MELSOFT

MITSUBISHI ELECTRIC

Engineering Software

GT Designer3 (GOT3000) Screen Design Manual

-SW1DND-GTWK3-E

Safety precautions

Always read the precautions before using this product.

Also read this manual and the relevant manuals mentioned in this manual carefully, and use the product properly while paying full attention to safety.

Note that the precautions in this manual apply only to this product.

The safety precautions are divided into the following levels: ⚠ WARNING and ⚠ CAUTION.

⚠ **WARNING**	**Indicates that incorrect handling may cause hazardous conditions, resulting in death or severe injury.**
⚠ **CAUTION**	**Indicates that incorrect handling may cause hazardous conditions, resulting in minor or moderate injury or property damage.**

Note that failure to observe ⚠ CAUTION may lead to a serious accident depending on the circumstances.

Make sure to observe both warnings and cautions to ensure personal safety.

Ensure that this manual is easily accessible to all users of this product.

[Design precautions]

⚠WARNING

- To maintain the security (availability, integrity, and confidentiality) of the GOT and the system against unauthorized access, DoS[*1] attacks, computer viruses, and other cyberattacks from unreliable networks and devices via network, take appropriate measures such as firewalls, virtual private networks (VPNs), and antivirus solutions.
  Mitsubishi Electric shall have no responsibility or liability for any problems involving GOT trouble and system trouble by unauthorized access, DoS attacks, computer viruses, and other cyberattacks.
  *1 DoS: A denial-of-service (DoS) attack disrupts services by overloading systems or exploiting vulnerabilities, resulting in a denial-of-service (DoS) state.
- Check our website for vulnerability periodically, and update the software if any vulnerabilities are found.

[Design precautions]

⚠CAUTION

- When the GOT connects to an Ethernet network, the IP address setting is restricted according to the system configuration.
  When a GOT1000 series model is on an Ethernet network, do not set the IP address 192.168.0.18 for the GOT and the controller on this network.
  Doing so may cause IP address duplication at the GOT startup, adversely affecting the communication of the device with the IP address 192.168.0.18.
  The operation at IP address duplication depends on the devices and the system.
- When using the Ethernet interfaces, set an IP address for each interface to access a different network.

[Input operation precautions]

⚠WARNING

- Thoroughly read the manual to fully understand the operating procedures before performing input operations on a user-created screen (such as turning a bit device on or off, changing the current value of a word device, changing the set or current value of a timer or counter, or changing the current value of a buffer memory or parameter).
  During the input operation, never change the data of the devices which are used to perform significant operation for the system.
  Doing so may cause an accident due to an incorrect output or malfunction.

[Precautions for use of the data storage]

⚠WARNING

- If the SD card in drive A of the GOT is removed while the GOT is accessing it, the GOT may stop processing for about 20 seconds.
  During this stop, you cannot operate the GOT, and the functions running in the background, including the screen refresh, alarm, logging, and script, also stop.
  This stop may affect the system operation, causing an accident.
  Before removing the SD card, check that the SD card access LED is off.

[Precautions for use of the data storage]

⚠CAUTION

- If you remove the data storage from the GOT while the GOT is accessing it, the data storage or files may get damaged.
  Before removing the data storage, check the SD card access LED, relevant system signal, or others to make sure that the data storage is not being accessed.
  If the data storage is damaged, the GOT may not function properly.

[Remote control precautions]

⚠WARNING

- Remote control is available through a network by using GOT functions, including the VNC server function and the GOT Mobile function.
  If these functions are used to perform remote control of control equipment, the field operator may not notice the remote control, possibly leading to an accident.
  In addition, a communication delay or interruption may occur depending on the network environment, and remote control of control equipment cannot be performed normally in some cases.
  Before using the above functions to perform remote control, fully grasp the circumstances of the field site and ensure safety.
- When operating the server (GOT) of the GOT Mobile function to disconnect a client, notify the operator of the client about the disconnection beforehand.
  Not doing so may cause an accident.

Product application

(1) Mitsubishi graphic operation terminal ("the PRODUCT") shall be used in conditions;
i) where any problem, fault or failure occurring in the PRODUCT, if any, shall not lead to any major or serious accident;
and
ii) where the backup and fail-safe function are systematically or automatically provided outside of the PRODUCT for the case of any problem, fault or failure occurring in the PRODUCT.

(2) The PRODUCT has been designed and manufactured for the purpose of being used in general industries.
MITSUBISHI ELECTRIC SHALL HAVE NO RESPONSIBILITY OR LIABILITY (INCLUDING, BUT NOT LIMITED TO ANY AND ALL RESPONSIBILITY OR LIABILITY BASED ON CONTRACT, WARRANTY, TORT, PRODUCT LIABILITY) FOR ANY INJURY OR DEATH TO PERSONS OR LOSS OR DAMAGE TO PROPERTY CAUSED BY the PRODUCT THAT ARE OPERATED OR USED IN APPLICATION NOT INTENDED OR EXCLUDED BY INSTRUCTIONS, PRECAUTIONS, OR WARNING CONTAINED IN MITSUBISHI ELECTRIC USER'S, INSTRUCTION AND/OR SAFETY MANUALS, TECHNICAL BULLETINS AND GUIDELINES FOR the PRODUCT. ("Prohibited Application")
- Nuclear Power Plants and any other power plants operated by Power companies, and/or any other cases in which the public could be affected if any problem or fault occurs in the PRODUCT.
- Railway companies or Public service purposes, and/or any other cases in which establishment of a special quality assurance system is required by the Purchaser or End User.
- Aircraft or Aerospace, Medical applications, Train equipment, transport equipment such as Elevator and Escalator, Incineration and Fuel devices, Vehicles, Manned transportation, Equipment for Recreation and Amusement, and Safety devices, handling of Nuclear or Hazardous Materials or Chemicals, Mining and Drilling, and/or other applications where there is a significant risk of injury to the public or property.

Notwithstanding the above restrictions, Mitsubishi Electric may in its sole discretion, authorize use of the PRODUCT in one or more of the Prohibited Applications, provided that the usage of the PRODUCT is limited only for the specific applications agreed to by Mitsubishi Electric and provided further that no special quality assurance or fail-safe, redundant or other safety features which exceed the general specifications of the PRODUCTs are required. For details, please contact the Mitsubishi Electric representative in your region.

(3) Mitsubishi Electric shall have no responsibility or liability for any problems involving graphic operation terminal trouble and system trouble caused by DoS attacks, unauthorized access, computer viruses, and other cyberattacks.

Introduction

Thank you for choosing Mitsubishi Electric Graphic Operation Terminal (GOT).
Before using the product, read this manual carefully and make sure you understand the functions and performance of the GOT for correct use.

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Relevant manuals

Point

e-Manual refers to the Mitsubishi Electric FA electronic book manuals that can be browsed using a dedicated tool.

e-Manual has the following features:

- Required information can be cross-searched in multiple manuals.
- Other manuals can be accessed from the links in the manual.
- Hardware specifications of each part can be found from the product figures.
- Pages that users often browse can be bookmarked.
- Sample programs can be copied to the engineering tool.

Screen design software-related manuals

Manual name	Manual number	Format
GT Works3 Installation Instructions	—	PDF e-Manual
GT Designer3 (GOT3000) Screen Design Manual	SH-082590ENG	PDF e-Manual

Connection manuals

Manual name	Manual number	Format
GOT3000 Series User's Manual (Connection)	SH-082593ENG	PDF e-Manual

GT SoftGOT3000 manual

Manual name	Manual number	Format
GT SoftGOT3000 User's Manual	SH-082594ENG	PDF e-Manual

GOT3000 series user manuals

Manual name	Manual number	Format
GOT3000 Series User's Manual (Hardware)	SH-082591ENG	PDF e-Manual Bound document
GOT3000 Series User's Manual (Utility & Maintenance Functions)	SH-082592ENG	PDF e-Manual

Abbreviations, generic terms, and model icons

The following shows the abbreviations, generic terms, and model icons used in this manual.

GOT3000 series

Abbreviations and generic terms			Model	Meaning of icon	
				Available	Unavailable
GT37	GT37-W		GT3715-FHCBD		
			GT3712-WXCBD		
	GT37-X	GT3715-X	GT3715-XRBA GT3715-XRBD		
		GT3712-X	GT3712-XRBA GT3712-XRBD		
		GT3710-X	GT3710-XRBA GT3710-XRBD		
		GT3708-X	GT3708-XRBA GT3708-XRBD		
GT SoftGOT3000			GT SoftGOT3000		

GOT2000 series and GOT1000 series

Abbreviations and generic terms	Model	Meaning of icon	
		Available	Unavailable
GOT2000 series	GOT2000 series	—	—
GOT1000 series	GOT1000 series	—	—

GOT units and option units

Abbreviations and generic terms		Description
Extension interface converter unit		This unit connects the extension unit of the GOT2000 series and GOT1000 series to the GOT3000 series.
Extension unit	Communication unit	A unit, such as the serial communication unit or CC-Link IE TSN communication unit, installed on the GOT to enable communication with other devices
	Option unit	A unit, such as an external I/O unit, installed on the GOT to provide specific functions
Option		Options, such as SD cards, batteries, and protective sheets, installed on the GOT for use

Software

■Software related to GOT

Abbreviations and generic terms	Description
GT Works3	Software that comprehensively supports screen design for the GOT
GT Works3 Version1	
GT Designer3	Screen design software for the GOT3000 series, GOT2000 series, and GOT1000 series
GT Designer3 (GOT3000)	Screen design software for the GOT3000 series
Speech synthesis license	License to use the speech synthesis function
VNC server function license	License to use the VNC server function with the GOT3000
VPN function license	License to use the VPN function with the GOT3000
License for the remote personal computer operation function (Ethernet)	License to use the remote personal computer operation function (Ethernet) in the GOT3000
Multimedia function license	License to perform the following with the GOT3000 • Use a network camera. • Record or play images taken by a network camera or web camera.
License for GT SoftGOT3000	License to use GT SoftGOT3000
GOT Mobile function license for GOT3000	License to use the GOT Mobile function with the GOT3000
GOT Mobile function license for GT SoftGOT3000	License to use the GOT Mobile function with GT SoftGOT3000
GENESIS64 Advanced	GENESIS64 server application (GEN64-APP)
GENESIS64 Basic SCADA	GENESIS64 server application (GEN64-BASIC)
GENESIS64	Generic term of GENESIS64 Advanced and GENESIS64 Basic SCADA
GT Simulator3	Screen simulator GT Simulator3 for the GOT3000 series
GT SoftGOT3000	Software that performs the same functions as the GOT3000 on a personal computer or panel computer
GT OPC UA Client	OPC UA server connection setting software

■Software related to iQ Works

Abbreviations and generic terms	Description
iQ Works	iQ Platform compatible engineering environment MELSOFT iQ Works
MELSOFT Navigator	Integrated development environment software included in the iQ Platform-compatible engineering environment, MELSOFT iQ Works
MELSOFT iQ AppPortal	Integrated application management software

■Other software

Abbreviations and generic terms		Description
GX Works3		Programmable controller engineering software
GX Works2		
Controller simulator	GX Simulator3	Simulation function of GX Works3
	GX Simulator2	Simulation function of GX Works2
	GX Simulator	Ladder logic test tool function software package
GX Developer		Programmable controller programming software
GX LogViewer		Dedicated logging data viewer
MI Configurator		Configuration and monitor tool for Mitsubishi Electric industrial computers
PX Developer		FBD software package for process control
MT Works2		Motion controller engineering software
MT Developer		Integrated start-up support software for motion controller Q series
CW Configurator		Setting/monitoring tools for the C Controller module and MELSECWinCPU
MR Configurator2		Servo configuration software
MR Configurator		Servo configuration software
FR Configurator2		Inverter setup software
FR Configurator		Inverter setup software
NC Configurator2		CNC parameter setting support software
NC Configurator		CNC parameter setting support tool
FX Configurator-FP		Parameter setting, monitoring, and testing software
FX Configurator-EN-L		FX3U-ENET-L type Ethernet module setting software
RT ToolBox3		Robot program creation software
RT ToolBox2		Robot program creation software
MX Component		Communication library
MX Sheet		Communication support software package
CPU Module Logging Configuration Tool		CPU Module Logging Configuration Tool

PART 1 Search by purpose

1 Useful information

1 Useful information

☞ Page 31 Finding the reference manual
☞ Page 37 Searching for functions

1.1 Finding the reference manual

This section describes the main GOT manuals and their contents.
The following abbreviations are used for the manual names.

Manual name	Abbreviation	Main contents
GT Designer3 (GOT3000) Screen Design Manual	GTD	• Screen operation with GT Designer3 • Settings of the functions that run on the GOT • Functions enabled by connecting the GOT and controllers
GOT3000 Series User's Manual (Hardware)	HW	• GOT hardware specifications • How to connect cables to and install units on the GOT
GOT3000 Series User's Manual (Utility & Maintenance Functions)	UT	• How to operate the utility • How to use dedicated screens such as a sequence program monitor • System alarms and corrective actions
GOT3000 Series User's Manual (Connection)	Connection	• Devices connectable with the GOT • System configuration • Communication settings • FA transparent function (reading and writing programs between a personal computer and a controller via the GOT)
GT SoftGOT3000 User's Manual	SGT	• How to operate GT SoftGOT3000

The following contents and their reference manuals are shown below.

☞ Page 32 Operations related to package data, BootOS, and CoreOS (data transfer)
☞ Page 32 How to protect the GOT and data
☞ Page 32 Operating the GOT using gestures
☞ Page 33 How to use GOT peripherals
☞ Page 34 Settings that can be changed in the utility or in GT Designer3
☞ Page 36 Devices, labels, and tags that can be monitored with the GOT
☞ Page 36 Drive configuration and capacity of the GOT
☞ Page 36 Differences between GT SoftGOT3000 functions and other functions

1.1.1 Operations related to package data, BootOS, and CoreOS (data transfer)

○: Available

—: Not available

Information on...	Reference				
	GTD	HW	UT	Connection	SGT
Reading/writing package data	○ ☞ Page 408 Transferring data to the GOT	—	—	—	—
Writing the BootOS and the CoreOS (version upgrade)	○ ☞ Page 445 Transferring data via a data storage	—	—	—	—
How to use the package data of the GOT with another GOT (uploading and downloading)	—	—	○	—	—

1.1.2 How to protect the GOT and data

○: Available

—: Not available

Information on...	Reference				
	GTD	HW	UT	Connection	SGT
Security functions of the GOT and GT Designer3	○ ☞ Page 38 Security function	—	—	—	○

1.1.3 Operating the GOT using gestures

○: Available

—: Not available

Information on...	Reference				
	GTD	HW	UT	Connection	SGT
Operating the GOT screen using gestures	○ ☞ Page 502 Zooming and scrolling the monitor screen of the GOT (screen gesture function)	—	—	—	—
Operating objects using gestures	○ ☞ Page 507 Operating objects with gestures (object gesture function)	—	—	—	—

1.1.4 How to use GOT peripherals

○: Available

—: Not available

Information on...	Reference				
	GTD	HW	UT	Connection	SGT
How to use a barcode reader	○ ☞ Page 2564 Using a barcode reader with the GOT (barcode function)	—	—	○	—
How to use an RFID controller	○ ☞ Page 2588 Using an RFID with the GOT (RFID function)	—	—	○	—
How to operate a personal computer from the GOT	○ ☞ Page 2613 Operating a personal computer by using the GOT (remote personal computer operation function (Ethernet))	—	—	○	—
How to use a VNC server	○ ☞ Page 2638 Viewing the GOT from a personal computer (VNC server function)	—	—	○	—
How to display or record images from a camera, video device, or other equipment on the GOT	○ ☞ Page 2661 Displaying and recording an image from a camera or video device on the GOT (digital image input/recording function)	—	—	○	—
How to display the GOT screen on an external display	○ ☞ Page 2698 Displaying the GOT screen on an external display (video output function)	—	—	○	—
How to play a sound file through speakers	○ ☞ Page 2707 Outputting sound with the GOT (sound output function)	—	—	○	—
How to use an external I/O device or an operation panel	○ ☞ Page 2722 Using an external I/O device on the GOT (External I/O function and operation panel function)	—	—	○	—
How to monitor a controller on a tablet via the GOT	○ ☞ Page 2736 Monitoring a controller from tablets or other devices (GOT Mobile function)	—	—	○	—
How to use the GOT as an OPC UA server	○ ☞ Page 2839 Monitoring controllers through the GOT (OPC UA server function)	—	—	—	—
How to monitor a controller via the GOT	○ ☞ Page 2868 Monitoring a controller through the GOT (server/client function)	—	—	—	—
How to access GOT files from a peripheral	○ ☞ Page 2904 Transferring files between the GOT and peripheral devices (FTP server function)	—	—	—	—
How to access files on an external server from the GOT	○ ☞ Page 2929 Transferring files between the GOT and peripheral devices (file transfer function (FTP transfer))	—	—	—	—

1.1.5 Settings that can be changed in the utility or in GT Designer3

The following shows whether utility menus can be set in GT Designer3.

When the package data is written to the GOT, the utility settings of the GOT can be updated to those of GT Designer3.

○: Available

—: Not available

Information on...		Reference				
		GTD	HW	UT	Connection	SGT
[GOT basic set] tab	[Display]	○ ☞ Page 616 Configuring the settings for the display on the GOT ([Display Setting/Language Setting]) ☞ Page 645 Setting a screen to be displayed on the GOT at startup ([Startup Logo])	—	○	—	—
	[Language]	○ ☞ Page 616 Configuring the settings for the display on the GOT ([Display Setting/Language Setting])	—	○	—	—
	[Unique info]	○ ☞ Page 620 Setting the identification information to the GOT ([GOT ID])	—	○	—	—
	[IP address]	○ ☞ Page 714 Setting the GOT IP address ☞ Page 717 Configuring the settings common to Ethernet interfaces	—	○	—	—
	[IP filter setting]	○ ☞ Page 719 Setting the IP filter	—	○	—	—
	[Operation]	○ ☞ Page 626 Configuring the settings for the touch operation on the GOT ([Operation Setting/Utility Call Key])	—	○	—	—
	[Utility call key]	○ ☞ Page 626 Configuring the settings for the touch operation on the GOT ([Operation Setting/Utility Call Key])	—	○	—	—
	[USB device/host]	○ ☞ Page 629 Disabling the USB interface on the GOT front face ([USB Common Setting]) ☞ Page 630 Configuring the settings for a mouse and a keyboard used with the GOT ([USB Host])	—	○	—	—
	[Time]	○ ☞ Page 635 Setting the GOT time setting method ([Time Setting])	—	○	—	—
	[Controller]	○ ☞ Page 727 Setting channels ☞ Page 773 Checking the interface settings of the GOT ([I/F Communication Setting])	—	○	—	—
	[Ethernet]	○ ☞ Page 731 [Connected Ethernet Controller Setting]	—	○	—	—
	[Transparent mode]	○ ☞ Page 643 Setting the FA transparent function ([Transparent Mode Setting])	—	○	—	—
	[GOT internal device monitor]	○ ☞ Page 644 Configuring the settings for the GOT internal device monitor ([GOT Internal Device Monitor])	—	○	—	—
	[Security]*1	○ ☞ Page 3039 Restricting display and operation on the GOT with level authentication	—	○	—	—
	[Operator authentication management]	—	—	○	—	—
	[Opr authn. Password change]	—	—	○	—	—
	[Brightness adjustment]	○ ☞ Page 616 Configuring the settings for the display on the GOT ([Display Setting/Language Setting])	—	○	—	—

Information on...		Reference				
		GTD	HW	UT	Connection	SGT
[Add-on setting] tab	[SoftGOT-GOT link function]	○ ☞ Page 648 Configuring the settings for the SoftGOT-GOT link function ([SoftGOT-GOT Link])	—	○	—	—
	[VNC server function]	○ ☞ Page 649 Configuring the settings for the VNC server function ([VNC Server])	—	○	—	—
	[Seq. program monitor]	○ ☞ Page 650 Configuring the settings for the sequence program monitor ([Sequence Program Monitor])	—	○	—	—
	[Backup restoration]	○ ☞ Page 652 Configuring the settings for the backup/restoration function ([Backup/Restoration])	—	○	—	—
	[License management]	—	—	○	—	—
	[System launcher]	○ ☞ Page 655 Configuring the settings for the system launcher function ([System Launcher])	—	○	—	—
	[iQSS utility]	○ ☞ Page 656 Configuring the settings for the iQSS utility function ([iQSS Utility])	—	○	—	—
	[File transfer]	○ ☞ Page 2929 Transferring files between the GOT and peripheral devices (file transfer function (FTP transfer))	—	○	—	—
	[Mail]	○ ☞ Page 2179 Sending an e-mail from the GOT when an alarm occurs (mail send function)	—	○	—	—
	[Web browser function]	○ ☞ Page 691 Setting the web browser function ([Web Browser])	—	○	—	—
	[ANDON connection]	—	—	○	—	—
	[VPN connection function]	○ ☞ Page 671 Setting the VPN connection function of the GOT ([VPN Connection])	—	○	—	—
	[Contactless tag function]	○ ☞ Page 667 Configuring the settings for the GOT contactless tag ([Contactless Tag])	—	○	—	—
[Maintenance]		—	—	○	—	—
[Monitor]		—	—	○	—	—
[Data mng.]		—	—	○	—	—

*1 Appears only when the security mode is set to mode 1.

1.1.6 Devices, labels, and tags that can be monitored with the GOT

○: Available

—: Not available

Information on...	Reference				
	GTD	HW	UT	Connection	SGT
GOT internal device list	○ ☞ Page 3577 GOT internal devices	—	—	—	—
Mitsubishi Electric products device list	○ ☞ Page 3128 Device range and settings of Mitsubishi Electric equipment	—	—	○	—
Non-Mitsubishi Electric products device list	○ ☞ Page 3487 Device range and settings of each controller	—	—	○	—
Types of devices that can be monitored with the GOT	○ ☞ Page 854 Settable devices in GT Designer3	—	—	—	—
Types of labels and tags that can be monitored with the GOT	○ ☞ Page 858 Labels and Tags Usable in GT Designer3	—	—	—	—

1.1.7 Drive configuration and capacity of the GOT

○: Available

—: Not available

Information on...	Reference				
	GTD	HW	UT	Connection	SGT
Drive configuration and capacity of the GOT	○ ☞ Page 81 Drive configuration and capacity of the GOT	—	—	—	—
Virtual drive of GT SoftGOT3000	○ ☞ Page 81 Drive configuration and capacity of the GOT	—	—	—	○

1.1.8 Differences between GT SoftGOT3000 functions and other functions

○: Available

—: Not available

Information on...	Reference				
	GTD	HW	UT	Connection	SGT
List of differences between GT SoftGOT3000 functions and other functions	—	—	—	—	○

1.2 Searching for functions

Information on...	Reference
Security functions	☞ Page 38 Security function
Remote GOT operation functions	☞ Page 44 Remote GOT operation functions
Data collection functions	☞ Page 46 Data collection functions

1.2.1 Security function

☞ Page 39 Security mode
☞ Page 40 Security function list

This section describes the security functions of the GOT and GT Designer3.

Precautions

■Taking security measures

The security functions of the GOT and GT Designer3 serve as a method to prevent unauthorized access from external devices, which could lead to the destruction of programs or data. However, these functions do not provide complete protection against unauthorized access.

To maintain the security (availability, integrity, and confidentiality) of GOT3000 and the system against unauthorized access from external devices, DoS attacks, computer viruses, and other cyberattacks, also take additional measures, such as firewalls, virtual private networks (VPNs), and antivirus solutions.

Mitsubishi Electric shall have no responsibility or liability for GOT3000 troubles and system troubles caused by unauthorized access from external devices, DoS attacks, computer virus, and other cyberattacks.

Security mode

There are two security modes: Mode 1 and mode 2.

The available security functions differ depending on the security mode.

Security mode	Description
Mode 1	The security functions compatible with the GOT2000 series can be used.
Mode 2	More robust security functions than mode 1 can be used.

When a new project is created, mode 2 is set by default.

The security mode can be set only in the [Type Setting] dialog ([Security Setting]).

☞ Page 526 [Security Setting]

■Differences by security mode

The availability and operation of the following functions vary depending on the security mode.

Function	Mode 1	Mode 2
Operator authentication	Only user-created screens are protected.	All operations on the GOT are protected.
Screen security	Select an authentication method from the following options: • Not used • Level authentication • Operator authentication	Only operator authentication is available. This function cannot be disabled.
Functional operation security	Restricts the display of the screen used to start the utility or to configure parameter settings.	Restricts the display of the screen used to configure parameter settings.
		Starting the utility is restricted by operator authentication. To determine whether the utility can be started for each operator, change the operation authority setting in the [Operator authentication management] screen in the utility. ☞ Page 3003 Registering or editing an operator or group
Data transfer security	Set a password for data transfers.	This function is disabled. Operator authentication is used for data transfer.
Operation log function	Records information on the items added to the operation log target list as an operation log.	Records the following information as operation logs: • Information on the items added to the operation log target list • Security information
Project security (when opening a project with GT SoftGOT3000)	Authenticates users.	This function is disabled. Authentication when opening a project with GT SoftGOT3000 is performed by operator authentication.

For information on security modes and the corresponding security functions, refer to the following.

☞ Page 40 Security function list

■Change of the security mode

When the package data is written, the GOT runs in the security mode set for the package data.

When the security mode is changed, the operator management information stored on the GOT is deleted.

Security function list

The following shows security modes and the corresponding security functions.

☞ Page 40 GOT (excluding GT SoftGOT3000) security function list

☞ Page 42 GT SoftGOT3000 security function list

■GOT (excluding GT SoftGOT3000) security function list

○: Supported

—: Unsupported

Function		Description	Mode 1	Mode 2
Security function setting function		Specifies the security mode of the GOT. ☞ Page 39 Security mode	○	○
Operator authentication (mode 2)		Registers operators to the GOT, thereby restricting the operation of GOT screens and access from external devices. ☞ Page 2989 Restricting GOT screen operations and access from external devices (operator authentication (Mode 2))	—	○
Mobile code execution control function		Disables JavaScript in the web browser function. ☞ Page 708 Disabling JavaScript (Mobile code execution control function)	○	○
Firmware update function		Updates the firmware of the GOT (CoreOS, BootOS, and system applications). ☞ Page 408 Transferring data to the GOT	○	○
Operation setting function		Prompts the GOT to perform a specific operation and notifies the error status using a buzzer when an error occurs on the GOT. The user does not need to configure the setting for this function.	○	○
Port forced close function	Default open port use/ nonuse setting function	Sets whether to open or close the GOT ports that are open by default. Configure the setting in the utility or in GT Designer3. ☞ Page 717 Configuring the settings common to Ethernet interfaces 📖GOT3000 Series User's Manual (Utility & Maintenance Functions)	○	○
	USB host/device disable function	Disables the USB interface on the GOT front face. Configure the setting in the utility or in GT Designer3. ☞ Page 629 Disabling the USB interface on the GOT front face ([USB Common Setting]) 📖GOT3000 Series User's Manual (Utility & Maintenance Functions)	○	○
External device input data verification function		Verifies whether the data input from an external device is consistent with the specifications. The user does not need to configure the setting for this function.	○	○
Initialize all data function		Deletes all data on the GOT. This function can be used to securely dispose of the GOT. 📖GOT3000 Series User's Manual (Utility & Maintenance Functions)	○	○
Information protection function		Performs the following: • File tampering check function: Checks if the files on the GOT have been tampered with. • Security protection function: Encrypts the security information of the GOT. ☞ Page 3065 Protecting the files in the GOT (Information protection function)	○	○
Encrypted communication function		Encrypts communication data when the GOT communicates with an external device. ☞ Page 3069 Encrypting communication data (Encrypted communication function)	○	○
IP filter function		Uses IP addresses to restrict devices that can communicate with the GOT via Ethernet. When connecting the GOT to Ethernet, using an IP filter is recommended. ☞ Page 719 Setting the IP filter	○	○
Operation log function	Mode 1	Records the operations of the GOT and system as history. ☞ Page 1909 Configuring the settings for collecting the GOT operation history ([Operation Log])	○	—
	Mode 2	Records the security functions of the GOT and system operations chronologically. For information on the operation log, refer to the following. ☞ Page 1909 Configuring the settings for collecting the GOT operation history ([Operation Log]) For the system alarm monitoring function, refer to the following. ☞ Page 2075 Collecting alarms by monitoring the system	—	○

Function		Description	Mode 1	Mode 2
Restriction function against DoS attacks		Restricts the bandwidth of networks used by the GOT. This function prevents network traffic and CPU load from increasing due to operational errors, etc., which may affect necessary functions. The user does not need to configure the setting for this function.	○	○
GOT data package acquisition function		Backs up the GOT data to the data storage. The backup data can be restored using the restore function. 📖GOT3000 Series User's Manual (Utility & Maintenance Functions)	○	○
Restore function		Restores the data backed up using the GOT data package acquisition function to the GOT via data transfer. 📖GOT3000 Series User's Manual (Utility & Maintenance Functions)	○	○
Screen security	Mode 1	Restricts operators who can display and operate screens by setting security levels for screens and objects. Select level authentication or operator authentication (mode 1) for the authentication method. ☞ Page 3038 Restricting display and operation on the GOT (Screen security)	○	—
	Mode 2	Restricts operators who can display and operate screens by setting security levels for screens and objects. ☞ Page 2989 Restricting GOT screen operations and access from external devices (operator authentication (Mode 2))	—	○
Functional operation security	Mode 1	Restricts the display of the screen used to start the utility or to configure parameter settings. ☞ Page 3057 Configuring the security settings for operations in the utility (Functional operation security)	○	—
	Mode 2	Restricts the display of the screen used to configure parameter settings. ☞ Page 3057 Configuring the security settings for operations in the utility (Functional operation security)	—	○
Data transfer security		Restricts data transfer between a personal computer and the GOT. ☞ Page 3062 Configuring the security setting for transferring data (Data transfer security)	○	—
Security control via Ethernet		Performs the following: • Prohibits or permits operations via the Ethernet port. • Notifies when a prohibited operation is performed via the Ethernet port. ☞ Page 3601 Invalid Access from Ethernet Port 1, Invalid Access from Ethernet Port 2 (GS254) ☞ Page 3641 Ethernet Port 1 Access Control, Ethernet Port 2 Access Control (GS454)	○	○
System screen operation restriction function		Restricts screen operations in the [Data mng.] tab of the utility. ☞ Page 3654 System Screen Operation Restriction (GS622) ☞ Page 3654 Specify Drive to Prohibit Write Operation (System Screen) (GS623) ☞ Page 3655 Specify Drive to Hide (System Screen) (GS624)	○	○
USB device communication disable function		Controls communications with GT Designer3 or Data Transfer Tool through the front USB interface (host/device) of the GOT. ☞ Page 629 Disabling the USB interface on the GOT front face ([USB Common Setting]) 📖GOT3000 Series User's Manual (Utility & Maintenance Functions)	○	○
SD card access control signal		Controls the SD card access switch ON/OFF. ☞ Page 3660 SD Card Access Switch Status Control (GS1820)	○	○
Project security		Restricts the project from being displayed or edited in GT Designer3. ☞ Page 2972 Protecting a project by registering users (Project security)	○	○

■GT SoftGOT3000 security function list

○: Supported

—: Unsupported

Function		Description	Mode 1	Mode 2
Security function setting function		Specifies the security mode of the GOT. ☞ Page 39 Security mode	○	○
Operator authentication (mode 2)		Registers operators to the GOT, thereby restricting the operation of GOT screens and access from external devices. ☞ Page 2989 Restricting GOT screen operations and access from external devices (operator authentication (Mode 2))	—	○
Mobile code execution control function		Restricts the execution of mobile code. Windows functions are used for the restriction.	○	○
Operation setting function		Prompts the GOT to perform a specific operation and notifies the error status in a dialog when an error occurs on the GOT. The user does not need to configure the setting for this function.	○	○
External device input data verification function		Verifies whether the data input from an external device is consistent with the specifications. The user does not need to configure the setting for this function.	○	○
Initialize all data function		Deletes non-deletable data by uninstalling GT SoftGOT3000. Execute this function from the GT SoftGOT3000 menu. 📖GT SoftGOT3000 User's Manual	○	○
Information protection function		Performs the following: • File tampering check function: Checks if the files on the GOT have been tampered with. • Security protection function: Encrypts the security information of the GOT. ☞ Page 3065 Protecting the files in the GOT (Information protection function)	○	○
Encrypted communication function		Encrypts communication data when the GOT communicates with an external device. ☞ Page 3069 Encrypting communication data (Encrypted communication function)	○	○
IP filter function		Uses IP addresses to restrict devices that can communicate with the GOT via Ethernet. Use the function of Windows or an external operating environment. When connecting GT SoftGOT3000 to Ethernet, it is recommended to use an IP filter.	○	○
Operation log function	Mode 1	Records the operations of the GOT and system as history. ☞ Page 1909 Configuring the settings for collecting the GOT operation history ([Operation Log])	○	—
	Mode 2	Records the security functions of the GOT and system operations chronologically. For information on the operation log, refer to the following. ☞ Page 1909 Configuring the settings for collecting the GOT operation history ([Operation Log]) For the system alarm monitoring function, refer to the following. ☞ Page 2075 Collecting alarms by monitoring the system	—	○
Restriction function against DoS attacks		Restricts the bandwidth of networks used by the GOT. This function prevents network traffic and CPU load from increasing due to operational errors, etc., which may affect necessary functions. Use the function of Windows or an external operating environment. The user does not need to configure the setting for this function.	○	○
Screen security	Mode 1	Restricts operators who can display and operate screens by setting security levels for screens and objects. Select level authentication or operator authentication (mode 1) for the authentication method. ☞ Page 3038 Restricting display and operation on the GOT (Screen security)	○	—
	Mode 2	Restricts operators who can display and operate screens by setting security levels for screens and objects. ☞ Page 2989 Restricting GOT screen operations and access from external devices (operator authentication (Mode 2))	—	○
Functional operation security		Restricts the utility from being started. ☞ Page 3057 Configuring the security settings for operations in the utility (Functional operation security)	○	—

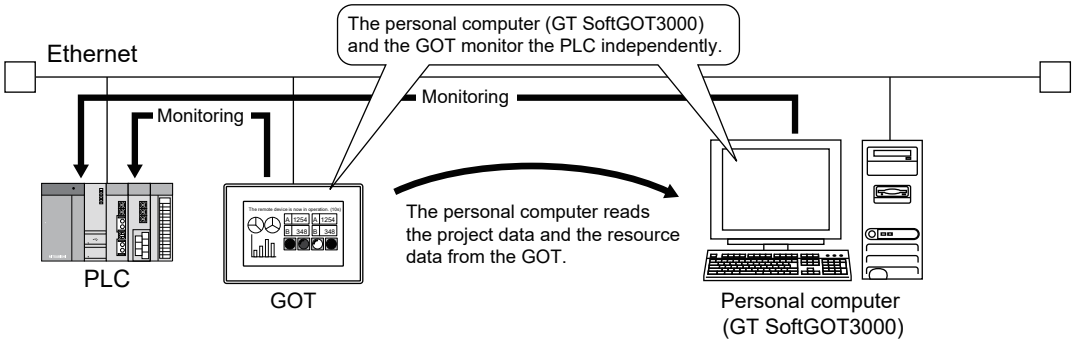
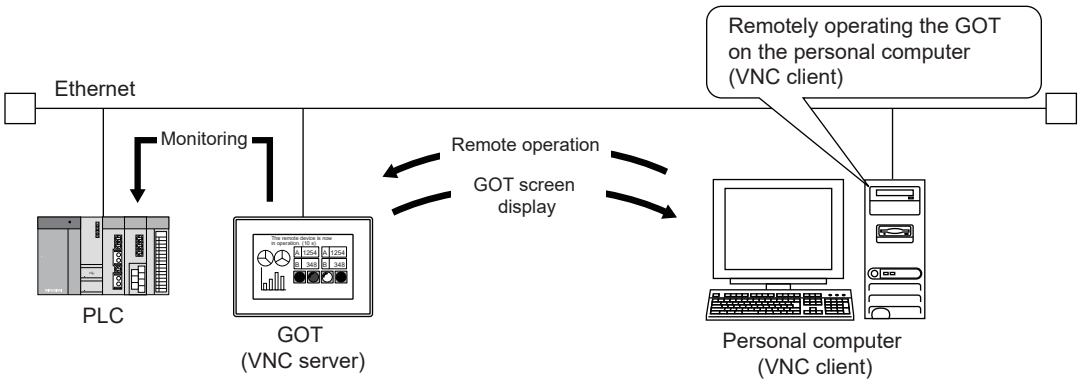
Function	Description	Mode 1	Mode 2
System screen operation restriction function	Restricts screen operations in the [Data mng.] tab of the utility. ☞ Page 3654 System Screen Operation Restriction (GS622) ☞ Page 3654 Specify Drive to Prohibit Write Operation (System Screen) (GS623) ☞ Page 3655 Specify Drive to Hide (System Screen) (GS624)	○	○
Project security	Restricts the project from being displayed or edited in GT Designer3. ☞ Page 2972 Protecting a project by registering users (Project security)	○	○

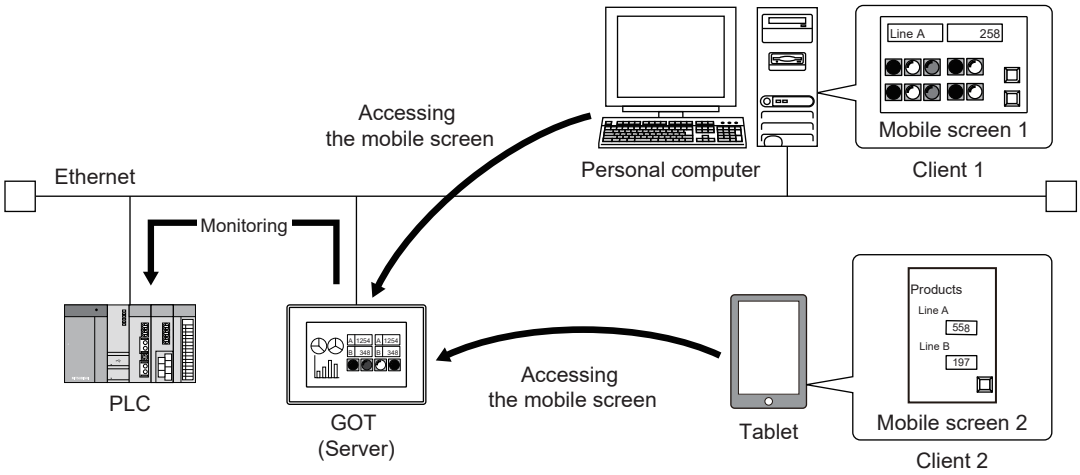
1.2.2 Remote GOT operation functions

☞ Page 44 Remote GOT operation function list
☞ Page 45 Differences between functions

The following shows the remote GOT operation functions.

Remote GOT operation function list

Function	Description
SoftGOT-GOT link function	With the SoftGOT-GOT link function, both GT SoftGOT3000 and the GOT hold the project data and monitor the controller. Since GT SoftGOT3000 displays the GOT screen on the personal computer, the processing load on the GOT is reduced. By using the internal device as the screen switching device, GT SoftGOT3000 and the GOT can display different screens.  The GOT and GT SoftGOT3000 operate independently; therefore, there may be differences in the collected data, such as alarm data and logging data, between the GOT and the personal computer. You cannot use the extended functions unsupported by GT SoftGOT3000 together with the SoftGOT-GOT link function. For details on the SoftGOT-GOT link function, refer to the following. 📖GT SoftGOT3000 User's Manual
VNC server function	The VNC server function displays the GOT screen on the remote screen of a personal computer. You can view the data collected by the GOT, including alarm data and logging data, on a personal computer in real time. Dedicated screens for add-on functions can also be operated on a personal computer (VNC client).  Since the VNC server function increases the processing load on the GOT, the GOT may delay displaying a screen or collecting data, including alarm data and logging data. The GOT may also delay its response to operations from the VNC client (personal computer). Set the load balance between processing of the VNC server function and processing of the other functions on the GOT as necessary. The processing load balance can be set in the [VNC Server] dialog or using GS1798. ☞ Page 2638 Viewing the GOT from a personal computer (VNC server function)

Function	Description
GOT Mobile function	With the GOT Mobile function, an information device, such as a tablet, displays mobile screens that are stored on the server (GOT). Considering one browser as one client, the GOT can access up to five clients while GT SoftGOT3000 can access up to 15 clients simultaneously. Each client can display different mobile screens. The information device does not store project data and resource data. The server (GOT) stores the data for management.  No functions incompatible with the GOT Mobile function, such as objects that cannot be placed on mobile screens, can be used. For details on the GOT Mobile function, refer to the following. ☞ Page 2736 Monitoring a controller from tablets or other devices (GOT Mobile function)

Differences between functions

Item	Function		
	SoftGOT-GOT link function	VNC server function	GOT Mobile function
Terminal to be used	Personal computer with GT SoftGOT3000 installed	Information device (such as a tablet and personal computer) on which an applicable VNC client is installed	Information device (such as a tablet and personal computer) on which an applicable browser is installed
Number of terminals connectable to one GOT	One GT SoftGOT3000 module is connectable. Up to seven GT SoftGOT3000 modules are connectable when the GOT network interaction function is enabled.	One VNC client is connectable.	Considering one browser as one client, the number of connectable clients is as follows: GOT (excluding GT SoftGOT3000): 5 clients GT SoftGOT3000: 15 clients
Required number of licenses	One license is required per personal computer.	One license is required per GOT.	One license is required per GOT.
Screen display contents	The GOT and GT SoftGOT3000 can display different screens.	The GOT and the remote screen on the personal computer display the same screen.	The GOT and each client display different screens. (The clients display dedicated mobile screens.)
Screen with exclusive authorization control enabled	All screens	All screens	Screen with exclusive authorization control enabled (settable for each screen)
Creation of screens for the terminal (project data setting)	Not needed	Not needed	Mobile screens must be created.
Project data storage destination	Both the GOT and GT SoftGOT3000 hold the project data. GT SoftGOT3000 reads the project data from the GOT.	GOT only	GOT or GT SoftGOT3000
Resource data storage destination	When the project data is read, the resource data is also read into GT SoftGOT3000. Afterward, both the GOT and GT SoftGOT3000 hold the resource data.	GOT only	GOT or GT SoftGOT3000
Support for add-on functions for terminals	Limited For the functions that can and cannot be used with GT SoftGOT3000, refer to the following. GT SoftGOT3000 User's Manual	Not limited	Limited ☞ Page 2748 Add-on function

1.2.3 Data collection functions

The following shows the data collection functions.

Collection target		Function and reference
GOT operation log		Collects information on the operation of the GOT such as the date and time and operator. ☞ Page 1909 Configuring the settings for collecting the GOT operation history ([Operation Log])
Alarm	User-defined alarms	☞ Page 46 User-defined alarm collection function
	System alarms	☞ Page 46 System alarm collection function
Device value		Collects the values of the specified device. ☞ Page 2194 Collecting device data ([Logging])

User-defined alarm collection function

The following functions collect user-defined alarms.

- User alarm monitoring
- Simple alarm display

Item	Function	
	User alarm monitoring	Simple alarm display
Function type	Functions running in the background	Object function
Alarm collection specifications	Collects alarms regardless of the screen being displayed.	Collects alarms only while the screen with the simple alarm display is displayed.
Alarm history accumulation	Supported. File save is supported.	Unsupported
Power-failure backup	Supported.	Unsupported
Alarm hierarchization	Supported.	Unsupported
Alarm display method	Uses the alarm popup display or alarm display (user) to display alarms. ☞ Page 2105 Enabling the popup display for when an alarm occurs ☞ Page 2132 Viewing alarm events (Alarm display)	Displays alarms on the simple alarm display placed on the screen.
Reference	☞ Page 2022 Collecting alarms by monitoring devices	☞ Page 1519 Placing a simple alarm display

System alarm collection function

The following functions collect system alarms.

- System alarm monitoring
- System alarm display

Item	Function	
	System alarm monitoring	System alarm display
Function type	Functions running in the background	Object function
Alarm collection specifications	Collects alarms regardless of the screen being displayed.	Collects alarms regardless of the screen being displayed.
Alarm history accumulation	Supported. File save is supported.	Unsupported
Power-failure backup	Supported.	Unsupported
Specification of the alarm type of alarms to be collected	Supported.	Unsupported
Alarm display method	Uses the alarm popup display or alarm display (system) to display alarms. ☞ Page 2105 Enabling the popup display for when an alarm occurs ☞ Page 2132 Viewing alarm events (Alarm display)	Displays alarms on the system alarm display placed on the screen.
Reference	☞ Page 2075 Collecting alarms by monitoring the system	☞ Page 1542 Placing a system alarm display

PART 2 Steps to operate the GOT

2 Procedure before operation

GT37 SoftGOT3000

This section explains the general procedure before operation.
The procedure before operation differs between GT SoftGOT3000 and the other GOTs.
The procedure also differs depending on the security mode set for the project.
For the procedure before operating a GOT other than GT SoftGOT3000 and the differences depending on the security mode, refer to the following.
☞ Page 49 Procedure before operating the GOT
For the procedure before operating GT SoftGOT3000 and the differences depending on the security mode, refer to the following.
☞ Page 51 Procedure before operating GT SoftGOT3000

What is the security mode?

The GOT's security function has two security modes.

Security mode	Description
Mode 1	The security functions compatible with the GOT2000 series can be used.
Mode 2 (default)	More robust security functions than mode 1 can be used.

Security mode settings can be configured only with GT Designer3.
For details, refer to the following.
☞ Page 493 Changing the GOT type of the project

2.1 Procedure before operating the GOT

GT37 SoftGOT3000

This section explains the procedure before operating the GOT and the manuals describing the details.
The procedure before operation differs depending on the security mode.
The necessity of each step is shown below.
○: Required, △: Optional, —: Not required

Step		Security mode		Reference
		Mode 1	Mode 2	
1	Install GT Designer3 on the personal computer.	○	○	📖GT Works3 Version1 Installation Instructions
2	Create a project with GT Designer3.	○	○	☞ Page 207 Project creation and operations
	Set the Ethernet interface of the GOT when connecting the GOT and the controller via Ethernet.	△	△	☞ Page 713 Setting the GOT Ethernet interface ([GOT Ethernet Setting])
	Configure the settings to connect the GOT and controllers.	○	○	📖GOT3000 Series User's Manual (Connection)
3	Install the battery (sold separately) in the GOT.	△*1	○	📖GOT3000 Series User's Manual (Hardware)
4	Install the extension unit and options on the GOT.	△	△	📖GOT3000 Series User's Manual (Hardware)
5	Install the GOT on the control panel.	○	○	📖GOT3000 Series User's Manual (Hardware)
6	Provide wiring to the power supply section of the GOT.	○	○	📖GOT3000 Series User's Manual (Hardware)
7	Turn on the GOT. The GOT includes a preinstalled demo screen project at the time of factory shipment. After the GOT is started and the initial settings are configured, the demo screen is displayed.	○	○	—
8	Write the project created with GT Designer3 to the GOT.*2	○	○	☞ Page 408 Transferring data to the GOT
	Enter the password when the file protection function is enabled.	△	△	☞ Page 3065 Protecting the files in the GOT (Information protection function)
	If the security mode set for the project is mode 2, register the information of the operator with administrator privileges in the GOT.	—	○	☞ Page 2989 Restricting GOT screen operations and access from external devices (operator authentication (Mode 2))
9	Turn off the GOT and connect the GOT and the controller.	○	○	📖GOT3000 Series User's Manual (Connection)
10	Turn on the GOT and the controller to start monitoring. You can check whether the GOT is monitoring normally.	○	○	☞ Page 50 How to check whether the GOT is operating correctly

*1 Install a battery to retain the clock data even when the GOT is powered off.
*2 When a project is written to the GOT, the demo screen project is overwritten.

How to check whether the GOT is operating correctly

The following methods can be used to check for any issues with the operation of the project written to the GOT or the communication status with the controller.

Check	Method
Check whether the GOT recognizes the controller.	This can be checked on the [Communication setting] screen of the utility. 📖GOT3000 Series User's Manual (Utility & Maintenance Functions)
Check if an error (system alarm) has occurred in the GOT, controller, or network.	When an error occurs in the GOT, controller, or network, the GOT outputs a system alarm (error code and error message). The system alarm can be checked on the [System alarm] of the utility. 📖GOT3000 Series User's Manual (Utility & Maintenance Functions)
Check that the settings enable the GOT to communicate with the controller correctly and that the connection cable is connected properly.	This can be checked on the [I/O check] of the utility. 📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

2.2 Procedure before operating GT SoftGOT3000

GT37 SoftGOT3000

This section explains the procedure before operating GT SoftGOT3000 and the manuals describing the details.
The procedure before operation differs depending on the security mode.
The necessity of each step is shown below.
○: Required, △: Optional, —: Not required

Step		Security mode		Reference
		Mode 1	Mode 2	
1	Install GT SoftGOT3000 on the personal computer.	○	○	GT Works3 Version1 Installation Instructions
	When creating a project, install GT Designer3 on the personal computer.	○	○	GT Works3 Version1 Installation Instructions
2	Start GT SoftGOT3000 and register the GT SoftGOT3000 license.	○	○	GT SoftGOT3000 User's Manual
	When starting GT SoftGOT3000 for the first time, set a password for the GT SoftGOT3000 application log file.	○	○	GT SoftGOT3000 User's Manual
3	Create a project with GT Designer3.	○	○	☞ Page 207 Project creation and operations ☞ Page 493 Changing the GOT type of the project
	Configure the settings to connect GT SoftGOT3000 and the controller.	○	○	GOT3000 Series User's Manual (Connection)
4	Connect the personal computer with GT SoftGOT3000 installed to the controller.	○	○	GOT3000 Series User's Manual (Connection)
5	Open the project in GT SoftGOT3000.	○	○	GT SoftGOT3000 User's Manual
	Enter the password when the file protection function is enabled.	△	△	☞ Page 3065 Protecting the files in the GOT (Information protection function) GT SoftGOT3000 User's Manual
	When the security mode set for the project is mode 2, register the information of the operator with administrator privileges to GT SoftGOT3000.	—	○	☞ Page 2989 Restricting GOT screen operations and access from external devices (operator authentication (Mode 2)) GT SoftGOT3000 User's Manual
6	Perform monitoring with GT SoftGOT3000 using the project.	○	○	GT SoftGOT3000 User's Manual
	The following shows how to check if GT SoftGOT3000 is monitoring correctly. • When an error occurs, the details of the error can be checked on the [System alarm] screen of the utility.	○	○	GOT3000 Series User's Manual (Utility & Maintenance Functions)

PART 3 Specifications and screen layout of GT Designer3

3 Specifications

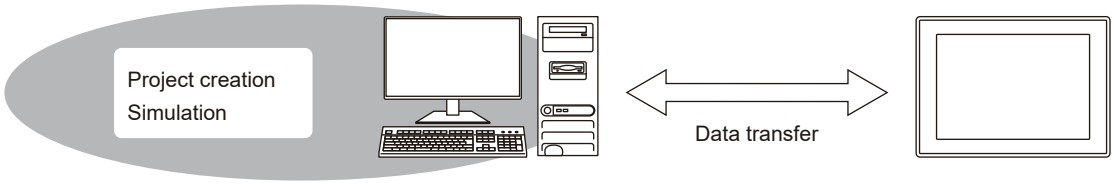
4 Basic knowledge required for screen design

5 Screen layout and basic operations

3 Specifications

GT37 SoftGOT3000

GT Designer3 is software used to create screens for GOT3000 series, GOT2000 series, and GOT1000 series.
This software enables you to create and simulate a project, and transfer data between the GOT and a personal computer.

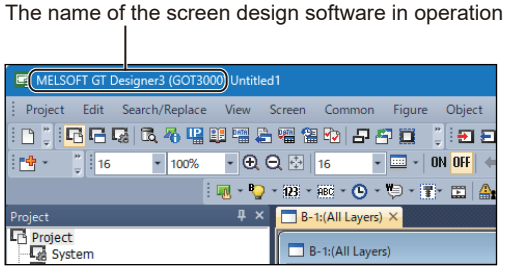


GT Designer3 consists of three screen design software modules as shown below.

- GT Designer3 (GOT3000): Screen design software module for GOT3000 series
- GT Designer3 (GOT2000): Screen design software module for GOT2000 series
- GT Designer3 (GOT1000): Screen design software module for GOT1000 series

When a project that cannot be edited with the current screen design software is operated, the compatible screen design software will start.
The title bar indicates the screen design software module in use.

The name of the screen design software in operation is displayed.



Each screen design software module has own Help.
To display Help for the screen design software module in use, press the [F1] key or use the menu.

Project creation

GT Designer3 manages the data used to operate the GOT for each project.
Set screens to be displayed on the GOT and functions which operate with the GOT for the created project.
☞ Page 207 Project creation and operations

Simulation

In GT Designer3, you can launch GT Simulator3 (3000) to simulate the project data being edited and check the operation on the GOT.
☞ Page 351 Simulation

Data transfer

Created projects and the data required for operating the GOT are written into the GOT from GT Designer3.
The resource data stored in the GOT can be read from the GOT to GT Designer3.
For the data transfer between GT Designer3 and the GOT, use a communication cable, network, or the data storage.
☞ Page 408 Transferring data to the GOT

3.1 Operating environment

GT37 SoftGOT3000

The following shows the operating environment for GT Designer3.

Item	Description
Model	Personal computer that Windows runs on
OS*1*2*3*4*5*6	• Microsoft Windows 11 Education (64-bit)*7 • Microsoft Windows 11 Enterprise (64-bit)*7 • Microsoft Windows 11 Pro (64-bit)*7 • Microsoft Windows 11 Home (64-bit)*7
CPU	Intel Core i3 (8th generation) or later
Memory	8 GB or more recommended
Display	9-inch or larger display with FWXGA (1366 × 768 dots) or higher resolution
Hard disk space	• For installation: 5 GB or more recommended • For execution: 512 MB or more recommended
Display color	High Color (16 bits) or higher

*1 For installation, administrator privileges are required.
For startup, the standard user or administrator account is required.
If another MELSOFT product is running with administrator privileges, also start GT Designer3 with administrator privileges.
If you change any setting of the personal computer while GT Designer3 is running, the change will not be applied to GT Designer3.

*2 The following functions are not supported.
Application start in Windows compatibility mode
Fast user switching
Changing your desktop themes (fonts)
Remote desktop
Setting the size of text and illustrations on the screen to any size other than [Small-100%]

*3 The touch feature is not supported.

*4 Operation in a virtual environment such as Hyper-V is not supported.

*5 Tablet mode is not supported.

*6 Unified Write Filter is not supported.

*7 Use the same language version of Windows OS as that of GT Designer3.
Example: When using the Japanese version of GT Designer3, use the Japanese version of Windows OS.

3.2 Model

GT37 SoftGOT3000

GT Designer3 is compatible with the following GOTs.

GOT	GOT type	Model
GT37	GT37**-FH (1920x1080)	GT3715-FHCBD
	GT37**-WX (1280x800)	GT3712-WXCBD
	GT37**-X (1024x768)	GT3715-XRBA GT3715-XRBD GT3712-XRBA GT3712-XRBD GT3710-XRBA GT3710-XRBD GT3708-XRBA GT3708-XRBD
GT SoftGOT3000	GT SoftGOT3000	GT SoftGOT3000

4 Basic knowledge required for screen design

☞ Page 57 BootOS, CoreOS and package data
☞ Page 58 Screen types and specifications
☞ Page 74 Specifications of displayable characters
☞ Page 80 Character codes supported by the GOT
☞ Page 81 Drive configuration and capacity of the GOT
☞ Page 84 Restrictions for folder names and file names used in GOT

4.1 BootOS, CoreOS and package data

GT37 SoftGOT3000

Data required to activate the GOT are shown below.

4.1.1 BootOS and CoreOS

The BootOS and the CoreOS are necessary to activate the GOT.

They are installed on the GOT by factory default.

To use additional functions, upgrading the BootOS and the CoreOS are required.

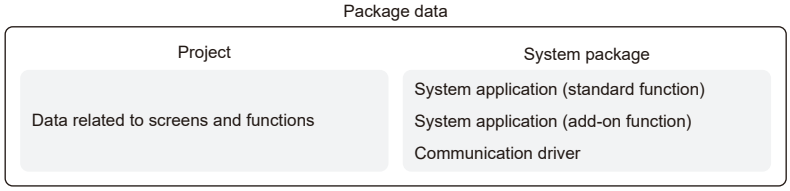
For the additional functions, refer to the following.

☞ Page 3732 Functions that require upgrading the versions of BootOS and CoreOS

4.1.2 Package data

The package data consists of a project and a series of system packages required to run the project.

GT Designer3 is used to create projects and write the projects to the GOT as package data.



Data included in the package data	Description	
Project	Data related screens and functions created by user using GT Designer3.	
System package	Programs and data of the system required to operate the GOT	
	System application (standard function)	Application required to operate the GOT or display the utility
	System application (add-on function)	Application required to use some functions such as the VPN connection function and GOT Mobile function
	Communication driver	Driver required for communication between the GOT and the controller

4.1.3 Package data and project file formats

Created project is saved as package data or a project in a file with one of the following extensions.

Perform manipulations (such as copy, move, and rename) on a file by using Windows Explorer or others.

Extension	Description	Model
*.GTY	File format of a single file containing projects only.	GT37 SoftGOT3000
*.GTYS	File format of a single file containing a project and the related system package. Since the versions of the project and system package are fixed, if you have transferred the file to the GOT with an older version of GT Designer3, the relevant functions are usable without being downgraded. This provides convenience when you save a project as complete data. Data can be transferred to the GOT by using Data Transfer Tool without GT Designer3.	
*.GTYP	File format used to execute a project on the GT SoftGOT3000 module. Only *.GTYP projects can be opened with GT SoftGOT3000.	GT37 SoftGOT3000
*.G3	File format used to save the project on the GOT or data storage.	GT37 SoftGOT3000

4.2 Screen types and specifications

GT37 SoftGOT3000

☞ Page 58 Screen type
☞ Page 62 Specifications of base screens
☞ Page 62 Specifications of window screens
☞ Page 65 Layer
☞ Page 68 Stacking order of the screens on the GOT
☞ Page 72 Coordinate
☞ Page 73 Functions that can be set on a screen

4.2.1 Screen type

GT37 SoftGOT3000

The following screens can be created with GT Designer3.

☞ Page 58 Base screen
☞ Page 58 Window screen
☞ Page 61 Mobile screen

Base screen

Basic screen that always appears on the GOT.

You can create multiple base screens and switch between them as needed.

The base screen to be displayed is controlled by a screen switching device.

When a value is stored to the screen switching device of the base screen, the screen is switched to the screen with the screen number corresponding to the stored value.

For details on base screen specifications, refer to the following.

☞ Page 62 Specifications of base screens

For information on how to create a base screen, refer to the following.

☞ Page 264 Creating a base screen

Window screen

Displayed as part of a base screen or used to display a popped window.

The following methods are available to display a window screen on the GOT.

☞ Page 59 Superimpose window
☞ Page 59 Overlap window
☞ Page 60 Key window
☞ Page 60 Dialog window

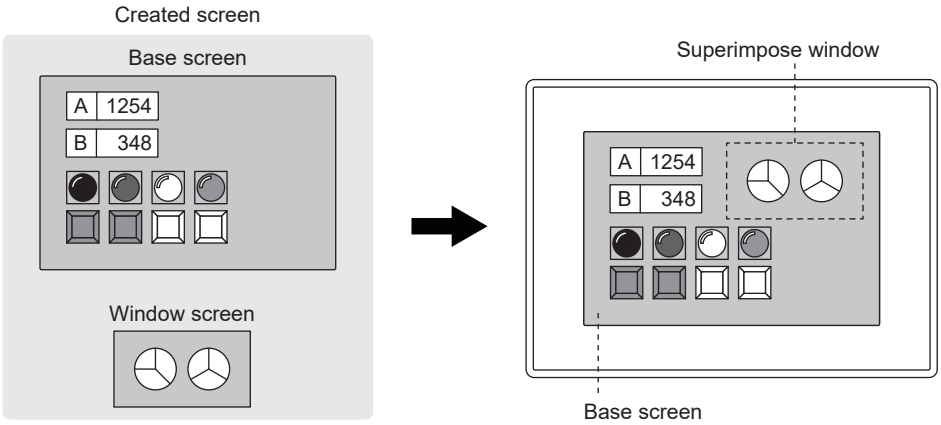
For information on how to create a window screen, refer to the following.

☞ Page 265 Creating a window screen

■Superimpose window

Window to be superimposed on a base screen and displayed as part of the base screen.

Up to two superimpose windows (superimpose window 1 and 2) can be displayed simultaneously.



For the specifications of window screens displayed as superimpose windows, refer to the following.

☞ Page 62 Specifications of superimpose windows

To display a superimpose window, set the following.

Setting	Reference
Setting a screen switching device for the superimpose window	☞ Page 530 Setting for switching screens to be displayed on the GOT ([Screen Switching/Window])
Placing a window position object on the base screen	☞ Page 1883 Specifying the display position of a window screen

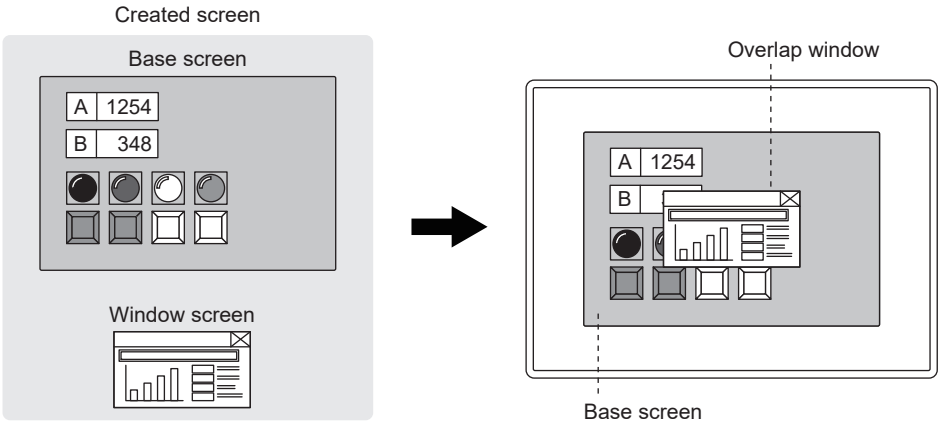
When a value is stored to the screen switching device of the superimpose window, the window screen with the screen number corresponding to the stored value is displayed at the position of the window position object.

■Overlap window

Window to pop up on a base screen.

Up to five overlap windows (overlap windows 1 to 5) can be displayed simultaneously.

The window is movable by using a touch operation or a display position specification device.



For the specifications of window screens displayed as overlap windows, refer to the following.

☞ Page 63 Specifications of overlap windows and key windows

To display overlap windows, set the following.

Setting	Reference
Setting screen switching devices for the overlap windows	☞ Page 530 Setting for switching screens to be displayed on the GOT ([Screen Switching/Window])
Placing a window position object on the base screen	☞ Page 1883 Specifying the display position of a window screen

When a value is stored to the screen switching device of the overlap window, the window screen with the screen number corresponding to the stored value is displayed at the window position object.

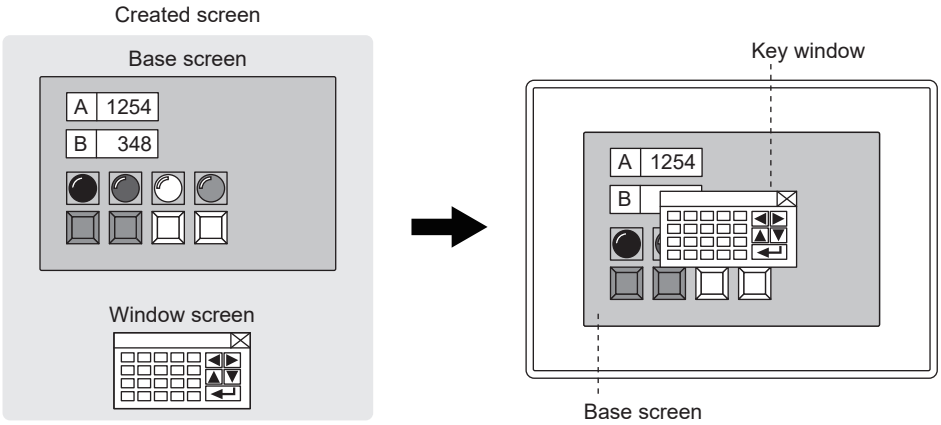
■Key window

Window used to enter a values or text.

The window pops up on the base screen when a numerical input object or text input object is touched.

The window is movable by a touch operation.

The GOT standard key window and the user-created key window are available.



For the specifications of a window screen displayed as a key window, refer to the following.

☞ Page 63 Specifications of overlap windows and key windows

For the settings to display a key window, refer to the following.

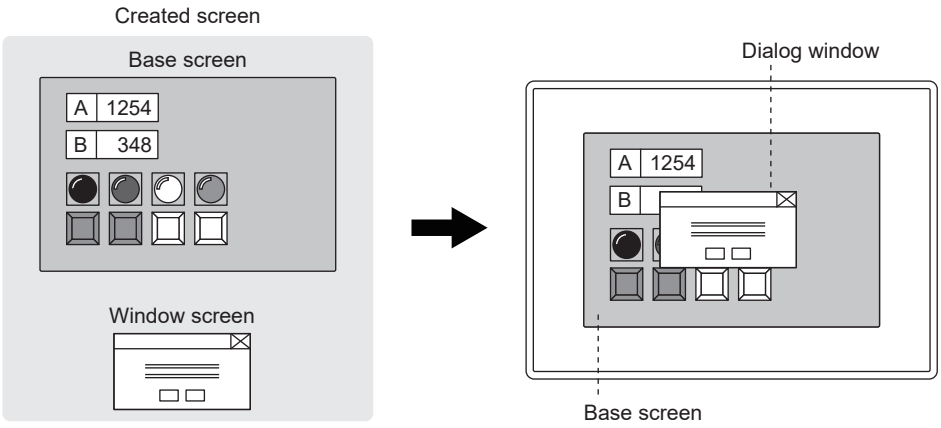
☞ Page 565 How to use key windows

■Dialog window

Window to be displayed, showing information such as errors and warnings.

While a dialog window is displayed, the other screens are inoperable.

Ready-made system dialogs and user-created dialogs are available.



For the specifications of a window screen displayed as a dialog window, refer to the following.

☞ Page 64 Specifications of dialog windows

For the settings to display a dialog window, refer to the following.

☞ Page 555 How to use dialog windows

Mobile screen

A screen displayed on the client (tablet or other information devices) when the GOT Mobile function is used.

The screen is not displayed on the server (GOT) screen.

For details on mobile screen, refer to the following.

☞ Page 2753 Mobile screen

4.2.2 Specifications of base screens

GT37 SoftGOT3000

GOT type	Screen size (width × height) (dots)		Registrable number of screen	Registrable screen number
	Base screen size expansion disabled	Base screen size expansion enabled*1*2		
GT37**-FH (1920 × 1080)	Horizontal display: 1920 × 1080 Vertical display: 1080 × 1920	Horizontal display: 1920 × 1080 to 3000 × 3000 Vertical display: 1080 × 1920 to 3000 × 3000	9999	0 to 32767
GT37**-WX (1280 × 800)	Horizontal display: 1280 × 800 Vertical display: 800 × 1280	Horizontal display: 1280 × 800 to 3000 × 3000 Vertical display: 800 × 1280 to 3000 × 3000		
GT37**-X (1024 × 768)	Horizontal display: 1024 × 768 Vertical display: 768 × 1024	Horizontal display: 1024 × 768 to 3000 × 3000 Vertical display: 768 × 1024 to 3000 × 3000		
GT SoftGOT3000	Same size as the set resolution.	Not supported		

*1 By enabling the base screen size expansion, you can create base screens that are larger than the GOT screen.
To enable the base screen size expansion, select [Expand base screen sizes] in [Basic Setting] in the [Type Setting] dialog.
☞ Page 519 [Basic Setting]

*2 For the sizes of the images displayable on the expanded base screens, refer to the following.
☞ Page 514 Size of images displayable on the expanded base screens

4.2.3 Specifications of window screens

GT37 SoftGOT3000

GOT type	Screen size (width × height) (dots)	Registrable number of screen	Registrable screen number
GT37**-FH (1920 × 1080)	The size of the displayable window screens depends on how to display window screens on the GOT. Set the window screen size according to your purpose. ☞ Page 62 Specifications of superimpose windows ☞ Page 63 Specifications of overlap windows and key windows ☞ Page 64 Specifications of dialog windows	2048	0 to 32767
GT37**-WX (1280 × 800)			
GT37**-X (1024 × 768)			
GT SoftGOT3000			

Specifications of superimpose windows

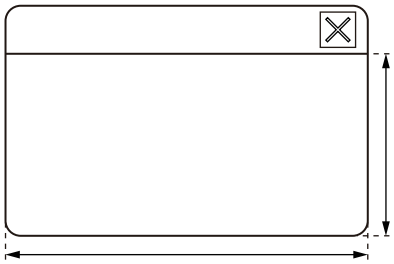
GOT type	Screen size (width × height) (dots)	Number of displayable screens on one base screen
GT37**-FH (1920 × 1080)	Horizontal display: 16 × 2 to 1920 × 1080 Vertical display: 16 × 2 to 1080 × 1920	2
GT37**-WX (1280 × 800)	Horizontal display: 16 × 2 to 1280 × 800 Vertical display: 16 × 2 to 800 × 1280	
GT37**-X (1024 × 768)	Horizontal display: 16 × 2 to 1024 × 768 Vertical display: 16 × 2 to 768 × 1024	
GT SoftGOT3000	Minimum: 16 × 2 Maximum: 1920 × 1200 or 1200 ×1920 The maximum size depends on the set resolution.	

Specifications of overlap windows and key windows

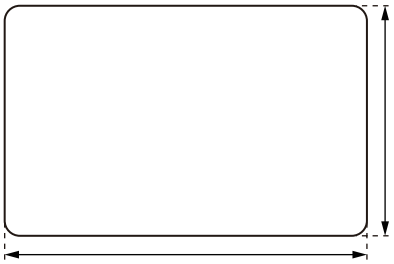
The maximum size of a window screen differs depending on the design selected in the [Screen Design] dialog and the display state of the screen title bar.

Ex.

For basic-type screen designs



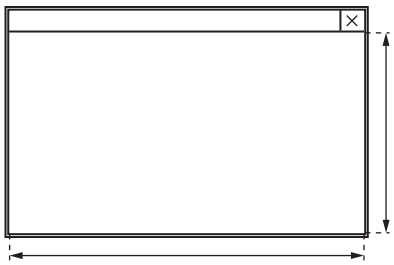
With a title bar



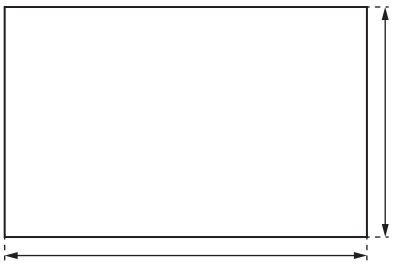
Without a title bar

Ex.

For classic screen designs



With a title bar



Without a title bar

GOT type	Screen size (width × height) (dots)		Number of displayable screens on one base screen
	With a title bar	Without a title bar	
GT37**-FH (1920 × 1080)	For classic screen designs Horizontal display: 16 × 2 to 1918 × 1062 Vertical display: 16 × 2 to 1078 × 1902	Horizontal display: 16 × 2 to 1920 × 1080 Vertical display: 16 × 2 to 1080 × 1920	Overlap window: 5 Key window: 1
	For non-classic screen designs Horizontal display: 16 × 2 to 1920 × 1037 Vertical display: 16 × 2 to 1080 × 1877		
GT37**-WX (1280 × 800)	For classic screen designs Horizontal display: 16 × 2 to 1278 × 782 Vertical display: 16 × 2 to 798 × 1262	Horizontal display: 16 × 2 to 1280 × 800 Vertical display: 16 × 2 to 800 × 1280	
	For non-classic screen designs Horizontal display: 16 × 2 to 1280 × 757 Vertical display: 16 × 2 to 800 × 1237		
GT37**-X (1024 × 768)	For classic screen designs Horizontal display: 16 × 2 to 1022 × 750 Vertical display: 16 × 2 to 766 × 1006	Horizontal display: 16 × 2 to 1024 × 768 Vertical display: 16 × 2 to 768 × 1024	
	For non-classic screen designs Horizontal display: 16 × 2 to 1024 × 725 Vertical display: 16 × 2 to 768 × 981		
GT SoftGOT3000	For classic screen designs Minimum: 16 × 2 Maximum: 1918 × 1182 or 1198 × 1902 The maximum size depends on the set resolution.	Minimum: 16 × 2 Maximum: 1920 × 1200 or 1200 ×1920 The maximum size depends on the set resolution.	
	For non-classic screen designs Minimum: 16 × 2 Maximum: 1920 × 1157 or 1200 × 1877 The maximum size depends on the set resolution.		

Specifications of dialog windows

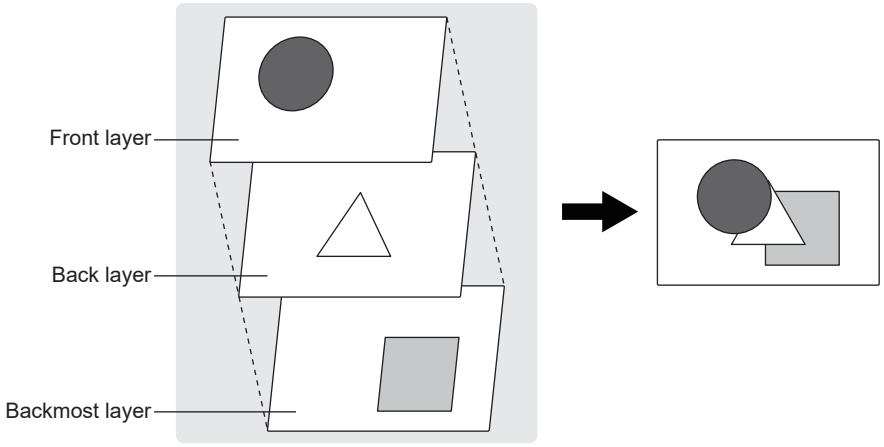
GOT type	Screen size (width × height) (dots)	Number of displayable screens on one base screen
GT37**-FH (1920 × 1080)	16 × 2 to 320 × 240	1
GT37**-WX (1280 × 800)		
GT37**-X (1024 × 768)		
GT SoftGOT3000		

4.2.4 Layer

GT37 SoftGOT3000

A base screen and a window screen created with GT Designer3 consists of three layers: a front layer, a back layer, and a backmost layer.

Each layer allows different items to be placed.



Display order	Layer type	Description	Item that can be placed
3	Front layer	The front layer is like a transparent sheet displayed in the foreground. When a transparent color is set, the figures and objects placed on the front layer becomes transparent. ☞ Page 67 Transparency of the front layer Through the parts without figures or objects, the back layer and the backmost layer can be seen.	Figure (processed as an object) Object
2	Back layer	The back layer is like a transparent sheet displayed behind the other screens. Through the parts other than figures and objects, the backmost layer can be seen.	Figure (processed as an object) Object
1	Backmost layer	Displayed behind the other screens.	Figure

Layers may be disabled depending on how the screen is displayed on the GOT.

☞ Page 66 Layers on each screen

Layers on each screen

In GT Designer3, layers are enabled when a base screen or window screen is edited.

Layers are handled differently depending on how the created screen is displayed on the GOT.

○: The stacking order of figures and objects placed on separate layers is valid.

×: The layers are combined into one layer on the GOT, and the stacking order between the layers is not guaranteed.

Screen type	Display on the GOT	Handling of layers	Remarks
Base screen	Base screen	○	—
	Called screen*1	○	Each layer of a called screen is combined with the corresponding layer of the basic screen. ☞ Page 69 Layer and screen combinations
Window screen	Superimpose window	○	Each layer of a superimpose window is combined with the corresponding layer of the base screen. ☞ Page 69 Layer and screen combinations
	Overlap window	○	—
	Key window	○	—
	Dialog window	×	—
	Called screen*1	○	Each layer of a called screen is combined with the corresponding layer of the basic screen. ☞ Page 69 Layer and screen combinations

*1 A called screen is displayed on a basic screen (base screen or window screen on which the called screen is to be placed) by setting the set overlay screen function.
A base screen or window screen is called on a basic screen, and the screens are displayed as a single screen.
☞ Page 1865 Placing a screen on another screen

Display status of layers and the layer on which figures and objects are placed

The display status of layers can be switched during screen editing in GT Designer3.

☞ Page 301 Switching the layer display

The display status affects the layer on which figures and objects are placed.

The display status of the layer may also be changed.

Item	Effect of the display status of the layer	
Figure	Regardless of the display status of the layer, figures are placed on the layer at the rearmost position. When the rearmost layer is hidden, the layer becomes visible only on the screen where figures are placed.	
Object	When all of the following conditions are satisfied • Either the front or the back layer is hidden. • The layer set as the initial value for the object to be placed is hidden.	The object is placed on the displayed layer.
	When a default value is set for the object to be placed	The layer set as the default value becomes visible and the object is placed. For information on the default value, refer to the following. ☞ Page 203 Customizing the default value
	When the front and back layers are hidden	The layer set as the initial or default value for the object becomes visible and the object is placed.

Transparency of the front layer

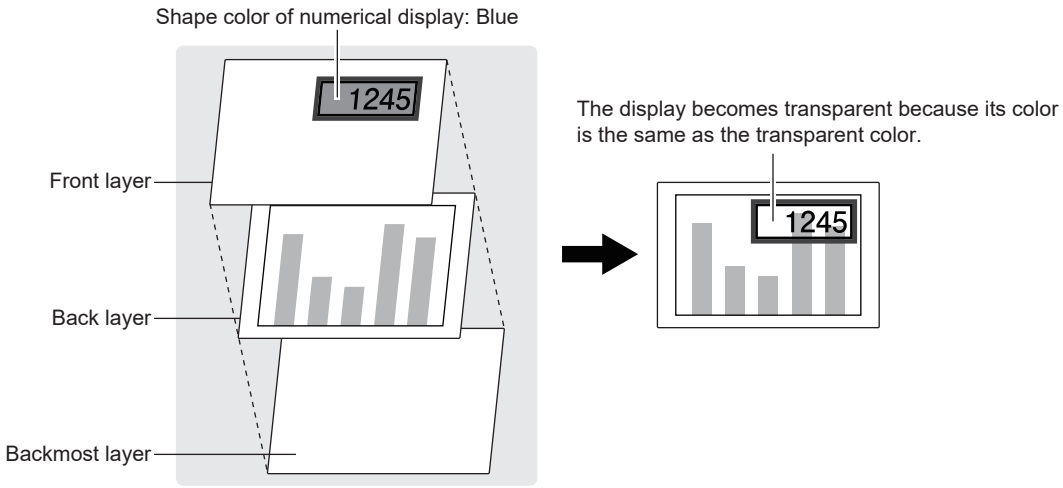
When [Enable the antialiasing] is not selected in the [Type Setting] dialog ([Basic Setting]), a transparent color can be set for the front layer.

The parts of the figures and objects placed on the front layer that have the same color as the transparent color become transparent, and the back layer and backmost layer are seen through the parts.

Ex.

When [Front Layer Transparent Color] of the base screen and the shape color of numerical display placed on the front layer are the same

[Front Layer Transparent Color] of the base screen: Blue



■Transparent color setting

A transparent color is set per screen.

Select [Front Layer Transparent Color] in the property of the base screen or window screen to enable this setting.

☞ Page 314 [Basic] tab

☞ Page 323 [Basic] tab

When a window screen is displayed as the following screen on the GOT, the transparent color will be as follows.

Display on the GOT	Transparent color
Superimpose window	The transparent color set to each screen is disabled, and the transparent color of the base screen is enabled.
Dialog window	The layers are combined into one layer on the GOT, and the transparent color is disabled.
Called screen*1	The transparent color set to each screen is disabled, and the transparent color of the basic screen is enabled.

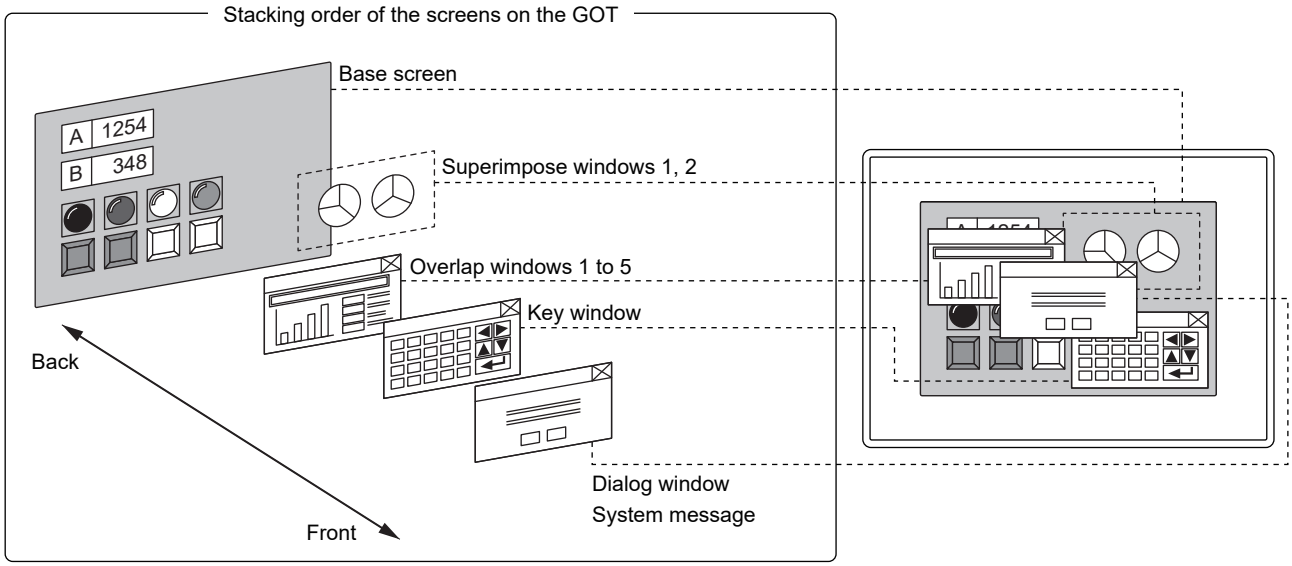
*1 A called screen is displayed on a basic screen (base screen or window screen on which the called screen is to be placed) by setting the set overlay screen function.
A base screen or window screen is called on a basic screen, and the screens are displayed as a single screen.
☞ Page 1865 Placing a screen on another screen

4.2.5 Stacking order of the screens on the GOT

GT37 SoftGOT3000

The screens created with GT Designer3 are displayed in the following order on the GOT.

Display order	Screen type	Description
6	Dialog window	The dialog window is displayed above the other screens.
5	Key window	The dialog window is displayed above the other screens. ☞ Page 71 Display and operation of the area where an overlap window and a key window overlap with each other
4	Overlap windows 1 to 5	The overlap window is displayed above a base screen. ☞ Page 71 Display and operation of the area where an overlap window and a key window overlap with each other When multiple overlap windows are displayed, the last-displayed one or the last-operated one is displayed above the other overlap windows. The stacking order of overlap windows is settable in the [Environmental Setting] window ([Screen Switching/Window]) as well. ☞ Page 542 [Screen Switching/Window]
3	Superimpose window 2	The superimpose window is displayed as a part of a base screen since the window is superimposed on the base screen. ☞ Page 69 Layer and screen combinations
2	Superimpose window 1	
1	Base screen	Displayed behind the other screens.



The stacking order of figures and objects is consistent with the stacking order of the screens on which the figures and objects are placed.

Layer and screen combinations

In the following combinations, each layer of a screen is combined with the corresponding layer of the other screen.

Screen combination	Description
Displaying a superimpose window on a base screen	The superimpose window is combined with the base screen and displayed as part of the base screen.
Displaying a called screen on a basic screen	A called screen is displayed on a basic screen (base screen or window screen on which the called screen is to be placed) by setting the set overlay screen function. A base screen or window screen is called on a basic screen, and the screens are displayed as a single screen. ☞ Page 1865 Placing a screen on another screen The stacking order of a basic screen and called screen varies by the settings of [Overlay Screen Positioning] in the [Environmental Setting] window ([Screen Switching/Window]). ☞ Page 542 [Screen Switching/Window]

☞ Page 69 Stacking order of screens on each layer
☞ Page 70 Screen combination example

Point

Overlapped objects on each combined layer may not appear or operate normally.
Do not overlap the objects placed on the same layer.
Some objects can appear and operate normally even on the same layer.
For the objects that can be overlapped even on the same layer, refer to the following.
☞ Page 1056 Operations of the superimposed objects

■Stacking order of screens on each layer

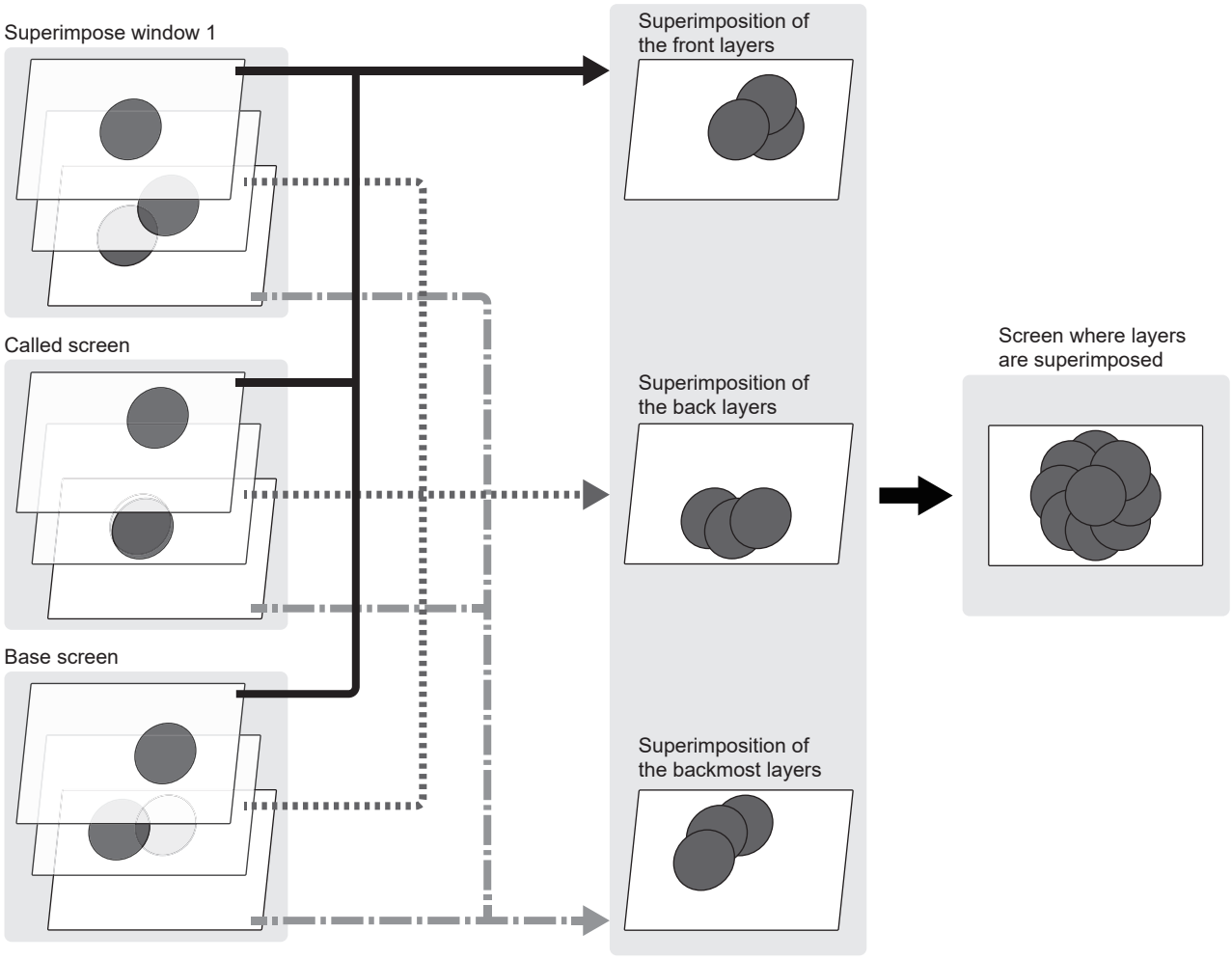
The following shows the stacking order of screens on each layer.

Layer	Stacking order of screens	
	When [On top of the reference screen] is selected for [Overlay Screen Positioning]	When [Under the reference screen] is selected for [Overlay Screen Positioning]
Front layer	Superimpose window 2	Superimpose window 2
	Superimpose window 1	Superimpose window 1
	Called screen	Basic screen (screen on which the set overlay screen is placed)
	Basic screen (screen on which the set overlay screen is placed)	Called screen
Back layer	Superimpose window 2	Superimpose window 2
	Superimpose window 1	Superimpose window 1
	Called screen	Basic screen (screen on which the set overlay screen is placed)
	Basic screen (screen on which the set overlay screen is placed)	Called screen
Backmost layer	Superimpose window 2	Superimpose window 2
	Superimpose window 1	Superimpose window 1
	Called screen	Basic screen (screen on which the set overlay screen is placed)
	Basic screen (screen on which the set overlay screen is placed)	Called screen

■Screen combination example

The following shows examples of combinations using the following settings.

- Base screen: One called screen and superimpose window 1 are displayed.
- [Overlay Screen Positioning] in the [Environmental Setting] window ([Screen Switching/Window]): [On top of the reference screen] is selected.



Display and operation of the area where an overlap window and a key window overlap with each other

■Display and operation of the area where windows overlap with each other

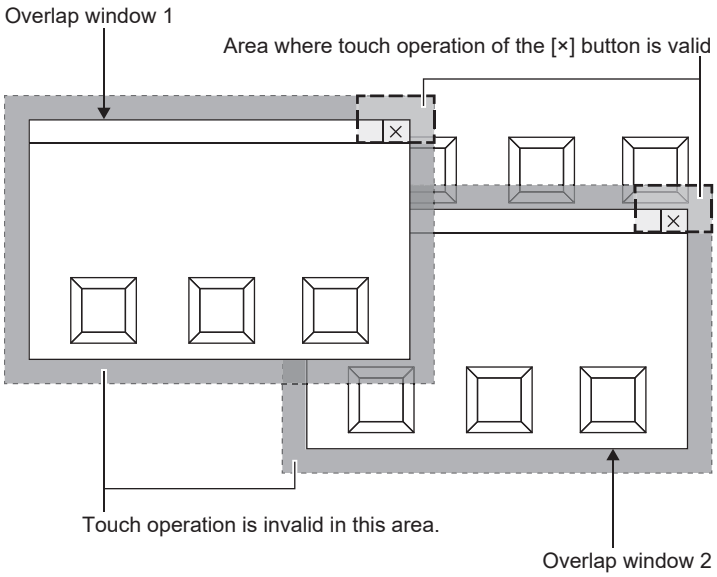
When hidden behind the windows, the figures and objects are not displayed, and input objects do not work.

To check or operate the figures and objects behind the windows, close or move the windows.

■Area where touch operation is invalid

When the title bar is displayed, touches are invalid in some areas around the window.

Such areas are 16 to 25 dots, depending on the screen size and resolution of the GOT.

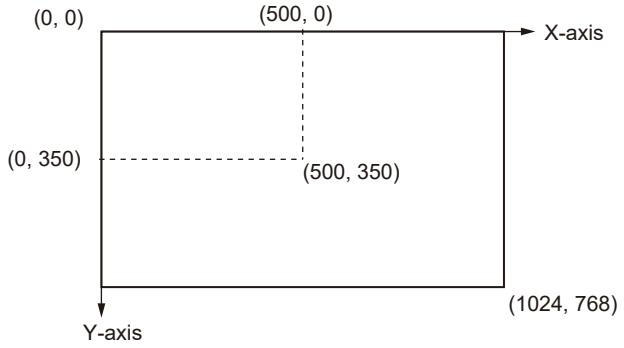
Title bar display	Operation
Displayed	The area around the window is invalid even when touched. In the area around the [×], touch of the [×] button is valid. In the area where windows overlap with each other, above-mentioned 16 dots are the areas where touches are invalid. 
Not displayed	Touches are valid in all areas.

4.2.6 Coordinate

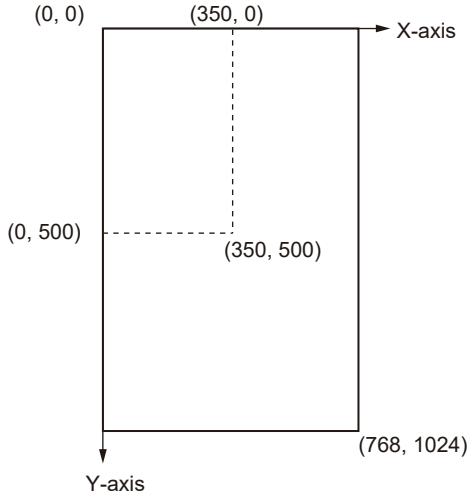
GT37 SoftGOT3000

The horizontal direction on the screen is regarded as the X coordinate, and the vertical direction the Y coordinate. The coordinate (X, Y) indicates the distance from the origin (0, 0) at the top-left of the screen.
The coordinates are specified in units of dots.

Ex.
When GT37-X (1024 × 768) is installed horizontally



Ex.
When GT37-X (1024 × 768) is installed vertically



The following can be checked by using the status bar on GT Designer3.

- Coordinates of the mouse pointer on the screen editor
- Coordinates of the figure or object selected on the screen editor

☞ Page 125 Status bar

The position of the figure or object selected on the screen editor can be changed by specifying coordinates on the property sheet.

☞ Page 126 Checking and editing settings of screens and objects

4.2.7 Functions that can be set on a screen

GT37 SoftGOT3000

To display texts, images, and touch switches for operation on a screen, use figures or objects.

Some functions do not appear on the screen but run in the background of the GOT.

☞ Page 73 Figure
☞ Page 73 Object
☞ Page 73 Functions running in the background on the GOT

Figure

Figures are a function placed on the screen and used to display texts and images.

It is suitable for displaying texts that do not change dynamically.

For the type of figures, refer to the following.

☞ Page 996 List of figures

Object

Objects are a function placed on the screen and used for the following purposes.

- Displaying texts or images on the screen and switching between them dynamically according to the change of the device value
- Operating touch a switch or input object to change the device value or display a window

The maximum number of objects on one screen depends on the screen type.

Screen type	Number of objects that can be set on one screen
Base screen	Up to 1024 objects can be placed. Objects placed after the 1025th object are not displayed on the GOT.
Window screen	Up to 512 objects can be placed. Objects placed after the 513th object are not displayed on the GOT.
Mobile screen	☞ Page 2753 Mobile screen

For the object types and the number of settings per object, refer to the following.

☞ Page 997 List of objects

Point

If many objects are placed on a screen, refreshing the GOT screen may be delayed.

Functions running in the background on the GOT

Some functions run when a specific screen is displayed.

Unlike figures and objects, on-screen placement does not apply to such functions.

The following table shows the functions that can be set on a screen and are performed in the background of the GOT.

Function running in the background	Description
Notifying the detected alarm in a popup window	☞ Page 2105 Enabling the popup display for when an alarm occurs
Writing a device value or executing a sound output triggered by change of the device value or by a cycle	☞ Page 2521 Operating a device as a trigger ([Trigger Action])
Executing a script	☞ Page 2330 Project script, screen script, script part, and script block

4.3 Specifications of displayable characters

GT37 SoftGOT3000

☞ Page 74 Font type
☞ Page 76 KANJI region
☞ Page 77 How to display characters on the GOT
☞ Page 79 Display language in the utility

4.3.1 Font type

GT37 SoftGOT3000

The following table lists the fonts available in GT Designer3.
Available fonts differ depending on the figures and objects.
Check the available fonts in the setting of each figure and object.

Classification	Font	Image	Displayable characters
UD font	UD Gothic*1		Fonts designed for easy reading. Unicode 2.1 characters can be displayed. Unicode surrogate pairs (character code: 0xD800 to 0xDBFF and 0xDC00 and 0xDFFF) are not supported. Thai is supported. For text display and text input, character codes can be specified as well as fonts. When the Shift JIS code is specified, only JIS level 1 and level 2 characters can be displayed on the GOT.
	UD Mincho*1		
	UDP Gothic*1		
	UDP Mincho*1		
	7-segment font		A font designed for easy reading. Numbers and some symbols can be displayed.
Windows font	TrueType font and OpenType font displayable on a personal computer		The TrueType font and OpenType font of Windows installed to a personal computer. Vertical fonts are unavailable. Unicode surrogate pairs (character code: 0xD800 to 0xDBFF and 0xDC00 and 0xDFFF) are not supported. Displayable characters, fonts, and character pitches differ depending on Windows fonts used.

*1 When placing figures and objects that display text on the screen, ensure they fit within the screen display area of the screen editor. If they extend beyond the temporary area, the text may be displayed incorrectly due to insufficient memory in the GOT.
☞ Page 293 Basic operations of a screen editor

Detailed font specifications

Font type	Font size	Character pitch*1	Character effect	KANJI region specification*2	Legible font*3
UD Gothic	Displayed in the size of 8 to 540 dots for the vertical and horizontal size. Specify 8 to 540 dots (in units of one dot) for the vertical size. Specify the horizontal size (font width) as a magnification of the vertical size.	Fixed	Bold*4 Shadow Engrave	Supported	Supported
UD Mincho		Fixed	Bold*4 Shadow Engrave	Supported	Supported
UDP Gothic		Proportional	Bold*4 Shadow Engrave	Supported	Supported
UDP Mincho		Proportional	Bold*4 Shadow Engrave	Supported	Supported
7-segment font	Displayed in the size of 8 to 540 dots for the vertical and horizontal size. Specify 8 to 540 dots (in units of one dot) for the vertical size. The horizontal size (font width) is half the vertical size.	Fixed	—	Not supported	Not supported
Windows font	Displayed in the size of 8 to 540 dots for the vertical and horizontal size. Specify 8 to 540 dots (in units of one dot) for the vertical size. Specify the horizontal size (font width) as a magnification of the vertical size.	Proportional	Bold*4 Shadow Engrave Italic*5 Underline*5*6	Not supported	Not supported

*1 A character pitch refers to the character width.
A proportional font is a font type that has different character widths for each character.

*2 For KANJI regions, refer to the following.
☞ Page 76 KANJI region

*3 0 (zero) and I can be changed to an easily-distinguishable font.
☞ Page 525 [Language and Font Setting]

*4 When setting a large font to bold, the text may look overlapped.

*5 Not available when Windows fonts are used for comment groups.

*6 When setting an underline for Windows font characters, the underline may not appear.

Precautions

When using the Windows fonts, note the following.

■Opening a created project on another computer

When Windows font used in the project has not been installed to the personal computer, and if a set text is changed, a different font is applied.

If the computer to open the project does not have the used Windows font, install the font to the computer.

■Using a Windows font that is installed while GT Designer3 is running

When using Windows fonts installed when operating GT Designer3, re-install GT Designer3.

■Effects of selecting [Enable the antialiasing to smooth jagged text edges]

Item	Description
Display of strings in GT Designer3	When antialiasing is enabled, the top of characters not included in European fonts may be cut off when certain European Windows fonts are used.
Data size of Windows fonts	When antialiasing is enabled, the data size becomes eight times larger than when it is disabled.
Character width of Windows fonts	When antialiasing is enabled, the character width increases compared to when it is disabled, which may cause characters to appear partially cut off.
Screen differential transfer	When only some screen data in the package data is transferred to the GOT, there may be a mix of screens with antialiasing enabled and screens with antialiasing disabled for Windows fonts.

4.3.2 KANJI region

GT37 SoftGOT3000

KANJI region refers to where Chinese characters are used (such as Japan and China).
Some Chinese characters, even with the same character code, look different depending on the region where Chinese characters are used.
In GT Designer3, the KANJI region can be specified for each figure or object to display characters in the font of the specified region (language).
Whether or not the KANJI region can be specified depends on the font.
☞ Page 75 Detailed font specifications
Available Chinese characters are Unicode Unified CJK Ideographs.
Unified CJK Ideographs are Chinese characters that consist of Chinese (Simplified), Chinese (Traditional), Japanese, and Korean, all of which are standardized in Unicode.
GT Designer3 supports the following KANJI regions.

KANJI region	Language	Available Chinese characters	Image
Japan	Japanese	Chinese characters included in the Shift JIS codes	
China	Chinese (Simplified)	Chinese characters included in the GB18030-2022 code set.	
	Chinese (Traditional)	Chinese characters included in the Big5 codes	

Multiple types of Chinese characters can be displayed as follows.
- Chinese characters in multiple KANJI regions can be displayed on one screen.
- The font of the displayed comment can be switched for each KANJI region by using the language switching function.

When Chinese characters in multiple KANJI regions are supported, install required fonts to the GOT.
☞ Page 77 How to display characters on the GOT

Precautions

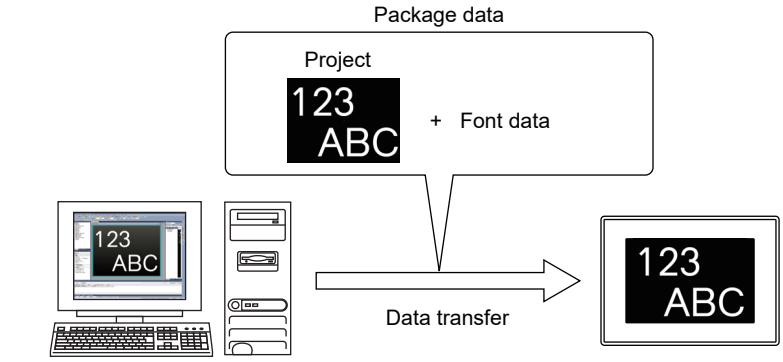
■Chinese characters which cannot be displayed with a specified KANJI region

If a specified KANJI region does not have Chinese character to be displayed, the character is displayed in Chinese character of another KANJI region that has the corresponding Chinese character.
The system finds the alternative KANJI region in order of Japanese, Chinese (Simplified), and Chinese (Traditional).

4.3.3 How to display characters on the GOT

GT37 SoftGOT3000

To display the text set in GT Designer3 on the GOT, write the font data to the GOT together with the project (screen data).
For GT SoftGOT3000, the font data is included in the GT SoftGOT3000 execution file (*.GTYP).



The font data is a system application and is automatically selected according to the font settings when the package data is transferred to the GOT.
The font data types are the system font and the add-on font.

Type of font data		Conditions for writing to the GOT
System font	UD system font	Automatically selected according to the settings for [Standard Language] and [Standard Style] in the [Environmental Setting] dialog ([Language and Font Setting]). ☞ Page 77 [Standard Language] and [Standard Style] in the [Environmental Setting] dialog ([Language and Font Setting])
	UD font (7-segment font)	Automatically selected if there are places where [7-Segment Font] is selected for [Font] for figures or objects.
Add-on font		Additionally required when displaying characters that are not included in the system font. Automatically selected according to the settings of [Font] and [KANJI Region] for figures or objects. ☞ Page 78 [Font] and [KANJI Region] for figures or objects ☞ Page 78 Other settings

You can check which font data was selected in the [Application Selection] dialog.
☞ Page 435 Setting the data to be transferred (application selection)

[Standard Language] and [Standard Style] in the [Environmental Setting] dialog ([Language and Font Setting])

Set a font used in the GOT as standard.
☞ Page 525 [Language and Font Setting]
One of the UD system fonts is selected to write to the GOT according to the settings.

Applicable UD system fonts	Settings in the [Type Setting] dialog ([Language and Font Setting])	
	[Standard Language]	[Standard Style]
[Japanese (Gothic)]	[Japanese] [English]	[Gothic]
[Japanese (Mincho)]		[Mincho]
[Chinese (Simplified) (Gothic)]	[Chinese (Simplified)]	[Gothic]
[Chinese (Simplified) (Mincho)]		[Mincho]
[Chinese (Traditional) (Gothic)]	[Chinese (Traditional)]	[Gothic]
[Chinese (Traditional) (Mincho)]		[Mincho]
[Korean (Hangul) (Gothic)]	[Korean (Hangul)]	[Gothic]
[Korean (Hangul) (Mincho)]		[Mincho]

[Font] and [KANJI Region] for figures or objects

Specify a font and KANJI region for each figure or object.

Add-on fonts are selected according to settings if any character that is not included in the fonts or KANJI regions set in the GOT as standard are set.

Applicable add-on fonts	Settings in the [Type Setting] dialog ([Language and Font Setting])		Settings for figures or objects	
	[Standard Language]	[Standard Style]	[Font]	[KANJI Region]
[Japanese (Gothic)]	[Japanese]	[Mincho]	Select either of the following items for at least one of the font settings. • [UD Gothic] • [UDP Gothic]	—
	Other than [Japanese]	—		Select the following item for at least one of the font settings. • [Japan]
[Japanese (Mincho)]	[Japanese]	[Gothic]	Select either of the following items for at least one of the font settings. • [UD Mincho] • [UDP Mincho]	—
	Other than [Japanese]	—		Select the following item for at least one of the font settings. • [Japan]
[Chinese (Simplified) (Gothic)]	[Chinese (Simplified)]	[Mincho]	Select either of the following items for at least one of the font settings. • [UD Gothic] • [UDP Gothic]	—
	Other than [Chinese (Simplified)]	—		Select the following item for at least one of the font settings. • [China(GB)]
[Chinese (Simplified) (Mincho)]	[Chinese (Simplified)]	[Gothic]	Select either of the following items for at least one of the font settings. • [UD Mincho] • [UDP Mincho]	—
	Other than [Chinese (Simplified)]	—		Select the following item for at least one of the font settings. • [China(GB)]
[Chinese (Traditional) (Gothic)]	[Chinese (Traditional)]	[Mincho]	Select either of the following items for at least one of the font settings. • [UD Gothic] • [UDP Gothic]	—
	Other than [Chinese (Traditional)]	—		Select the following item for at least one of the font settings. • [China(Big5)]
[Chinese (Traditional) (Mincho)]	[Chinese (Traditional)]	[Gothic]	Select either of the following items for at least one of the font settings. • [UD Mincho] • [UDP Mincho]	—
	Other than [Chinese (Traditional)]	—		Select the following item for at least one of the font settings. • [China(Big5)]

Other settings

The corresponding add-on font is selected if a different language from [Standard Language] in the [Environmental Setting] dialog ([Language and Font Setting]) is selected.

Setting	Reference
[System Language] in the [GOT Setup] window ([Display Setting/Language Setting])	☞ Page 618 [Display Setting/Language Setting]
[Fixed Language] in the [Alarm Common Setting] dialog	☞ Page 2043 [Alarm Common Setting] dialog
[Section Title] in the [Mail Send Detail Setting] dialog	☞ Page 2051 [Mail Send Detail Setting] dialog

4.3.4 Display language in the utility

GT37 SoftGOT3000

To switch the display language in the utility, the GOT requires the font data of the target language.
For GT SoftGOT3000, the font data is included in the GT SoftGOT3000 execution file (*.GTYP).
The following shows the relationship between the language displayed in the utility and the font data required for the GOT (excluding GT SoftGOT3000).

Display language in the utility	Required font data
Japanese	One of the following font data items is required. • [Standard Function] → [UD System Font] → [Japanese (Gothic)] • [Standard Function] → [UD System Font] → [Japanese (Mincho)] • [Add-on Function] → [Add-on Font] → [UD Add-on Font] → [Japanese (Gothic)] • [Add-on Function] → [Add-on Font] → [UD Add-on Font] → [Japanese (Mincho)]
English	The language can be selected regardless of the font data installed on the GOT.
Chinese (Simplified)	One of the following font data items is required. • [Standard Function] → [UD System Font] → [Chinese (Simplified) (Gothic)] • [Standard Function] → [UD System Font] → [Chinese (Simplified) (Mincho)] • [Add-on Function] → [Add-on Font] → [UD Add-on Font] → [Chinese (Simplified) (Gothic)] • [Add-on Function]→ [Add-on Font]→ [UD Add-on Font] → [Chinese (Simplified) (Mincho)]
Chinese (Traditional)	One of the following font data items is required. • [Standard Function] → [UD System Font] → [Chinese (Traditional) (Gothic)] • [Standard Function] → [UD System Font] → [Chinese (Traditional) (Mincho)] • [Add-on Function] → [Add-on Font] → [UD Add-on Font] → [Chinese (Traditional) (Gothic)] • [Add-on Function] → [Add-on Font] → [UD Add-on Font] → [Chinese (Traditional) (Mincho)]
Korean	The language can be selected regardless of the font data installed on the GOT.

Font data is one of the system applications.
For information on how to add a system application to be installed on the GOT, refer to the following.
☞ Page 435 Setting the data to be transferred (application selection)

4.4 Character codes supported by the GOT

GT37 SoftGOT3000

The GOT supports the following character codes.

Character code	Remarks
ASCII	—
Unicode	UTF-16 is supported. If any Unicode data other than UTF-16 data is used, the GOT converts the character code to UTF-16. There are restrictions depending on the data used.
Shift JIS	—
GB	GB18030-2022 is supported.
Big5	—
KS	—

4.5 Drive configuration and capacity of the GOT

GT37 SoftGOT3000

This section describes the GOT drives specified as transfer destinations of projects or storage destinations of resource data.

☞ Page 81 Drive configuration and capacity of GT37
☞ Page 83 Drive configuration and capacity of GT SoftGOT3000

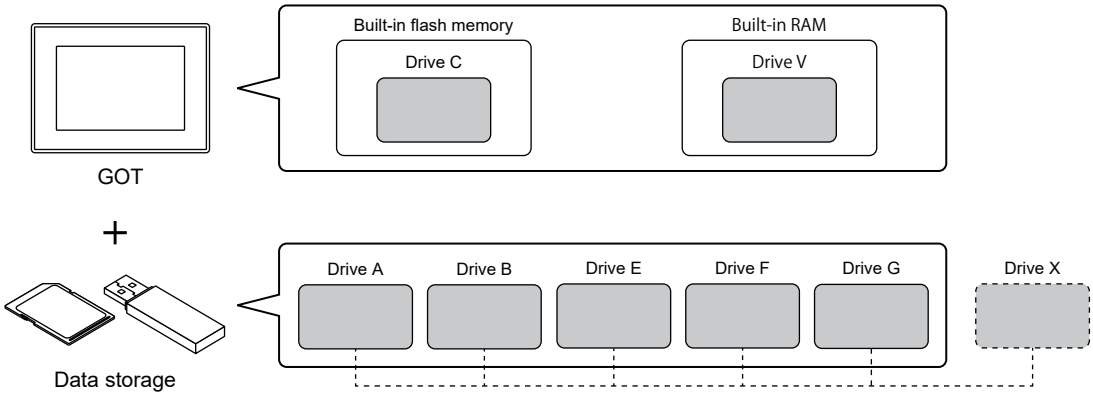
4.5.1 Drive configuration and capacity of GT37

GT37 SoftGOT3000

Built-in flash memory and data storages mounted to a built-in interface are used as drives.

For specifications of built-in interface and available data storages, refer to the following.

GOT3000 Series User's Manual (Hardware)



Drive	Name	Capacity	Conditions for use	Specification as a storage destination	
				Project System application (add-on function)	Resource data
A	Standard SD card	Depends on the data storage used.	Insert an SD card to the SD card interface of the GOT.*1	Available	Available
B	USB drive*2	Depends on the data storage used.	Install a data storage on the USB interface of the GOT.*1	Available	Available
C	Built-in flash memory	User area: 256 MB	No condition	Available	Not available
E	USB drive*2	Depends on the data storage used.	Install a data storage on the USB interface of the GOT.*1	Available	Available
F	USB drive*2				
G	USB drive*2				
V*3	Built-in RAM (user work memory area)	16 MB	Select [Enable the automatic update of image files] in the [Parts Setting] dialog ☞ Page 831 [Parts Setting] dialog	Not available	Not available
X	Current drive	A drive that is running a project. If the project is running from drive C, the current drive refers to drive A. By specifying a current drive, the same drive as the project storage destination can be specified. The drive specifications are consistent with the drive that is running a project.			

*1 For details on data storage specifications, refer to the following.
☞ Page 82 Specifications of available data storages

*2 For details on USB drive specifications, refer to the following.
☞ Page 82 USB drive specifications

*3 Drive V is the area where image files written using the FTP server function are stored.
The image files on this drive can only be used to automatically switch the image of a parts display object.
☞ Page 1416 Placing a parts display

Specifications of available data storages

Data storages with 2 TB or less can be used.

Before using data storages, format them with the following file systems.

Data storage	Compatible file system
2 GB or more	FAT32
Less than 2 GB	FAT16

Formatting can also be performed using the GOT utility or GT Designer3.

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

☞ Page 472 [GOT Read] tab

USB drive specifications

Drive letters (characters for identifying the drives) are assigned to the data storages mounted to the USB interface of the GOT in the order they are mounted.

Multiple data storages can be mounted to a single USB interface using a USB hub or card reader.

Up to four USB drives can be assigned to all the USB interfaces.

The assignment order of drive letters differs depending on whether the data storage is mounted to the front USB (device/host) or the rear USB (host).

Built-in interface of the GOT	Order of drive letter assignment	
	First drive detected	Second and subsequent drives detected
Front USB interface (device/host)	E	F→G→B
Rear USB interface (host)	B	F→G→E

When assigning user-selected drives to data storages, mount the data storages in order of assignment.

4.5.2 Drive configuration and capacity of GT SoftGOT3000

GT37 SoftGOT3000

Specify a folder in the personal computer as a virtual drive and use the folder as a drive.

Multiple GT SoftGOT3000 modules can be started, and a module number is assigned to each activated window.

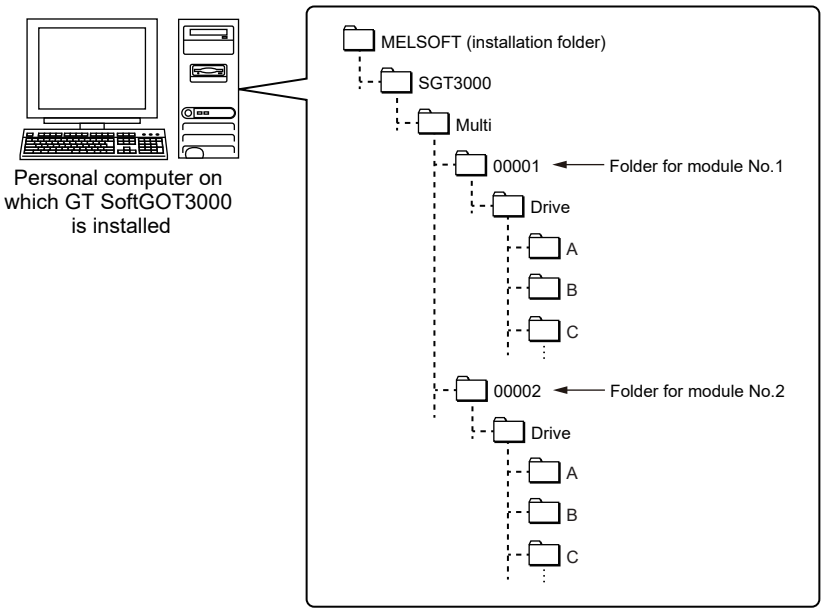
Virtual drives are created for each GOT.

For information on how to set virtual drives, refer to the following.

GT SoftGOT3000 User's Manual

In GT SoftGOT3000, open the project to be used and start monitoring.

Data of the opened project is stored to drive C.

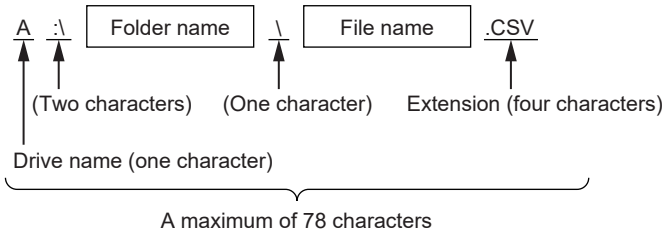


Virtual drive	Name	Capacity	Conditions for use	Specification as a storage destination
				Resource data
A	—	Depends on the personal computer hard disk.	No condition	Available
B	—	Depends on the personal computer hard disk.	No condition	Available
C	—	Depends on the personal computer hard disk.	No condition	Not available
E	—	Depends on the personal computer hard disk.	No condition	Available
F	—	Depends on the personal computer hard disk.	No condition	
G	—	Depends on the personal computer hard disk.	No condition	
V*1	—	Depends on the personal computer hard disk.	Select [Enable the automatic update of image files] in the [Parts Setting] dialog ☞ Page 831 [Parts Setting] dialog	Not available
X	Current drive	A drive that is running a project. If the project is running from drive C, the current drive refers to drive A. By specifying a current drive, the same drive as the project storage destination can be specified. The drive specifications are consistent with the drive that is running a project.		

*1 Drive V is the area where image files written using the FTP server function are stored.
The image files on this drive can only be used to automatically switch the image of a parts display object.
☞ Page 1416 Placing a parts display

4.6 Restrictions for folder names and file names used in GOT

GT37 SoftGOT3000

Item	Description	Remarks
Usable characters	One-byte alphanumeric and symbols	The following symbols cannot be used. • " • * • / • : (Usable only for indicating a drive name) • < • > • ? • \ (Usable only for the folder name separator) • | • One-byte space
		The following texts (case-insensitive) cannot be used as a folder name or file name. However, the following characters can be used when they are included in those names. • COM0 to COM9 • LPT0 to LPT9 • AUX • CON • NUL • PRN • CLOCK$
		Do not use the following items because they are hidden in the GOT utility. • Folders and files whose names start with G1, G2, or G3 • A folder named SYSLOG • Files with .INI or .G3G extensions
	Any characters specified in Unicode	Surrogate pairs (character code: 0xD800 to 0xDBFF and 0xDC00 and 0xDFFF) are not supported.
		Characters specified in Unicode cannot be used in a name of the folder to store package data ([Package Folder Name]). ☞ Page 519 [Basic Setting]
Maximum number of characters	78 (Any character type)	Set a folder name and file name so that the total number of characters used for the path is 78 or less. Example) Path of the CSV file to be stored to drive A  When setting the folder name, enter \ between folder names. \ is counted as a character. Up to 20 hierarchy levels are functional in a folder.

5 Screen layout and basic operations

☞ Page 86 Startup and exit
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5.1 Startup and exit

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5.1.1 Starting GT Designer3

Operating procedure

The following shows how to start GT Designer3 using the Windows 11 operating environment as an example.

1. From the Windows start menu, select [All] → [MELSOFT] → [GT Designer3] to start GT Designer3.
2. Select [GOT3000] in the series selection dialog.
3. Select an operation in the [Select Project] dialog.

☞ Page 86 [Select Project] dialog

■Starting multiple GT Designer3 modules

You can edit data among GT Designer3 modules, such as copying and pasting.
Copying and pasting data between GT Designer3 modules of different series are unavailable.

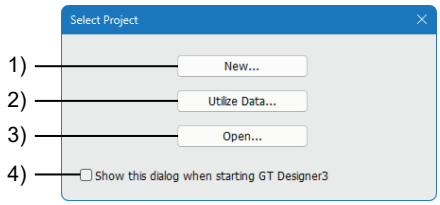
Point

GT Designer3 consists of three screen design software modules as shown below.

- GT Designer3 (GOT3000): Screen design software module for GOT3000 series
- GT Designer3 (GOT2000): Screen design software module for GOT2000 series
- GT Designer3 (GOT1000): Screen design software module for GOT1000 series

When a project that cannot be edited with the current screen design software is operated, the compatible screen design software will start.

[Select Project] dialog



Item		Description
1)	[New] button	Creates a new project. ☞ Page 208 Creating a project
2)	[Utilize Data] button	Utilizes an existing project to create a new project. ☞ Page 211 Utilizing a project
3)	[Open] button	Opens a saved project. ☞ Page 216 Opening a project
4)	[Show this dialog when starting GT Designer3]	Displays the [Select Project] dialog at startup of GT Designer3. Whether to display or hide the [Select Project] dialog at startup of GT Designer3 is settable on the [Operation] tab in the [Option] dialog as well. ☞ Page 197 Customizing the operation

5.1.2 Exiting GT Designer3

Operating procedure

To exit GT Designer3, perform one of the following operations.

- Select [Project] → [Exit] from the menu.
- Click the [×] button on the title bar of GT Designer3.

5.2 Switching the display language

GT37 SoftGOT3000

By switching the display language of GT Designer3, you can use GT Designer3 in multiple languages on one personal computer.

Operating procedure

The following shows how to switch the display language.

1. Select [View] → [Switch Display Language] from the menu to display the [Switch Display Language] dialog.
☞ Page 90 [Switch Display Language] dialog
2. Select a language to be switched to in [Display Language], and click the [OK] button.
3. Exit GT Designer3.
4. Start GT Designer3 again to switch the display language.

The language of Help is also switched according to the display language.
If you need the latest Help, consult your local sales office.

5.2.1 Specifications of the display language switching

Languages supported by the personal computer OS

When the personal computer OS does not support a language to be switched to, the screen layout collapses and the characters become garbled in GT Designer3.
Install a language pack or others on the personal computer as needed.

Items to which the display language switching is not applied

The display language switching is not applied to the following items.

Item	Display specifications
Some right-click context menu items	The display language depends on the OS language.
Setting items and buttons in some dialogs	The display language depends on the OS language.
Manuals	The display language depends on the language version of the manual installed.

Display language for importing files

After exporting a file using the following functions, you cannot import the file to GT Designer3 whose display language is different.

- Label group
- Comment group
- User alarm monitoring
- Logging
- Recipe
- Device data transfer

File format of exported files

When display languages differ between GT Designer3 and the OS, export files in the Unicode text format.
Do not select CSV format, or the files may not be exported properly.

Copying the settings between GT Designer3 modules whose display languages are different

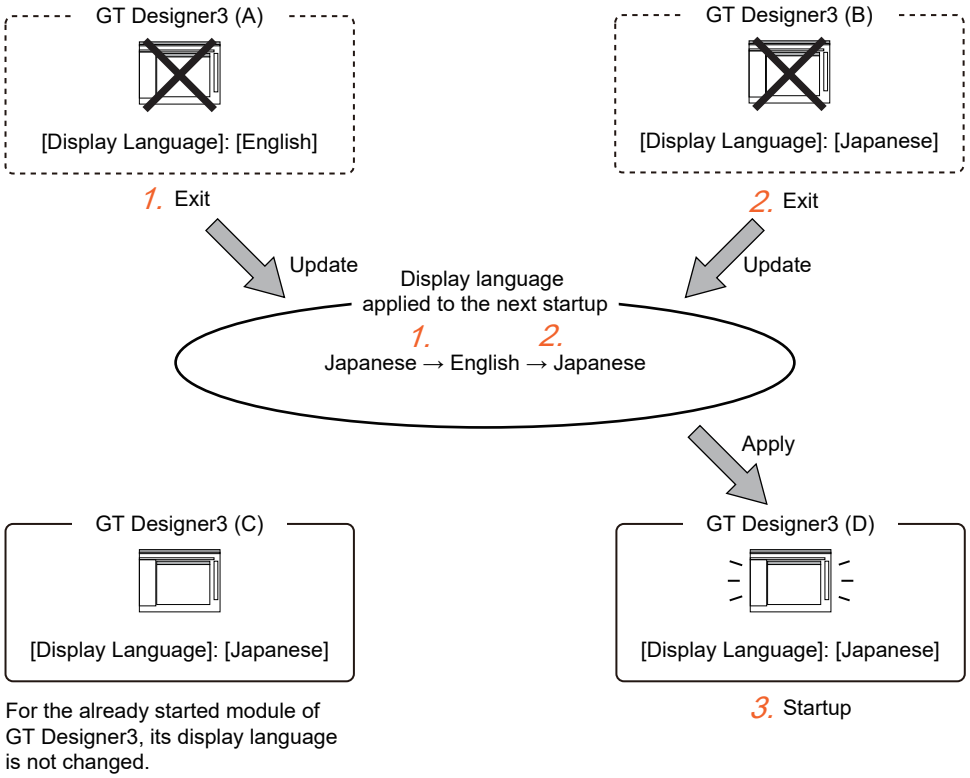
When starting multiple GT Designer3 modules, you cannot copy the following items between the modules whose display languages are different.

- Label group
- Search result list in the data browser

Operation when multiple modules of GT Designer3 are started

The display language is shared among all modules of GT Designer3.
When GT Designer3 is exited, the display language will be updated at the next startup according to the [Display Language] setting in GT Designer3.
The display language of the last exited GT Designer3 is applied when you newly start a GT Designer3 module.

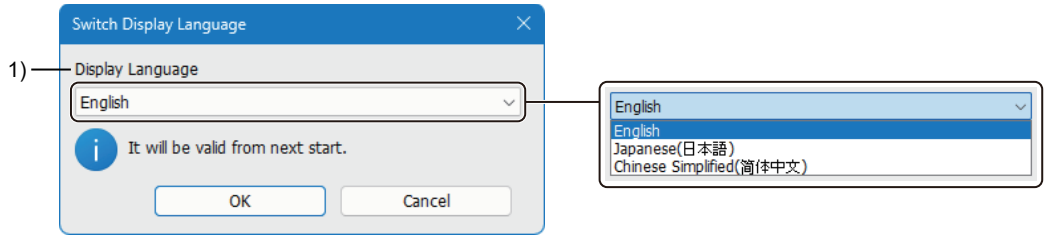
Ex.
When exiting GT Designer3 (A) ([Display Language]: [English]), and then exiting GT Designer3 (B) ([Display Language]: [Japanese])
Japanese is applied as the display language when GT Designer3 (D) is newly started.



For the already started module of GT Designer3, its display language is not changed.

5.2.2 [Switch Display Language] dialog

GT37 SoftGOT3000

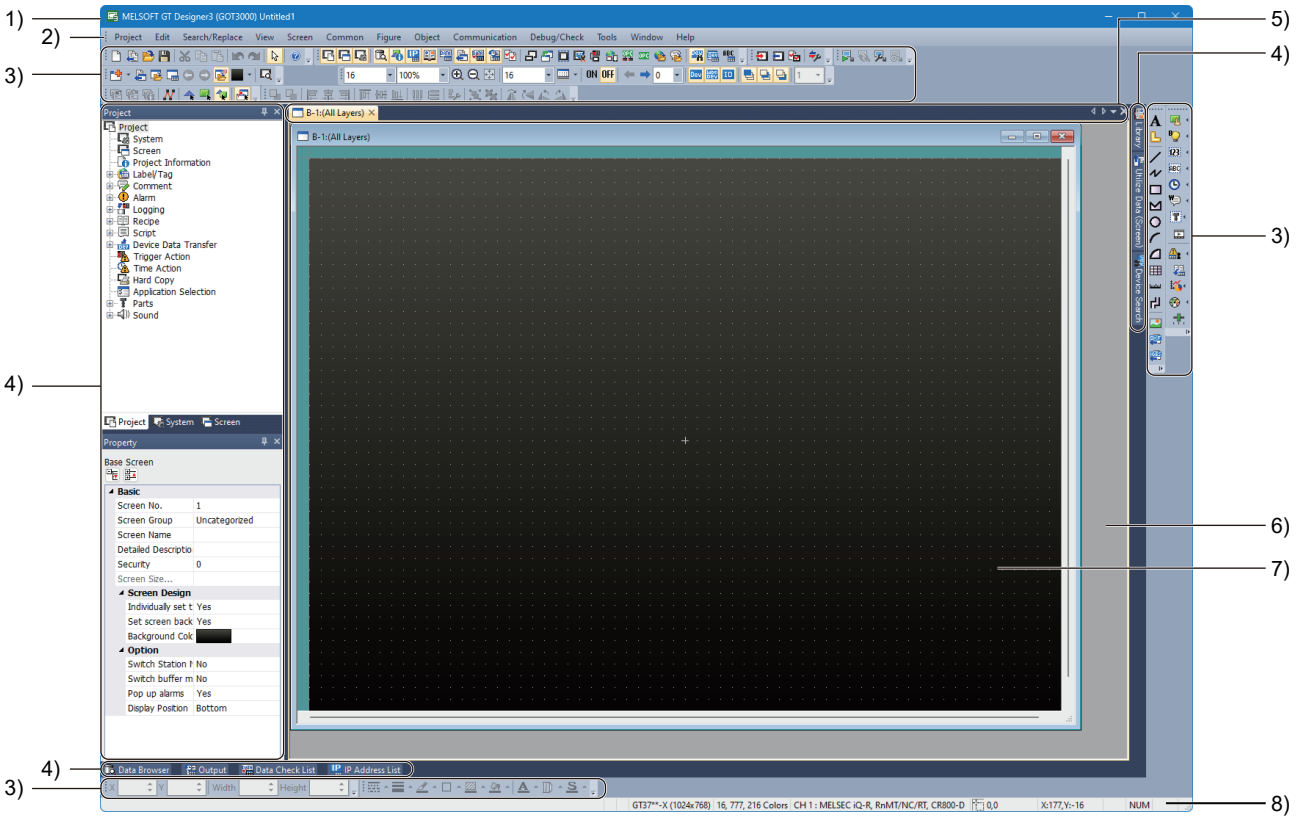


Item		Description
1)	[Display Language]	Select a language to be switched to.

5.3 Screen layout

GT37 SoftGOT3000

The following shows the screen layout of GT Designer3.



Item		Description
1)	Title bar	Displays the software module name and the file name with a full path.
2)	Menu bar	GT Designer3 is operable with the pull-down menus. ☞ Page 93 Menu bar
3)	Toolbar	GT Designer3 is operable with the buttons. ☞ Page 104 Toolbars and shortcut keys
4)	Docking window	A window that can be docked with the screen of GT Designer3. The docking location is customizable. ☞ Page 194 Customizing a docking window For the docking window types, refer to the following. ☞ Page 92 List of docking windows
5)	Editor tab	Displays the tabs of the windows and screen editors which are displayed on the work window. ☞ Page 114 Editor tab, work window
6)	Work window	Displays screen editors, the [Environmental Setting] window, the [GOT Setup] window, and other windows. ☞ Page 114 Editor tab, work window
7)	Screen editor	Create a screen to be displayed on the GOT by placing figures and objects on the screen editor. ☞ Page 263 Creating a screen
8)	Status bar	Displays the following contents according to the position of the mouse cursor, selected figure, or object. • Description of the item under the mouse cursor • GOT type, color settings, and controller settings in the current project • Coordinates of the selected figure or object • Auto save function enabled state

List of docking windows

Item	Description
[Utilize Data (Screen)] window	Search other projects for a screen that can be utilized. ☞ Page 211 Utilizing a project
[Project] window	Lists the settings of the whole project. ☞ Page 116 [Project] window
[System] window	Lists settings, such as the GOT type setting, environmental setting, and controller setting. ☞ Page 118 [System] window
[Screen] window	Lists the created base screens, window screens, and mobile screens. You can create or edit a base screen, window screen, or mobile screen. ☞ Page 122 [Screen] window
[Property] window	Lists the settings of a selected screen, figure, or object. You can edit the settings without opening the setting dialog of a figure, object and others. ☞ Page 126 Checking and editing settings of screens and objects
[Library] window	Lists the figures and objects registered in the library. You can utilize, create, or edit a figure or object in the library. ☞ Page 1061 Using the data registered in the library
[Device Search] window	Search the project for matching devices, labels, or tags. ☞ Page 130 Searching for a device (Device search)
[Data Browser] window	Lists the settings in the project. You can search for the setting of a figure or object and edit it. ☞ Page 167 Searching for and editing a specific setting (Data Browser)
[Data Check List] window	Lists data check results. ☞ Page 344 [Data Check List] window
[Output] window	Lists the history of changes when a project is converted due to GOT type change or other reasons. ☞ Page 528 [Output] window
[Controller Type List] window	Lists the controllers set for each channel. ☞ Page 739 [Controller Type List] window
[Data View] window	Lists the figures and objects on the screen editor. You can select a figure or object in the [Data View] window. ☞ Page 1005 [Data View] window
[Screen Image List] window	Displays the icons of base screens, window screens, and mobile screens. You can create or edit a base screen, window screen, or mobile screen. ☞ Page 335 [Screen Image List] window
[Category List] window	Lists categories, and their figures and objects. You can change a category, or collectively change the devices or other settings by category. ☞ Page 1128 [Category List] window
[Parts Image List] window	Lists the icons of registered parts. You can create or edit a part. ☞ Page 830 [Parts Image List] window
[IP Address List] window	Lists the IP addresses registered in the project. ☞ Page 183 Checking the IP addresses in the list (IP address list)

5.3.1 Menu bar

The following shows the GT Designer3 menu configurations.

The menus unavailable for the GOT type are not displayed.

☞ Page 93 [Project]
☞ Page 94 [Edit]
☞ Page 95 [Search/Replace]
☞ Page 95 [View]
☞ Page 97 [Screen]
☞ Page 98 [Common]
☞ Page 100 [Figure]
☞ Page 100 [Object]
☞ Page 102 [Communication]
☞ Page 102 [Debug/Check]
☞ Page 102 [Tools]
☞ Page 103 [Window]
☞ Page 103 [Help]

[Project]

Menu			Description
[New]			Creates a new project.
[Utilize Data]			Searches for a project that can be utilized.
[Open]			Opens a saved project.
[Close]			Closes the current project.
[Save]			Saves the current project over itself.
[Save As]			Saves the current project as a new name.
[Verify]			Verifies the current project against a saved project.
[Project Information]			Set a project title and a creator's name.
[Utilize Project]			Utilizes data of saved projects.
[Import Other Data]	[Device Comment/Device Definition]		Reads device comments.
	[Label/Tag/Ethernet Setting]		Reads the label, tag, and Ethernet settings.
	[Profile (CSP+)]	[Label (GT Designer3) Auto Registration]	Registers the labels (GT Designer3) created from profile data automatically.
[Save Package Data]			Saves the project in the package data format (*.GTYS).
[Security]	[User Management]		Manage the user information registered with the project.
	[Setup Access Authority]		Set the access authority of each access level.
	[Change Password]		Change the password of the logged-in user.
[Recent Projects]			Lists up to five recently-used projects.
[Start GT Designer3 (GOT2000)]			Starts GT Designer3 (GOT2000).
[Start GT Designer3 (GOT1000)]			Starts GT Designer3 (GOT1000).
[Exit]			Exits GT Designer3.

[Edit]

Menu		Description
[Undo]		Cancels the last operation.
[Redo]		Redoes the operation that has been undone by the [Undo] command.
[Cut]		Cuts the selected item.
[Copy]		Copies the selected item.
[Paste]		Pastes a copied or cut target to a selected area.
[Duplicate]		Pastes a copy of a figure or object selected on the screen editor.
[Consecutive Copy]		Pastes multiple copies of a figure or object selected on the screen editor.
[Select All]		Selects all figures and objects placed on the screen editor.
[Delete]		Deletes the selected item.
[Object of Selection]	[Figure]	Changes the target for selecting on the screen editor.
	[Object]	
	[Figure + Object]	
	[Overlay Screen]	Enables or disables selection of set overlay screens.
[Group]		Groups selected figures and objects.
[Ungroup]		Cancels the grouping of a selected group.
[Stacking Order]	[Move to the Front of Front Layer]	Changes the stacking order of the selected figures and objects.
	[Move to the Back of Back Layer]	
	[Move to the Front of Layer]	
	[Move to the Back of Layer]	
	[Move to the Front]	
	[Move to the Back]	
[Align]	[Left]	Aligns the positions of multiple selected figures, objects, template information, and groups.
	[Center (Horizontal)]	
	[Right]	
	[Top]	
	[Center (Vertical)]	
	[Bottom]	
	[Align Sideways]	
	[Align Lengthways]	
	[Custom]	
[Rotate/Flip]	[Flip Vertical]	Rotates or flips a selected figure.
	[Flip Horizontal]	
	[Rotate Left]	
	[Rotate Right]	
[Edit Vertices]		Switches between changing and fixing the positions of the vertexes of a figure.
[Edit Objects with Fixed Frame Width]	[Always Fix the Width]	Fixes or does not fix the frame width of the object shape when the object is resized.
	[Collective Edit]	Changes the shape frame widths of all objects that satisfy the frame width fixing conditions. After the change, the frame widths become fixed.
[Edit Touch Area]	[Manual Edit]	Enables or disables separately setting the touch area and display area of a touch switch.
	[Self-adjust]	Matches the touch area of a selected touch switch with the displayed area.
	[Constant Self-adjust]	Enables or disables automatic adjustment so that the touch area of a touch switch is always aligned with the display area.
[Adjust Direct Text Size]		Enables or disables change of the text size according to the scaling of the object size.
[Template Registration]	[Register to Template]	Adds a selected figure or object to a template.
	[Deregister from Template]	Deletes a selected figure or object from the template list.
[Edit Template Attribute]		Edits the template attribute of a selected template.
[Set to Default]		Sets the settings configured for the selected figure or object as defaults.
[Add to Category]	[Switch]	Changes the category of a selected figure or object.
	[Lamp]	
	[Other]	
	[User-defined Category]	

Menu	Description
[Shape Change]	Changes the shape of a selected object.
[Change Text]	Changes the text of the selected figure or object.
[Display Template Property]	Displays the settings of a selected template.
[Open Setting Dialog]	Displays the setting dialog of a selected figure or an object.

[Search/Replace]

Menu		Description
[Device Search]		Search the project for matching devices, labels, or tags.
[Device List]	[Screen]	Lists the devices used in the project.
	[Project]	
	[Script Text]	
[Text List]		Lists the strings used in the project.
[Batch Edit]	[Device]	Changes the device settings in the project collectively.
	[Unit No./Axis No.]	Changes the unit numbers and axis numbers in the project collectively.
	[Network]	Changes the network settings in the project collectively.
	[CH No.]	Changes the channel number settings in the project collectively.
	[Color]	Changes the color settings in the project collectively.
	[Figure]	Changes the shape settings in the project collectively.
[Data Browser]		Displays the [Data Browser] window.
[IP Address List]		Displays the [IP Address List] window.

[View]

Menu		Description
[Preview]		Displays a preview of the current screen.
[Window Preview]	[Apply to all base screens]	Switches between applying settings in the [Window Preview] dialog to all base screens and configuring the settings for each base screen.
	[Apply to all mobile screens]	Switches between applying settings in the [Window Preview] dialog to all mobile screens and configuring the settings for each mobile screen.
	[Overlap Window1]	Displays a preview of overlap window 1.
	[Overlap Window2]	Displays a preview of overlap window 2.
	[Overlap Window3]	Displays a preview of overlap window 3.
	[Overlap Window4]	Displays a preview of overlap window 4.
	[Overlap Window5]	Displays a preview of overlap window 5.
	[Superimpose Window1]	Displays a preview of superimpose window 1.
	[Superimpose Window2]	Displays a preview of superimpose window 2.
	[Key Window]	Displays a preview of the key window.
	[Dialog Window]	Displays a preview of the dialog window.
	[PC Remote Operation]	Displays a preview of the remote personal computer screen.
	[Web Browser]	Displays a preview of the web browser window.
	[Custom]	Sets a window screen to be displayed.
[Switch ON/OFF Display]		Switches the display status of objects on screen editors between ON and OFF.
[State No.]	[Previous State]	Switches the states of objects to be displayed on screen editors in descending order.
	[Next State]	Switches the states of objects to be displayed on screen editors in ascending order.
[Redisplay]		Redisplays a selected screen editor.

Menu		Description
[Toolbar]	[Main]	Displays or hides the [Main] toolbar.
	[Window Display]	Displays or hides the [Window Display] toolbar.
	[View]	Displays or hides the [View] toolbar.
	[Screen]	Displays or hides the [Screen] toolbar.
	[Edit]	Displays or hides the [Edit] toolbar.
	[Align]	Displays or hides the [Align] toolbar.
	[Figure]	Displays or hides the [Figure] toolbar.
	[Object]	Displays or hides the [Object] toolbar.
	[Draw Figure]	Displays or hides the [Draw Figure] toolbar.
	[Communication]	Displays or hides the [Communication] toolbar.
	[Debug/Check]	Displays or hides the [Debug/Check] toolbar.
	[Coordinate/Size]	Displays or hides the [Coordinate/Size] toolbar.
	[My Favorites]	Displays or hides the [My Favorites] toolbar. This menu is enabled if any figure or object is registered in My Favorites in the library. ☞ Page 1061 Using the data registered in the library
	[Customize]	Customize the toolbars. ☞ Page 188 Customizing the toolbar
[Docking Window]	[Project Tree]	Displays or hides the [Project] window.
	[Screen Tree]	Displays or hides the [Screen] window.
	[System Tree]	Displays or hides the [System] window.
	[Device Search]	Displays or hides the [Device Search] window.
	[Data Browser]	Displays the [Data Browser] window.
	[Propertysheet]	Displays or hides the [Property] window.
	[IP Address List]	Displays or hides the [IP Address List] window.
	[Library List]	Displays the [Library] window.
	[Controller Type List]	Displays or hides the [Controller Type List] window.
	[Data View]	Displays or hides the [Data View] window.
	[Screen Image List]	Displays or hides the [Screen Image List] window.
	[Category List]	Displays or hides the [Category List] window.
	[Parts Image List]	Displays or hides the [Parts Image List] window.
	[Utilize Data (Screen)]	Displays the [Utilize Data (Screen)] window.
	[Data Check List]	Displays the [Data Check List] window.
	[Output]	Displays the [Output] window.
	[Verify Result]	Displays the [Verify Result] window.
[Editor Tab]		Displays or hides the editor tab.
[Status Bar]		Displays or hides the status bar.
[Display Items]	[Device]	Displays or hides the specified devices on screen editors.
	[Device of Label]	Displays or hides the devices that are assigned to the labels (GT Designer3) on screen editors.
	[Object ID]	Displays or hides object IDs on screen editors.
	[Paint]	Displays or hides paints on screen editors.
	[Object]	Displays or hides objects on screen editors.
	[Object Frame]	Displays or hides object frames on screen editors.
	[Template Information]	Displays or hides template information on screen editors.
	[Touch Area]	Displays or hides the touch areas of touch switches on screen editors.
	[Frame]	Displays or hides the frames of screen editors.
	[Option]	Displays the [Display] tab in the [Option] dialog to set information to be displayed on screen editors.
[Grid]	[Front]	Displays grids on screen editors.
	[Back]	
	[None]	
[Center Guide]		Displays or hides the guidelines that indicate the center of the screen display area.

Menu		Description
[Scroll Bar Area]	[Front]	Displays the scroll bar area for the expanded base screen on the screen editor.
	[Back]	
	[None]	
[Layer]	[All Screens]	Applies the layer display switching to all screen editors.
	[Front]	Displays or hides each layer.
	[Back]	
	[Backmost]	
	[All Layers]	Displays all layers.
[Guidelines (auxiliary line)]	[Display]	Sets guidelines to be displayed for placing a figure or object.
	[Figure]	
	[Object]	
	[Figure + Object]	
	[Same Type]	
	[Custom]	
[Zoom]	[All Screens]	Switches between applying a magnification setting to all screen editors and configuring the setting for each screen editor.
	[400%]	Changes the magnification of screen editors.
	[300%]	
	[200%]	
	[150%]	
	[100%]	
	[75%]	
	[50%]	
	[25%]	
	[Custom]	
	[Whole Screen]	
[Switch Display Language]		Switches the display language of GT Designer3.

[Screen]

Menu		Description
[New]	[Base Screen]	Create a base screen.
	[Window Screen]	Create a window screen.
	[Mobile Screen]	Create a mobile screen.
[Utilize Data]		Search other projects for a screen that can be utilized.
[Open]		Open a selected window.
[Close]		Closes the current screen.
[Close All]		Closes all windows.
[Copy]		Copy a selected window.
[Delete]		Delete a selected window.
[Screen Design]		Displays the [Screen Design] dialog.
[Screen Image List]		Displays the [Screen Image List] window.
[Previous Screen]		Opens a screen whose screen number is one smaller than that of the current screen.
[Next Screen]		Opens a screen whose screen number is one greater than that of the current screen.
[Open Closed Screens]		Sets or cancels the closed screen as the target for the operation of [Previous Screen] or [Next Screen].
[Screen Script]		Set screen scripts.
[Screen Trigger Action]		Set screen trigger actions.
[Resize Screen]		Resizes the following screens. • Base screen (when the base screen size expansion is enabled) • Window screen • Mobile screen This item is enabled when all of the following conditions are satisfied. • [Expand base screen sizes] is selected in the [Type Setting] dialog ([Basic Setting]) (for the base screen only). • Screen size editing is allowed for the logged-in operator's access level (project security function).

Menu	Description
[Copy Screen Image to the Clipboard]	Captures the current screen image.
[Screen Property]	Configure the settings for the screen being edited in the screen properties.

[Common]

Menu			Description
[GOT Type Setting]			Change the GOT model setting of the project.
[GOT Environmental Setting]	[Screen Switching/Windows]		Configure the screen switching settings.
	[Language Switching]		Configure the language switching settings.
	[Dialog Window]		Configure the system message dialog window settings.
	[Key Window]		Configure the project-wide key window settings.
	[System Information]		Set devices that handle the system information.
	[Security]		Set a password for operating the GOT and reading the data from the GOT.
	[Information Protection Function]		Configure the settings for file protection and certificates in the GOT.
	[Operation Log]		Configure the settings for collecting operation history events of the GOT.
	[Internal Device Retention]		Configure the settings for retaining the GOT internal device values.
	[Kana-Kanji/Pinyin Conversion]		Configure the settings for Kana-Kanji or Pinyin conversion.
[SoftGOT Setting]			Configure the GT SoftGOT3000 settings.
[GOT Setup]	[Basic Setting]	[Display Setting/Language Setting]	Configure the GOT display settings.
		[GOT ID]	Set unique information to the GOT.
		[Operation Setting/Utility Call Key]	Set a buzzer sound and the utility call key for the GOT.
		[USB Common Setting]	Configure the GOT USB interface settings.
		[USB Host]	Configure the settings for using a mouse and keyboard on the GOT.
		[Time Setting]	Set the GOT time setting method.
		[Transparent Mode Setting]	Set the target channel for the FA transparent function.
		[GOT Internal Device Monitor]	Configure the GOT internal device monitor settings for the GOT diagnostics.
		[Startup Logo]	Configure the startup logo settings.
		[Digital Image Output]	Set the target (screen image) to be output from the GOT to an external display.
	[Add-on Setting]	[SoftGOT-GOT Link]	Configure the SoftGOT-GOT link function settings.
		[VNC Server]	Configure the VNC server function settings.
		[Sequence Program Monitor]	Configure the sequence program monitor settings.
		[Backup/Restoration]	Configure the backup/restoration function settings.
		[System Launcher]	Configure the system launcher settings.
		[iQSS Utility]	Configure the iQSS utility settings.
		[Contactless Tag]	Configure the contactless tag settings.
		[VPN Connection]	Configure the VPN connection settings.
		[Web Browser]	Configure the settings for displaying a web browser on the GOT.
[GOT Ethernet Setting]	[GOT IP Address Setting]		Set the IP address of the GOT.
	[GOT Ethernet Common Setting]		Configure the GOT Ethernet setting.
	[IP filter Setting]		Configure the IP filter setting.
[VPN Connection]			Configure the VPN connection settings.
[Controller Setting]			Configure the settings for communicating with controllers.

Menu		Description
[Peripheral Setting]	[PC (Data Transfer)]	Set the interface for connecting GT Designer3 (personal computer) with the GOT.
	[Bar Code]	Configure the settings for using a barcode reader on the GOT.
	[RFID]	Configure the settings for using a RFID controller on the GOT.
	[PC Remote Operation]	Configure the settings for operating the personal computer from the GOT.
	[VNC Server]	Configure the VNC server function settings.
	[Digital Image Input/Recording]	Configure the settings for displaying or recording images from a web camera or other devices on the GOT.
	[Web Browser]	Configure the optional settings for the web browser function.
	[External I/O / Operation Panel]	Configure the settings for using an external I/O device or operation panel with the GOT.
[GOT Network Interaction]		Configure the settings for controlling pieces of equipment on the same network to prevent simultaneous operations.
[GOT Mobile Setting]		Configure the settings for using the GOT as the server in the GOT Mobile function.
[OPC UA Server Setting]	[OPC UA Server Setting]	Configure the settings for using the GOT as an OPC UA server.
	[OPC UA Tag Setting]	Create an OPC UA tag.
[I/F Communication Setting]		Lists the interface settings of the GOT.
[Label]	[Open]	Lists label groups.
	[New Label Group]	Create a label group.
	[Label Group Property]	Change the number and title of a label group.
[Comment]	[Open]	Lists comment groups.
	[New Comment Group]	Create a comment group.
	[Comment Group Property]	Change the number and title of a comment group.
	[New Row]	Create a row at the bottom of the comment group being edited.
	[Insert Row]	Insert a new row into a comment group being edited.
	[Insert Column]	Insert a new column into a comment group being edited.
	[Import]	Imports a comment group from a file.
	[Export]	Outputs a comment group to a file.
	[Search]	Searches a comment group for a comment.
	[Jump]	Displays the row of a specified comment number.
	[Attribute Setting]	Changes the attribute of a selected row.
	[Attribute Display/Non-Display]	Displays or hides the attribute of a comment group.
[Alarm]	[Alarm Common Setting]	Set devices that convert alarm files.
	[User Alarm Observation]	Configure the settings for collecting alarms by monitoring target devices.
	[System Alarm Observation]	Configure the settings for collecting alarms by monitoring the system.
	[Alarm Popup Display]	Configure the settings for displaying collected alarms in a popup window when the alarms are collected.
[Logging]		Set control devices for the recipe function.
[Recipe]	[Recipe Common Setting]	Configures the settings for executing batch write or batch read on multiple devices.
	[Recipe]	
[Script]	[Script]	Set scripts.
	[Script List]	Lists the scripts.
	[Script Symbol]	Set script symbols.
	[Object Script Symbol]	Set object script symbols.
[Device Data Transfer]		Configure the settings for transferring data between devices.
[Trigger Action]		Set actions triggered by devices or sampling.
[Time Action]		Set actions triggered by time.
[Hard Copy]		Captures the active screen on the GOT.
[Application Selection]		Select system applications to be written to the GOT.
[Parts]	[Parts Image List]	Lists the icons of the parts.
	[Parts Setting]	Configure the part settings.
	[New]	Create a part.

Menu		Description
[Sound]	[Sound File List]	Lists the sound files to register or edit the files.
	[Touch Key Sound Setting]	Configure the setting to use a specified sound file for the touch key sound.

[Figure]

Menu	Description
[Text]	Draw a text figure.
[Logo Text]	Draw a logo text figure.
[Line]	Draw a line.
[Line Freeform]	Draw a freeform line.
[Rectangle]	Draw a rectangle.
[Polygon]	Draw a polygon.
[Circle]	Draw a circle.
[Arc]	Draw an arc.
[Sector]	Draw a sector.
[Table]	Draw a table.
[Scale]	Draw a scale.
[Piping]	Draw a piping.
[Paint]	Fills the framed area of the figure on the screen.
[Import Image Data]	Imports an image file into the screen.
[Import DXF Data]	Imports a DXF data into the screen.
[Import IGES Data]	Imports an IGES data into the screen.

[Object]

Menu		Description
[Select Library]	[Library List]	Displays the [Library] window.
	[My Library]	Displays the [My Library] tree in the [Library] window.
	[My Favorites]	Displays the [My Favorites] tree in the [Library] window.
[Switch]	[Switch]	Place a touch switch with multiple functions.
	[Bit Switch]	Place a touch switch to switch ON/OFF of a bit device.
	[Word Switch]	Place a touch switch to change the value of a word device.
	[Go To Screen Switch]	Place a touch switch to switch a screen.
	[Change Station No. Switch]	Place a touch switch to switch the station number of the GOT monitoring target.
	[Special Function Switch]	Place a touch switch to display the utility or the screen for a monitor function.
	[Key Window Display Switch]	Place a touch switch to display a key window.
	[Key Code Switch]	Place a touch switch to enter a key code.
[Lamp]	[Bit Lamp]	Place a lamp controlled by a bit device.
	[Word Lamp]	Place a lamp controlled by a word device.
	[Lamp Area]	Place a lamp area controlled by a bit device.
[Numerical Display/Input]	[Numerical Display]	Place an object to display a device value (numerical value).
	[Numerical Input]	Place an object to input a device value (numerical value).
[Text Display/Input]	[Text Display]	Place an object to display a device value (text).
	[Text Input]	Place an object to input a device value (text).
[Date/Time Display]	[Date Display]	Place an object to display the date.
	[Time Display]	Place an object to display the time.
[Comment Display]	[Bit Comment]	Place an object to display a comment. A bit device controls the displayed comment.
	[Word Comment]	Place an object to display a comment. A word device controls the displayed comment.
	[Simple Comment]	Place an object to display a comment. The displayed comment is fixed.

Menu		Description
[Parts Display]	[Bit Parts]	Place an object to display a part. A bit device controls the displayed parts.
	[Word Parts]	Place an object to display a part. A word device controls the displayed parts.
	[Fixed Parts]	Place an object to display a part. The displayed part is fixed.
[Frame Animation]		Place an object to display frame-by-frame videos.
[Historical Data List Display]		Place an object to display the history of device values collected by the logging function.
[Alarm Display]	[Alarm Display (User)]	Place an object to display the alarms collected through user alarm monitoring.
	[Alarm Display (System)]	Place an object to display the alarms collected through system alarm monitoring.
	[Simple Alarm Display]	Place an object to display the alarms collected by monitoring devices. Set the alarms to be monitored by object.
	[System Alarm Display]	Place an object to display the alarms collected by monitoring the system. Set the alarms to be monitored by object.
[Recipe Display (Record List)]		Place an object to list the records of a recipe. This object must be used in combination with the recipe function.
[Graph]	[Line Graph]	Place an object to display device values in line graph.
	[Trend Graph]	Place an object to display device values in chronological order in graph.
	[Bar Graph]	Place an object to display device values in bar graph.
	[Bar(Rectangle)]	Place an object to display the ratio of each device value to the total device values in bar graph.
	[Pie(Circle)]	Place an object to display the ratio of each device value to the total device values in pie graph.
	[Scatter Graph]	Place an object to display two device values as a point in scatter graph by assigning the two devices to the X and Y coordinates respectively.
	[Historical Trend Graph]	Place an object to display the device values collected by the logging function in chronological order in graph.
[Graphical Meter]	[Sector Meter]	Place an object to display a device value on a sector meter.
	[Semicircle Meter]	Place an object to display a device value on a semicircle meter.
	[Bar (Vertical) Meter]	Place an object to display a device value on a vertical bar meter.
	[Bar (Horizontal) Meter]	Place an object to display a device value on a horizontal bar meter.
[Meter]	[Level]	Place an object to display a device value by filling the specified area.
	[Panelmeter]	Place an object to display a device value on a meter.
[Slider]		Place an object to specify a device value (numeric value) by sliding the knob along the bar.
[Document Display]		Place an object to display a document on a screen.
[Digital Image Display]	[Camera/PC Image Display]	Place an object to display the images sent from the personal computer or other devices on the GOT.
	[File Playback]	Place an object to play a video file.
[Script Parts]		Place an object to create a script.
[Set Overlay Screen]		Place an object to overlay a called screen on a base screen.
[Animation Route]		Set a route through which an object travels.
[Window Position]	[Overlap1]	Place an object to specify the display position of overlap window 1.
	[Overlap2]	Place an object to specify the display position of overlap window 2.
	[Overlap3]	Place an object to specify the display position of overlap window 3.
	[Overlap4]	Place an object to specify the display position of overlap window 4.
	[Overlap5]	Place an object to specify the display position of overlap window 5.
	[Superimpose1]	Place an object to specify the display position of superimpose window 1.
	[Superimpose2]	Place an object to specify the display position of superimpose window 2.
	[Key Window]	Place an object to specify the display position of the key window.
[Key Window Object]	[Input Value Area Setting]	Place an object to display the value being input.
	[Input Range Area Setting]	Place an object to display the range of values that can be input.
	[Input Maximum Value Area Setting]	Place an object to display the maximum value that can be input.
	[Input Minimum Value Area Setting]	Place an object to display the minimum value that can be input.
	[Previous Value Area Setting]	Place an object to display the value that is input previously.
	[Project Setting]	Configure the project-wide key window settings.

Menu	Description
[Hyperlink]	Place an object to access a website or a file in the GOT public folder, or make a phone call.
[My Favorites]	Displays objects registered in [My Favorites] in the library.

[Communication]

Menu	Description
[Write to GOT]	Writes data from the personal computer (GT Designer3) to the GOT.
[Read from GOT]	Reads data from the GOT to the personal computer (GT Designer3).
[Verify GOT]	Compares the current project with the project in the GOT.
[Communication Configuration]	Sets the method of the communication between the personal computer (GT Designer3) and the GOT.
[Batch Write to multiple GOTs]	Writes data from a personal computer (GT Designer3) to multiple GOTs.
[Write to Memory Card]	Writes data to data storage.
[CSP+ for iQSS Data Write]	Writes iQSS data (CSP+) to data storage.

[Debug/Check]

Menu		Description
[Simulator]	[Activate]	Simulates the current project.
	[Update]	
	[Set]	
	[Exit]	
[Data Check]	[Check]	Checks if no error exists in the project.
	[Item Setting]	Sets the targets for the data check function.
[Label Check]		Checks the set label (GT Designer3) for errors.
[Data Size]	[Screen]	Displays the data size of the screen and the project.
	[Project]	
[GOT Offline Monitor]	[Activate]	Connect to the GX Works3 offline monitor on the personal computer to monitor the project running on the GOT.
	[Setting]	
	[Exit]	
[GOT Diagnostics]		Displays the causes and corrective actions for GOT errors.

[Tools]

Menu		Description
[Resource Data Conversion]	[Operation Log File]	Converts the file format of the operation log file.
	[Alarm File]	Converts the file format of the alarm file.
	[Logging File]	Converts the file format of the logging file.
	[Recipe File]	Converts the file format of the recipe file.
[Default Setting]	[Edit]	Sets the preset values of figures and objects.
	[Export]	Exports the preset values of figures and objects.
	[Import]	Imports the preset values of figures and objects.
[Customize]		Customize the toolbars. ☞ Page 188 Customizing the toolbar
[Option]		Customizes operations and displayed contents of GT Designer3.

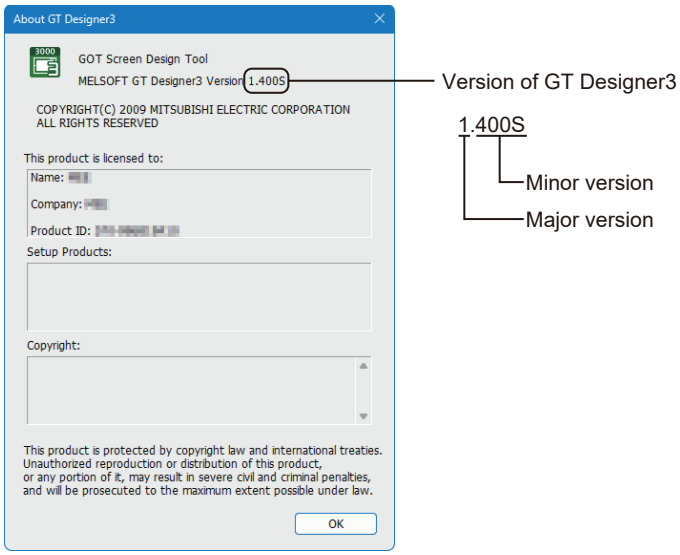
[Window]

Menu	Description
[Cascade]	Aligns the screen editors and screens in the work window.
[Vertical]	
[Horizontal]	
[Align Icons]	Aligns minimized screens.
[Close All Windows]	Closes all screens in the work window.
List of open screens	Up to nine screens being opened on the work window are displayed in the pull-down menu.
[Other Windows]	Select a screen to be operated on the [Window Selection] dialog.

[Help]

Menu	Description
[GT Designer3 (GOT3000) Help]	Displays Help.
[Manual List]	Lists the manuals.
[Connection to MITSUBISHI ELECTRIC FA Global Website]	Connects to the MITSUBISHI ELECTRIC FA Global Website.
[About GT Designer3]	Displays the version of GT Designer3. ☞ Page 103 [About GT Designer3] dialog

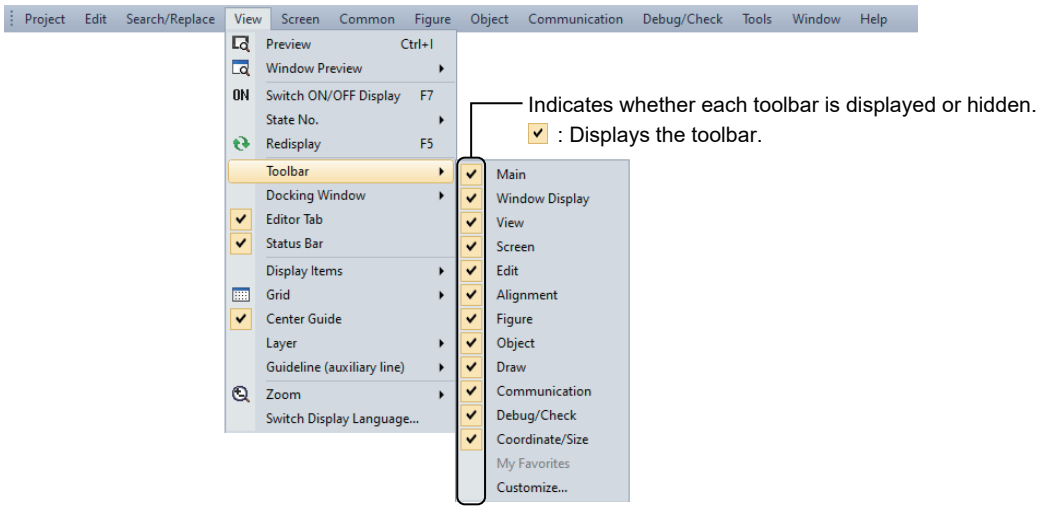
■[About GT Designer3] dialog



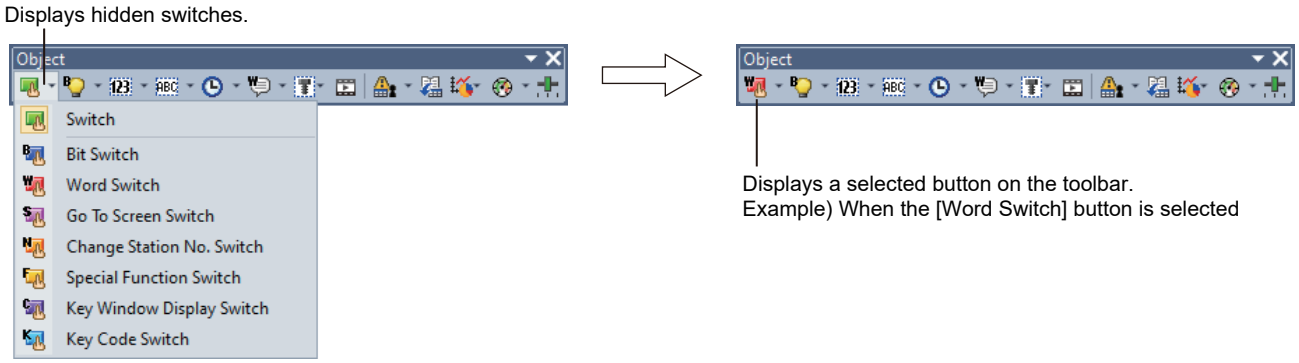
5.3.2 Toolbars and shortcut keys

☞ Page 105 [Main]
☞ Page 106 [Window Display]
☞ Page 107 [View]
☞ Page 108 [Screen]
☞ Page 108 [Edit]
☞ Page 109 [Align]
☞ Page 110 [Figure]
☞ Page 111 [Object]
☞ Page 112 [Draw Figure]
☞ Page 113 [Communication]
☞ Page 113 [Debug/Check]
☞ Page 113 [Coordinate/Size]
☞ Page 113 [My Favorites]

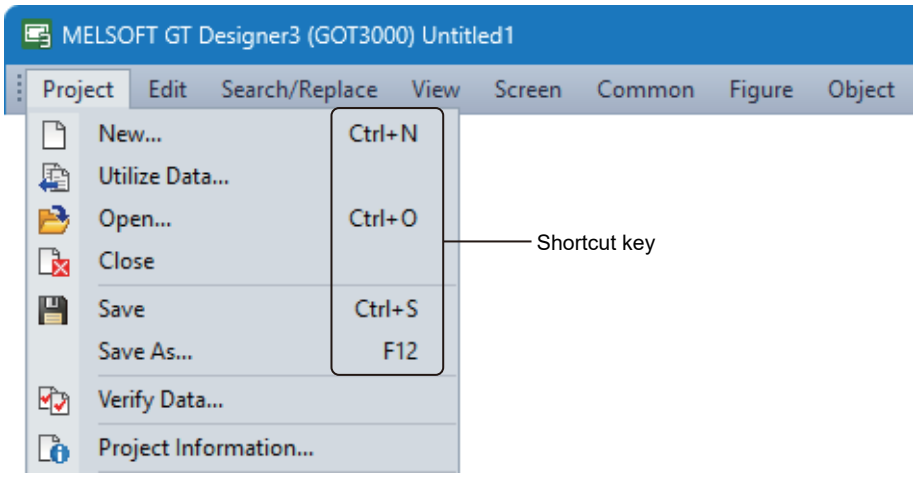
You can select whether to display or hide each toolbar on the [View] menu.



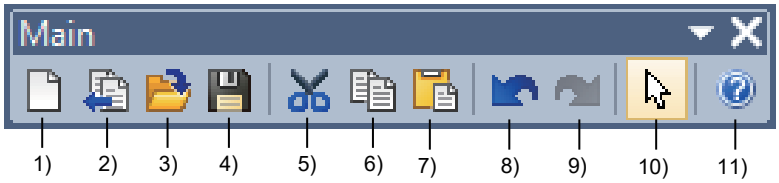
Some buttons may not be displayed on the toolbar.
Select a hidden button to display it on the toolbar.



Shortcut keys are displayed on each menu.

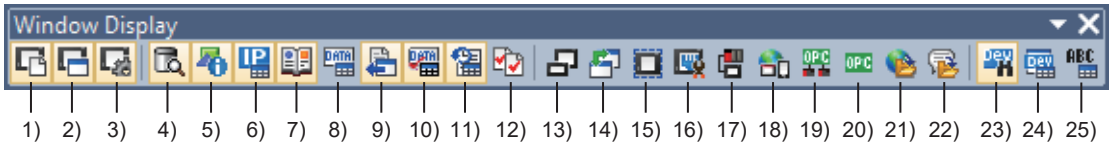


[Main]



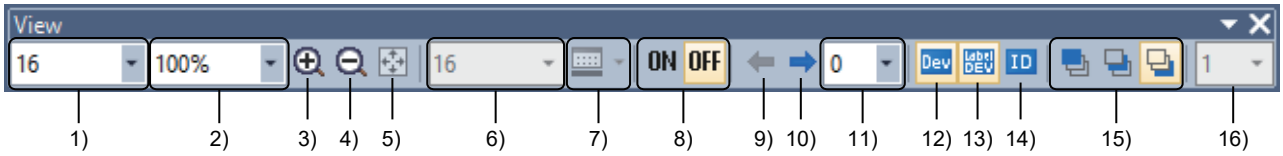
Item		Description	Shortcut key
1)	[New] button	Creates a new project.	Ctrl + N
2)	[Utilize Data] button	Searches for a project that can be utilized.	—
3)	[Open] button	Opens a saved project.	Ctrl + O
4)	[Save] button	Saves the current project over itself.	Ctrl + S
5)	[Cut] button	Cuts the selected item.	Ctrl + X
6)	[Copy] button	Copies the selected item.	Ctrl + C
7)	[Paste] button	Pastes a copied or cut target to a selected area.	Ctrl + V
8)	[Undo] button	Cancels the last operation.	Ctrl + Z
9)	[Redo] button	Redoes the operation that has been undone by the [Undo] command.	Ctrl + Y
10)	[Figure or Object Selection] button	Enables the mouse pointer to select a figure or object.	—
11)	[GT Designer3 Help] button	Displays GT Designer3 Help.	F1

[Window Display]



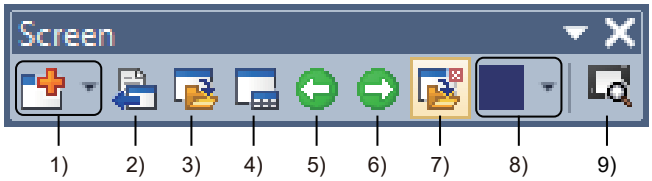
Item		Description	Shortcut key
1)	[Docking Window: Project Tree] button	Displays or hides the [Project] window.	Alt + O
2)	[Docking Window: Screen Tree] button	Displays or hides the [Screen] window.	—
3)	[Docking Window: System Tree] button	Displays or hides the [System] window.	—
4)	[Docking Window: Data Browser] button	Displays or hides the [Data Browser] window.	Ctrl + E
5)	[Docking Window: Property Sheet] button	Displays or hides the [Property] window.	Alt + 1
6)	[Docking Window: IP Address List] button	Displays or hides the [IP Address List] window.	—
7)	[Docking Window: Library List] button	Displays or hides the [Library] window.	F9
8)	[Docking Window: Data View] button	Displays or hides the [Data View] window.	—
9)	[Docking Window: Utilize Creation (Screen)] button	Displays or hides the [Utilize Creation (Screen)] window.	—
10)	[Docking Window: Data Check List] button	Displays or hides the [Data Check List] window.	—
11)	[Docking Window: Output] button	Displays or hides the [Output] window.	—
12)	[Docking Window: Verify Result] button	Displays or hides the [Verify Result] window.	—
13)	[GOT Type Setting] button	Displays the [GOT Type Setting] dialog.	—
14)	[GOT Environmental Setting: Screen Switching/Window] button	Displays the [Environmental Setting] window.	—
15)	[GOT Setup: Basic Setting: Display Setting/Language Setting] button	Displays the [GOT Setup] window.	—
16)	[GOT Ethernet Setting] button	Displays the [GOT Ethernet Setting] window.	—
17)	[Controller Setting] button	Displays the [Controller Setting] window.	—
18)	[GOT Mobile Setting] button	Displays the [GOT Mobile Setting] window.	—
19)	[OPC UA Server Setting:OPC UA Server Setting] button	Displays the [OPC UA Server Setting] window.	—
20)	[OPC UA Server Setting:OPC UA Tag Setting] button	Displays the [OPC UA Tag Setting] window.	—
21)	[Label: Open] button	Displays the [Label Group List] dialog.	—
22)	[Comment: Open] button	Displays the [Open Comment Group] dialog.	—
23)	[Docking Window: Device Search] button	Displays or hides the [Device Search] window.	Ctrl + F
24)	[Device List: Screen] button	Displays the [Device List] window.	—
25)	[Text List] button	Displays the [Text List] window.	—

[View]



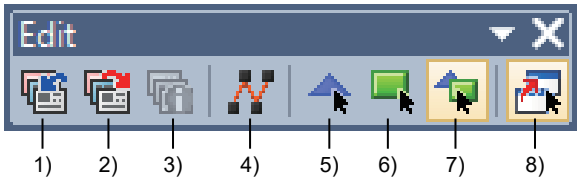
Item		Description	Shortcut key
1)	[Snap]	Sets the travel distance of a figure and an object on the screen editor.	—
2)	[Zoom]	Sets the magnification of the screen editor.	—
3)	[Zoom in] button	Increases the magnification of the screen editor in increments of 10%.	Ctrl + +
4)	[Zoom out] button	Reduces the magnification of the screen editor by 10%.	Ctrl + -
5)	[Whole Screen] button	Resizes the screen display area of the screen editor according to the editor window size. This item is unavailable when [All Screens] is selected in [Zoom] on the [View] menu.	—
6)	[Grid Interval]	Sets the distance between the lines of the grid on the screen editor.	—
7)	[Grid Color]	Sets the grid color of the screen editor.	—
8)	[ON] button [OFF] button	Switches the display status of objects on screen editors between ON and OFF.	F7 (The display can be off with F8 as well.)
9)	[Previous State] button	Switches the states of objects to be displayed on screen editors in descending order.	—
10)	[Next State] button	Switches the states of objects to be displayed on screen editors in ascending order.	—
11)	[State No.]	Switches the states of objects to be displayed on screen editors by selecting the state No.	—
12)	[Display Items: Device] button	Displays or hides the specified devices on screen editors.	—
13)	[Display Items: Device of Label] button	Displays or hides the devices that are assigned to the labels (GT Designer3) on screen editors.	—
14)	[Display Items: Object ID] button	Displays or hides object IDs on screen editors.	—
15)	[Layer: Front] button [Layer: Back] button [Layer: Backmost] button	Displays or hides each layer.	—
16)	[Language Switching Preview Column No.]	Sets a comment column number to be displayed on the screen editor. The setting range is [1] to [30].	—

[Screen]



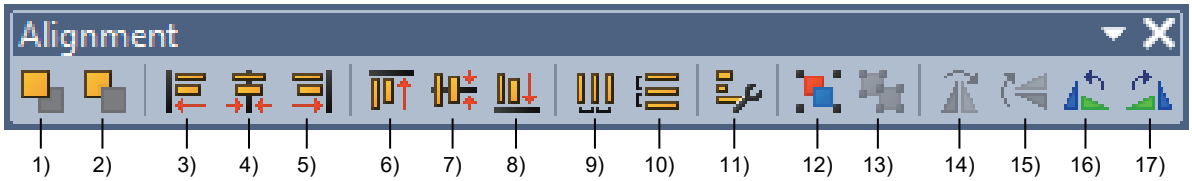
Item			Description	Shortcut key
1)	[New] button	[Base Screen]	Creates a base screen.	—
		[Window Screen]	Creates a window screen.	—
		[Mobile Screen]	Creates a mobile screen.	—
2)	[Utilize Data] button		Search other projects for a screen that can be utilized.	—
3)	[Open] button		Open a selected window.	—
4)	[Screen Image List] button		Displays the [Screen Image List] window.	—
5)	[Previous Screen] button		Opens a screen whose screen number is one smaller than that of the current screen.	Ctrl + Alt + P
6)	[Next Screen] button		Opens a screen whose screen number is one greater than that of the current screen.	Ctrl + Alt + N
7)	[Open Closed Screens] button		Sets or cancels the closed screen as the target for the operation of [Previous Screen] or [Next Screen].	—
8)	[Screen Background Color] button		Select a background color, gradient, and pattern for the screen.	—
9)	[Preview] button		Displays a preview of the current screen.	Ctrl + I

[Edit]



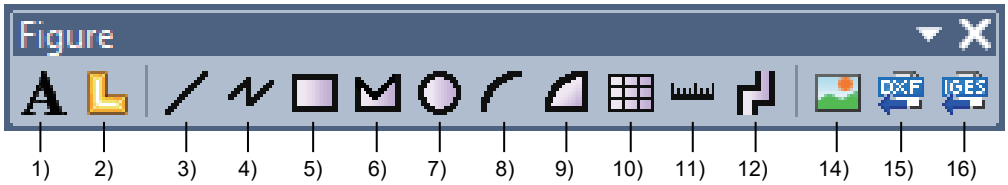
Item		Description
1)	[Template Registration: Register to Template] button	Register the selected figure or object to the template.
2)	[Template Registration: Deresigter from Template] button	Deletes a selected figure or object from the template list.
3)	[Edit Template Attribute] button	Edits the template attribute of selected template information.
4)	[Edit Vertices] button	Switches between changing and fixing the positions of the vertexes of a figure.
5)	[Object of Selection: Figure] button	Enables selection of figures only.
6)	[Object of Selection: Object] button	Enables selection of objects only.
7)	[Object of Selection: Figure + Object] button	Enables selection of figures and objects.
8)	[Object of Selection: Overlay Screen] button	Enables or disables selection of set overlay screens on the screen editor.

[Align]



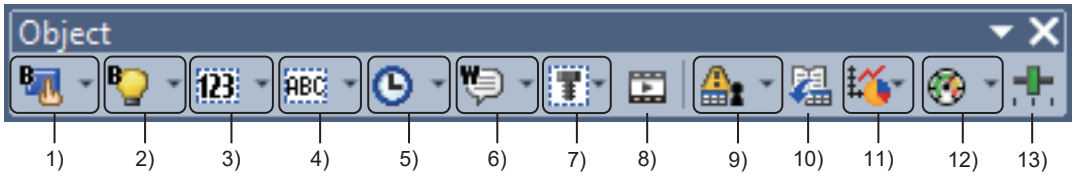
Item		Description	Shortcut key
1)	[Stacking Order: Move to the Front] button	Moves a selected figure or object to the front.	—
2)	[Stacking Order: Move to the Back] button	Moves a selected figure or object to the back.	—
3)	[Align: Left] button	Aligns selected figures, objects, template information, and groups with the leftmost item.	—
4)	[Align: Center (Horizontal)] button	Aligns selected figures, objects, template information, and groups horizontally to the center.	—
5)	[Align: Right] button	Aligns selected figures, objects, template information, and groups with the rightmost item.	—
6)	[Align: Top] button	Aligns selected figures, objects, template information, and groups with the topmost item.	—
7)	[Align: Center (Vertical)] button	Aligns selected figures, objects, template information, and groups vertically to the center.	—
8)	[Align: Bottom] button	Aligns selected figures, objects, template information, and groups with the bottom item.	—
9)	[Align: Align Sideways] button	Aligns selected figures, objects, template information, and groups horizontally with even spacing.	—
10)	[Align: Align Lengthways] button	Aligns selected figures, objects, template information, and groups vertically with even spacing.	—
11)	[Align: Custom] button	Displays the [Align] dialog.	—
12)	[Group] button	Groups selected figures and objects.	Ctrl + G
13)	[Ungroup] button	Cancels the grouping of selected figures and objects.	Ctrl + U
14)	[Rotate/Flip: Flip Horizontal] button	Flips a selected figure horizontally.	Ctrl + H
15)	[Rotate/Flip: Flip Vertical] button	Flips a selected figure vertically.	Ctrl + J
16)	[Rotate/Flip: Rotate Left] button	Rotates a selected figure 90 degrees counterclockwise.	Ctrl + L
17)	[Rotate/Flip: Rotate Right] button	Rotates a selected figure 90 decrees clockwise.	Ctrl + R

[Figure]



Item		Description
1)	[Text] button	Draw a text figure.
2)	[Logo Text] button	Draw a logo text figure.
3)	[Line] button	Draw a line.
4)	[Line Freeform] button	Draw a freeform line.
5)	[Rectangle] button	Draw a rectangle.
6)	[Polygon] button	Draw a polygon.
7)	[Circle] button	Draw a circle.
8)	[Arc] button	Draw an arc.
9)	[Sector] button	Draw a sector.
10)	[Table] button	Draw a table.
11)	[Scale] button	Draw a scale.
12)	[Piping] button	Draw a piping.
13)	[Paint] button	Fills the framed area of the figure on the screen.
14)	[Import Image Data] button	Imports an image file into the screen.
15)	[Import DXF Data] button	Imports a DXF data into the screen.
16)	[Import IGES Data] button	Imports an IGES data into the screen.

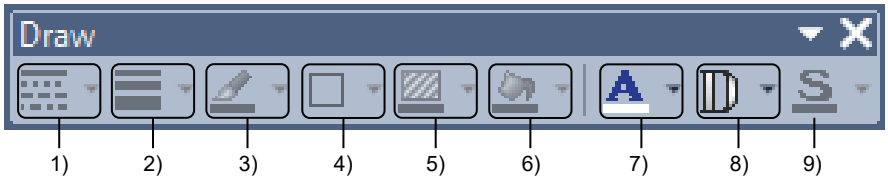
[Object]



Item			Description
1)	[Switch] button	[Switch] button	Place a touch switch with multiple functions.
		[Bit Switch] button	Place a touch switch to switch ON/OFF of a bit device.
		[Word Switch] button	Place a touch switch to change the value of a word device.
		[Go To Screen Switch] button	Place a touch switch to switch a screen.
		[Change Station No. Switch] button	Place a touch switch to switch the station number of the GOT monitoring target.
		[Special Function Switch] button	Place a touch switch to display the utility or the screen for a monitor function.
		[Key Window Display Switch] button	Place a touch switch to display a key window.
		[Key Code Switch] button	Place a touch switch to enter a key code.
2)	[Lamp] button	[Bit Lamp]	Place a lamp controlled by a bit device.
		[Word Lamp]	Place a lamp controlled by a word device.
		[Lamp Area]	Place a lamp area controlled by a bit device.
3)	[Numerical Display/ Input] button	[Numerical Display]	Place an object to display a device value (numerical value).
		[Numerical Input]	Place an object to input a device value (numerical value).
4)	[ASCII Display/Input] button	[Text Display]	Place an object to display a device value (text).
		[Text Input]	Place an object to input a device value (text).
5)	[Date/Time Display] button	[Date Display]	Place an object to display the date.
		[Time Display]	Place an object to display the time.
6)	[Comment Display] button	[Bit Comment]	Place an object to display a comment. A bit device controls the displayed comment.
		[Word Comment]	Place an object to display a comment. A word device controls the displayed comment.
		[Simple Comment]	Place an object to display a comment. The displayed comment is fixed.
7)	[Parts Display] button	[Bit Parts]	Place an object to display a part. A bit device controls the displayed parts.
		[Word Parts]	Place an object to display a part. A word device controls the displayed parts.
		[Fixed Parts]	Place an object to display a part. The displayed part is fixed.
8)	[Frame Animation] button		Place an object to play a video frame by frame.
9)	[Alarm Display] button	[Alarm Display (User)]	Place an object to display the alarms collected through user alarm monitoring.
		[Alarm Display (System)]	Place an object to display the alarms collected through system alarm monitoring.
		[Simple Alarm Display]	Place an object to display the alarms collected by monitoring devices. Set the alarms to be monitored by object.
		[System Alarm Display]	Place an object to display the alarms collected by monitoring the system. Set the alarms to be monitored by object.
10)	[Recipe Display (Record List)] button		Place an object to list the records of a recipe. This object must be used in combination with the recipe function.

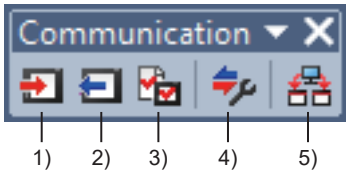
Item			Description
11)	[Graph] button	[Line Graph]	Place an object to display device values in line graph.
		[Trend Graph]	Place an object to display device values in chronological order in graph.
		[Bar Graph]	Place an object to display device values in bar graph.
		[Statistics Bar Graph]	Place an object to display the ratio of each device value to the total device values in bar graph.
		[Pie(Circle)]	Place an object to display the ratio of each device value to the total device values in pie graph.
		[Graph]	Place an object to display two device values as a point in scatter graph by assigning the two devices to the X and Y coordinates respectively.
		[Historical Trend Graph]	Place an object to display the device values collected by the logging function in chronological order in graph.
12)	[Graphical Meter] button	[Sector Meter]	Place an object to display a device value on a sector meter.
		[Semicircle Meter]	Place an object to display a device value on a semicircle meter.
		[Bar (Vertical) Meter]	Place an object to display a device value on a vertical bar meter.
		[Bar (Horizontal) Meter]	Place an object to display a device value on a horizontal bar meter.
13)	[Slider] button		Place an object to specify a device value (numeric value) by sliding the knob along the bar.

[Draw Figure]



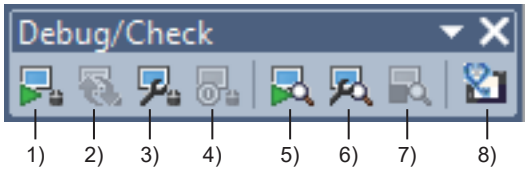
Item		Description
1)	[Line Style] button	Sets the line type of a selected figure.
2)	[Line Width] button	Sets the line width of a selected figure.
3)	[Line Color] button	Sets the line color of a selected figure.
4)	[Pattern] button	Sets the pattern of a selected figure.
5)	[Shape Color] button	Sets the pattern color of a selected figure.
6)	[Background Color] button	Sets the pattern background color of a selected figure.
7)	[Text Color] button	Set the text color.
8)	[Style] button	Set a character effect.
9)	[Text Solid Color] button	Set a shadow color for a text.

[Communication]



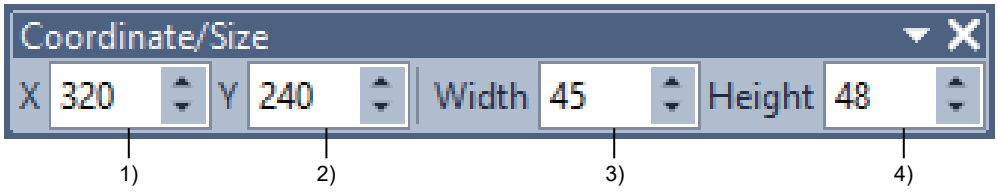
Item		Description	Shortcut key
1)	[Write to GOT] button	Writes data from the personal computer (GT Designer3) to the GOT.	Shift + F11
2)	[Read from GOT] button	Reads data from the GOT to the personal computer (GT Designer3).	—
3)	[Verification with GOT] button	Compares the current project with the project in the GOT.	—
4)	[Communication Configuration] button	Sets the method of the communication between the personal computer (GT Designer3) and the GOT.	—
5)	[Batch Write to multiple GOTs]	Writes data from a personal computer (GT Designer3) to multiple GOTs.	—

[Debug/Check]



Item		Description	Shortcut key
1)	[Simulator: Start] button	Starts GT Simulator3 and executes a simulation.	Ctrl + F10
2)	[Simulator: Update] button	Updates the project being simulated with the current project.	Alt + F10
3)	[Simulator: Setting] button	Configure the connection and other settings for GT Simulator3.	—
4)	[Simulator: End] button	Exits GT Simulator3.	—
5)	[GOT Offline Monitor: Activate] button	Activates the GOT offline monitor.	Ctrl + F12
6)	[GOT Offline Monitor: Set] button	Configure the connection and other settings for the GOT offline monitor.	—
7)	[GOT Offline Monitor: Exit] button	Exits the GOT offline monitor.	—
8)	[GOT Diagnostics]	Displays the causes and corrective actions for GOT errors.	—

[Coordinate/Size]



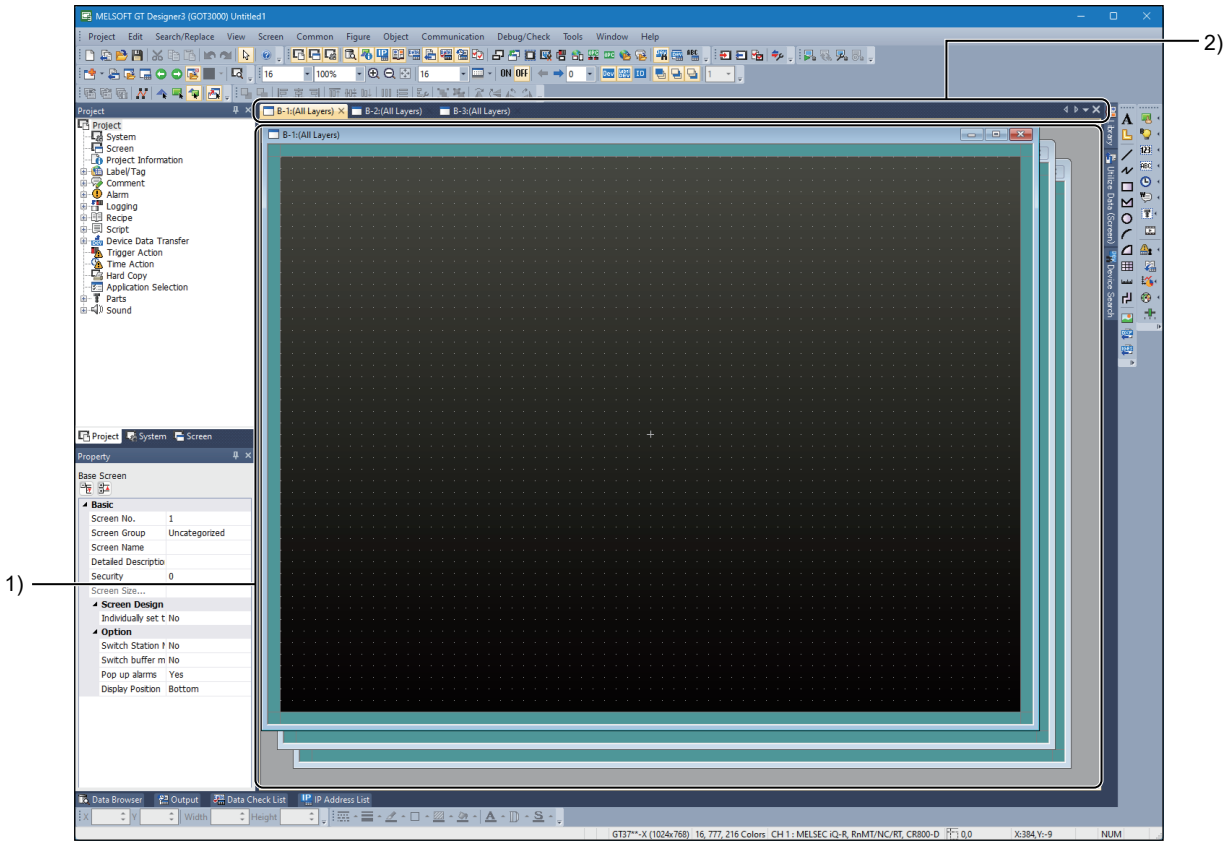
Item		Description
1)	[X]	Sets the X coordinate of the upper left vertex of a selected figure or object in dots.
2)	[Y]	Sets the Y coordinate of the upper left vertex of a selected figure or object in dots.
3)	[Width]	Sets the width of a selected figure or object in dots.
4)	[Height]	Sets the height of a selected figure or object in dots.

[My Favorites]

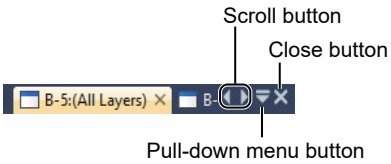
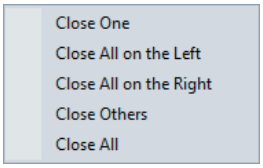
Displays figures and objects registered in the favorite of the [Library] window.

5.3.3 Editor tab, work window

The following shows what are displayed in the editor tab and work window.



Item		Description
1)	Work window	Area where screen editors and other windows are displayed. The following shows the screens to be displayed in the work window. • Screen editor • [Environmental Setting] window • [GOT Setup] window • [Controller Setting] window • [Comment List] window • [Device List] window • [Text List] window

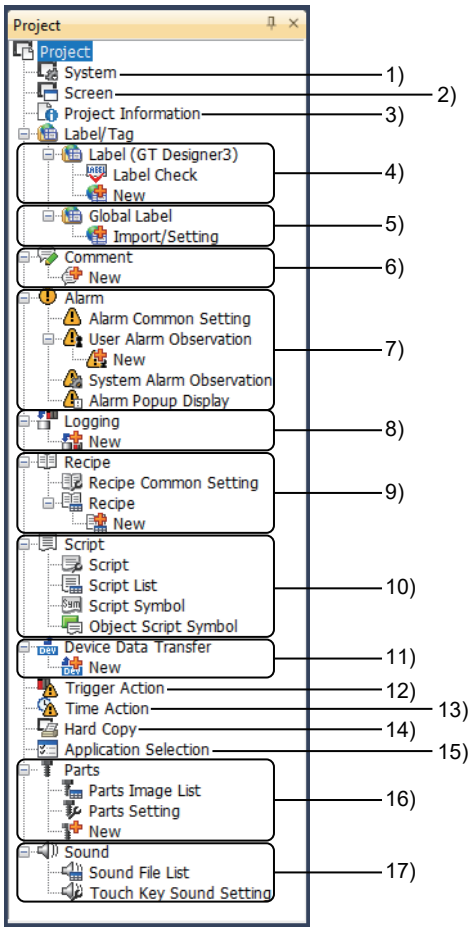
Item		Description
2)	Editor tab	Displays the tabs of the windows and screen editors which are displayed on the work window. When a tab is selected, the corresponding window is displayed in the topmost position in the work window. To switch between displaying and hiding the editor tab, select [Display] → [Editor tab] from the menu.  • Scroll button Scrolls the position of a selected tab sideways. The button can be used when tabs are too many to be displayed in the editor tab. • Pull-down menu button Displays the list of screen editors and windows being displayed in the work window. This button displays a screen editor or window selected from the pull-down menu in the topmost position. • Close button Closes a selected tab.  Right-click a tab to display menus to operate the tab. • [Close this Tab] Closes the right-clicked tab. • [Close All Tab on the Left] Closes all the tabs on the left side of the right-clicked tab. • [Close All Tab on the Right] Closes all the tabs on the right side of the right-clicked tab. • [Close All Other] Closes all the tabs except the right-clicked tab. • [Close All] Closes all the displayed tabs.

5.3.4 [Project] window

The [Project] window lists the settings of the whole project.

Double-click an item to display the setting dialog.

The menus unavailable for the GOT type are not displayed.

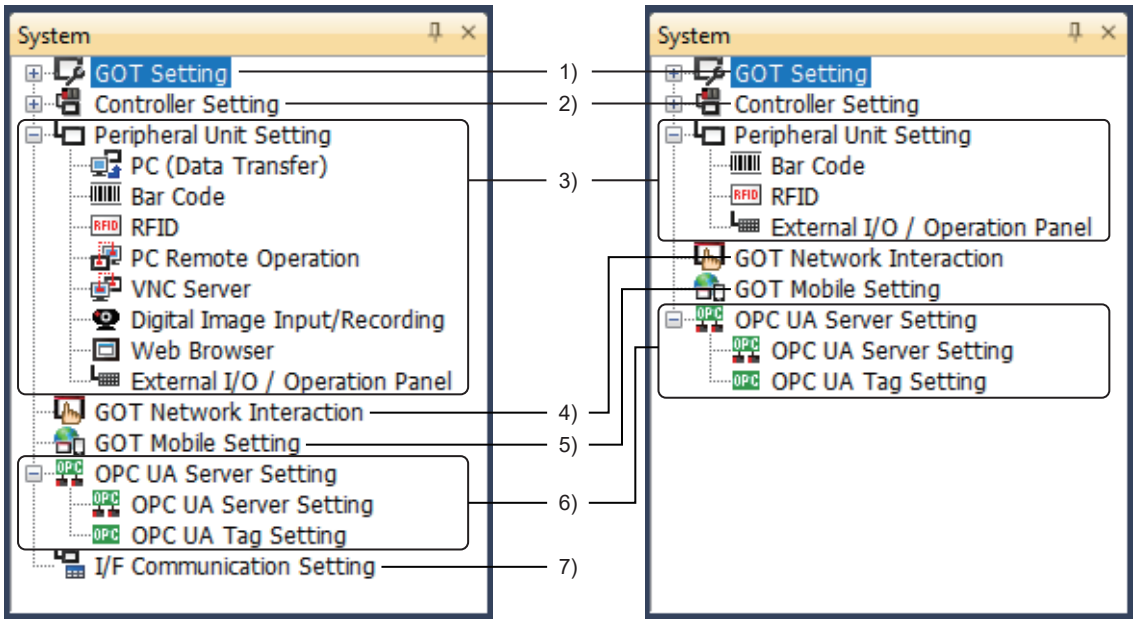


Item			Description
1)	[System]		Displays the [System] window. ☞ Page 118 [System] window
2)	[Screen]		Displays the [Screen] window. ☞ Page 122 [Screen] window
3)	[Project Information]		Set a project title and a creator's name.
4)	[Label (GT Designer3)]	—	Lists the set label groups. Each one can be copied and pasted with the [Edit] menu.
		[Label Check]	Updates labels (GT Designer3) and checks them.
		[New]	Create a label group.
5)	[Global Label] [OMRON NJ/NX Tag] [RSLogix 5000 Tag] [AB Native Tag] [OPC UA Tag]	—	Lists the imported labels and tags. Each item appears when the controller settings corresponding to the label or tag are configured in the [Controller Setting] window. ☞ Page 729 [Controller Setting]
		[Import/Setting]	Displays the [Label/Tag/Ethernet Setting List] dialog. ☞ Page 860 [Label/Tag/Ethernet Setting List] dialog
6)	[Comment]	—	Lists the set comment groups. Each one can be copied and pasted with the [Edit] menu.
		[New]	Create a comment group.

Item			Description
7)	[Alarm]	[Alarm Common Setting]	Set devices that convert alarm files.
		[User Alarm Observation]	Lists the configured settings for user alarm monitoring. Each one can be copied and pasted with the [Edit] menu. Double-click [New] to configure the settings for collecting alarms by monitoring devices.
		[System Alarm Observation]	Configure the settings for collecting alarms by monitoring the system.
		[Alarm Popup Display]	Configure the settings for displaying collected alarms in a popup window when the alarms are collected.
8)	[Logging]	—	Lists the set logging settings. Each one can be copied and pasted with the [Edit] menu.
		[New]	Configure the settings for collecting device values.
9)	[Recipe]	[Recipe Common Setting]	Set control devices for the recipe function.
		[Recipe]	Lists the set recipe settings. Each one can be copied and pasted with the [Edit] menu. Double-click [New] to configure the settings for executing batch write or batch read on multiple devices.
10)	[Script]	[Script]	Set scripts.
		[Script List]	Lists the scripts.
		[Script Symbol]	Set script symbols.
		[Object Script Symbol]	Set object script symbols.
11)	[Device Data Transfer]	—	Lists the set device data transfer settings. Each one can be copied and pasted with the [Edit] menu.
		[New]	Configure the settings for transferring data between devices.
12)	[Trigger Action]		Set actions triggered by devices or sampling.
13)	[Time Action]		Set actions triggered by time.
14)	[Hard Copy]		Configure the settings for capturing the active screen on the GOT.
15)	[Application Selection]		Select system applications to be written to the GOT.
16)	[Parts]	[Parts Image List]	Lists the part images. Each one can be copied and pasted with the [Edit] menu.
		[Parts Setting]	Configure the part settings.
		[New]	Create a part.
17)	[Sound]	[Sound File List]	Lists the sound files to register or edit the files.
		[Touch Key Sound Setting]	Configure the setting to use a specified sound file for the touch key sound.

5.3.5 [System] window

The [System] window lists settings, such as the GOT type setting, environmental setting, and controller setting.
Double-click an item to display the setting dialog.
The menus unavailable for the GOT type are not displayed.

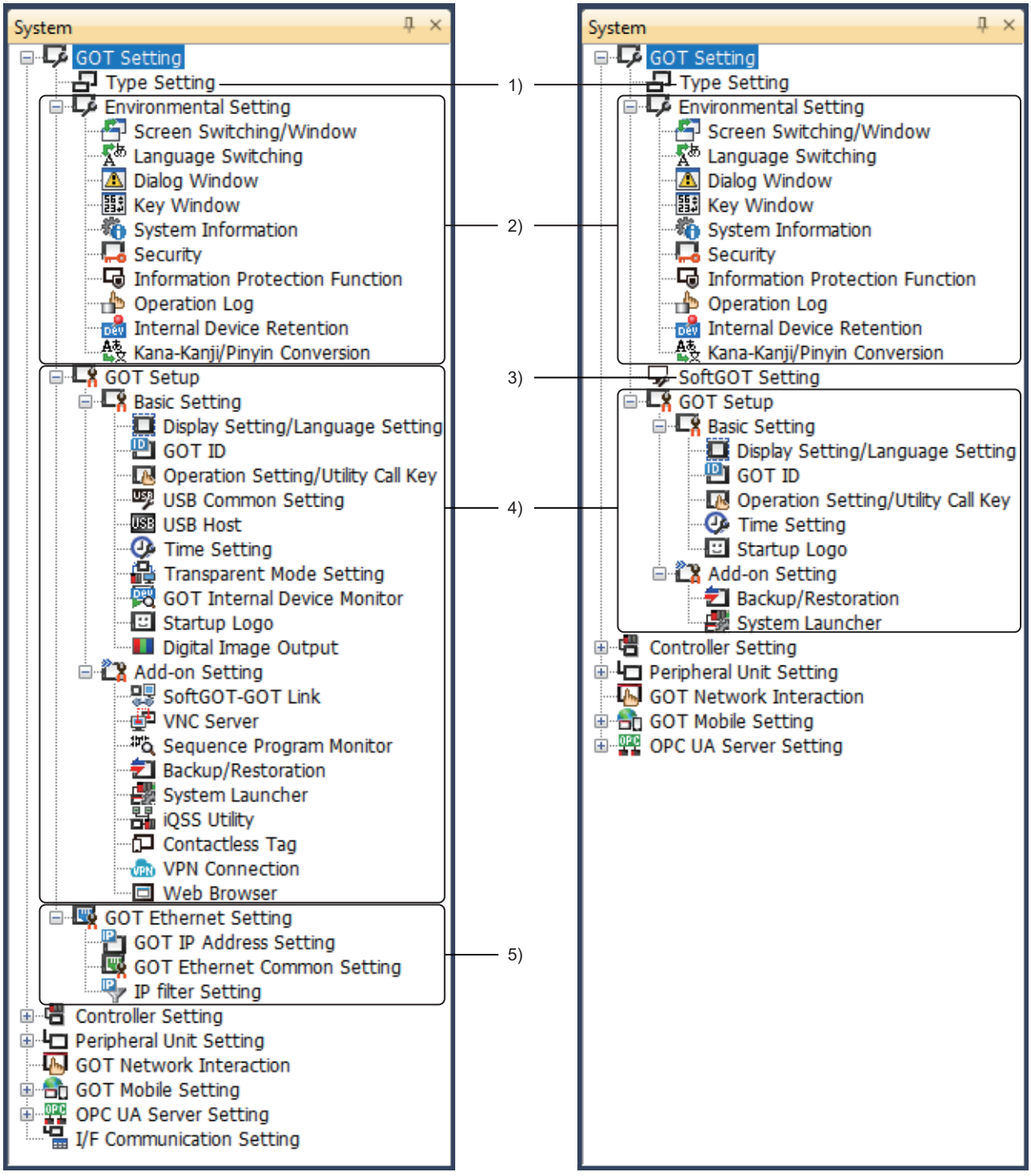


GOT (excluding GT SoftGOT3000)

GT SoftGOT3000

Item			Description
1)	[GOT Setting]		☞ Page 119 [GOT Setting]
2)	[Controller Setting]		☞ Page 121 [Controller Setting]
3)	[Peripheral Unit Setting]	[PC (Data Transfer)]	Set the interface for connecting GT Designer3 (personal computer) with the GOT.
		[Bar Code]	Configure the settings for using a barcode reader on the GOT.
		[RFID]	Configure the settings for using a RFID controller on the GOT.
		[PC Remote Operation]	Configure the settings for operating the personal computer from the GOT.
		[VNC Server]	Configure the settings for viewing the GOT display contents from the personal computer.
		[Digital Image Input/ Recording]	Configure the settings for displaying or recording images from a web camera or other devices on the GOT.
		[Web Browser]	Configure the optional settings for the web browser function.
		[External I/O / Operation Panel]	Configure the settings for using an external I/O device or operation panel with the GOT.
4)	[GOT Network Interaction]		Configure the settings for controlling pieces of equipment on the same network to prevent simultaneous operations.
5)	[GOT Mobile Setting]		Configure the settings for using the GOT as the server in the GOT Mobile function.
6)	[OPC UA Server Setting]	[OPC UA Server Setting]	Configure the settings for using the GOT as an OPC UA server.
		[OPC UA Tag Setting]	Create an OPC UA tag.
7)	[I/F Communication Setting]		Lists the interface settings of the GOT.

[GOT Setting]



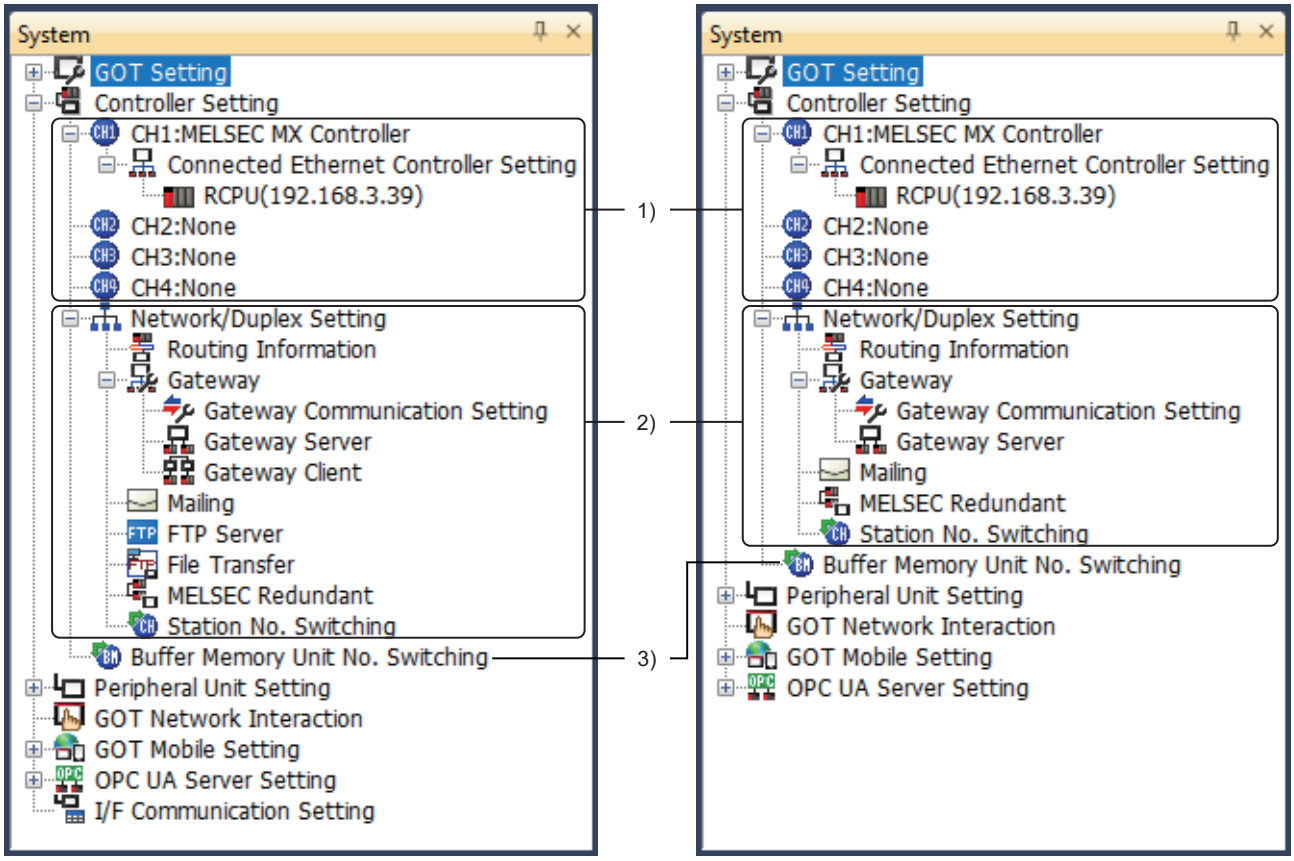
GOT (excluding GT SoftGOT3000)

GT SoftGOT3000

Item		Description
1)	[Type Setting]	Change the GOT model setting of the project.

Item				Description
2)	[Environmental Setting]	[Screen Switching/Windows]		Configure the screen switching settings.
		[Language Switching]		Configure the language switching settings.
		[Dialog Window]		Configure the system message dialog window settings.
		[Key Window]		Configure the project-wide key window settings.
		[System Information]		Set devices that handle the system information.
		[Security]		Configure the security settings for the GOT operations.
		[Information Protection Function]		Configure the settings for file protection and certificates in the GOT.
		[Operation Log]		Configure the settings for collecting operation history events of the GOT.
		[Internal Device Retention]		Configure the settings for retaining the GOT internal device values.
		[Kana-Kanji/Pinyin Conversion]		Configure the settings for Kana-Kanji or Pinyin conversion.
3)	[SoftGOT Setting]			Configure the GT SoftGOT3000 settings.
4)	[GOT Setup]	[Basic Setting]	[Display Setting/Language Setting]	Configure the GOT display settings.
			[GOT ID]	Set unique information to the GOT.
			[Operation Setting/Utility Call Key]	Set a buzzer sound and the utility call key for the GOT.
			[USB Common Setting]	Configure the GOT USB interface settings.
			[USB Host]	Configure the settings for using a mouse and keyboard on the GOT.
			[Time Setting]	Set the GOT time setting method.
			[Transparent Mode Setting]	Set the target channel for the FA transparent function.
			[GOT Internal Device Monitor]	Configure the GOT internal device monitor settings for the GOT diagnostics.
			[Startup Logo]	Set the initial screen displayed at the GOT startup.
			[Digital Image Output]	Set the target (screen image) to be output from the GOT to an external display.
		[Add-on Setting]	[SoftGOT-GOT Link]	Configure the SoftGOT-GOT link function settings.
			[VNC Server]	Configure the VNC server function settings.
			[Sequence Program Monitor]	Configure the sequence program monitor settings.
			[Backup/Restoration]	Configure the backup/restoration function settings.
			[System Launcher]	Configure the system launcher settings.
			[iQSS Utility]	Configure the iQSS utility settings.
			[Contactless Tag]	Configure the contactless tag settings.
			[VPN Connection]	Configure the VPN connection settings.
			[Web Browser]	Configure the web browser settings.
5)	[GOT Ethernet Setting]	[GOT IP Address Setting]		Set the IP address of the GOT.
		[GOT Ethernet Common Setting]		Configure the GOT Ethernet setting.
		[IP filter Setting]		Configure the IP filter setting.

[Controller Setting]



GOT (excluding GT SoftGOT3000)

GT SoftGOT3000

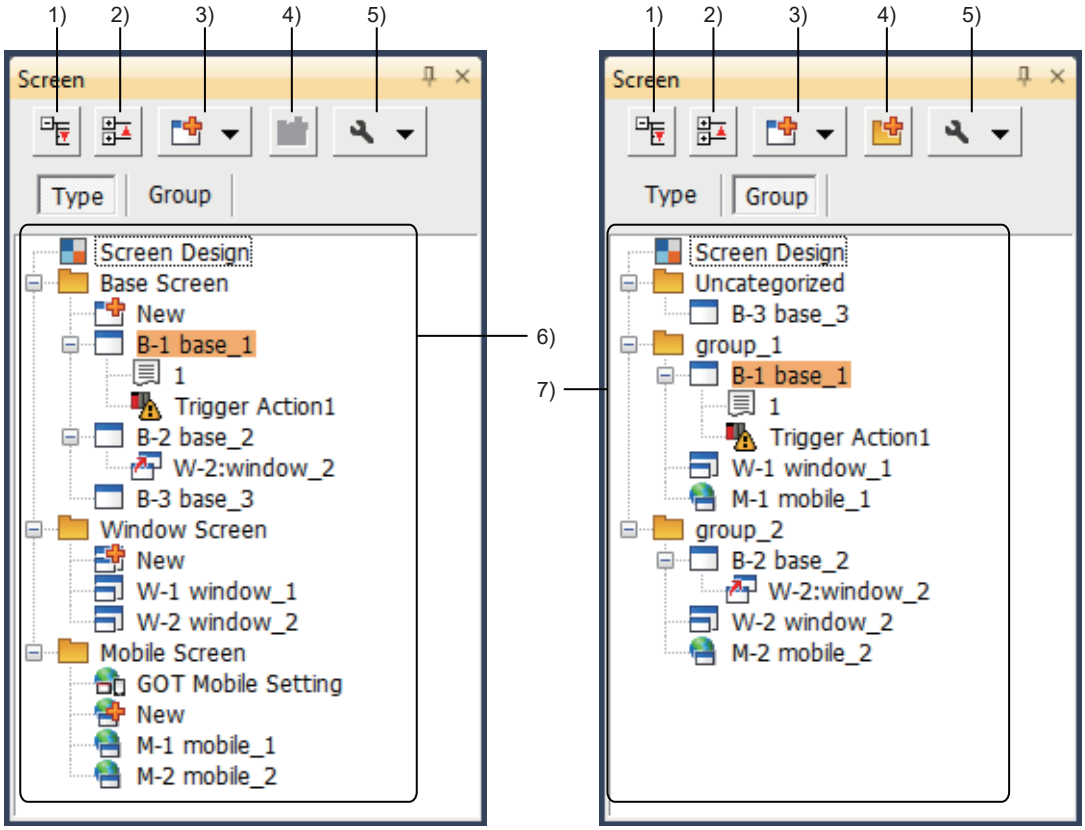
Item				Description
1)	Channel settings			Configure the settings for communicating with controllers.
2)	[Network/Duplex Setting]	[Routing Information]		Configure the settings for monitoring other networks.
		[Gateway]	[Gateway Communication Setting]	Configure the communication settings for the server/client function.
			[Gateway Server]	Configure the server function settings.
			[Gateway Client]	Configure the client function settings.
		[Mail Send]		Configure the mail send function settings.
		[FTP Server]		Configure the FTP server function settings.
		[File Transfer]		Configure the file transfer function settings (FTP transfer or GOT internal transfer).
		[MELSEC Redundant]		Configure the settings for monitoring the MELSEC redundant system.
		[Station No. Switching]		Configure the settings for switching the station number of the monitoring target.
3)	[Buffer Memory Unit No. Switching]			Configure the settings for switching the buffer memory unit No. of the monitoring target.

5.3.6 [Screen] window

The [Screen] window lists the created base screens, window screens, and mobile screens.

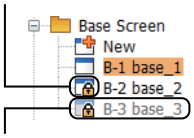
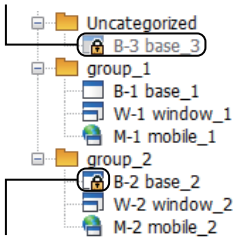
Double-click an item to display the setting dialog.

The menus unavailable for the GOT type are not displayed.



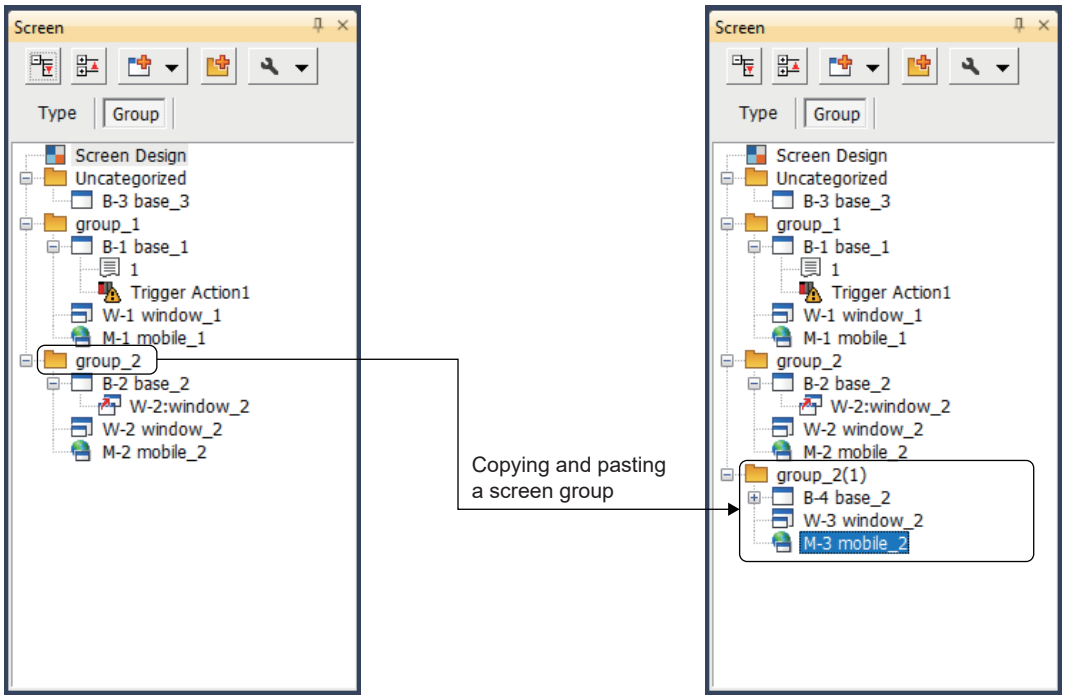
[Type] tab [Group] tab

Item			Description
1)	[Unfold All] button		Expands the tree.
2)	[Fold All] button		Collapses the tree.
3)	[New Screen] button		Creates a base screen, window screen, or mobile screen.
4)	[New Screen Group] button		Creates a screen group in the [Group] tab. Up to 10000 screen groups can be created. (The default screen group [Uncategorized] is not counted as a screen group.) However, if there are 256 empty screen groups, no more screen group can be created. Up to 100 characters can be set for a screen group name. The characters are case-sensitive. The following characters cannot be used. • , / • Control characters (Unicode: U+0000 to U+001F (C0 control code), U+007F (delete character), U+0080 to U+009F (C1 control code))
5)	[Display Option] button	[Set Overlay Screen]	Displays or hides the hierarchy of set overlay screens in the tree.
		[Screen Script]	Displays or hides the screen script settings in the tree.
		[Screen Trigger Action]	Displays or hides the screen trigger action settings in the tree.

Item		Description
6)	[Base Screen] [Window Screen] [Mobile Screen]	Lists the created base screens, window screens, and mobile screens. If there items are enabled using the [Display Option] button, the set overlay screen objects, scripts, and trigger actions set for each screen are also displayed in the tree. Double-click [New] to create a new screen. Copying and pasting are available from the right-click context menu. For details, refer to the following. ☞ Page 124 Copying and pasting a screen or screen group If screen display and editing are prohibited by project security, the list is displayed as shown below. Edit-disabled screen  Display-disabled screen
7)	Screen group	Lists the created base screens, window screens, and mobile screens by screen group. For details on a screen group, refer to the following. ☞ Page 125 Operating a screen group You can select a screen or screen group, and copy and paste it from the right-click context menu. For details, refer to the following. ☞ Page 124 Copying and pasting a screen or screen group If screen display and editing are prohibited by project security, the list is displayed as shown below. Display-disabled screen  Edit-disabled screen

Copying and pasting a screen or screen group

A screen or screen group can be duplicated by copying and pasting from the right-click context menu in the [Screen] window.
Empty screen groups cannot be copied.



The specifications of pasting differ depending on the copy source and destination.

Copy source screen or screen group	Copy destination	Specifications of pasting
One screen	In the tree on the [Type] tab	Pasting can be performed in the tree of the same screen type. When pasting is performed, the screen properties are displayed. Set [Screen No.] of the pasted screen.
	In the tree on the [Group] tab	Pasting can be performed in any group. When pasting is performed, the screen properties are not displayed. The screen number is set to the largest number used + 1.
Multiple screens of the same screen type	In the tree on the [Type] tab	Pasting can be performed in the tree of the same screen type. When pasting is performed, the screen properties are displayed. Set [Screen No.] of the pasted screen.
	In the tree on the [Group] tab	Pasting can be performed in any group. When pasting is performed, the screen properties are not displayed. The first screen number is set to the largest number used + 1, and the subsequent screen numbers are set with the same order and interval as those of the copy source screen numbers.
Multiple screens of different screen types	In the tree on the [Type] tab	Pasting cannot be performed.
	In the tree on the [Group] tab	Pasting can be performed in any group. When pasting is performed, the screen properties are not displayed. The first screen number is set to the largest number used + 1, and the subsequent screen numbers are set with the same order and interval as those of the copy source screen numbers.
Screen group	In the tree on the [Type] tab	Pasting cannot be performed.
	In the tree on the [Group] tab	Pasting can be performed as a new screen group. The screen group name is the title of the copy source screen group with a sequential number appended to the end of the title. The first screen number is set to the largest number used + 1, and the subsequent screen numbers are set with the same order and interval as those of the copy source screen numbers.

Operating a screen group

Screens can be grouped by purpose.

Creating a screen group of the screens and settings to be utilized enables utilization easy when you create another project.

The following shows grouping methods.

One screen can belong to one group.

■Moving a screen among screen groups

1. Select an intended screen and perform one of the following operations to change the screen group to which the selected screen belongs.

Multiple screens can be selected and moved together.

- Dragging a screen to the move destination screen group
- Selecting [Move Screen Group] from the right-click menu, then selecting the move destination screen group in the [Move Screen Group] dialog, and clicking the [OK] button

■Deleting a screen group

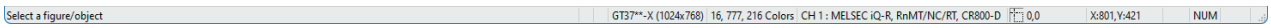
When a created screen group is deleted, the screen group and the screens within are deleted.

Multiple screen groups can be selected and deleted together.

The screen group registered by default ([Uncategorized]) cannot be deleted.

1. Select an intended screen group and click the [Delete] button from the right-click context menu.
2. Click [Yes] in the confirmation dialog to delete the selected screen group and the screens within.

5.3.7 Status bar



Displays the following contents according to the position of the mouse cursor, selected figure, or object.

- Description of the item under the mouse cursor
- GOT type, color settings, and controller settings in the current project
- Coordinates of the selected figure or object
- Auto save function enabled state

To display or hide the status bar, select [Display] → [Status bar] from the menu.

When a global label is used and a change in the label is detected, an icon appears to notify the change.

☞ Page 907 Updating the imported global labels

5.4 Checking and editing settings of screens and objects

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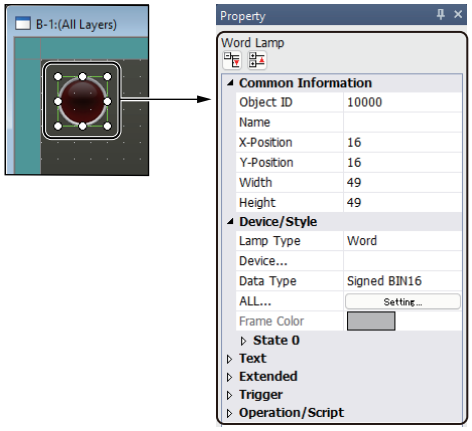
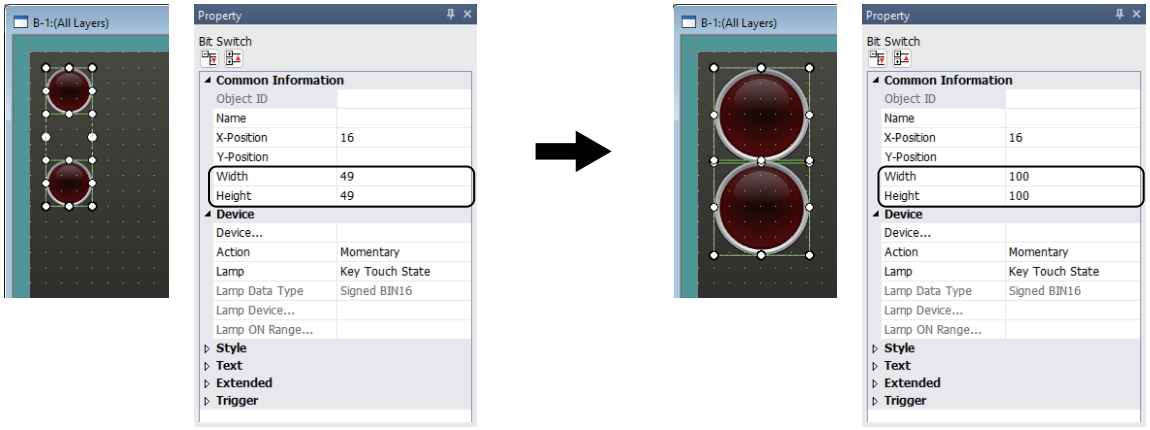
The attributes and set values of a selected screen, figure, or object are listed.
Settings can be checked or changed without opening the setting dialog.

Ex.
Selecting a word lamp



Set values can be changed collectively by selecting multiple figures or objects on the same screen.

Ex.
Collectively changing the width and height of bit switches



☞ Page 127 Specifications of the property sheet
☞ Page 128 How to use the property sheet
☞ Page 129 [Property] window

5.4.1 Specifications of the property sheet

Display targets in the [Property] window

The following shows the display targets whose attributes can be listed in the [Property] window.

- Base screen
- Window screen
- Mobile screen
- Figure
- Object
- Template

Display when multiple figures and objects are selected

When multiple figures and objects on the same screen are selected, the attribute list is displayed as follows.

■If a figure is included in the selection

The attribute list is displayed on the basis of the attributes of the figure in the backmost layer.

■If no figure is included in the selection

The attribute list is displayed on the basis of the attributes of the object of the smallest object ID number.

Display when a grouped figure or object is selected

When a grouped figure or object is selected, the attribute list is displayed as follows.

■When a group is selected

The properties of the group are displayed.

■When one of the figures and objects in a group is selected

The properties of the selected figure or object are displayed.

■When multiple figures and objects in a group are selected

The display is the same as when multiple ungrouped figures and objects are selected.

For details, refer to the following.

☞ Page 127 Display when multiple figures and objects are selected

Batch change of attributes

You can select multiple figures and objects on the same screen and perform a batch change of the attributes.

The batch change is applicable to the attributes that are common to the selected figures or objects.

If the set values of the attributes common to the selected figures and objects differ, the fields of the set values are displayed blank.

The attributes that cannot be changed are displayed with in gray.

A batch change result is reflected in all the selected figures and objects.

To avoid an unintentional change, select only the targets that need the change.

Width and height of a figure or object

The following shows the setting ranges of the width and height of a figure or object.

Item	Setting range
[Width]	[1] to [2000]
[Height]	[1] to [1600]

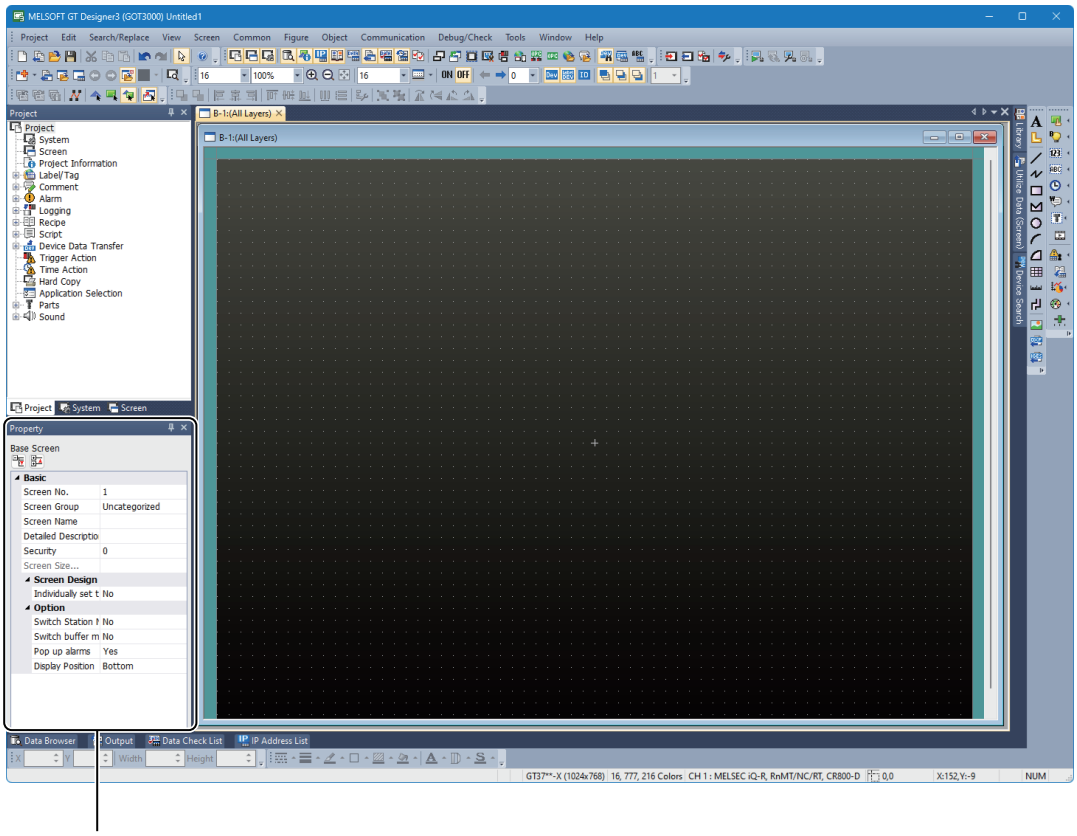
In the [Property] window, the width and height of a grouping of figures or objects are not user-changeable.

5.4.2 How to use the property sheet

1. Click [View] → [Docking Window] → [Propertysheet] from the menu to display the [Property] window.

The [Property] window is docked with GT Designer3 by default.

☞ Page 129 [Property] window



2. Select the target screen, figure, or object to display the attributes of the target in the [Property] window.

3. To change an attribute, change the set value in the attribute list of the [Property] window.

The method of setting each attribute is the same as that applied to each setting dialog.

5.4.3 [Property] window

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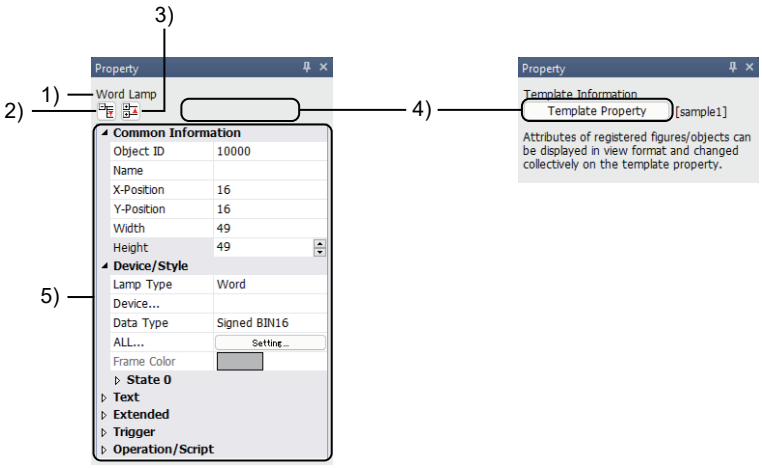

Item		Description
1)	Display target	Displays the target that gets its attributes displayed in the [Property] window.
2)	[Unfold All] button	Expands all attribute items.
3)	[Fold All] button	Collapses all attribute items.
4)	[Template Property] button	Appears when a template information box is selected. Switches the [Property] window to the one for template attributes. ☞ Page 1118 [Property] window (when the template property is displayed)
5)	Attribute list	Lists the attributes the target has had. The contents displayed depend on the selected item. • For a base screen, window screen, or mobile screen The same contents as those in the [Basic] tab in the screen properties are displayed. • Figures and objects The coordinates (X, Y), size (width, height), and the same contents as those in each setting dialog are displayed. • Templates The template attributes are displayed. ☞ Page 1118 [Property] window (when the template property is displayed)

PART 3

5.5 Searching for and editing settings of projects

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☞ Page 130 Searching for a device (Device search)
☞ Page 136 Listing devices (Device list)
☞ Page 143 Listing strings (Text list)
☞ Page 147 Changing the set values collectively (Batch Edit)
☞ Page 167 Searching for and editing a specific setting (Data Browser)
☞ Page 183 Checking the IP addresses in the list (IP address list)

5.5.1 Searching for a device (Device search)

Search the current project for devices, labels, or tags.

You can perform a keyword search, identify which functions use the found devices, and change the related settings.

☞ Page 131 How to use the device search
☞ Page 133 [Device Search] window

How to use the device search

☞ Page 131 Searching the project for matching devices
☞ Page 132 Changing or deleting the settings related to a found device
☞ Page 132 Exporting the search result list data

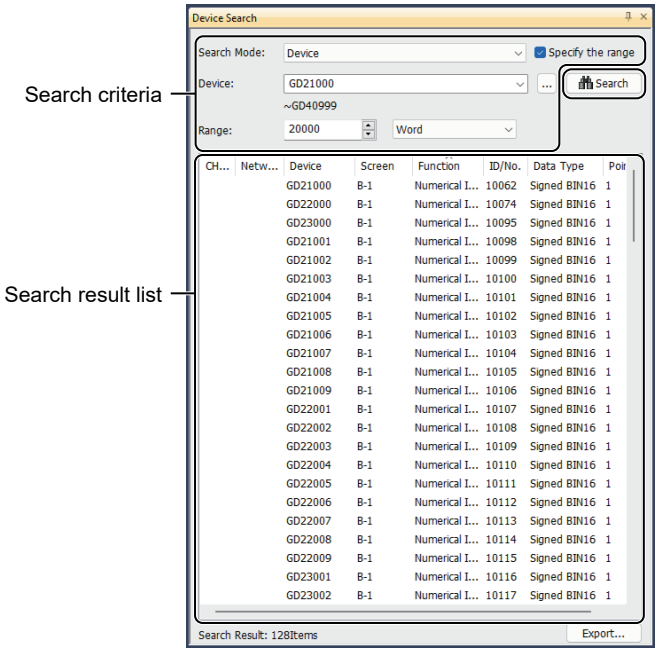
■Searching the project for matching devices

1. Perform one of the following operations to display the [Device Search] window.

- Pressing Ctrl + F keys
- Clicking [Search/Replace] → [Device Search] from the menu
- Clicking [View] → [Docking Window] → [Device Search] from the menu
- Clicking the [Device Search] button on the toolbar
- Selecting [Device Search] from the right-click context menu

☞ Page 133 [Device Search] window

2. Set the search criteria and click the [Search] button to display the found devices, labels, or tags in the search result list. When [Search Mode] is set to [Keyword (Label/Tag)], [Keyword (Label)], or [Keyword (Device)], if [Keyword] is left blank, clicking the [Search] button lists all the devices, labels, or tags used in the project.



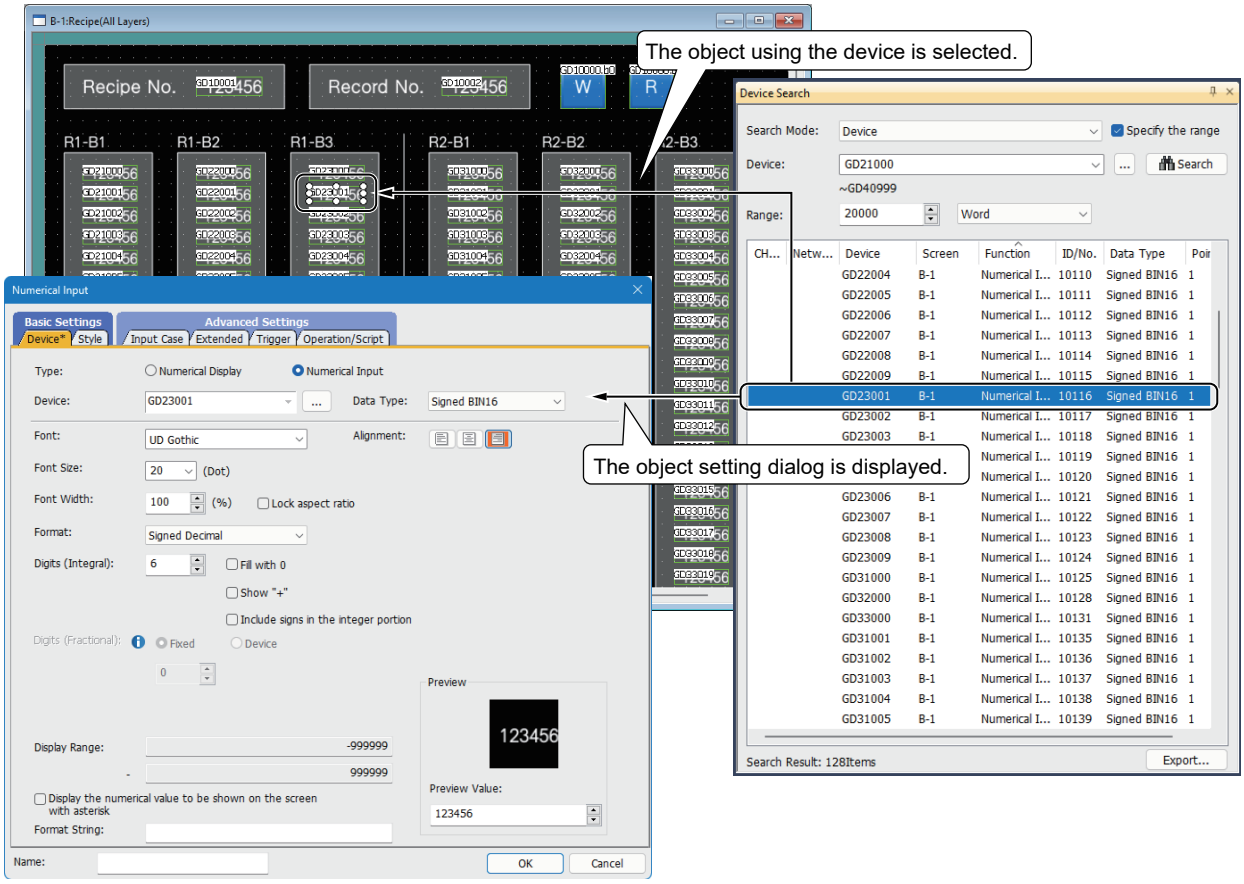
■Changing or deleting the settings related to a found device

1. Search for devices in the [Device Search] window.

☞ Page 131 Searching the project for matching devices

2. Double-click a found device in the search result list to display the setting dialog for the figure, object, or common setting where the device is specified.

Change or delete settings as necessary.



3. Click the [Search] button again to apply setting changes to the search result list.

■Exporting the search result list data

1. Search for devices in the [Device Search] window.

☞ Page 131 Searching the project for matching devices

2. Click the [Export] button to display the [Save As] dialog.
3. Set [File name] and [Save as type] and click the [Save] button to export the search result list.

[Device Search] window

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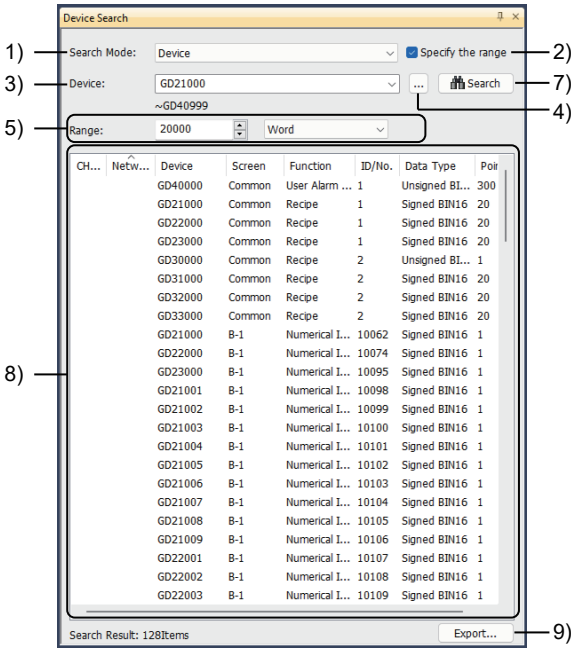
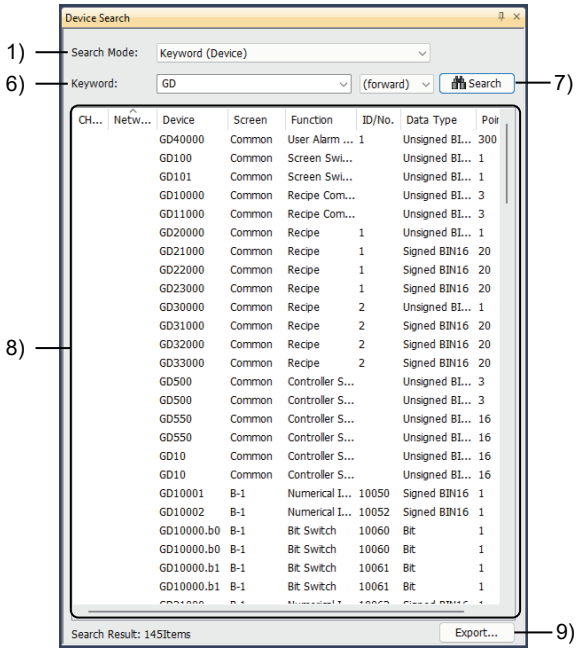
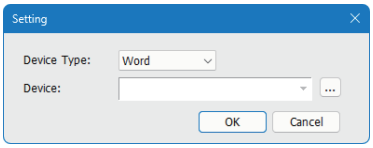
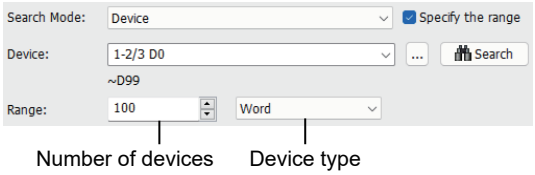


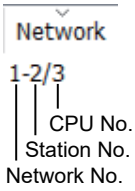
When [Search Mode] is set to [Device]



When [Search Mode] is set to any other than [Device]

Item		Description
1)	[Search Mode]	Select a search mode. The following shows selectable items. • [Device] Searches for the device that matches the specified device, channel number, and network setting. If one of consecutive devices is specified, the start device of the consecutive devices is searched for. Among the devices of non-Mitsubishi Electric equipment, some bit devices and word devices are used for the same purpose, but have different device names. When [Search Mode] is set to [Device], the search result list will display the specified device and other devices that are used for the same purpose as the specified device. To find the specified device only, select [Keyword (Device)] for [Search Mode]. • [Keyword (Label/Tag)] Searches for labels and tags containing the specified keyword. • [Keyword (Label)] Searches for labels containing the specified keyword. • [Keyword (Device)] Searches for devices containing the specified keyword.
2)	[Specify the range]	This item appears when [Search Mode] is set to [Device]. Enables the setting to specify the scope of a search.
3)	[Device]	This item appears when [Search Mode] is set to [Device]. Specify a device, channel number, and network setting. If you specify no channel number and network setting, channel No. 1 and 0-FF (host station) are assumed. The search result list will display the device matching the specified conditions or the start device of consecutive devices containing the matching device. The device, channel number, and network setting are settable in the [Setting] dialog alternatively.

Item		Description
4)	[...] button	This item appears when [Search Mode] is set to [Device]. Displays the [Setting] dialog. Specify a device, channel number, and network setting. If you specify no channel number and network setting, channel No. 1 and 0-FF (host station) are assumed.  • [Device Type] Select the data type of a device. • [Device] Specify a device, channel number, and network setting. ☞ Page 834 How to set devices, labels, and tags
5)	[Range]	This item appears when [Specify the range] is selected. Specify the number of devices and the device type.  The consecutive devices starting from the specified device are searched for. The maximum number of devices varies depending on the device name.
6)	[Keyword]	This item appears when [Search Mode] is set to [Keyword (Label/Tag)], [Keyword (Label)], or [Keyword (Device)]. Specify a search keyword. The labels, tags, or devices containing the specified keyword will be listed in the search result list. To specify multiple keywords, enter a one-byte space between them.
7)	[Search] button	Performs a search. The hits will be listed in the search result list. If two or more objects and figures are selected on the screen editor, the devices, labels, or tags specified for the objects and figures will be searched. In this case, the title bar of the window displays [selected range].

Item			Description
8)	Search result list	—	Lists the search results. Right-click the column header of the list to select columns to be displayed.
		[Label/Tag], [Label]	Labels or tags that contain the string specified with [Keyword]
		[Device]	• When [Search Mode] is set to [Device] Device matching the specified device, channel number and network setting, or the start device of consecutive devices containing the matching device Devices used on the display-prohibited screens and scripts in a project protected with project security are not displayed. The devices assigned to script symbols are not displayed. • When [Search Mode] is set to [Keyword (Label/Tag)] or [Keyword (Label)] Devices assigned to the found labels or tags • When [Search Mode] is set to [Keyword (Device)] Devices that contain the string specified with [Keyword]
		[CH No.]	Channel numbers specified for the devices listed
		[Network]	Network numbers, station numbers, and CPU numbers that are specified for the devices listed Example) When network No. 1, station No. 2, and CPU No. 3 are set 
		[Screen]	Locations where the devices listed are set "n" represents a screen number. • [Common]: Common setting • [B-n]: Base screen • [W-n]: Window screen • [M-n]: Mobile screen
		[Function]	Functions that use the devices listed
		[ID/No.]	Object IDs of the objects where the devices listed are set, or setting numbers of the functions where the devices listed are set
		[Data Type]	Data type of the devices
		[Points]	Number of consecutive devices
9)	[Export] button		Saves the search result list as a CSV or Unicode text file.

■Mouse and keyboard operations

The following shows the mouse and keyboard operations for the search result list in the [Device Search] window.

Operation	Action
↑ ↓	Moves the cursor.
Enter	Moves the cursor down one row.
Home Ctrl + ↑	Moves the cursor to the top row.
Enter Ctrl + ↓	Moves the cursor to the bottom row.
PgUp	Moves the cursor from the row with the cursor to the corresponding row up one page.
PgDown	Moves the cursor from the row with the cursor to the corresponding row down one page.
Click	Select the figure or object where the selected device is set, on the screen editor.
Double click	Open the setting dialog for the figure, object, or common setting where the selected device is set.

5.5.2 Listing devices (Device list)

The devices and labels used in the project are displayed in a list.

You can narrow your search, jump to the location where a selected device is used, and export the device list.

☞ Page 136 How to use the device list
☞ Page 139 [Device List] window
☞ Page 142 Details of the exported file

How to use the device list

☞ Page 136 Listing the devices used in the project
☞ Page 137 Searching for a device or jumping to the location where a selected device is used
☞ Page 138 Exporting the device list

■Listing the devices used in the project

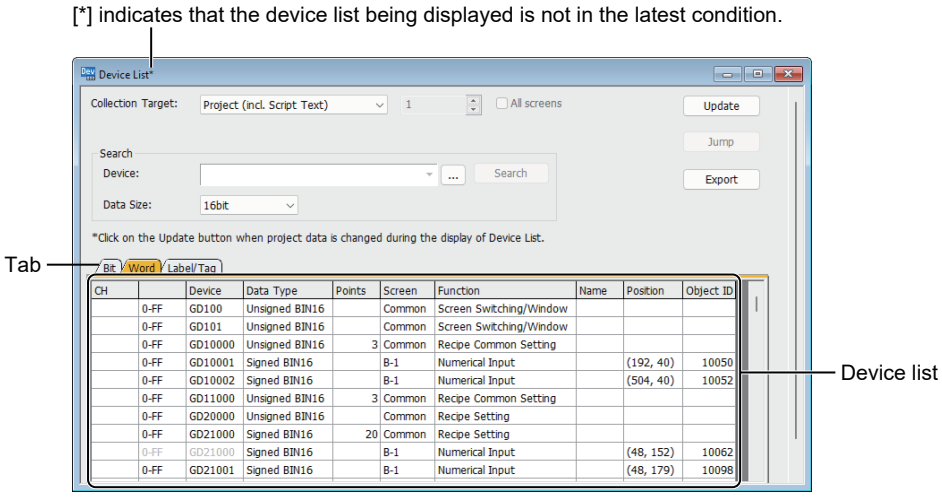
1. Select [Search/Replace] → [Device List] from the menu, then select either of the following items to display the [Device List] window.

☞ Page 139 [Device List] window

- [Screen]: Displays the [Device List] window and sets the currently selected screen editor as the target for collecting devices.
- [Project]: Displays the [Device List] window and sets the whole project (including script texts) as the target for collecting devices.
- [Script Text]: Displays the [Device List] window and sets all script text as the target for collecting devices.

2. After selecting any item for [Collection Target], click the [Update] button to update the device list.

To switch the display of bit devices, word devices, labels, and others, switch the tabs.



CH		Device	Data Type	Points	Screen	Function	Name	Position	Object ID
	0-FF	GD100	Unsigned BIN16		Common	Screen Switching/Window			
	0-FF	GD101	Unsigned BIN16		Common	Screen Switching/Window			
	0-FF	GD10000	Unsigned BIN16	3	Common	Recipe Common Setting			
	0-FF	GD10001	Signed BIN16		B-1	Numerical Input		(192, 40)	10050
	0-FF	GD10002	Signed BIN16		B-1	Numerical Input		(504, 40)	10052
	0-FF	GD11000	Unsigned BIN16	3	Common	Recipe Common Setting			
	0-FF	GD20000	Unsigned BIN16		Common	Recipe Setting			
	0-FF	GD21000	Signed BIN16	20	Common	Recipe Setting			
	0-FF	GD21000	Signed BIN16		B-1	Numerical Input		(48, 152)	10062
	0-FF	GD21001	Signed BIN16		B-1	Numerical Input		(48, 179)	10098

Even though any device setting is changed while the [Device List] window is displayed, the device list is not automatically updated.

If the device list being displayed is not in the latest condition, [*] is displayed in the title bar.

Click the [Update] button to update the list.

Precautions

The gateway device (EG) is not displayed in the [Device List] window.

■Searching for a device or jumping to the location where a selected device is used

1. Display the [Device List] window.

☞ Page 136 Listing the devices used in the project

2. Select a target that includes the device to be searched for [Collection Target] and click the [Update] button.

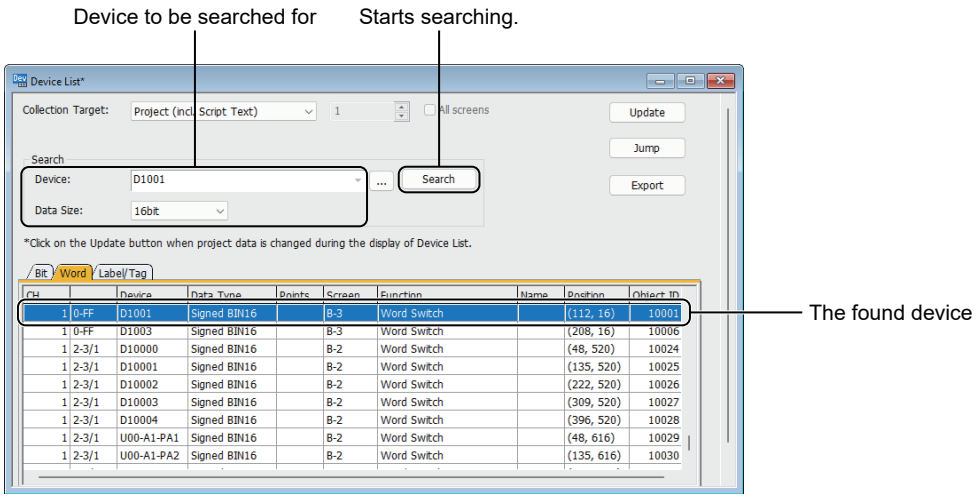
3. Switch between the tabs according to the deice or label to be searched for.

- [Bit] tab: Displays bit devices.
- [Word] tab: Displays word devices.
- [Label/Tag] tab: Displays labels or tags.

4. Set a device or label to be searched for and click the [Search] button.

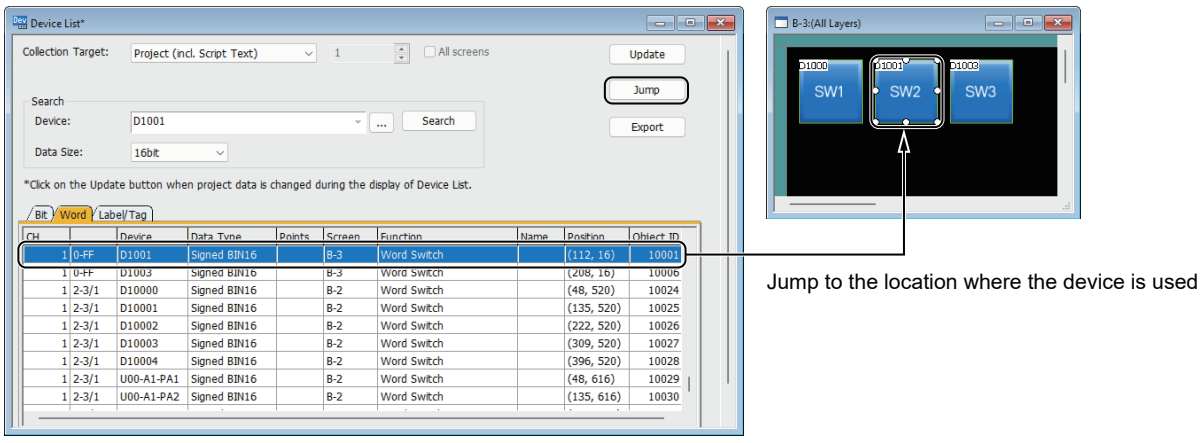
- [Bit] tab: Set [Device].
- [Word] tab: Set [Device] and [Data Size].
- [Label/Tag] tab: Set [Label/Tag Name] or [Label Name].

5. The corresponding device is selected in the device list.



6. If you select a device in the device list and click the [Jump] button, a figure or an object for which the selected device is used is selected on the screen editor.

If any device which has been used for something other than figures and objects is selected, the [Jump] button is disabled.



■Exporting the device list

1. Display the [Device List] window.

☞ Page 136 Listing the devices used in the project

2. Click the [Export] button to display the [Save As] dialog.

3. Set [File name] and [Save as type] and click the [Save] button to export the device list.

☞ Page 142 Details of the exported file

[Device List] window

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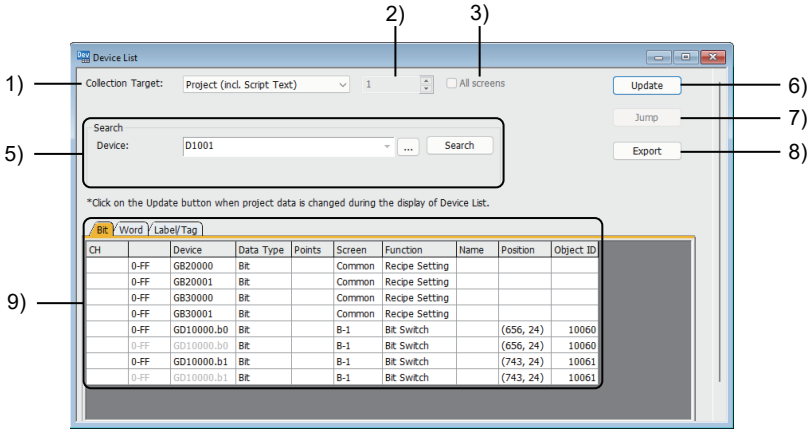
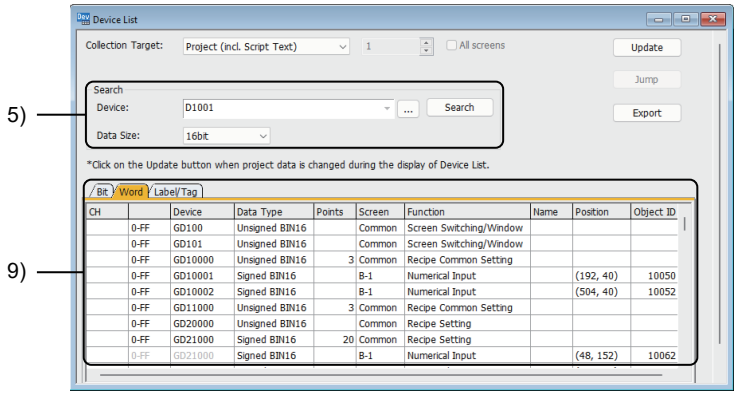
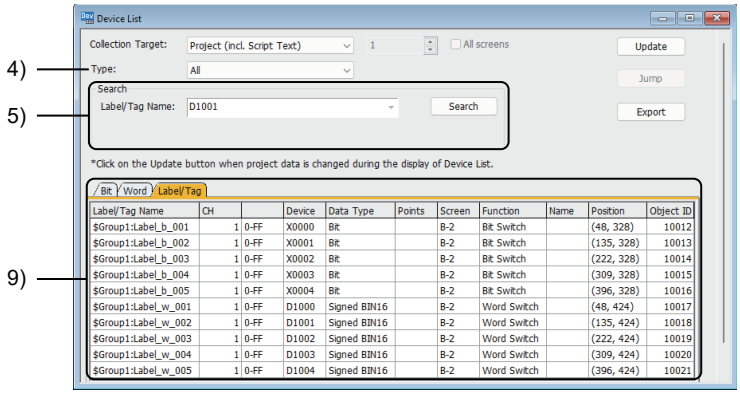


When the [Bit] tab is selected



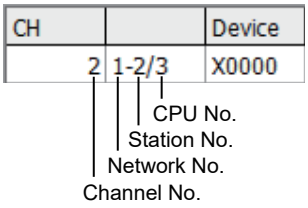
When the [Word] tab is selected



When the [Label/Tag] tab is selected

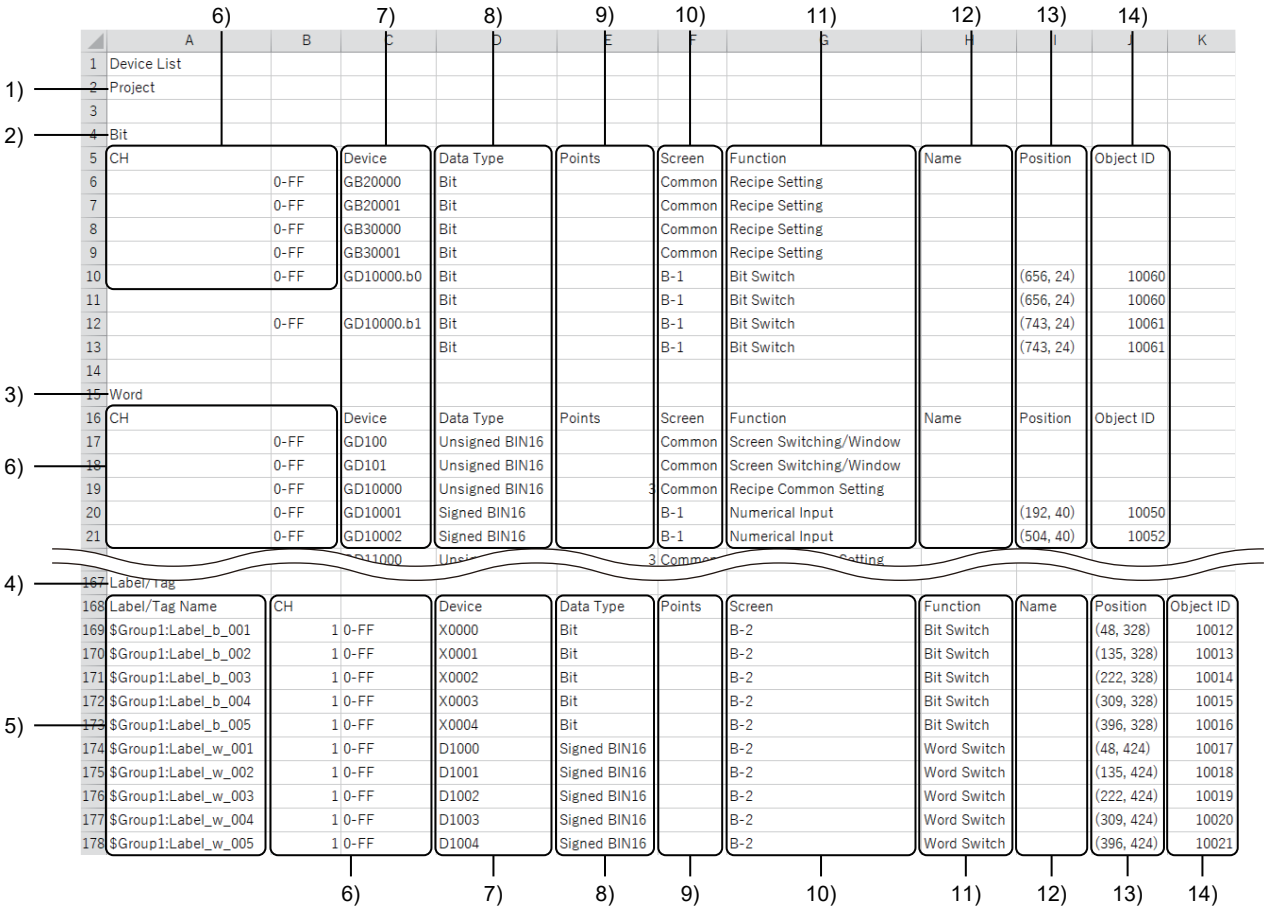
Item		Description
1)	[Collection Target]	Select a target to be displayed in the device list. After changing any device setting, click the [Update] button to update the device list.
2)	Target screen number	When [Base Screen], [Window Screen], or [Mobile Screen] is selected for [Collection Target], set the screen number to be searched for. The range to be selected is [0] to [32767].
3)	[All screens]	When [Base Screen], [Window Screen], or [Mobile Screen] is selected for [Collection Target], all the screens selected for [Collection Target] are targeted for collection. When this item is selected, the target screen number is invalid.
4)	[Type]	Select the type of the labels or tags displayed in the device list.

Item			Description
5)	[Search]	—	Set search conditions.
		[Device]	Set a device to be searched for.
		[Data Bit]	This item is displayed when the [Word] tab is selected. Set a data size of the device to be searched for.
		[Label/Tag Name]	This item is displayed when the [Label/Tag] tab or the [Label] tab is selected. Set the label name or tag name to be searched for.
		[...] button	Displays the device setting dialog when the [Bit] tab or the [Word] tab is selected. When the [Label/Tag] tab or the [Label] tab is selected, the dialog to appear varies with the selection for [Type] as shown below. • When [Label (GT Designer3)] is selected for [Type], the [Select Label (GT Designer3)] dialog appears. ☞ Page 838 [Select Label (GT Designer3)] dialog • When [Global Label] is selected for [Type], the [Select Global Label] dialog appears. ☞ Page 839 [Select Global Label] dialog • When [OMRON NJ/NX Tag] is selected for [Type], the [Select OMRON NJ/NX Tag] dialog appears. ☞ Page 840 [Select OMRON NJ/NX Tag] dialog • When [AB Native Tag] is selected for [Type], the [Select AB Native Tag] dialog appears. ☞ Page 841 [Select AB Native Tag] dialog • When [OPC UA Tag] is selected for [Type], the [Select OPC UA Tag] dialog appears. ☞ Page 842 [Select OPC UA Tag] dialog
		[Search] button	Starts searching.
6)	[Update] button		Updates the device list. If the device list being displayed is not in the latest condition, [*] is displayed in the title bar of the [Device List] window.
7)	[Jump] button		Displays a figure or object for which the device selected in the device list is used. If any device which is used for something other than figures and objects is selected, the [Jump] button is disabled.
8)	[Export] button		Saves the device list as a CSV file or Unicode text file. Set [File name] and [Save as type] in the displayed dialog and click the [Save] button. ☞ Page 142 Details of the exported file

Item			Description
9)	Device list	—	The list of the devices used in the project. Devices used on the display-prohibited screens and scripts in a project protected with project security are not displayed in the device list. Each tab displays different contents. Switch the following tabs according to the contents to be checked. • [Bit] tab: Displays the list of bit devices. • [Word] tab: Displays the list of word devices. • [Label/Tag] tab: Displays the list of labels or tags.
		[Label/Tag Name]	This item is displayed in the [Label/Tag] tab. Label name or tag name.
		[CH], network No., station number, CPU No.	Channel Nos., network Nos., station numbers, and CPU Nos. Example) Device of channel No. 2, network No. 1, station number 2, and CPU No. 3  If the same device continues, the one in the second row or later is displayed in gray.
		[Device]	Devices If the same device continues, the one in the second row or later is displayed in gray.
		[Data Type]	Data type of the devices
		[Points]	Number of devices which are consecutively set
		[Screen]	Screens for which the devices are used • [Common]: Common setting • [B-n]: Base screen "n" represents a screen number. • [W-n]: Window screen "n" represents a screen number. • [M-n]: Mobile screen "n" represents a screen number.
		[Function]	Function names for which the devices are used
		[Name]	Names of figures and objects
		[Position]	Coordinates where the figures and objects are placed
		[Object ID]	Object IDs of the figures and objects

Details of the exported file

The following shows the details of the exported file of the device list.



Item		Description
1)	Collection target	Setting of the collection target
2)	[Bit]	Details of the [Bit] tab
3)	[Word]	Details of the [Word] tab
4)	[Label/Tag]	Details of the [Label/Tag] tab
5)	[Label/Tag Name]	Label name or tag name.
6)	[CH], network No., station number, CPU No.	Channel Nos., network Nos., station numbers, and CPU Nos. If the same device continues, the one in the second row or later is blank.
7)	[Device]	Devices If the same device continues, the one in the second row or later is displayed in gray.
8)	[Data Type]	Data type of the devices
9)	[Points]	Number of devices which are consecutively set
10)	[Screen]	Screens for which the devices are used • [Common]: Common setting • [B-n]: Base screen "n" represents a screen number. • [W-n]: Window screen "n" represents a screen number. • [M-n]: Mobile screen "n" represents a screen number.
11)	[Function]	Function names for which the devices are used
12)	[Name]	Names of figures and objects
13)	[Position]	Coordinates where the figures and objects are placed
14)	[Object ID]	Object IDs of the figures and objects

5.5.3 Listing strings (Text list)

Lists the strings used in the project.

You can narrow your search, and jump to the location where a selected text is used.

☞ Page 143 How to use the text list

☞ Page 145 [Text List] window

How to use the text list

☞ Page 143 Listing the strings used in the project

☞ Page 144 Searching for a text or jumping to a text

■Listing the strings used in the project

1. Select [Search/Replace] → [Text List] from the menu to display the [Text List] window.

☞ Page 145 [Text List] window

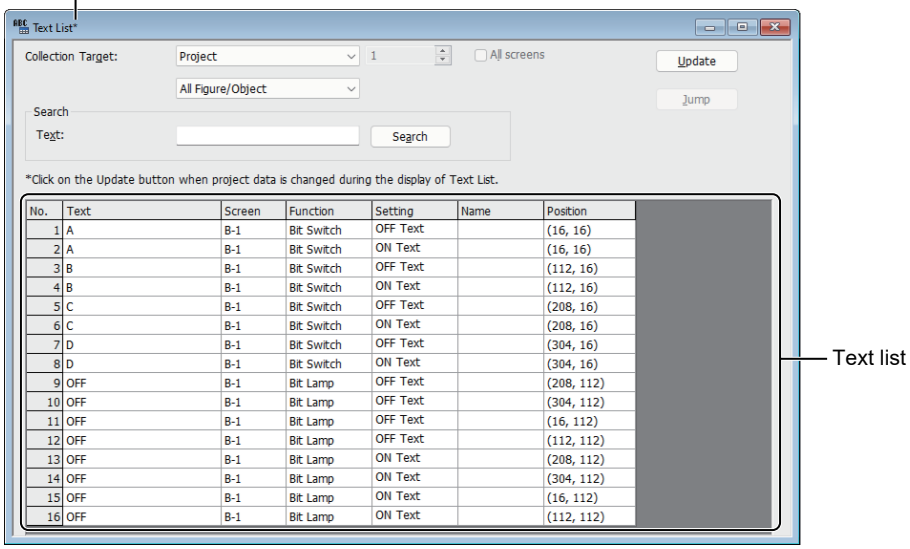
2. After selecting any item for [Collection Target], click the [Update] button to update the text list.

Even though any text setting is changed while the [Text List] window is displayed, the text list is not automatically updated.

If the text list being displayed is not in the latest condition, [*] is displayed in the title bar.

Click the [Update] button to update the list.

[*] indicates that the text list being displayed is not in the latest condition.



No.	Text	Screen	Function	Setting	Name	Position
1	A	B-1	Bit Switch	OFF Text		(16, 16)
2	A	B-1	Bit Switch	ON Text		(16, 16)
3	B	B-1	Bit Switch	OFF Text		(112, 16)
4	B	B-1	Bit Switch	ON Text		(112, 16)
5	C	B-1	Bit Switch	OFF Text		(208, 16)
6	C	B-1	Bit Switch	ON Text		(208, 16)
7	D	B-1	Bit Switch	OFF Text		(304, 16)
8	D	B-1	Bit Switch	ON Text		(304, 16)
9	OFF	B-1	Bit Lamp	OFF Text		(208, 112)
10	OFF	B-1	Bit Lamp	OFF Text		(304, 112)
11	OFF	B-1	Bit Lamp	OFF Text		(16, 112)
12	OFF	B-1	Bit Lamp	OFF Text		(112, 112)
13	OFF	B-1	Bit Lamp	ON Text		(208, 112)
14	OFF	B-1	Bit Lamp	ON Text		(304, 112)
15	OFF	B-1	Bit Lamp	ON Text		(16, 112)
16	OFF	B-1	Bit Lamp	ON Text		(112, 112)

■Searching for a text or jumping to a text

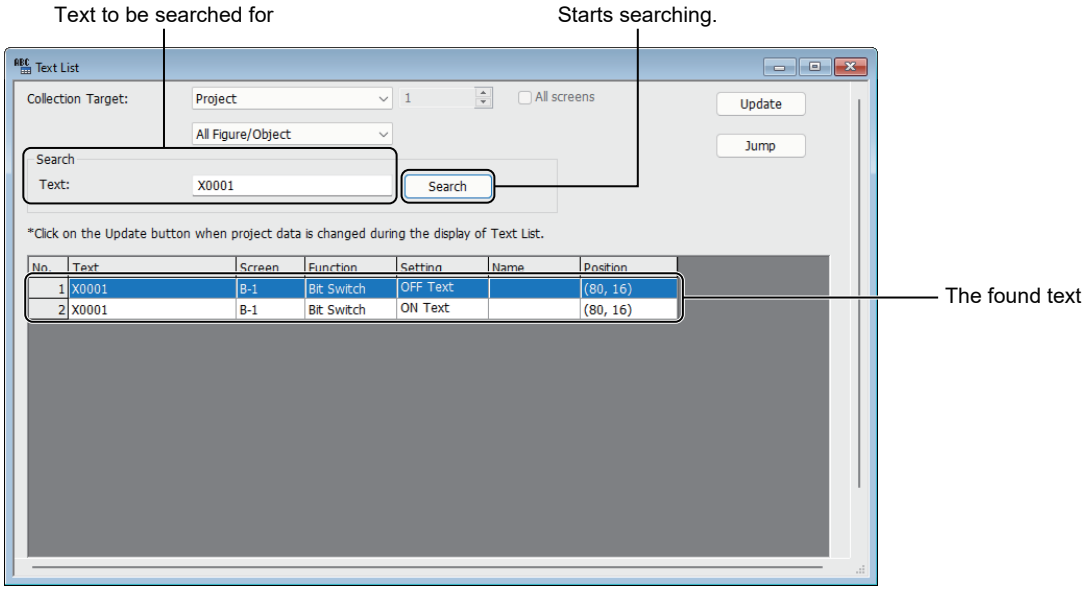
1. Display the [Text List] window.

☞ Page 143 Listing the strings used in the project

2. Select a target that includes the text to be searched for [Collection Target] and click the [Update] button.

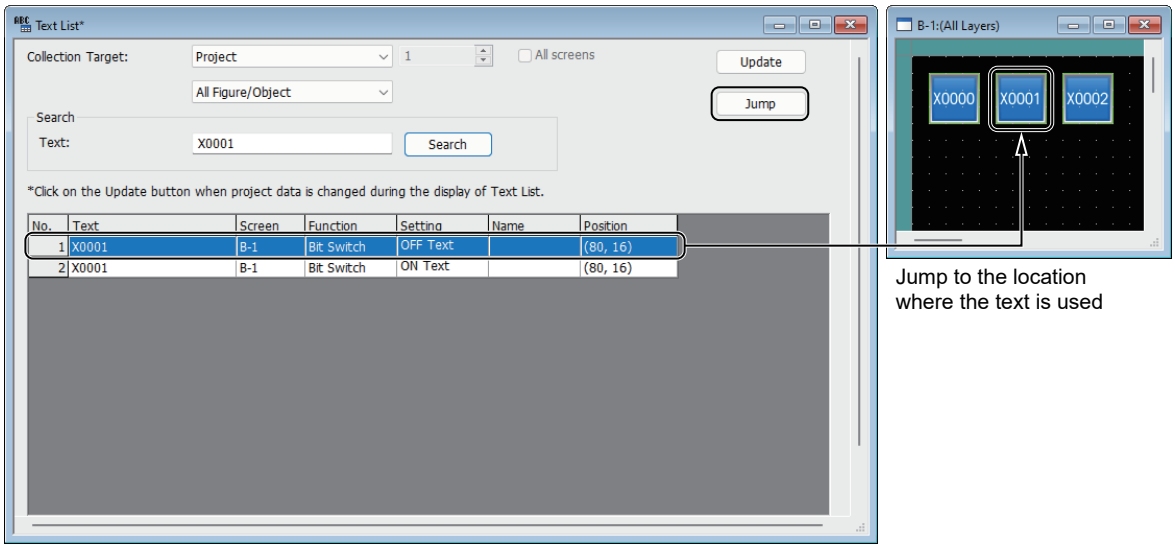
3. Set the text to be searched for in [Text] and click the [Search] button.

The corresponding text is displayed in the text list.



4. If you select a text in the text list and click the [Jump] button, a figure or an object for which the selected text is used is used on the screen editor.

If any text which is used for something other than figures and objects is selected, the [Jump] button is disabled.



[Text List] window

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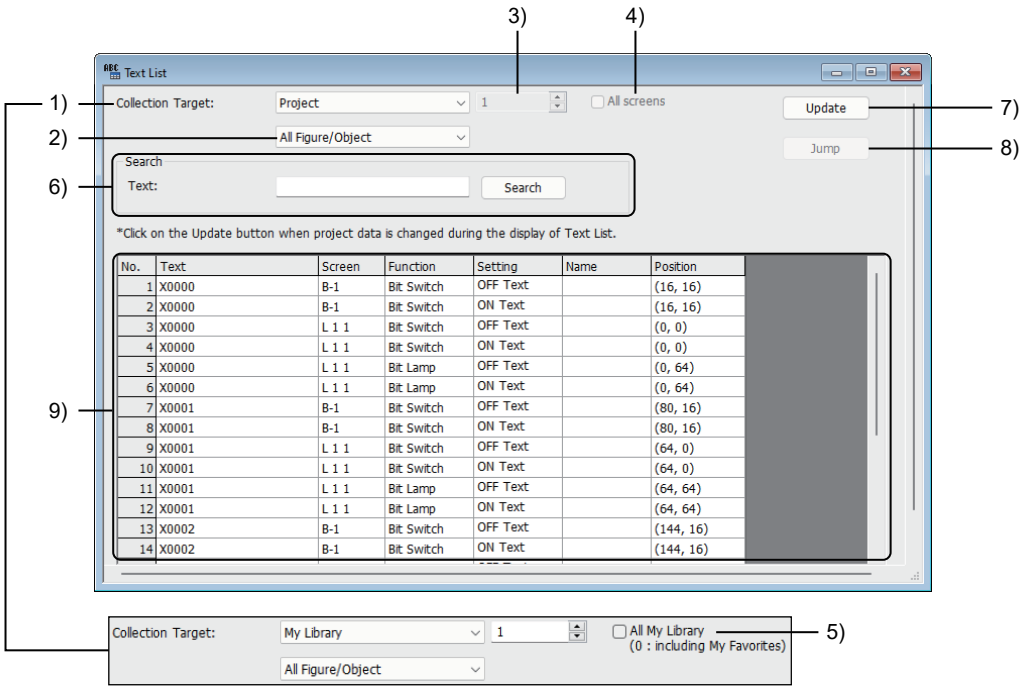


Item			Description
1)	[Collection Target]		Select a target to be displayed in the text list. After changing any text setting, click the [Update] button to update the text list.
2)	Additional condition		Select an additional condition to narrow the collection target.
3)	Target number		Depending on the selection for [Collection Target], the setting item differs. • [Base Screen], [Window Screen], or [Mobile Screen] Set the collection target screen number. The setting range is [0] to [32767]. • [Parts] Set the collection target parts number. The setting range is [1] to [32767]. • [My Library] Set the collection target library folder number. The setting range is [0] to [512].
4)	[All screens]		Depending on the selection for [Collection Target], the setting item differs. When this item is selected, the target number is invalid. • [Base Screen], [Window Screen], or [Mobile Screen] Sets all screens with the screen type selected in [Collection Target] as the collection target. • [Parts] Sets all parts as the collection target.
5)	[All My Library]		Sets all library folders as the collection target.
6)	[Search]	—	Set search conditions.
		[Text]	Set the text to be searched for.
		[Search] button	Starts searching.
7)	[Update] button		Updates the text list. If the text list being displayed is not in the latest condition, [*] is displayed in the title bar of the [Text List] window.
8)	[Jump] button		Displays the location where the text selected in the text list is used.

Item			Description
9)	Text list	—	Lists the text used in the project. Texts used on the display-prohibited screens in a project protected with project security are not displayed in the text list. Dragging each column enables changing the width of column.
		[Text]	Texts.
		[Screen]	The screens for which the texts are used. • [B-n]: Base screen "n" represents a screen number. • [W-n]: Window screen "n" represents a screen number. • [M-n]: Mobile screen "n" represents a screen number. • [P-n]: Part "n" represents a screen number. • [L x n], [L x-y n]: Folder of the my library "x" represents the folder number one level below My Library, "y" represents the folder number two levels below My Library, and "n" represents the data number.
		[Function]	Function names for which the texts are used
		[Setting]	Settings for which the texts are used
		[Name]	Names which are set for the figures and objects
		[Position]	Coordinates where the figures and objects are placed

5.5.4 Changing the set values collectively (Batch Edit)

☞ Page 148 How to use the Batch Edit
☞ Page 155 [Device Batch Edit] dialog
☞ Page 157 [Unit No./Axis No. Batch Edit] dialog
☞ Page 159 [Network Batch Edit] dialog
☞ Page 161 [CH No. Batch Edit] dialog
☞ Page 163 [Color Batch Edit] dialog
☞ Page 165 [Shape Batch Edit] dialog

The settings including the device settings and the figure settings can be changed collectively.

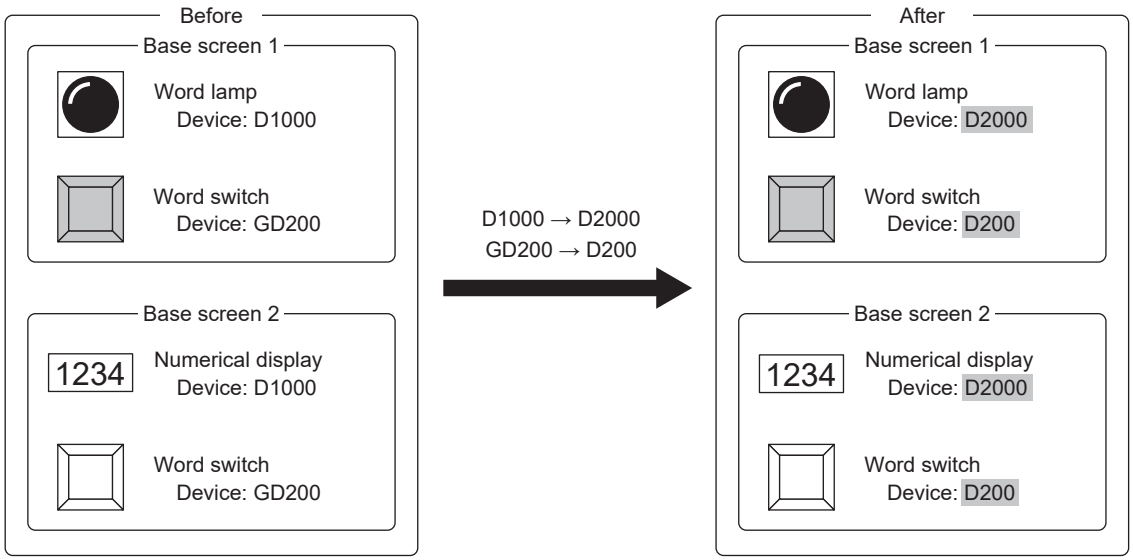
The following shows the settings which can be changed collectively.

- Device, label, OMRON NJ/NX tag, AB native tag, or OPC UA tag
- Unit No. and axis No.
- Network setting (Network No., station number, and CPU No.)
- Channel No.
- Color of a figure or object
- Shape of a touch switch or lamp

The settings of different figures and objects can be changed collectively.

Ex.

Changing devices collectively



How to use the Batch Edit

☞ Page 148 Changing devices collectively
☞ Page 150 Changing unit numbers and axis numbers collectively
☞ Page 151 Changing the network settings collectively
☞ Page 152 Changing channel numbers collectively
☞ Page 153 Changing the colors of figures and objects collectively
☞ Page 154 Changing the shapes of touch switches and lamps collectively

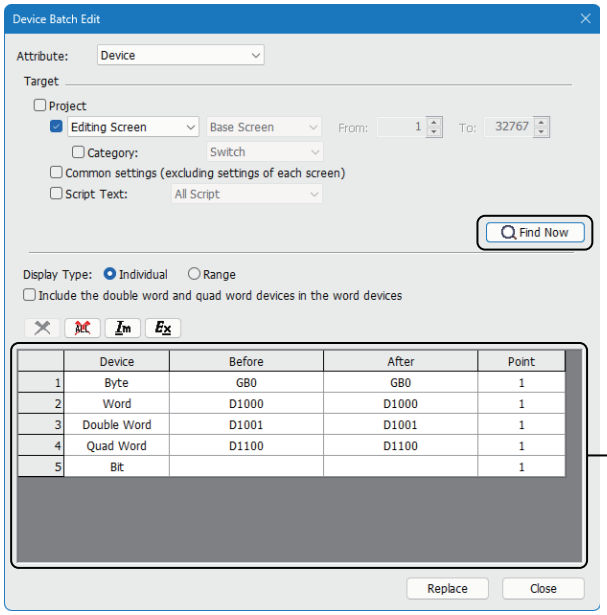
■Changing devices collectively

1. Select [Search/Replace] → [Batch Edit] → [Device] from the menu to display the [Device Batch Edit] dialog.

If you have selected figures and objects on the screen editor before selecting the menu, the [Device Batch Edit] dialog displays the settings of the selected figures and objects in the search result list.

☞ Page 155 [Device Batch Edit] dialog

2. Set [Target] and [Display Type] and click the [Find Now] button to list search results.



3. In the search result list, double-click a cell in the [After] column, and set a new value.

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4. Click the [Replace] button to replace the settings in the [Before] column with the settings in the [After] column.

Precautions

Item	Description
Changing devices into different device types	The devices for which the settable device types are fixed (including bit devices and word devices) cannot be changed into different device types.
Changing consecutive devices	The start device of consecutive devices cannot be changed to a device which is out of the device range.
Changing a device of the object for which the offset function is enabled	The device of the object for which the offset function is enabled cannot be changed to a bit device specified as a word device.
Changing to labels (GT Designer3)	For collectively changing to labels (GT Designer3), the data type consistency check is not performed automatically between the labels (GT Designer3) and the objects or others where the labels (GT Designer3) are used. It is recommended to check the data type consistency by comparing the contents between the device list on GT Designer3 and the labels (GT Designer3) exported with GT Designer3. Note that change to the labels (GT Designer3) unregistered in label groups is not available.
Changing to global labels	For collectively changing to global labels, the data type consistency check is not performed automatically between the global labels and the objects or others where the global labels are used. It is recommended to check the data type consistency by comparing the contents between the device list on GT Designer3 and the global labels exported with GX Works3.
Changing to OMRON NJ/NX tags	For collectively changing to OMRON NJ/NX tags, the data type consistency check is not performed automatically between the OMRON NJ/NX tags and the objects or others where the tags are used. It is recommended to check the data type consistency by comparing the contents between the device list on GT Designer3 and the OMRON NJ/NX tags exported from Sysmac Studio.
Changing to AB native tags	For collectively changing to AB native tags, the data type consistency check is not performed automatically between the AB native tags and the objects or others where the AB native tags are used. It is recommended to check the data type consistency by comparing the contents between the device list on GT Designer3 and the AB native tags exported from RSLogix 5000.
Changing to OPC UA tags	For collectively changing to OPC UA tags, the data type consistency check is not performed automatically between the OPC UA tags and the objects or others where the OPC UA tags are used. It is recommended to check the data type consistency by comparing the device list in GT Designer3 with the tag information in GT OPC UA Client.
Collectively changing double-word devices	Double-word devices are collectively changed in units of two words. When the start device number is an even number, only the devices whose device number is an even number are changed collectively. When the start device number is an odd number, only the devices whose device number is an odd number are changed collectively. Example) For five double-word devices (D0 to D9), D0, D2, D4, D6, and D8 are changed collectively. D1, D3, D5, D7, and D9 are not changed. To collectively change word and double-word devices, select [Include the double word and quad word devices in the word devices] in the [Device Batch Edit] dialog.
Collectively changing quad word devices	Quad word devices are collectively changed in units of four words. Example) For five quad word devices (D0 to D19), D0, D4, D8, D12, and D16 are changed collectively. The other devices are not changed collectively. To collectively change word and quad word devices, select [Include the double word and quad word devices in the word devices] in the [Device Batch Edit] dialog.
Collectively changing the string-type labels and tags	When the string-type and non-string type devices, labels, and tags are set as the batch change targets, the string-type labels and tags cannot be changed collectively.
Collectively changing the string-type labels and tags	In the [Device Batch Edit] dialog, when values are directly entered in [Before] and [After] without using the [Find Now] button or the values are imported, the data is handled as signed 16-bit binary data. String-type labels and tags cannot be set in these cases. Even though the [Find Now] button is used, if string-type data and non-string type data both exist, string-type labels and tags may not be selected.

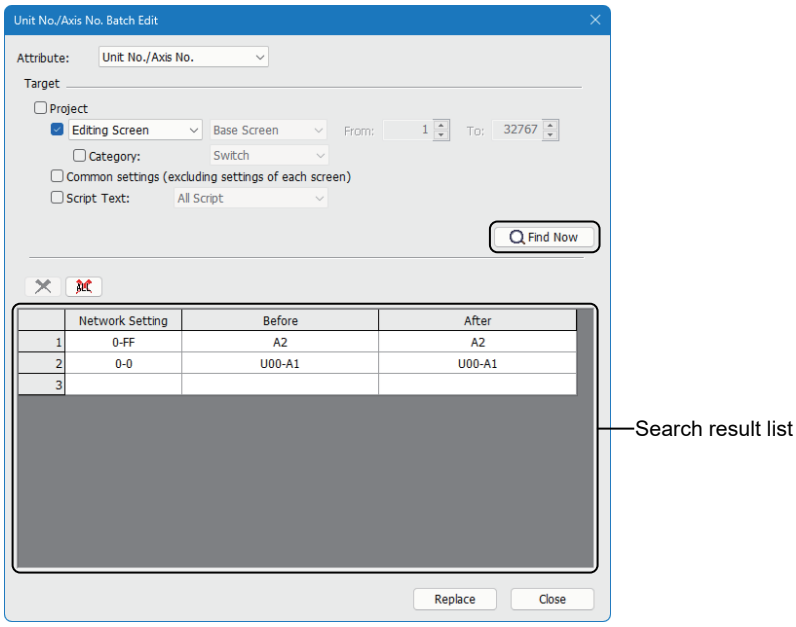
■Changing unit numbers and axis numbers collectively

1. Select [Search/Replace] → [Batch Edit] → [Unit No./Axis No.] from the menu to display the [Unit No./Axis No. Batch Edit] dialog.

If you have selected figures and objects on the screen editor before selecting the menu, the [Unit No./Axis No. Batch Edit] dialog displays the settings of the selected figures and objects in the search result list.

☞ Page 157 [Unit No./Axis No. Batch Edit] dialog

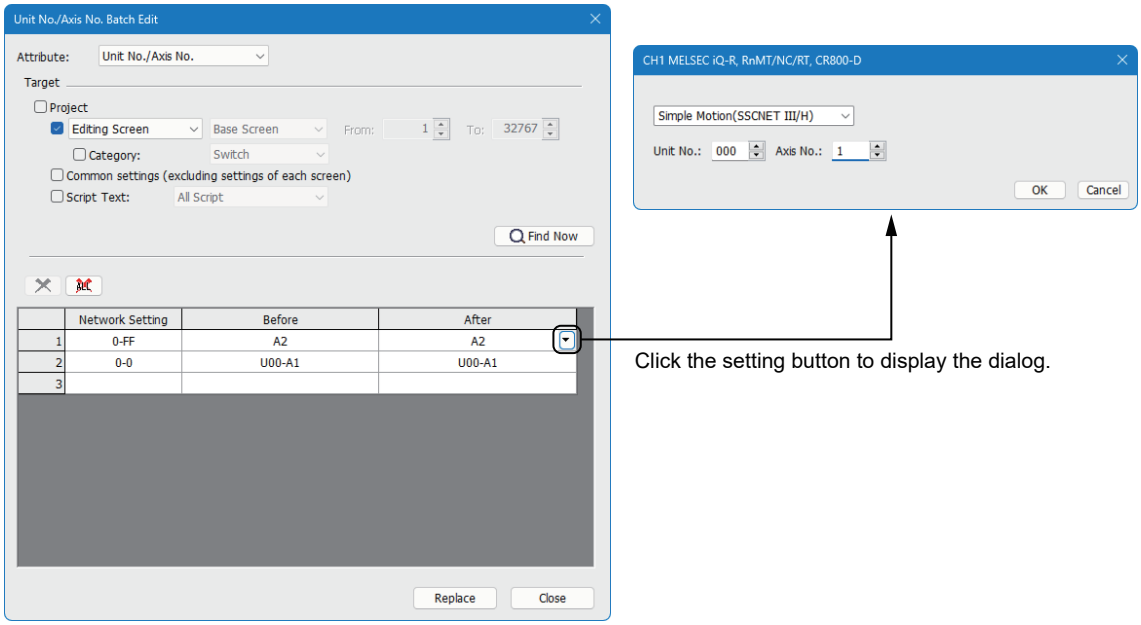
2. Set [Target] and click the [Find Now] button to display the found settings in the search result list.



3. In the search result list, click a cell in the [After] column to display the setting button.

4. Click the setting button to display the unit No./axis No. setting dialog.

Set a value to be applied after the batch change, and click the [OK] button.



5. Click the [Replace] button to replace the settings in the [Before] column with the settings in the [After] column.

Precautions

Item	Description
Unit numbers and axis numbers not applicable to the batch change	For the global labels imported from Motion Control Setting Function, the unit numbers and axis numbers are not changed collectively.

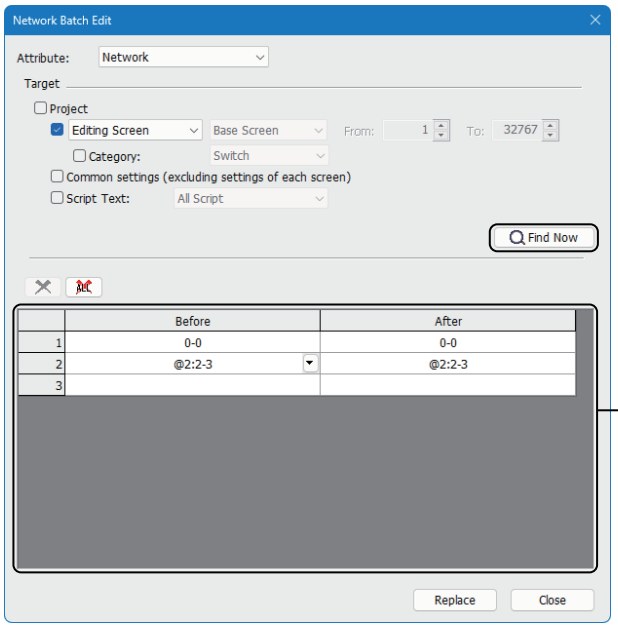
■Changing the network settings collectively

1. Select [Search/Replace] → [Batch Edit] → [Network] from the menu to display the [Network Batch Edit] dialog.

If you have selected figures and objects on the screen editor before selecting the menu, the [Network Batch Edit] dialog display the settings of the selected figures and objects in the search result list.

☞ Page 159 [Network Batch Edit] dialog

2. Set [Target] and click the [Find Now] button to display the found settings in the search result list.

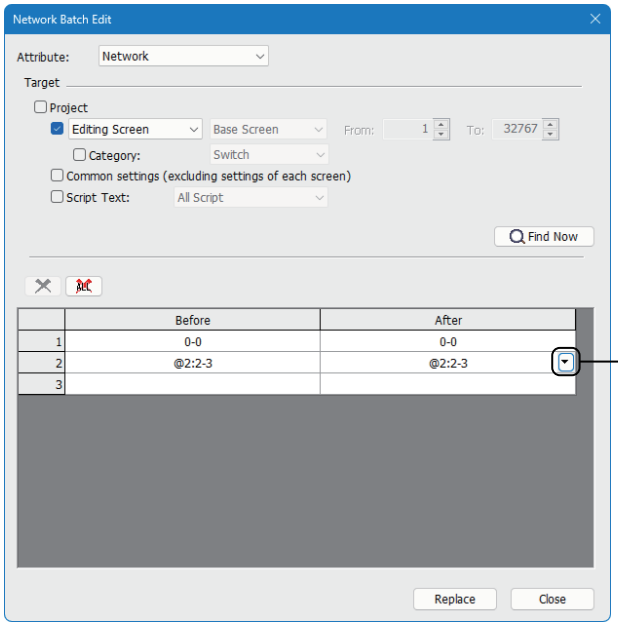


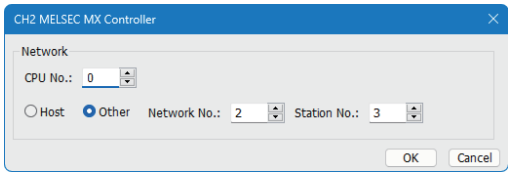
Search result list

3. In the search result list, click a cell in the [After] column to display the setting button.

4. Click the setting button to display the network setting dialog.

Set a value to be applied after the batch change, and click the [OK] button.





Click the setting button to display the dialog.

5. Click the [Replace] button to replace the settings in the [Before] column with the settings in the [After] column.

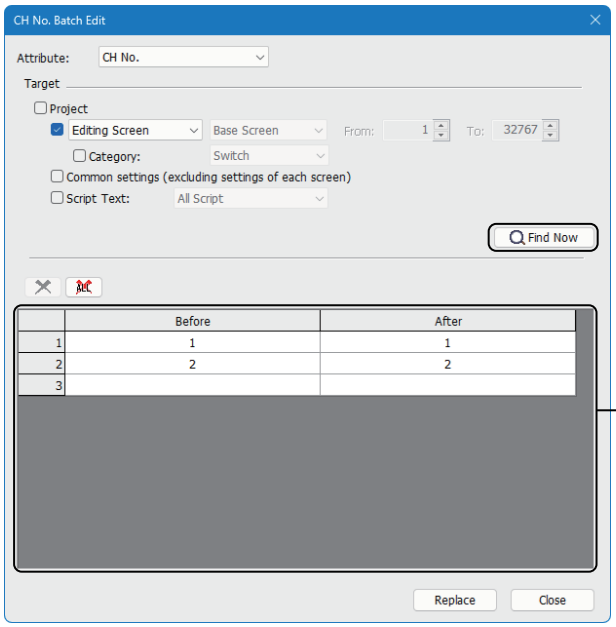
■Changing channel numbers collectively

1. Select [Search/Replace] → [Batch Edit] → [CH No.] from the menu to display the [CH No. Batch Edit] dialog.

If you have selected figures and objects on the screen editor before selecting the menu, the [CH No. Batch Edit] dialog displays the settings of the selected figures and objects in the search result list.

☞ Page 161 [CH No. Batch Edit] dialog

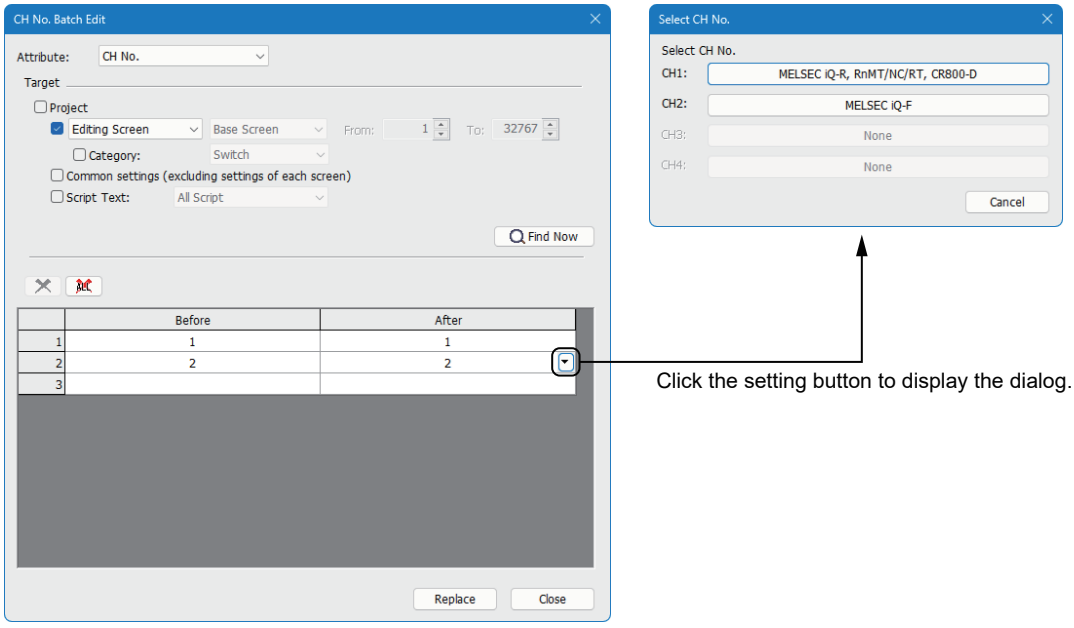
2. Set [Target] and click the [Find Now] button to display the found settings in the search result list.



3. In the search result list, click a cell in the [After] column to display the setting button.

4. Click the setting button to display the [Select CH No.] dialog.

Select a channel No. after the batch change and click the [OK] button.



5. Click the [Replace] button to replace the settings in the [Before] column with the settings in the [After] column.

Precautions

Item	Description
Confirmation after the batch change	If a device that does not exist in the after the batch change is set for a channel number, the device is displayed as [??] after the batch change. After changing channel numbers in a batch, check that all the devices set in the project are not displayed as [??].

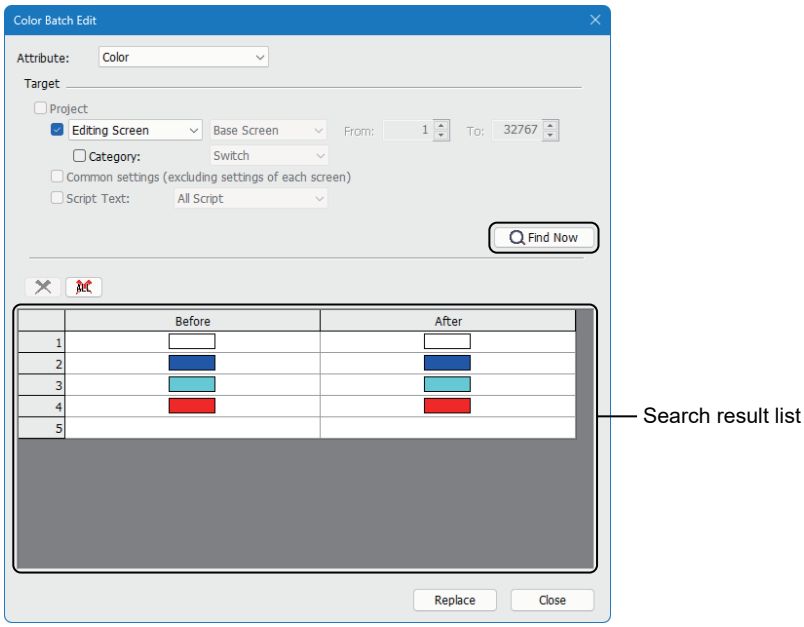
■Changing the colors of figures and objects collectively

1. Select [Search/Replace] → [Batch Edit] → [Color] from the menu to display the [Color Batch Edit] dialog.

If you have selected figures and objects on the screen editor before selecting the menu, the [Color Batch Edit] dialog displays the settings of the selected figures and objects in the search result list.

☞ Page 163 [Color Batch Edit] dialog

2. Set [Target] and click the [Find Now] button to display the found settings in the search result list.

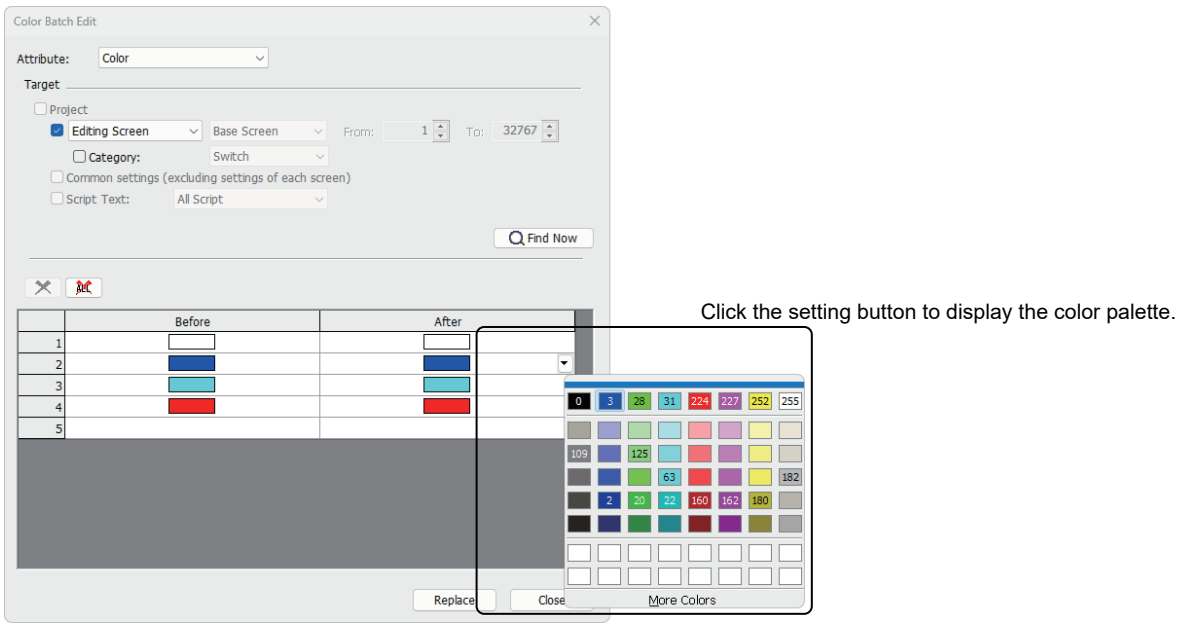


3. In the search result list, click a cell in the [After] column to display the setting button.

4. Click the setting button to display the color palette.

Set a color after the batch change.

☞ Page 988 Color settings



5. Click the [Replace] button to replace the settings in the [Before] column with the settings in the [After] column.

Precautions

Item	Description
Colors not applicable to the bath change	When you select a shape in a given color from the system library for an object, the object is excluded from the target of the color batch change.

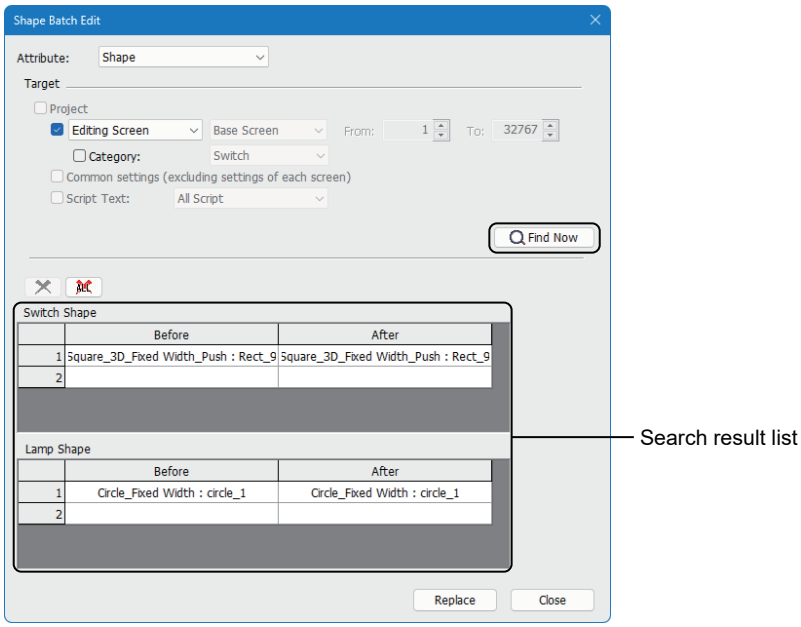
■Changing the shapes of touch switches and lamps collectively

1. Select [Search/Replace] → [Batch Edit] → [Shape] from the menu to display the [Shape Batch Edit] dialog.

If you have selected figures and objects on the screen editor before selecting the menu, the [Shape Batch Edit] dialog displays the settings of the selected figures and objects in the search result list.

☞ Page 165 [Shape Batch Edit] dialog

2. Set [Target] and click the [Find Now] button to display the found settings in the search result list.

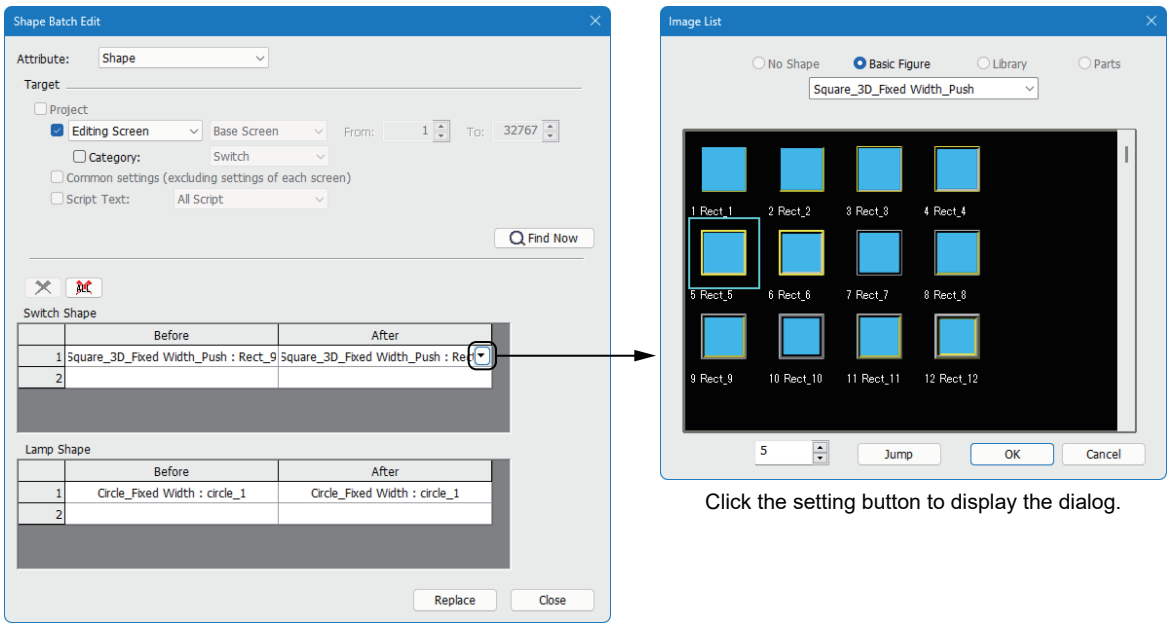


3. In the search result list, click a cell in the [After] column to display the setting button.

4. Click the setting button to display the [Image List] dialog.

The image types of figures ([Basic Figure], [Library] and [Parts]) cannot be changed.

Select a figure after the batch change and click the [OK] button.



Click the setting button to display the dialog.

5. Click the [Replace] button to replace the settings in the [Before] column with the settings in the [After] column.

[Device Batch Edit] dialog

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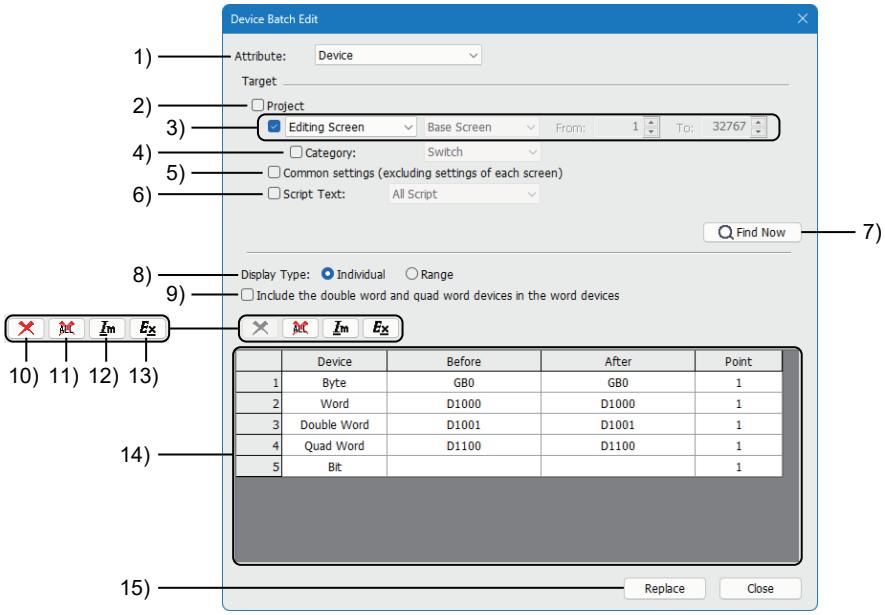
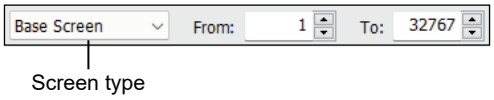


Item		Description
1)	[Attribute]	Select an attribute to change in a batch. The dialog to be displayed differs depending on the selected item. ☞ Page 155 [Device Batch Edit] dialog ☞ Page 157 [Unit No./Axis No. Batch Edit] dialog ☞ Page 159 [Network Batch Edit] dialog ☞ Page 161 [CH No. Batch Edit] dialog ☞ Page 163 [Color Batch Edit] dialog ☞ Page 165 [Shape Batch Edit] dialog
2)	[Project]	Searches the whole project.
3)	Search target screens	The specified screens are searched. The following shows selectable items. • [All screens] Searches all screens. • [Editing screen] Sets the screen editor displayed at the topmost position as the search target. • [Screen range] Searches the screens of the specified type and screen numbers.  Select the type of the screens to be searched for. Set the range of the screens to be searched for to [From] and [To] with screen numbers. The setting range is [0] to [32767]. • [Selected area] Searches the figures and objects selected on the screen editor before the [Device Batch Edit] dialog is opened. This item is enabled only when figures and objects have been selected on the screen editor.
4)	[Category]	Searching is performed in the set category. ☞ Page 1121 Managing figures and objects by category
5)	[Common settings (excluding settings of each screen)]	Searches the common settings.
6)	[Script Text]	Searches the scripts of the specified type.
7)	[Find Now] button	Conducts a search based on the setting of [Target]. Search results are displayed in the search result list.

Item			Description
8)	[Display Type]		Select the display type of the search results. • [Individual] Lists devices individually. • [Range] Lists devices collectively by device type.
9)	[Include the double word and quad word devices in the word devices]		Displays double-word and quad word devices in word devices, which are collectively changed in word units.
10)	[Delete] button		Clears all the contents in the search result list.
11)	[Clear] button		Clears all the contents in the search result list.
12)	[Import] button		Reads the device batch change settings from a Unicode text file or CSV file.
13)	[Export] button		Saves the device batch change settings to a Unicode text file or CSV file. ☞ Page 156 Details of the exported file For the precautions for using a Unicode text file or CSV file, refer to the following. ☞ Page 3668 Precautions for using CSV file ☞ Page 3669 Precautions for using Unicode text file
14)	Search result list	—	Shows the search results. Display-prohibited screens and scripts in a project protected with project security are not displayed in the search result list. Double-clicking each cell enables changing the settings. You can also directly set [Device], [Before], [After], and [Point] without a search to execute the batch change.
		[Device]	Device types ([Bit], [Byte], [Word], [Double Word], [Quad Word])
		[Before]	Setting values of the found settings
		[After]	Set a device applied after the batch change. The setting values before the batch change are displayed in the [After] column right after the searching. Double-clicking each cell of the [After] column enables changing the devices. If you change a device in the [After] column and then change the setting of [Display Type], the last-minute device change is discarded. ☞ Page 834 How to set devices, labels, and tags
		[Point]	Number of devices which are consecutively set In a row where a label or tag is set in [Before] or [After], [Points] is fixed to [1], and the cell color of [Points] changes to gray.
15)	[Replace] button		Executes the batch change with the settings in the search result list.

■Details of the exported file

The following shows the details of the exported file of the search results.

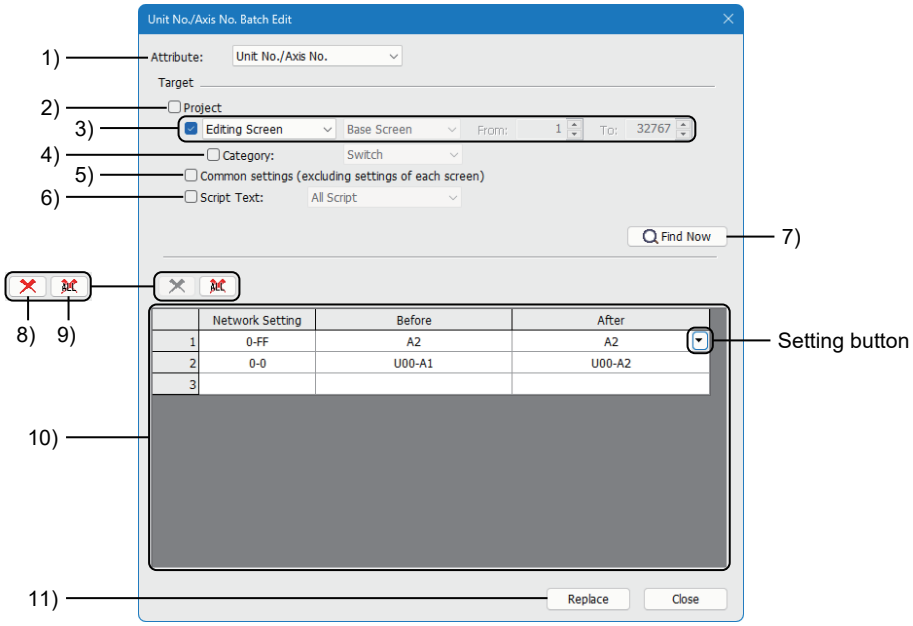
	A	B	C	D
1	Device Batch Edit			
2				
3	Device	Before	After	Point
4	Byte	GB0	GB0	1
5	Word	D1000	D1000	1
6	Double Word	D1001	D1001	1
7	Quad Word	D1100	D1100	1

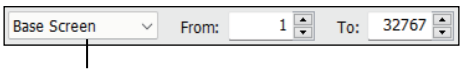
1) 2) 3) 4)

Item		Description
1)	[Device]	Device types.
2)	[Before]	Devices before the change.
3)	[After]	Devices after the change. When [Range] is selected for [Display Type], only the start device is exported.
4)	[Point]	Number of devices.

[Unit No./Axis No. Batch Edit] dialog

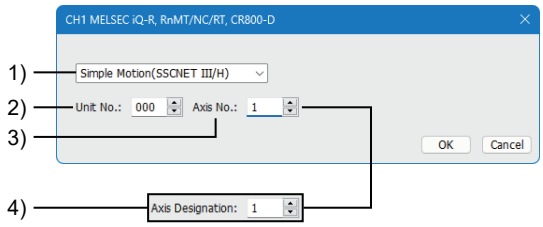
GT37 SoftGOT3000



Item		Description
1)	[Attribute]	Select an attribute to change in a batch. The dialog to be displayed differs depending on the selected item. ☞ Page 155 [Device Batch Edit] dialog ☞ Page 157 [Unit No./Axis No. Batch Edit] dialog ☞ Page 159 [Network Batch Edit] dialog ☞ Page 161 [CH No. Batch Edit] dialog ☞ Page 163 [Color Batch Edit] dialog ☞ Page 165 [Shape Batch Edit] dialog
2)	[Project]	Searches the whole project.
3)	Search target screens	The specified screens are searched. The following shows selectable items. • [All screens] Searches all screens. • [Editing screen] Sets the screen editor displayed at the topmost position as the search target. • [Screen range] Searches the screens of the specified type and screen numbers.  Screen type Select the type of the screens to be searched for. Set the range of the screens to be searched for to [From] and [To] with screen numbers. The setting range is [0] to [32767]. • [Selected area] Searches the figures and objects selected on the screen editor before the [Unit No./Axis No. Batch Edit] dialog is opened. This item is enabled only when figures and objects have been selected on the screen editor.
4)	[Category]	Searching is performed in the set category. ☞ Page 1121 Managing figures and objects by category
5)	[Common settings (excluding settings of each screen)]	Searches the common settings.
6)	[Script Text]	Searches the scripts of the specified type.
7)	[Find Now] button	Conducts a search based on the setting of [Target]. Search results are displayed in the search result list.
8)	[Delete] button	Clears all the contents in the search result list.
9)	[Clear] button	Clears all the contents in the search result list.

Item			Description
10)	Search result list	—	Shows the search results. Display-prohibited screens and scripts in a project protected with project security are not displayed in the search result list. Click the setting button of a cell in the [After] column to display the unit No./axis No. setting dialog. ☞ Page 158 Unit No./axis No. setting dialog You can also directly set [Network Setting], [Before], and [After] without a search to execute the batch edit. Click the setting button of a blank cell to display the [Select CH No.] dialog. ☞ Page 158 [Select CH No.] dialog
		[Network Setting]	Current network settings of the found settings.
		[Before]	Setting values of the found settings
		[After]	Configure the setting values after the batch change. The setting values before the batch change are displayed in the [After] column right after the searching.
11)	[Replace] button		Executes the batch change with the settings in the search result list.

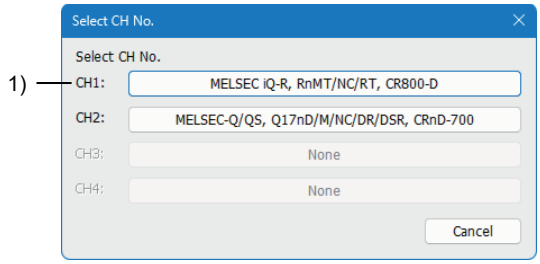
■Unit No./axis No. setting dialog



The setting items vary according to the selected module.

Item		Description
1)	Unit	Select a module to be routed to.
2)	[Unit No.]	Specify a unit number.
3)	[Axis No.]	Specify an axis number.
4)	[Axis Designation]	Specify an axis.

■[Select CH No.] dialog



Item		Description
1)	CH No.	Select a channel. Click a channel button to display the network setting dialog or the unit No./axis No. setting dialog. The number of channels varies by GOT model.

[Network Batch Edit] dialog

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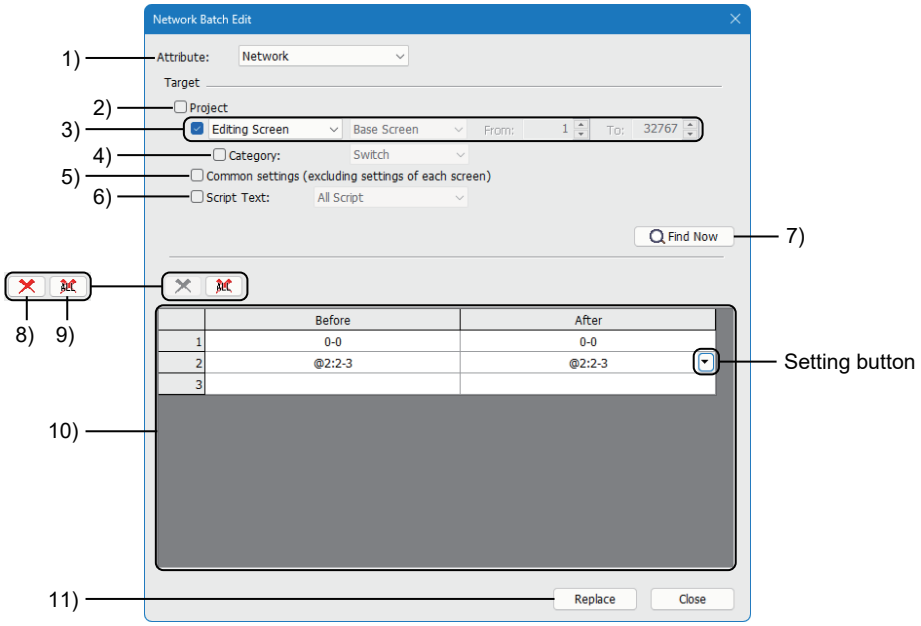
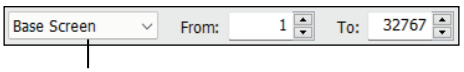
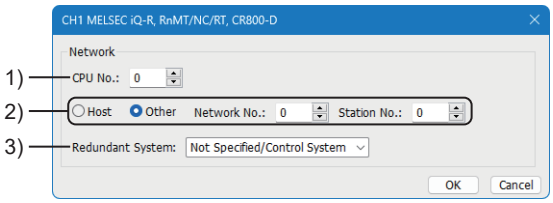


Item		Description
1)	[Attribute]	Select an attribute to change in a batch. The dialog to be displayed differs depending on the selected item. ☞ Page 155 [Device Batch Edit] dialog ☞ Page 157 [Unit No./Axis No. Batch Edit] dialog ☞ Page 159 [Network Batch Edit] dialog ☞ Page 161 [CH No. Batch Edit] dialog ☞ Page 163 [Color Batch Edit] dialog ☞ Page 165 [Shape Batch Edit] dialog
2)	[Project]	Searches the whole project.
3)	Search target screens	The specified screens are searched. The following shows selectable items. • [All screens] Searches all screens. • [Editing screen] Sets the screen editor displayed at the topmost position as the search target. • [Screen range] Searches the screens of the specified type and screen numbers.  Screen type Select the type of the screens to be searched for. Set the range of the screens to be searched for to [From] and [To] with screen numbers. The setting range is [0] to [32767]. • [Selected area] Before the [Network Batch Edit] dialog is opened, searching is performed for the figures and objects which have been selected on the screen editor. This item is enabled only when figures and objects have been selected on the screen editor.
4)	[Category]	Searching is performed in the set category. ☞ Page 1121 Managing figures and objects by category
5)	[Common settings (excluding settings of each screen)]	Searches the common settings.
6)	[Script Text]	Searches the scripts of the specified type.
7)	[Find Now] button	Conducts a search based on the setting of [Target]. Search results are displayed in the search result list.
8)	[Delete] button	Clears all the contents in the search result list.
9)	[Clear] button	Clears all the contents in the search result list.

Item			Description
10)	Search result list	—	Shows the search results. Display-prohibited screens and scripts in a project protected with project security are not displayed in the search result list. Click the setting button in a cell of the search result list to display the network setting dialog. ☞ Page 160 Network setting dialog You can also directly set [Before] and [After] without a search to execute the batch edit. Click the setting button of a blank cell to display the [Select CH No.] dialog. ☞ Page 160 [Select CH No.] dialog
		[Before]	Setting values of the found settings
		[After]	Configure the setting values after the batch change. The setting values before the batch change are displayed in the [After] column right after the searching.
11)	[Replace] button		Executes the batch change with the settings in the search result list.

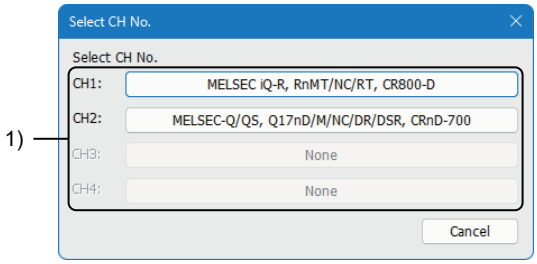
■Network setting dialog

The items to be displayed differ depending on the monitored controller and settings.



Item		Description
1)	[CPU No.]	Set a CPU No.
2)	Station settings	Configure the station settings.
3)	[Redundant System]	Configure the MELSEC redundant function settings.

■[Select CH No.] dialog



Item		Description
1)	CH No.	Select a channel. Click each channel button to display the network setting dialog. The number of channels varies by GOT model.

[CH No. Batch Edit] dialog

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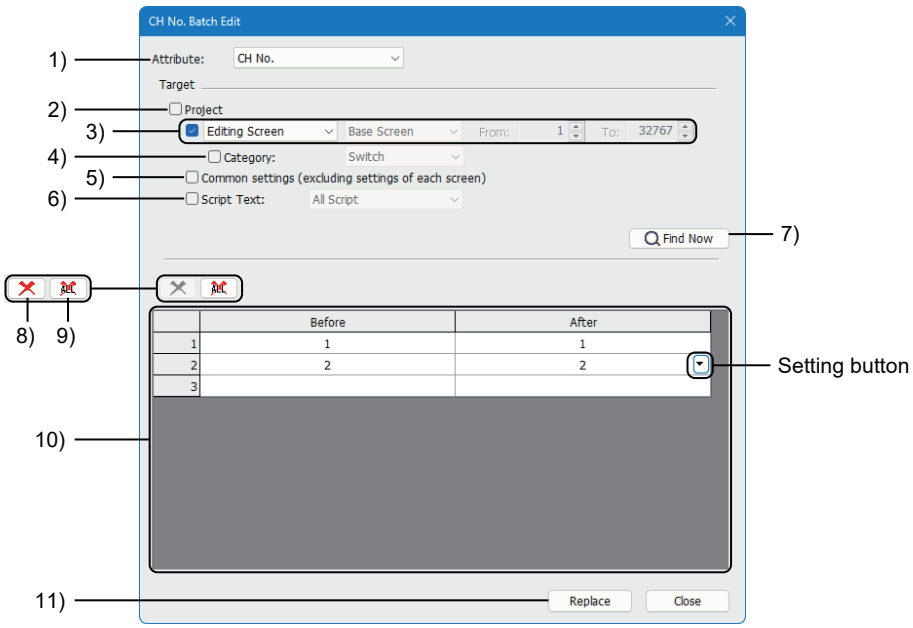
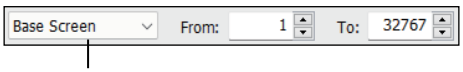
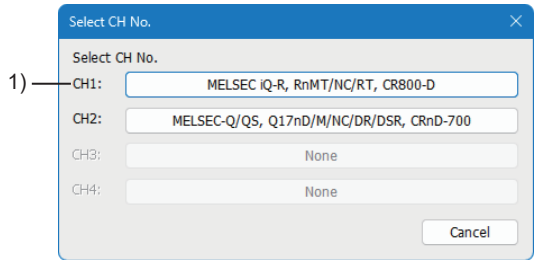


Item		Description
1)	[Attribute]	Select an attribute to change in a batch. The dialog to be displayed differs depending on the selected item. ☞ Page 155 [Device Batch Edit] dialog ☞ Page 157 [Unit No./Axis No. Batch Edit] dialog ☞ Page 159 [Network Batch Edit] dialog ☞ Page 161 [CH No. Batch Edit] dialog ☞ Page 163 [Color Batch Edit] dialog ☞ Page 165 [Shape Batch Edit] dialog
2)	[Project]	Searches the whole project.
3)	Search target screens	The specified screens are searched. The following shows selectable items. • [All screens] Searches all screens. • [Editing screen] Sets the screen editor displayed at the topmost position as the search target. • [Screen range] Searches the screens of the specified type and screen numbers.  Screen type Select the type of the screens to be searched for. Set the range of the screens to be searched for to [From] and [To] with screen numbers. The setting range is [0] to [32767]. • [Selected area] Before the [CH No. Batch Edit] dialog is opened, searching is performed for the figures and objects which have been selected on the screen editor. This item is enabled only when figures and objects have been selected on the screen editor.
4)	[Category]	Searching is performed in the set category. ☞ Page 1121 Managing figures and objects by category
5)	[Common settings (excluding settings of each screen)]	Searches the common settings.
6)	[Script Text]	Searches the scripts of the specified type.
7)	[Find Now] button	Conducts a search based on the setting of [Target]. Search results are displayed in the search result list.
8)	[Delete] button	Clears all the contents in the search result list.
9)	[Clear] button	Clears all the contents in the search result list.

Item			Description
10)	Search result list	—	Shows the search results. Display-prohibited screens and scripts in a project protected with project security are not displayed in the search result list. Click the setting button in a cell of the search result list to display the [Select CH No.] dialog. ☞ Page 162 [Select CH No.] dialog You can also directly set [Before] and [After] without a search to execute the batch edit.
		[Before]	Setting values of the found settings
		[After]	Configure the setting values after the batch change. The setting values before the batch change are displayed in the [After] column right after the searching.
11)	[Replace] button		Executes the batch change with the settings in the search result list.

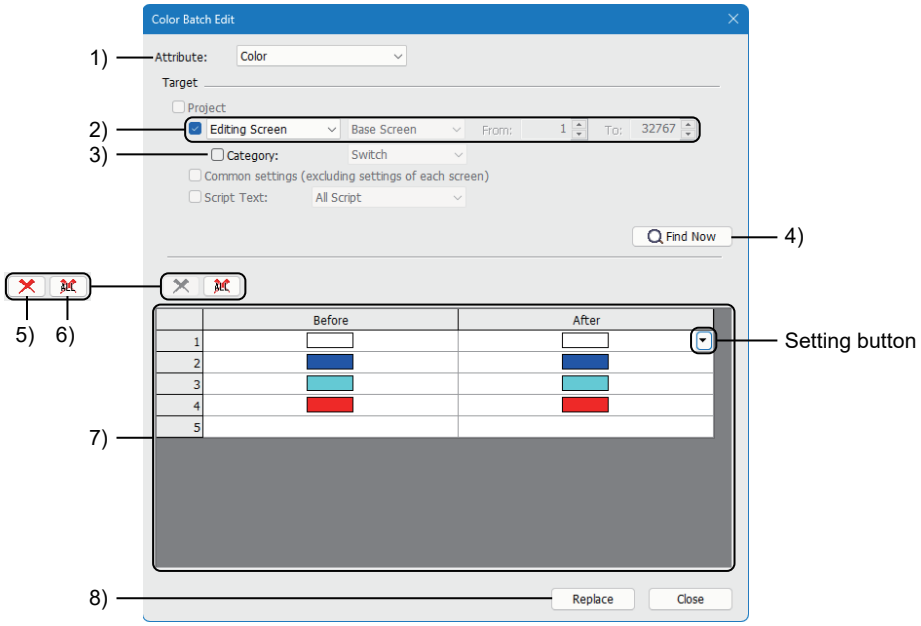
■[Select CH No.] dialog

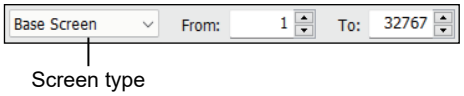


Item		Description
1)	CH No.	Select a channel. The number of channels varies by GOT model.

[Color Batch Edit] dialog

GT37 SoftGOT3000

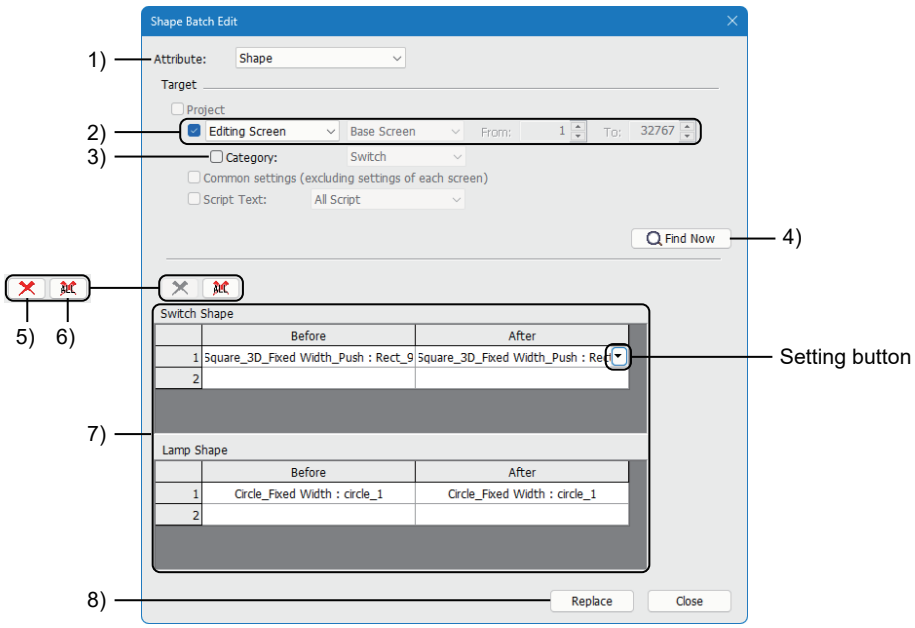


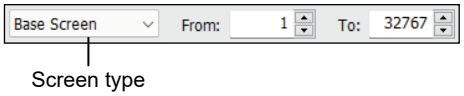
Item		Description
1)	[Attribute]	Select an attribute to change in a batch. The dialog to be displayed differs depending on the selected item. ☞ Page 155 [Device Batch Edit] dialog ☞ Page 157 [Unit No./Axis No. Batch Edit] dialog ☞ Page 159 [Network Batch Edit] dialog ☞ Page 161 [CH No. Batch Edit] dialog ☞ Page 163 [Color Batch Edit] dialog ☞ Page 165 [Shape Batch Edit] dialog
2)	Search target screens	The specified screens are searched. The following shows selectable items. • [All screens] Searches all screens. • [Editing screen] Sets the screen editor displayed at the topmost position as the search target. • [Screen range] Searches the screens of the specified type and screen numbers.  Select the type of the screens to be searched for. Set the range of the screens to be searched for to [From] and [To] with screen numbers. The setting range is [0] to [32767]. • [Selected area] Before the [Color Batch Edit] dialog is opened, searching is performed for the figures and objects which have been selected on the screen editor. This item is enabled only when figures and objects have been selected on the screen editor.
3)	[Category]	Searching is performed in the set category. ☞ Page 1121 Managing figures and objects by category
4)	[Find Now] button	Conducts a search based on the setting of [Target]. Search results are displayed in the search result list.
5)	[Delete] button	Clears all the contents in the search result list.
6)	[Clear] button	Clears all the contents in the search result list.

Item			Description
7)	Search result list	—	Shows the search results. Display-prohibited screens and scripts in a project protected with project security are not displayed in the search result list. Click the setting button in a cell to display the color palette. ☞ Page 988 Color settings You can also directly set [Before] and [After] without a search to execute the batch edit.
		[Before]	Setting values of the found settings
		[After]	Configure the setting values after the batch change. The setting values before the batch change are displayed in the [After] column right after the searching.
8)	[Replace] button		Executes the batch change with the settings in the search result list.

[Shape Batch Edit] dialog

GT37 SoftGOT3000



Item		Description
1)	[Attribute]	Select an attribute to change in a batch. The dialog to be displayed differs depending on the selected item. ☞ Page 155 [Device Batch Edit] dialog ☞ Page 157 [Unit No./Axis No. Batch Edit] dialog ☞ Page 159 [Network Batch Edit] dialog ☞ Page 161 [CH No. Batch Edit] dialog ☞ Page 163 [Color Batch Edit] dialog ☞ Page 165 [Shape Batch Edit] dialog
2)	Search target screens	The specified screens are searched. The following shows selectable items. • [All screens] Searches all screens. • [Editing screen] Sets the screen editor displayed at the topmost position as the search target. • [Screen range] Searches the screens of the specified type and screen numbers.  Select the type of the screens to be searched for. Set the range of the screens to be searched for to [From] and [To] with screen numbers. The setting range is [0] to [32767]. • [Selected area] Before the [Shape Batch Edit] dialog is opened, searching is performed for the figures and objects which have been selected on the screen editor. This item is enabled only when figures and objects have been selected on the screen editor.
3)	[Category]	Searching is performed in the set category. ☞ Page 1121 Managing figures and objects by category
4)	[Find Now] button	Conducts a search based on the setting of [Target]. Search results are displayed in the search result list.
5)	[Delete] button	Clears all the contents in the search result list.
6)	[Clear] button	Clears all the contents in the search result list.

Item			Description
7)	Search result list	—	Shows the search results. Display-prohibited screens and scripts in a project protected with project security are not displayed in the search result list. Click the setting button in a cell to display the [Image List] dialog (figure). The image types of figures ([Basic Figure], [Library] and [Parts]) cannot be changed. ☞ Page 1045 [Image List] dialog (shape) You can also directly set [Before] and [After] without a search to execute the batch edit.
		[Switch Shape]	Shapes set for touch switches
		[Lamp Shape]	Shapes set for lamps
		[Before]	Setting values of the found settings
		[After]	Configure the setting values after the batch change. The setting values before the batch change are displayed in the [After] column right after the searching.
8)	[Replace] button		Executes the batch change with the settings in the search result list.

5.5.5 Searching for and editing a specific setting (Data Browser)

The common setting, figures, and objects set in the project are displayed in a list.
You can narrow the targets displayed in the list by specifying conditions with keywords.
You can change the settings separately or collectively in the [Data Browser] window.

☞ Page 167 How to use the data browser
☞ Page 175 [Data Browser] window
☞ Page 179 [Display Setting] dialog
☞ Page 181 [Display Setting List] dialog
☞ Page 182 [Text Replacement] dialog
☞ Page 182 Details of the exported file

How to use the data browser

☞ Page 167 Displaying the [Data Browser] window
☞ Page 168 Displaying the settings in the project
☞ Page 169 Changing the items and ranges to be displayed in the data browser (registering a preset)
☞ Page 170 Editing a preset
☞ Page 170 Deleting a preset
☞ Page 171 Changing the settings displayed in the data browser separately
☞ Page 172 Changing the settings displayed in the data browser collectively
☞ Page 173 Exporting the data collected in the data browser
☞ Page 173 Operations not restored by [Undo]
☞ Page 173 The settings which cannot be edited while the corresponding screen is closed
☞ Page 173 Projects protected with project security
☞ Page 174 Editing of [Range Setting] and [Input Range Setting]

■Displaying the [Data Browser] window

Perform either of the following operations to display the [Data Browser] window.

- Clicking [Search/Replace] → [Data Browser] from the menu
- Clicking [View] → [Docking Window] → [Data Browser] from the menu

☞ Page 175 [Data Browser] window

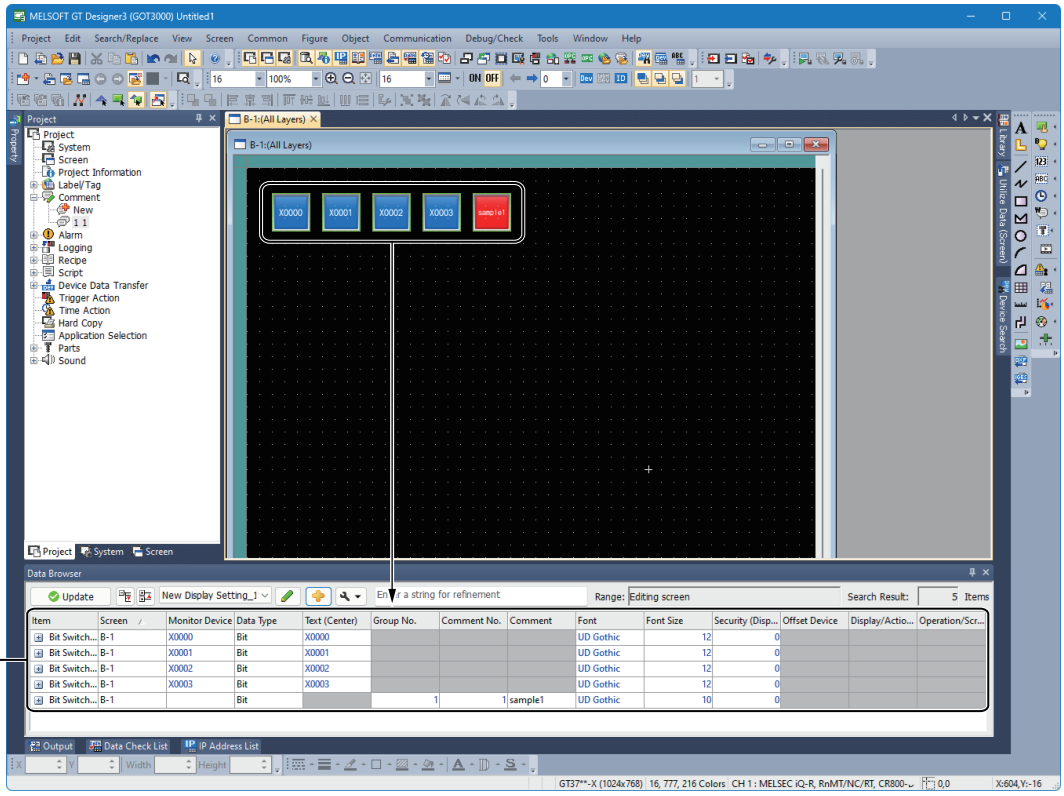
■Displaying the settings in the project

The search result list in the [Data Browser] window displays the search results according to the setting of the search range.

Ex.

When [Editing screen] is selected for [Range]

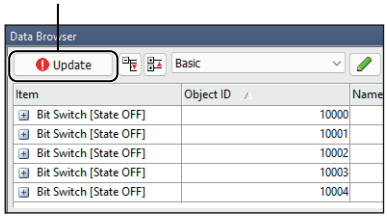
When the [Data Browser] window is displayed, the settings of the screen editor displayed at the topmost position are displayed.



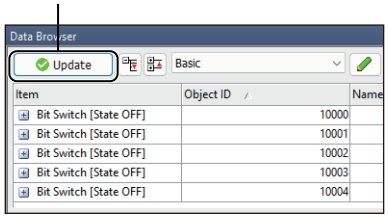
If any setting in the project is changed while the [Data Browser] window is displayed, the search result list is not automatically updated.

Click the [Update] button to refresh the contents of the search result list.

When the search result list is not in the latest condition



When the search result list is in the latest condition



To change the targets or items displayed in the [Data Browser] window, refer to the following.

☞ Page 169 Changing the items and ranges to be displayed in the data browser (registering a preset)

■Changing the items and ranges to be displayed in the data browser (registering a preset)

Register a combination of the items and ranges to be displayed in the data browser as a preset.

Select the registered preset of the display settings from the pull-down menu, and the items and ranges displayed in the data browser will change.

1. Register a new preset.

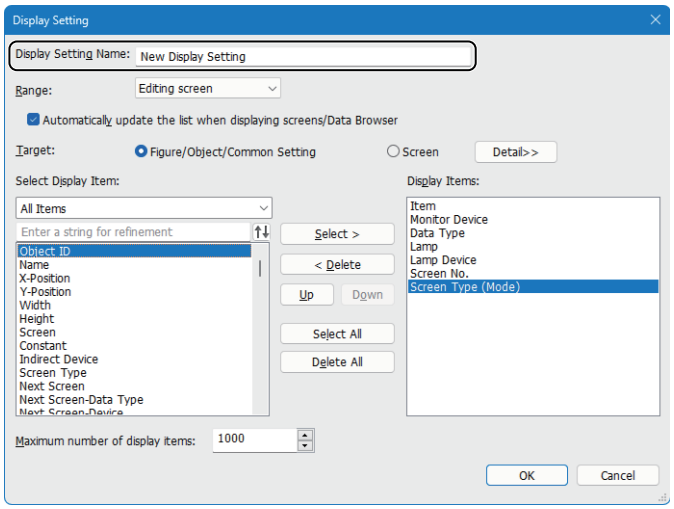
Perform one of the following operations to display the [Display Setting] dialog.

- Click the [Add] button in the [Data Browser] window.
- Click [Option] → [Display Setting List] button in the [Data Browser] window, and then click the [Add] button in the [Display Setting List] dialog.

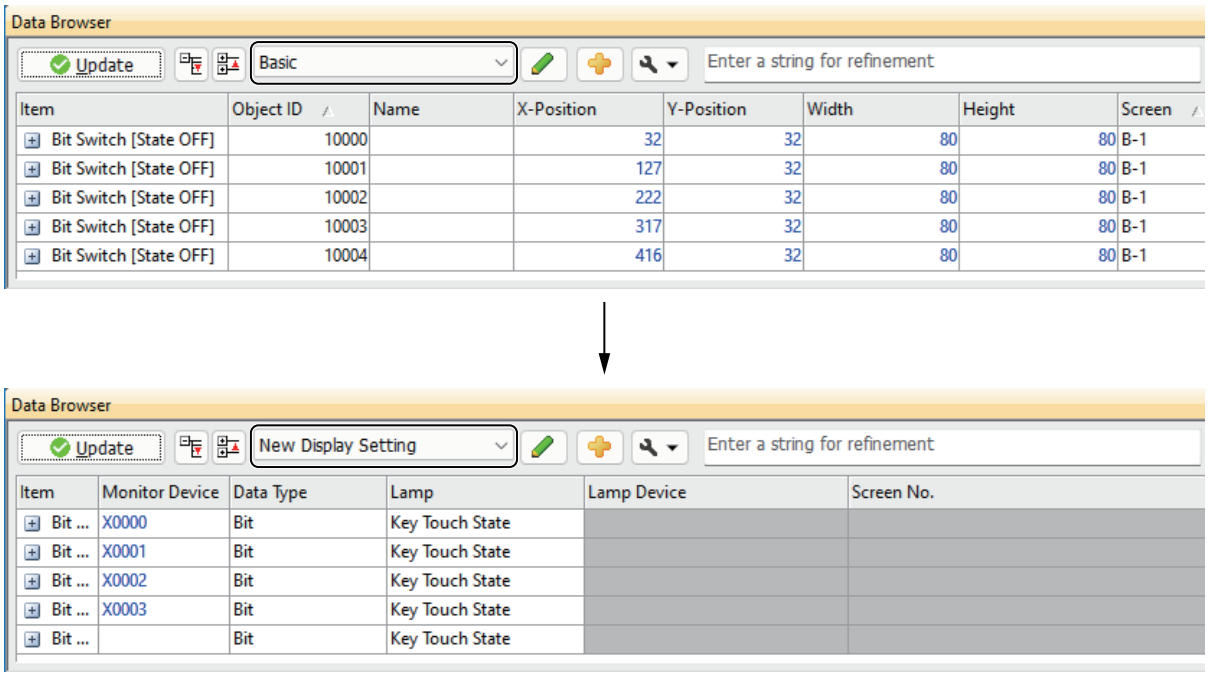
2. Select the items and ranges to be displayed in the data browser.

☞ Page 179 [Display Setting] dialog

Click the [OK] button to register the preset with the name set for [Display Setting Name].



3. Select the preset of the display settings registered in Step 2 from the pull-down menu, and the items and ranges displayed in the data browser will change.



■Editing a preset

Edit the settings of a registered preset.

The settings of the presets registered as initial settings can also be edited.

To restore the initial settings after editing, refer to the following.

☞ Page 176 Presets registered as initial settings

1. In the [Data Browser] window, click [Option] → [Display Setting List] from the menu to display the [Display Setting List] dialog.

☞ Page 181 [Display Setting List] dialog

2. Select a preset and click the [Edit] button to display the [Display Setting] dialog.

☞ Page 179 [Display Setting] dialog

3. Edit the settings and click the [OK] button to apply the new settings to the preset.

■Deleting a preset

Delete a registered preset.

The presets registered as initial settings can also be deleted.

To restore the initial settings after deletion, refer to the following.

☞ Page 176 Presets registered as initial settings

1. In the [Data Browser] window, click [Option] → [Display Setting List] from the menu to display the [Display Setting List] dialog.

☞ Page 181 [Display Setting List] dialog

2. Select an intended preset and click the [Delete] button to delete the preset.

■Changing the settings displayed in the data browser separately

1. The text color of each cell in the search result list indicates whether you can edit the cell or not in the [Data Browser] window.

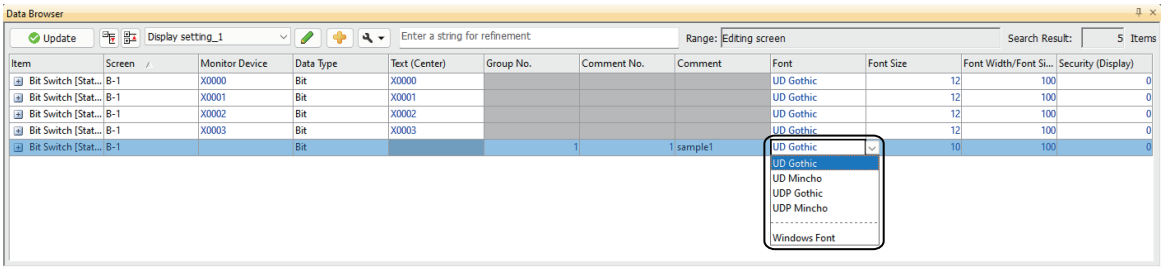
Double-click a cell whose text color is blue and edit the setting.

Text color	Description
Blue	The setting can be edited in the [Data Browser] window. Double-click each cell to edit the setting.
Black	The setting cannot be edited in the [Data Browser] window. Double-click each cell to display the setting dialog.

The setting method differs depending on the setting to be edited.

Ex.

Changing a font



For mouse and keyboard operations, refer to the following.

☞ Page 177 Operations for the list display

☞ Page 178 Operations when a cell is edited

■Changing the settings displayed in the data browser collectively

1. Select the rows intended for the batch change in the search result list.

Multiple rows can be selected by either of the following methods.

- Shift + Click

Selects the rows from the row with the cursor to the row where the mouse is clicked.

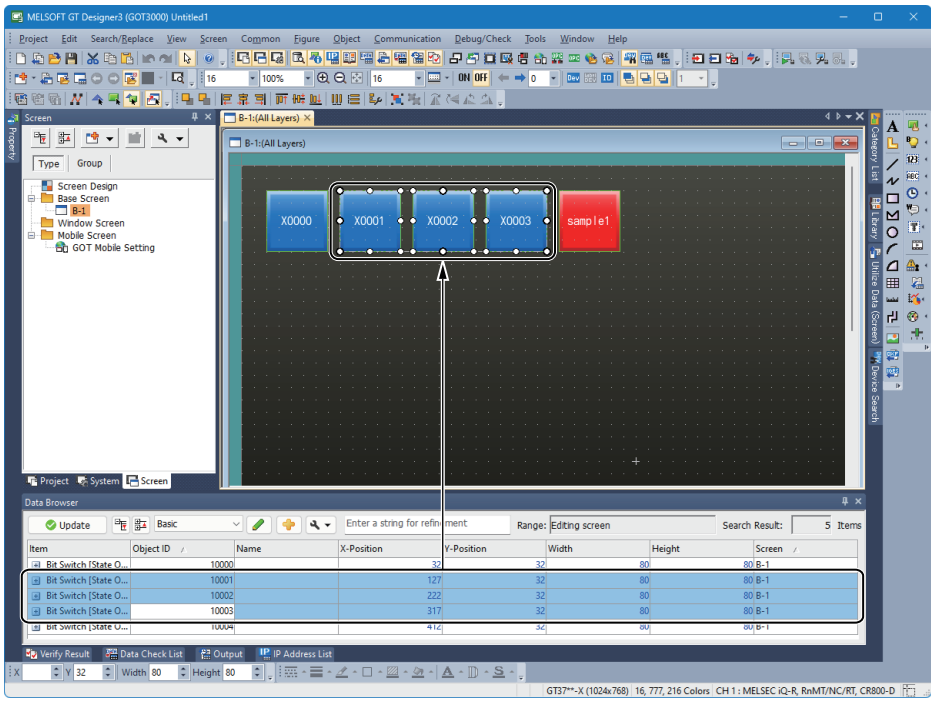
- Ctrl + Click

Selects or deselects a row.

- Shift + ↑, Shift + ↓

Moves the cursor while keeping the row with the cursor selected.

The destination row of the cursor is also selected.



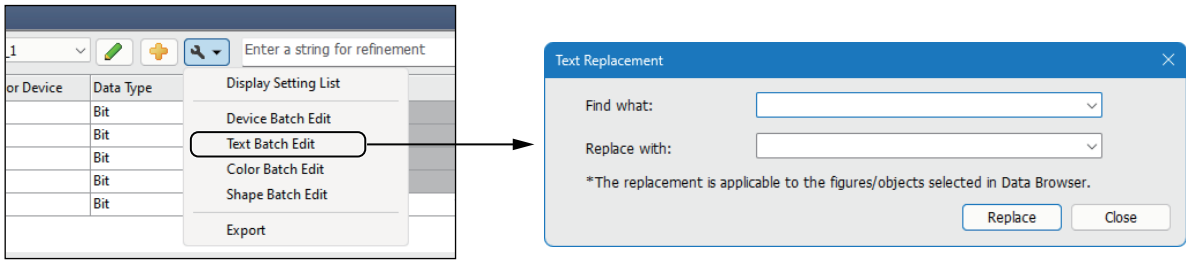
The figures and objects corresponding to the rows selected in the search result list are selected on the screen editor.

2. Click the [Option] button, and select [Device Batch Edit], [Text Batch Edit], [Color Batch Edit], or [Shape Batch Edit] from the pull-down menu.

A dialog appears to prompt the batch change of each setting.

Ex.

Selecting [Text Batch Edit] from the menu



3. Set each item in the displayed dialog and click the [Replace] button to execute the batch change with the configured settings.

- [Device Batch Edit] dialog

☞ Page 155 [Device Batch Edit] dialog

- [Text Replacement] dialog

☞ Page 182 [Text Replacement] dialog

- [Color Batch Edit] dialog

☞ Page 163 [Color Batch Edit] dialog

- [Shape Batch Edit] dialog

☞ Page 165 [Shape Batch Edit] dialog

4. Click the [Close] button to close the batch edit dialog.

5. Click the [Update] button to refresh the contents of the search result list.

■Exporting the data collected in the data browser

1. Click the [Option] button and select [Export] from the pull-down menu.

The [Save As] dialog appears.

2. Set [File name] and [Save as type] and click the [Save] button to export the search result list.

☞ Page 182 Details of the exported file

■Operations not restored by [Undo]

The settings changed by the following operations cannot be restored even [Edit] → [Undo] is selected from the menu.

Before changing the settings, check the contents to be changed.

- Changing the settings with the Text Batch Edit, Device Batch Edit, or Color Batch Edit
- Changing the settings of the figures and objects placed on a screen editor which is not opened
- Changing the common settings or screen settings

■The settings which cannot be edited while the corresponding screen is closed

Some settings (including the settings of X-coordinates, Y-coordinates, and logo texts) cannot be edited while the corresponding screens are closed.

If you change those settings in the [Data Browser] window, open a screen on which the figures and objects to be edited are placed.

■Projects protected with project security

When editing the project is prohibited, the settings cannot be changed in the [Data Browser] window.

The settings for display-disabled screens and scripts are not displayed in the [Data Browser] window.

Although the settings for edit-disabled screens and scripts are displayed in the [Data Browser] window, the settings cannot be changed and deleted.

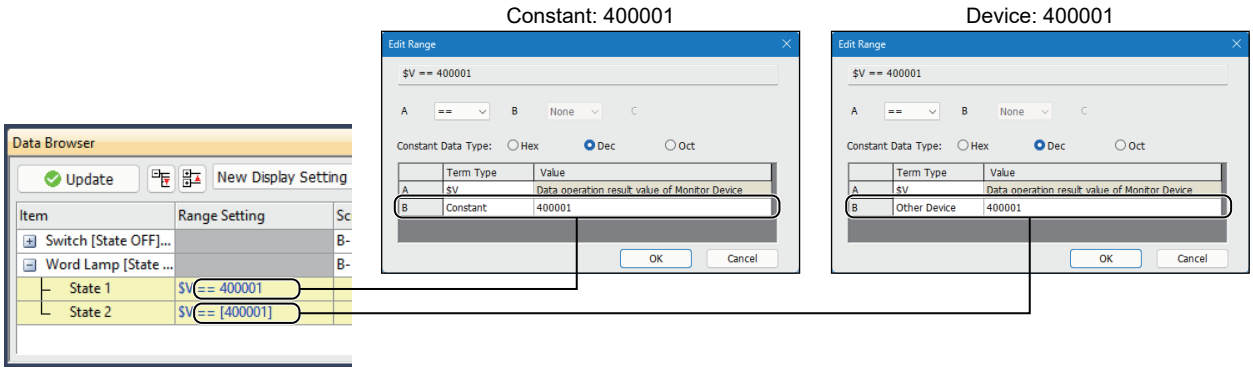
■Editing of [Range Setting] and [Input Range Setting]

When you directly enter a device name for [Range Setting] or [Input Range Setting] with numbers only, enclose the numbers in square brackets.

If not, the device will not be recognized as a device.

Ex.

Specifying the device [400001] of the MODBUS equipment for [Range Setting]



[Data Browser] window

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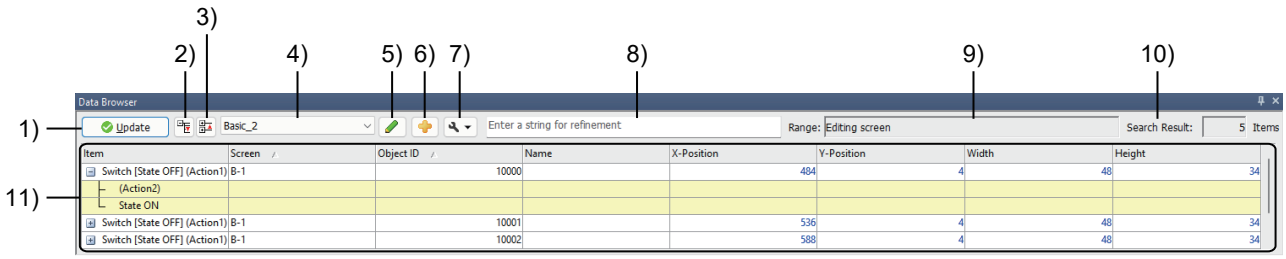
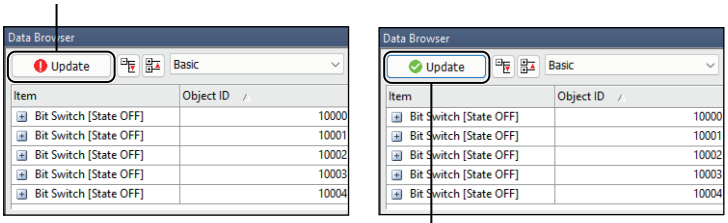


Item			Description
1)	[Update] button		Updates the search result list. The display of the [Update] button differs depending on the status of the search result list. When the search result list is not in the latest condition  When the search result list is in the latest condition
2)	[Unfold All] button		Expands all the trees in the [Type] column.
3)	[Fold All] button		Collapses all the trees in the [Type] column.
4)	Preset for display settings		Selecting a registered preset from the pull-down menu changes the items and ranges displayed in the result list. You can add presets to the preregistered presets [Basic], [Device], [Text], [Color], and [Screen]. ☞ Page 169 Changing the items and ranges to be displayed in the data browser (registering a preset) For information on the settings of presets registered as initial settings, refer to the following. ☞ Page 176 Presets registered as initial settings
5)	[Edit] button		Displays the [Display Setting] dialog for the selected preset. ☞ Page 179 [Display Setting] dialog
6)	[Add] button		Creates a new preset for display settings. Displays the [Display Setting] dialog. ☞ Page 179 [Display Setting] dialog
7)	[Option] button	—	Operates the [Data Browser] window from the pull-down menu.
		[Display Setting List]	Displays the [Display Setting List] dialog. Manage the presets. ☞ Page 181 [Display Setting List] dialog
		[Device Batch Edit]	Displays the [Device Batch Edit] dialog. The device settings selected in the search result list can be changed collectively. ☞ Page 155 [Device Batch Edit] dialog
		[Text Batch Edit]	Displays the [Text Batch Edit] dialog. The text settings selected in the search result list can be changed collectively. ☞ Page 182 [Text Replacement] dialog
		[Color Batch Edit]	Displays the [Color Batch Edit] dialog. The color settings selected in the search result list can be changed collectively. ☞ Page 163 [Color Batch Edit] dialog
		[Shape Batch Edit]	Displays the [Shape Batch Edit] dialog. The shape settings selected in the search result list can be changed collectively. ☞ Page 165 [Shape Batch Edit] dialog
		[Export]	Saves the search result list as a CSV file or a Unicode text file. Set [File name] and [Save as type] in the displayed dialog and click the [Save] button. ☞ Page 182 Details of the exported file
8)	[Refinement]		Narrows the displayed contents of the search result list by keywords. Up to 128 characters can be set. To narrow the contents using multiple keywords, separate each keyword with one-byte spaces.

Item			Description
9)	[Range]		Displays the item selected for [Range] in the [Display Setting] dialog.
10)	[Search Result]		Displays the number of the items displayed in the search result list.
11)	Search result list	—	Displays the search result. Clicking the top row sorts the results by item. If you select a row, the corresponding figure or object is also selected on the screen editor. You can edit the settings of some items. The text color of each cell indicates whether you can edit the cell or not in the [Data Browser] window. For mouse and keyboard operations, refer to the following. ☞ Page 177 Operations for the list display ☞ Page 178 Operations when a cell is edited
		Blue	The setting can be edited in the [Data Browser] window. Double-click each cell to edit the setting. The setting method differs depending on the setting to be edited.
		Black	The setting cannot be edited in the [Data Browser] window. Double-click each cell to display the setting dialog.

■Presets registered as initial settings

Preset name	Initial settings in the [Display Setting] dialog			
	[Range]	[Target]	[Select Display Item]	[Display Items]
[Basic]	[Editing screen]	[Figure/Object/Common Setting]	[Basic Setting]	Items listed in the display item options
[Device]	[Editing screen]	[Figure/Object/Common Setting]	[Device Setting]	
[Text]	[Editing screen]	[Figure/Object/Common Setting]	[Text Setting]	
[Color]	[Editing screen]	[Figure/Object/Common Setting]	[Color Setting]	
[Screen]	[All screens]	[Screen]	[Basic Setting of Screen]	

■Operations for the list display

The following table shows how to operate the search result list in the [Data Browser] window with the mouse or keyboard.

Operation	Action
↑ ↓ → ←	Moves the cursor.
Shift + ↑ ↓ → ←	Moves the cursor while keeping the cell with the cursor selected. The cell to which the cursor is moved is also selected.
+ (Numeric keypad)	Expands the row under the cursor.
- (Numeric keypad)	Collapses the row under the cursor.
Shift + + (Numeric keypad) Shift + , (comma)	Expands the tree.
Shift + - (Numeric keypad) Shift + . (Period)	Collapses the tree.
Home	Moves the cursor to the cell in the top row.
End	Moves the cursor to the cell in the bottom row.
PgUp	Moves the cursor from the cell with the cursor to the corresponding cell up one page.
PgDown	Moves the cursor from the cell with the cursor to the corresponding cell down one page.
Shift + Home	Selects the cells from the cell with the cursor to the cell in the top row.
Shift + End	Selects the cells from the cell with the cursor to the cell in the bottom row.
Shift + PgUp	Selects the cells from the cell with the cursor to the corresponding cell up one page.
Shift + PgDown	Selects the cells from the cell with the cursor to the corresponding cell down one page.
Shift + Click	Selects the cells from the cell with the cursor to the cell where the mouse is clicked.
Ctrl + Space Ctrl + Click	Selects or deselects a row.
Tab	Moves the cursor to the right cell.
Shift + Tab	Moves the cursor to the left cell.
Enter	Moves the cursor down one row.
Alt + Enter F3	Displays the setting dialog for the figure or object corresponding to the row with the cursor.
Ctrl + C	Copies the figure or object corresponding to the row selected with the cursor when a cell in the [Type] column is selected. When multiple cells are selected, only the figures and objects placed on the same screen editor are copied. Copies the setting value in the cell selected with the cursor when a cell in a column other than the [Type] column is selected. When multiple cells are selected, the setting values of all the selected cells are copied.
Ctrl + X	Cuts the figure or object corresponding to the row with the cursor.
Ctrl + V	Pastes the copied figure or object to the screen editor when a cell in the [Type] column is copied. Pastes the text into the cell selected with the cursor when a cell in a column other than the [Type] column is copied. The value which is out of the setting range cannot be pasted.
Ctrl + D	Pastes a copy of the figure or object corresponding to the row with the cursor on the screen editor.
Ctrl + A	Selects all the figures and objects placed on the screen editor displayed at the topmost position.
Ctrl + U	Cancels the grouping of the figures and objects corresponding to the rows with the cursor.
Delete	Clears the value of the cell with the cursor only when the cell allows direct editing. Clearing the items for which numerical values are set makes the setting values to zero.
Back space	Enables editing of the cell with the cursor. Clears the setting value and enables editing when the cell allows direct editing. ☞ Page 178 Operations when a cell is edited
Character keys	Enables editing when the cell with the cursor allows direct editing. ☞ Page 178 Operations when a cell is edited
F2	Enables editing of the cell with the cursor. You can edit only the cells whose text color is blue. ☞ Page 178 Operations when a cell is edited
Double click	Enables editing of the cells whose text color is blue. For the other cells, the setting dialog for the figure or object corresponding to the cell is displayed. ☞ Page 178 Operations when a cell is edited
Drag	Selects multiple cells.

■Operations when a cell is edited

The following table shows the keyboard operation for when a cell in the search result list is edited.

Operation	Action
Enter	Confirms and ends the edit.
Esc	Discards and ends the edit.
Tab	Confirms the edit and moves the cursor to the right cell.
Shift + Tab	Confirms the edit and moves the cursor to the left cell.
Alt + Enter	Inserts a line feed when text is input.

[Display Setting] dialog

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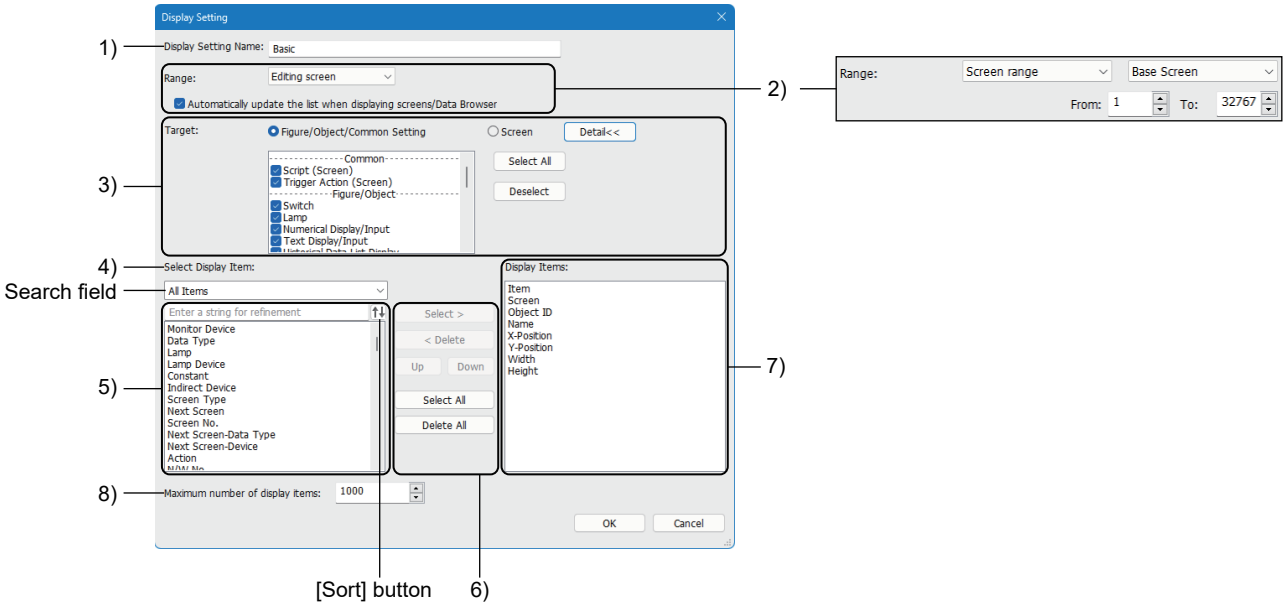
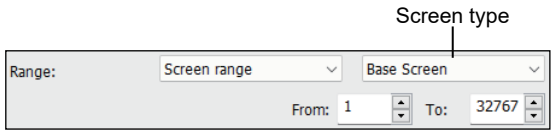
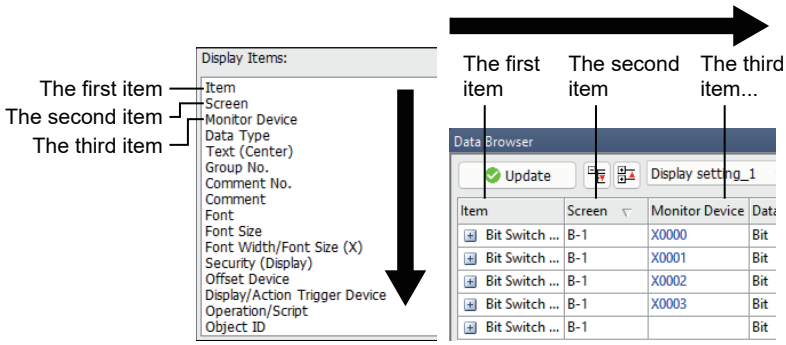
Configure the settings to narrow down the items and ranges to be displayed in the search result list in the [Data Browser] window.



Item			Description
1)	[Display Setting Name]		Set a name used to narrow down the items and ranges to be displayed in the search result list in the [Data Browser] window. Up to 100 characters can be set. The set name is added to the preset for display settings in the [Data Browser] window.
2)	[Range]	—	Selects the range to be displayed in the [Data Browser] window. The following shows selectable items.
		[All screens]	Displays the settings included in all screens.
		[Editing screen]	Displays the settings included in the screen editor displayed in the foreground. When [Automatically update the list when displaying screens/Data Browser] is selected, the displayed contents in the [Data Browser] window are updated when one of the following operations is performed. • Displaying or switching a screen editor • Displaying the hidden [Data Browser] window (auto-hiding function enabled)
		[Screen range]	Displays the settings included in the specified screen.  Select the type of the display target screens. Set the range of displayed screens to [From] and [To] with screen numbers. The setting range is [0] to [32767].
3)	[Target]		Set the display target in the [Data Browser] window. Click the [Detail >>] button to display details of the display target. Select the settings to be displayed.
4)	[Select Display Item]		Narrow down the items listed in the display item options.
5)	Display item options		Options of the items displayed in the search result list Select an item and click the [Select] button to move the item to [Display Items]. To narrow down the list, enter a string in the search field. To sort the list in ascending or descending order, click the [Sort] button.

Item			Description
6)	Operation buttons	[Select] button	Moves the item selected in the display item options to [Display Items].
		[Delete] button	Moves the item selected in [Display Items] to the display item options.
		[Up] button, [Down] button	Move the item selected in [Display Items] up or down.
		[Select All] button	Moves all the items in the display item options to [Display Items].
		[Delete All] button	Moves all the items other than [Type] in [Display Items] to the display item options.
7)	[Display Items]		Items to be displayed in the search result list Select an item and click the [Delete] button to move the item to the display item options. The items in the search result list are displayed in the order set for [Display Items].  Select an item and click the [Up] or [Down] button to move the item up or down.
8)	[Maximum number of display items]		Sets the maximum number of data to be displayed in the search result list. The setting range is [1] to [10000].

[Display Setting List] dialog

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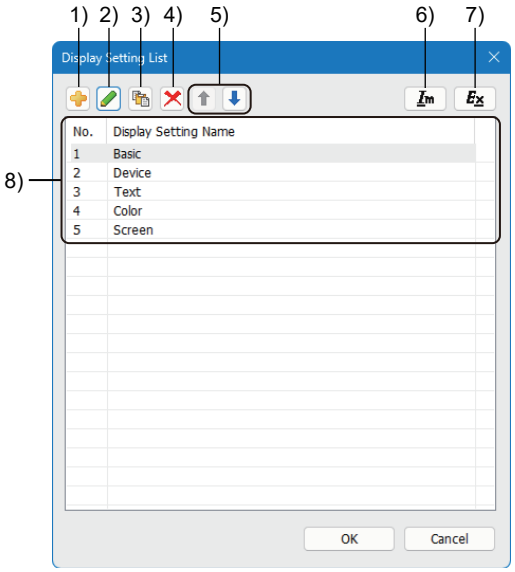
Manage the presets created in the [Display Setting] dialog.



Item		Description
1)	[Add] button	Create a new preset in the [Display Setting] dialog. Up to 32 presets can be created. ☞ Page 179 [Display Setting] dialog
2)	[Edit] button	Edit a preset in the [Display Setting] dialog. ☞ Page 179 [Display Setting] dialog
3)	[Duplicate] button	Duplicate the selected preset in the bottom of the list.
4)	[Delete] button	Deletes the selected preset.
5)	[Up] button [Down] button	Move the selected preset up or down.
6)	[Im] button	Import the preset list. The imported preset list replaces the current preset list. The file format of importable files is the format (*.gtdbr) of the file that lists the display settings in the data browser.
7)	[Ex] button	Export the preset list. The file format of exportable files is the format (*.gtdbr) of the file that lists the display settings in the data browser.
8)	Preset list	Lists the registered presets.

[Text Replacement] dialog

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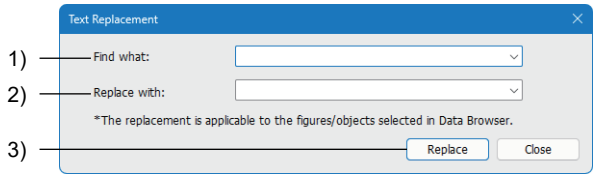

Item		Description
1)	[Find what]	Set a text before the replacement. Up to 512 characters can be set. The characters are case-sensitive.
2)	[Replace with]	Set a text after the replacement. Up to 512 characters can be set. The characters are case-sensitive.
3)	[Replace] button	The text set in [Find what] is replaced with the text set in [Replace with].

Details of the exported file

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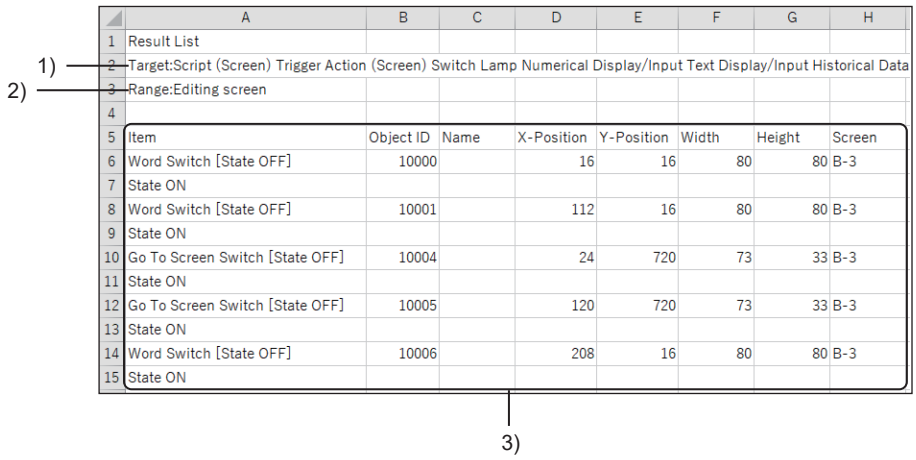
The following shows the details of the exported file of the corrected data in the data browser.



	A	B	C	D	E	F	G	H
1	Result List							
2	Target:Script (Screen) Trigger Action (Screen) Switch Lamp Numerical Display/Input Text Display/Input Historical Data							
3	Range:Editing screen							
4								
5	Item	Object ID	Name	X-Position	Y-Position	Width	Height	Screen
6	Word Switch [State OFF]	10000		16	16	80	80	B-3
7	State ON							
8	Word Switch [State OFF]	10001		112	16	80	80	B-3
9	State ON							
10	Go To Screen Switch [State OFF]	10004		24	720	73	33	B-3
11	State ON							
12	Go To Screen Switch [State OFF]	10005		120	720	73	33	B-3
13	State ON							
14	Word Switch [State OFF]	10006		208	16	80	80	B-3
15	State ON							

Item		Description
1)	[Target]	Target to be displayed in the [Data Browser] window
2)	[Range]	Target to be displayed in the [Data Browser] window
3)	Item	Item set in the [Display Item Setting]

5.5.6 Checking the IP addresses in the list (IP address list)

The IP addresses registered in the project are displayed in the list.

You can narrow your search, or jump to an IP address setting window.

☞ Page 183 IP addresses to be displayed
☞ Page 184 How to use the IP address list
☞ Page 186 [IP Address List] window
☞ Page 187 [Display Item Setting] dialog (IP address list)

IP addresses to be displayed

The IP addresses are displayed in the IP address list depending on the settings as shown below.

Display target setting			Remarks
[GOT Setup] window	[Adjust] tab of [Time Setting]		—
	[VPN Connection]		—
	[Web Browser]	[HTTPS Server]	—
		[HTTP Server]	—
[GOT Ethernet Setting] window	[GOT IP Address Setting]	[Port 1] tab	—
		[Port 2] tab	—
	[GOT Ethernet Common Setting]	[Preferred Server]	These items are displayed when either [Preferred Server] or [Alternate Server] is set to a value other than [0.0.0.0].
		[Alternate Server]	
[Controller Setting] window	Channel settings (CH1 to CH4)	IP address of the device registered in [Connected Ethernet Controller Setting]	—
		[IP Address] of [Detail Setting]	This item is displayed when the communication driver is [CC-Link IE TSN].
	[Gateway Client]		—
	[Mail Send]	[SMTP Server]	—
		[POP3 Server]	—
	[File Transfer]	[Destination FTP Server Setting]	—
[Digital Image Input/Recording] dialog	[Ethernet] tab	[IP Address] in the [Network Camera List] dialog (CH1 to CH4)	—
[GOT Network Interaction] dialog	[IP Address]		—
[OPC UA Server Setting] dialog	[Communication Setting] tab		This item is displayed when [Port No.] is included in the items displayed in the [IP Address List] window. Only the port number is displayed in the [IP Address List] window.
[Communication Setting] dialog	[IP Address] for [PLC side I/F]		—

How to use the IP address list

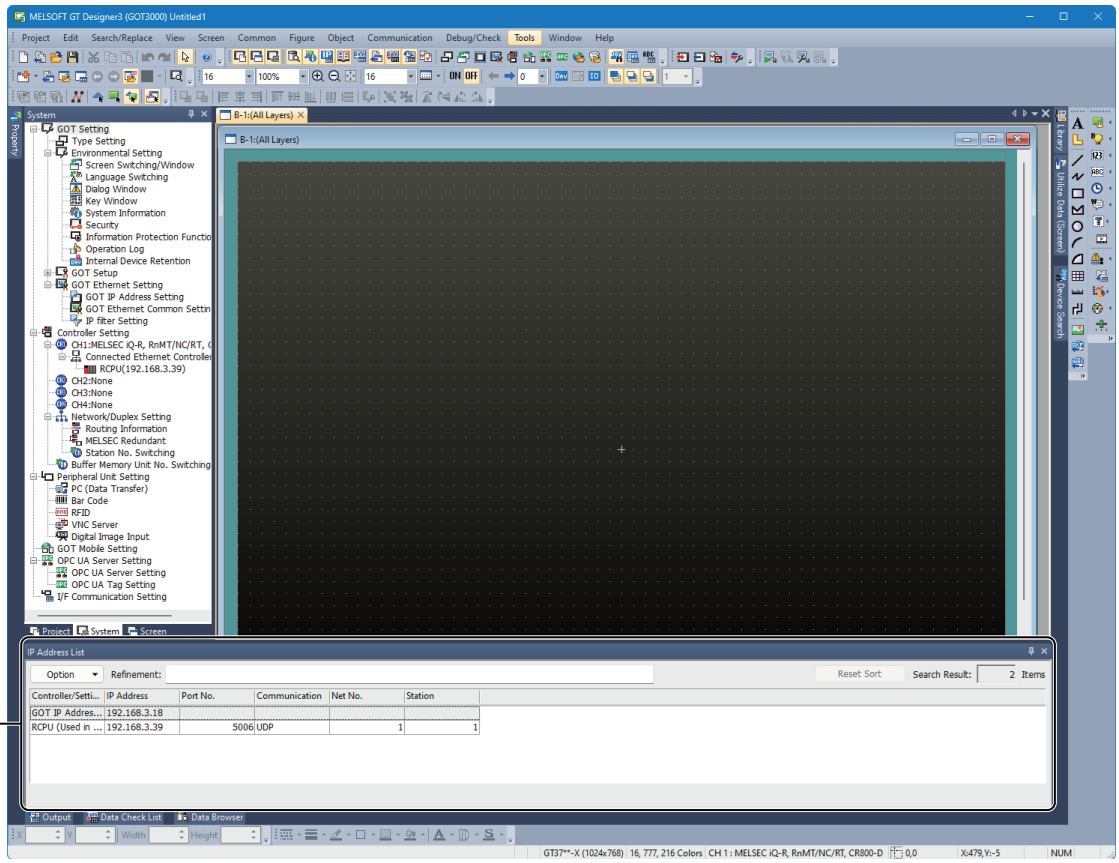
☞ Page 184 Displaying the IP addresses registered in a project
☞ Page 185 Changing the items to be displayed in the IP address list
☞ Page 185 Changing an IP address displayed in the IP address list
☞ Page 185 Exporting the search results displayed in the IP address list

■Displaying the IP addresses registered in a project

Perform one of the following operations to display the [IP Address List] window.

- Select [Search/Replace] → [IP Address List] from the menu.
- Select [View] → [Docking Window] → [IP Address List] from the menu.
- Click the [IP Address List] button on the toolbar.

☞ Page 186 [IP Address List] window

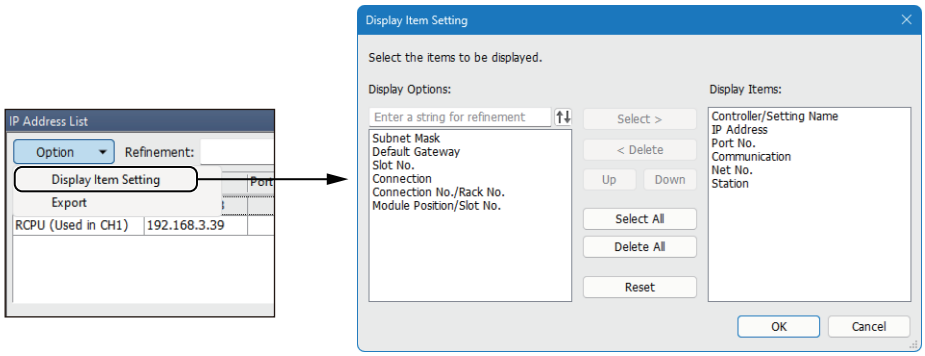


The search result list in the [IP Address List] window displays the search results according to the items selected for display.
For selecting the items to be displayed, refer to the following.

☞ Page 185 Changing the items to be displayed in the IP address list

■Changing the items to be displayed in the IP address list

1. Click the [Option] button in the [IP Address List] window and select [Display Item Setting] from the pull-down menu to display the [Display Item Setting] dialog.



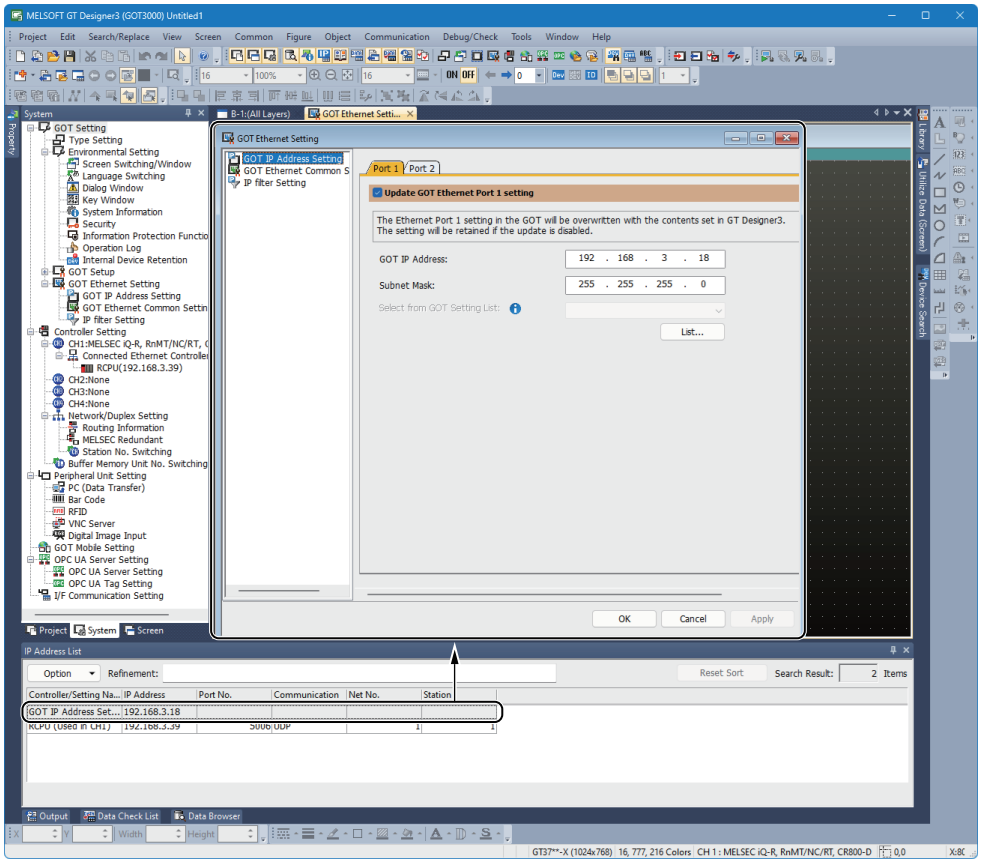
2. Select the items to be displayed in the [IP Address List] window, and specify their display order.

For details on the operation buttons, refer to the following.

☞ Page 187 [Display Item Setting] dialog (IP address list)

■Changing an IP address displayed in the IP address list

1. Double-click the row of the IP address to be changed in the search result list in the [IP Address List] window to display its setting window.



2. Edit the setting and click the [OK] button to apply the new setting.

■Exporting the search results displayed in the IP address list

1. Click the [Option] button and select [Export] from the pull-down menu to display the [Save As] dialog.

2. Set [File name] and [Save as type] and click the [Save] button to export the search result list.

[IP Address List] window

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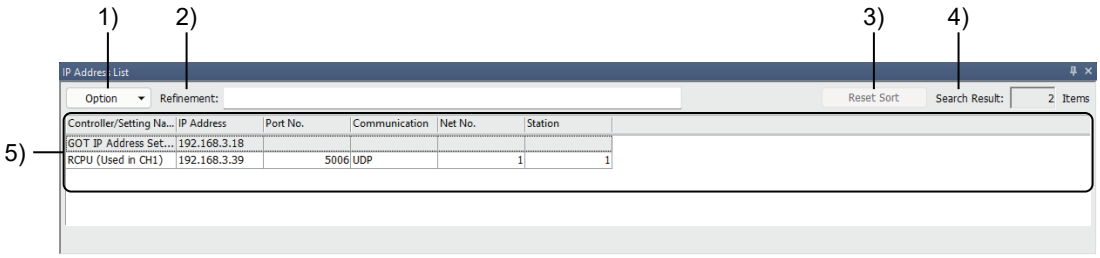
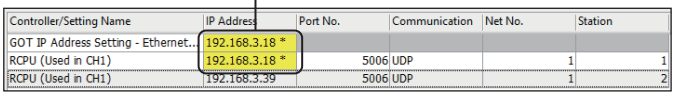


Item			Description
1)	[Option] button	—	Select a setting item from the pull-down menu.
		[Display Item Setting]	Displays the [Display Item Setting] dialog. Select the items to be displayed in the search result list. ☞ Page 187 [Display Item Setting] dialog (IP address list)
		[Export]	Saves the search result list as a CSV file or a Unicode text file. Set [File name] and [Save as type] in the displayed dialog and click the [Save] button to export the search result list. When the IP address is duplicated in a project, a symbol indicating duplication is output to the right of the IP address.
2)	[Refinement]		Narrows the displayed contents of the search result list by keywords. Up to 128 characters can be set. To narrow the contents using multiple keywords, separate each keyword with one-byte spaces.
3)	[Reset Sort]		Changes the sorting order of [Controller/Setting Name] to the order of GT Designer3 menus.
4)	[Search Result]		Displays the number of the items displayed in the search result list.
5)	Search result list		Displays the search result. Click an item name to enable sorting. If the IP address is duplicated in a project, the target cell turns yellow and a symbol indicating duplication appears to the right of the IP address. Display when duplication occurs  However, if the IP address is duplicated with one that is not included as a target in the IP address list, the IP address is not displayed as described above. ☞ Page 183 IP addresses to be displayed

■Mouse and keyboard operations

The following shows the mouse and keyboard operations for the search result list in the [IP Address List] window.

Operation	Action
↑ ↓ → ←	Moves the cursor.
Home	Moves the cursor to the cell in the top row.
End	Moves the cursor to the cell in the bottom row.
PgUp	Moves the cursor from the cell with the cursor to the corresponding cell up one page.
PgDown	Moves the cursor from the cell with the cursor to the corresponding cell down one page.
Enter	Moves the cursor down one row.
Ctrl + Space	Selects or deselects a row.
Double click	Displays the setting window corresponding to the row with the cursor.
Alt + Enter	
F3	

■[Display Item Setting] dialog (IP address list)

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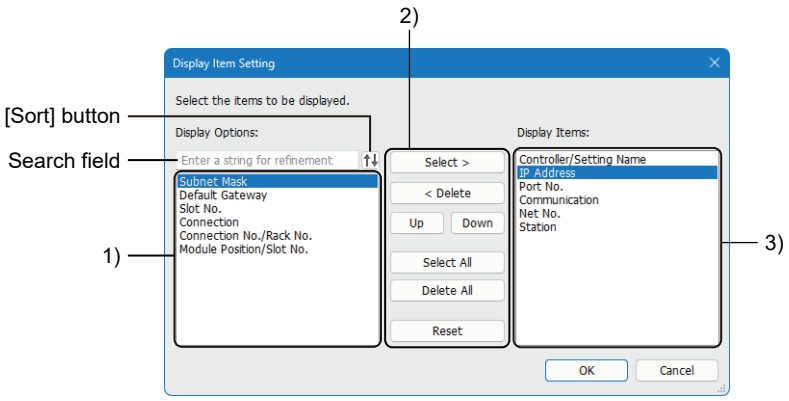
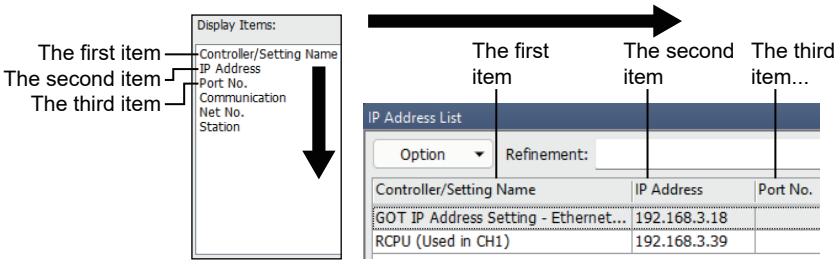


Item			Description
1)	[Display Options]		Options of the items displayed in the search result list Select an item and click the [Select] button to move the item to [Display Items]. To narrow down the list, enter a string in the search field. To sort the list in ascending or descending order, click the [Sort] button.
2)	Operation buttons	[Select] button	Moves the item selected in [Display Options] to [Display Items].
		[Delete] button	Moves the item selected in [Display Items] to [Display Options].
		[Up] button [Down] button	Move the item selected in [Display Items] up or down.
		[Select All] button	Moves all the items in [Display Options] to [Display Items].
		[Delete All] button	Moves all the items other than [Controller/Setting Name] in [Display Items] to [Display Options].
		[Reset] button	Restores the items in [Display Items] to the default ones.
3)	[Display Items]		Items to be displayed in the search result list If any item is selected and the [Delete] button is clicked, the selected item is moved to [Display Options]. The items in the search result list are displayed in the order set for [Display Items].  Select an item and click the [Up] or [Down] button to move the item up or down.

PART 3

5.6 Customizing GT Designer3

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☞ Page 188 Customizing the toolbar
☞ Page 194 Customizing a docking window
☞ Page 197 Customizing the operation
☞ Page 199 Customizing the settings related to editing operations
☞ Page 201 Customizing the display
☞ Page 203 Customizing the default value

5.6.1 Customizing the toolbar

The position of the toolbars for GT Designer3 can be changed and a toolbar can be created in collecting frequently used functions.

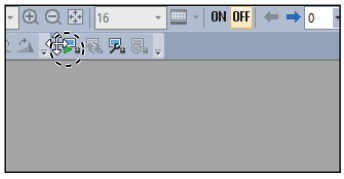
☞ Page 188 Changing the position of toolbars
☞ Page 189 Adding/deleting buttons to/from a toolbar
☞ Page 190 Resetting toolbars
☞ Page 190 Creating a toolbar
☞ Page 191 Deleting a toolbar
☞ Page 192 [Customize] dialog

For details on toolbar types and the method of switching between displaying and hiding toolbars, refer to the following.

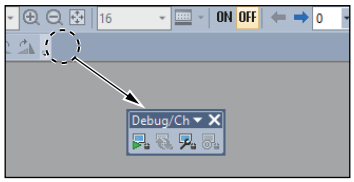
☞ Page 104 Toolbars and shortcut keys

Changing the position of toolbars

1. When the mouse cursor is moved over the left end of the toolbar to move, the shape of the mouse cursor changes as shown below.



2. Drag the toolbar to the destination while holding it clicked. The toolbar moves.



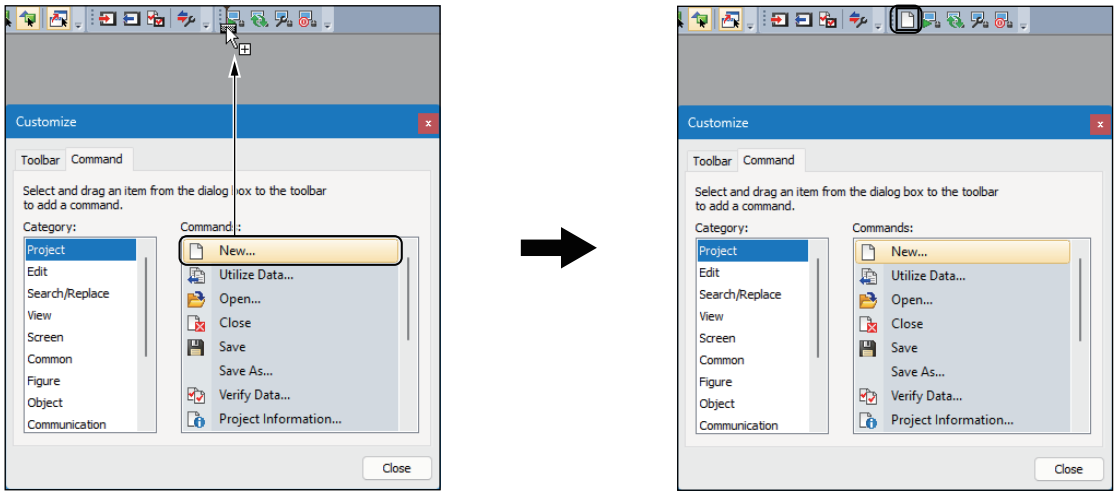
Adding/deleting buttons to/from a toolbar

☞ Page 189 Adding buttons
☞ Page 189 Deleting buttons

■Adding buttons

1. Select [Tools] → [Customize] from the menu to display the [Customize] dialog.
2. Select [Category] in the [Command] tab and drag the command to add from [Command] to the toolbar to which the corresponding button is added.

The button corresponding to the dragged command is added.



☞ Page 193 [Command] tab

3. When completed, close the [Customize] dialog.

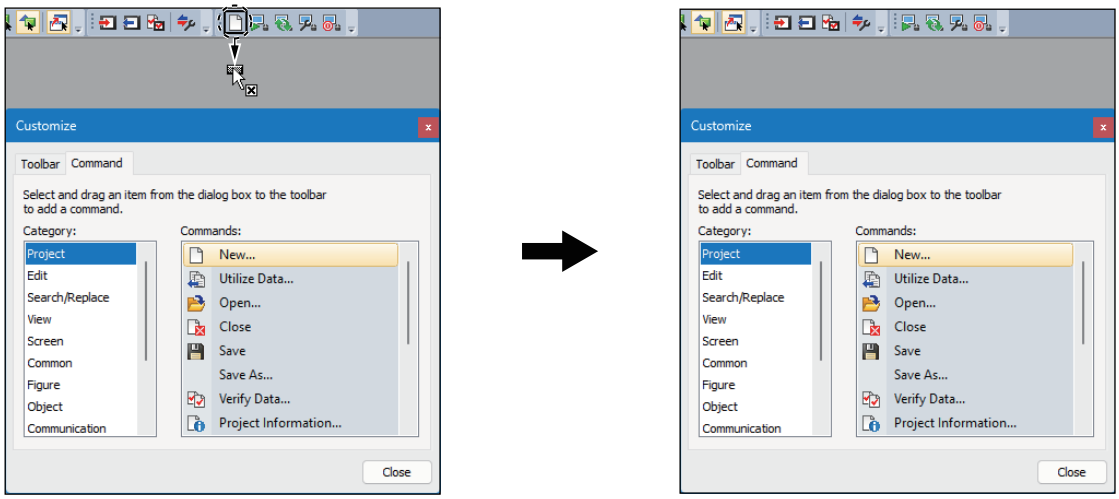
Changes made to the default toolbars can be reset in the [Toolbar] tab.

☞ Page 192 [Toolbar] tab

■Deleting buttons

1. Select [Tools] → [Customize] from the menu to display the [Customize] dialog.
2. While the [Customize] dialog is displayed, drag out of the toolbar the button to delete from the toolbar.

The dragged button is deleted.

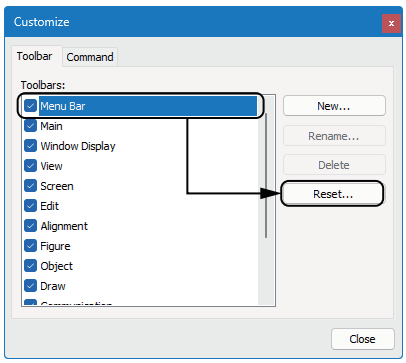


3. When completed, close the [Customize] dialog.

Resetting toolbars

1. Select [Tools] → [Customize] from the menu to display the [Customize] dialog.
2. Select the toolbar to reset in the [Toolbar] tab and click the [Reset] button to reset the toolbar.

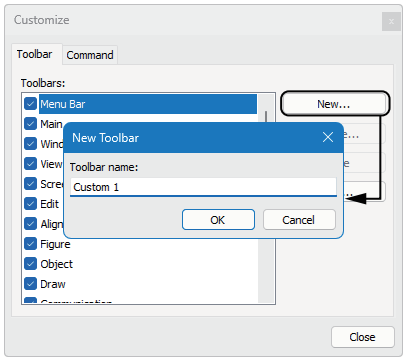
Only the default toolbars can be reset.



3. When completed, close the [Customize] dialog.

Creating a toolbar

1. Select [Tools] → [Customize] from the menu to display the [Customize] dialog.
2. Click the [New] button in the [Toolbar] tab to display the [New Toolbar] dialog.



3. Set [Toolbar name] and click the [OK] button to create a new toolbar.

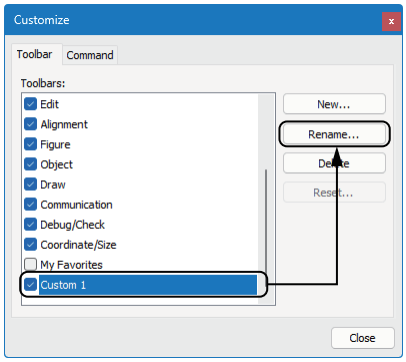
Add buttons in the [Command] tab.

☞ Page 189 Adding buttons

Deleting a toolbar

The following describes how to delete a user-created toolbar.

1. Select [Tools] → [Customize] from the menu to display the [Customize] dialog.
2. Select an intended toolbar in the [Toolbar] tab, and click the [Delete] button to delete the toolbar.



3. When completed, close the [Customize] dialog.

[Customize] dialog

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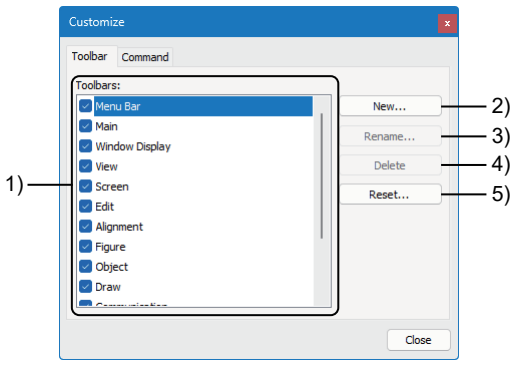
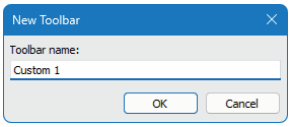
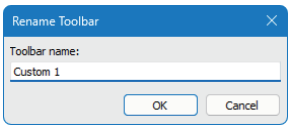
☞ Page 192 [Toolbar] tab
☞ Page 193 [Command] tab

■[Toolbar] tab

GT37 SoftGOT3000



Item		Description
1)	[Toolbars]	Lists the toolbars. Switches between displaying and hiding each toolbar.
2)	[New] button	Displays the [New Toolbar] dialog. Creates a new toolbar.  Set a name for the toolbar to be created for [Toolbar name]. Up to 255 characters can be entered.
3)	[Rename] button	Displays the [Rename Toolbar] dialog. Rename the toolbar selected in [Toolbars]. The default toolbars cannot be renamed.  Set a new name for [Toolbar name]. Up to 255 characters can be entered.
4)	[Delete] button	Deletes the toolbar selected in the [Toolbars]. The default toolbars cannot be deleted.
5)	[Reset] button	Resets the contents of the toolbar selected in [Toolbars] to the initial status. Only the default toolbars can be reset.

■[Command] tab

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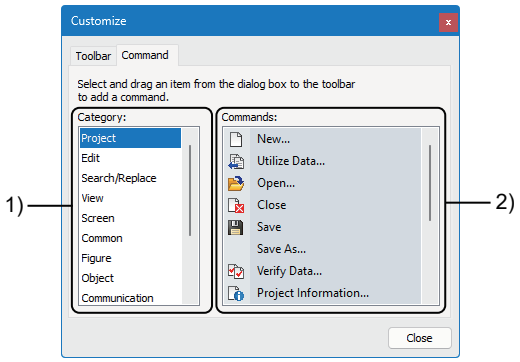


Item		Description
1)	[Category]	Lists the categories of commands. Switches the contents displayed in [Commands].
2)	[Commands]	Display the commands to add to the toolbars. Drag a command to a toolbar to add a button in the toolbar.

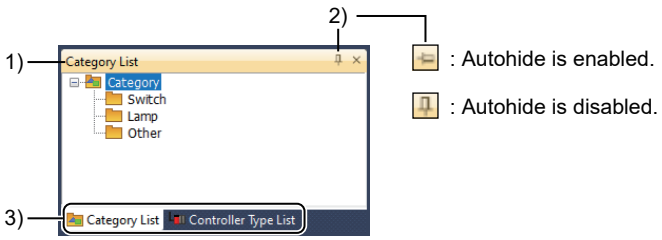
5.6.2 Customizing a docking window

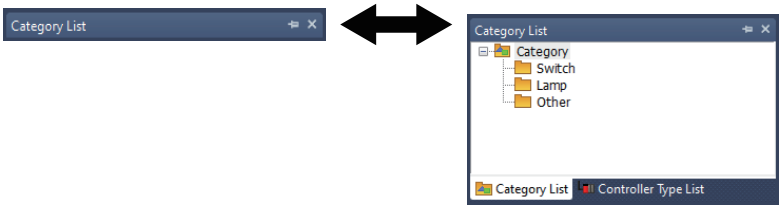
You can reposition a docking window or combine multiple docking windows into a single window.
Docking windows can be displayed or hidden as required.
Customized docking windows are saved and retained for the next startup.
☞ Page 194 Screen layout of the docking windows
☞ Page 195 Changing the position of docking windows
For details on docking window types, and the method of switching between displaying and hiding the docking windows, refer to the following.
☞ Page 91 Screen layout
☞ Page 104 Toolbars and shortcut keys

Screen layout of the docking windows

The following shows the screen layout common to the docking windows.

Ex.
[Category List] window



Item		Description
1)	Title bar	Displays the title of the docking window. Drag this bar to display the docking guide on the screen. ☞ Page 195 Docking
2)	Autohide button	The contents of the docking window are displayed only when the mouse cursor is moved over the title bar of the docking window. 
3)	Docking tabs	Switches docking windows. The tabs are displayed when docking windows are docked. To extract a docking window from the dock window, drag the corresponding tab out of the dock window.

Changing the position of docking windows

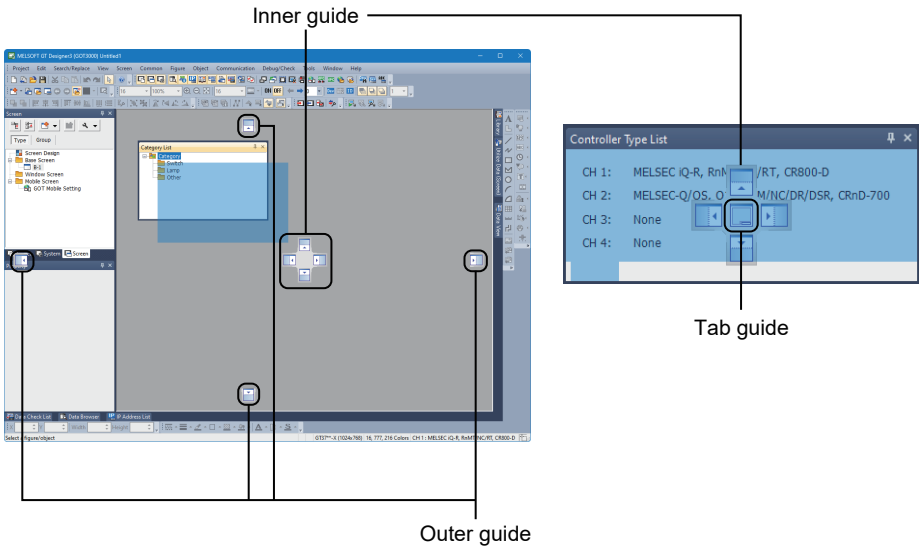
☞ Page 195 Docking
☞ Page 196 Extracting docking windows from a dock window

■Docking

Ex.

Docking the [Category List] window with the main screen

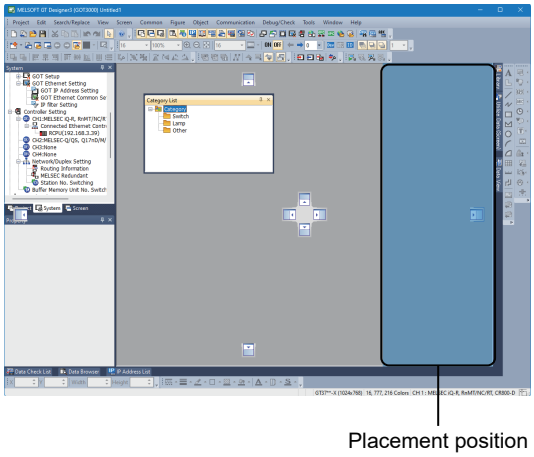
1. Drag the title bar of the docking window to dock over the main screen to display the docking guides.



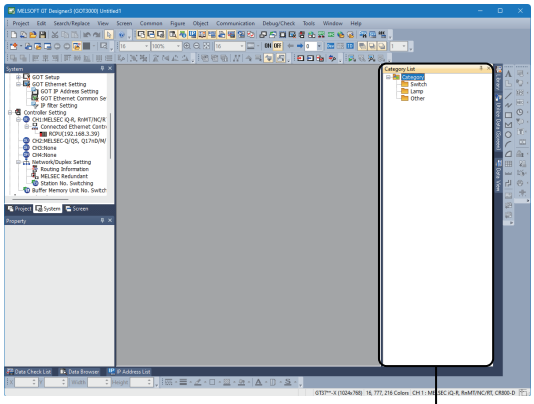
The following shows the types of the docking guides.

Type	Description
Inner guide (Right/Left/Up/Down)	Docks the window in a position nearer to the center than where the other docking windows have been already docked.
Tab guide	Appears in the center of the inner guide when the docking window is dragged over another docking window. Docks the docking window with another docking window.
Outer guide (Right/Left/Up/Down)	Docks the window in a position farther from the center than where the other docking windows have been already docked.

2. Move the mouse cursor over a docking guide while dragging the docking window over to display the indication of the position where the docking window is placed when it is docked.



3. Drop the window while the mouse cursor is on the docking guide to dock the docking window.

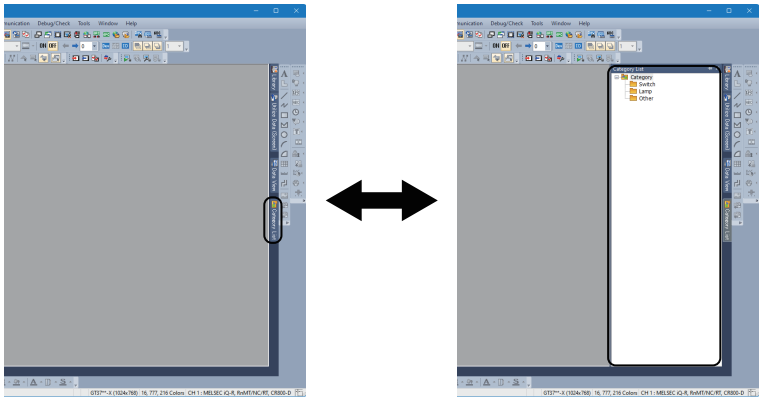


A docking window has been docked.

4. Enable autohide with the autohide button to display the tab of the docking window.

☞ Page 194 Screen layout of the docking windows

Place the mouse cursor over the tab to display the docking window.



To change the size of the docking window, place the mouse cursor over and drag the docking window frame.

■Extracting docking windows from a dock window

1. Disable autohide of the docking window with the autohide button.

☞ Page 194 Screen layout of the docking windows

2. Drag the corresponding tab or the title bar out of the dock window to extract the docking window from the dock window.

Double-clicking the title bar or the tab also extracts the window.

5.6.3 Customizing the operation

You can customize settings related to the operations of GT Designer3.

1. Select [Tools] → [Option] from the menu to display the [Options] dialog.
2. Change the settings of the [Operation] tab and click the [OK] button to get the settings reflected.

☞ Page 197 [Options] dialog ([Operation] tab)

[Options] dialog ([Operation] tab)

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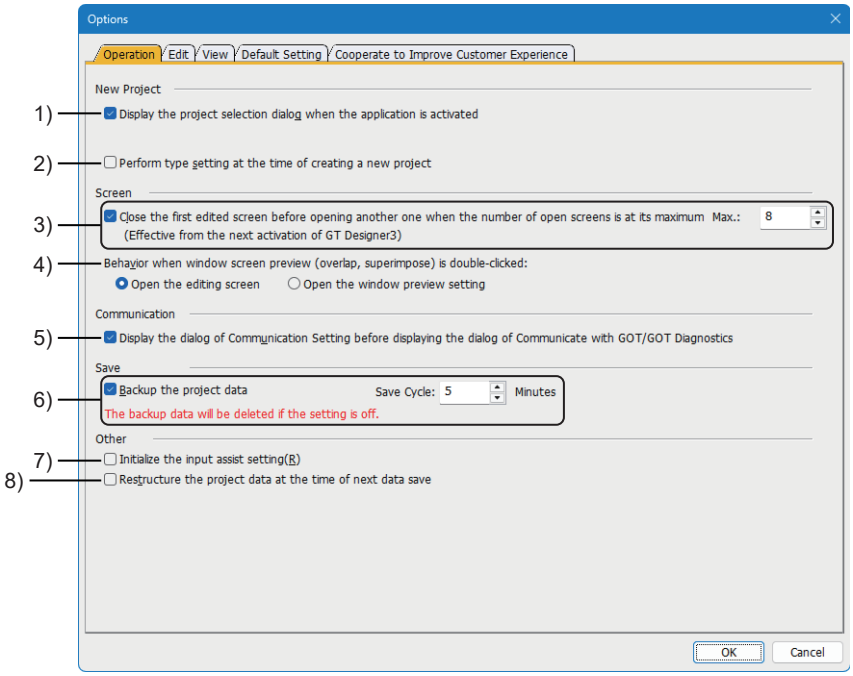

Item			Description
1)	[Display the project selection dialog when the application is activated]		Displays the [Select Project] dialog at the startup of GT Designer3. ☞ Page 86 Starting GT Designer3
2)	[Perform type setting at the time of creating a new project]		Displays the [Type Setting] dialog when a project is created.
3)	[Close the first edited screen before opening another one when the number of open screens is at its maximum]	—	Closes the first-opened screen when a new editor is opened after the number of screen editors being opened reaches its maximum. The setting is enabled at the next start-up of GT Designer3.
		[Max]	Set the maximum number of screens which can be opened. The setting range is [1] to [25].
4)	[Behavior when window screen preview (overlap, superimpose) is double-clicked]		Select the behavior when the window position object for an overlap window or superimpose window is doubled-clicked on the base screen. If a window screen preview is not displayed for the placed window position object, double-clicking the object displays the [Window Preview] dialog regardless of what is selected. The [Window Preview] dialog is displayed by one of the following operations as well. • Select [Display] → [Window Preview] → [Setting] from the menu. • Right-click a window position object on a base screen, and select [Setting]. • Select a window position object on a base screen, and press the Alt + Enter keys simultaneously.
5)	[Display the dialog of Communication Setting before displaying the dialog of Communicate with GOT/GOT Diagnostics]		Displays the [Communication Setting] dialog before displaying the [Communicate with GOT] dialog or the [GOT Diagnostics] dialog.

Item			Description
6)	[Backup the project data]	—	Saves the backup data of the current project automatically. The following projects are saved automatically. • A project which has never been saved • Project data (*.GTY) • Package data (*.GTYS) • GT SoftGOT3000 execution file (*.GTYP) If GT Designer3 unexpectedly exits while a project is being edited, the project can be restored from the backup data at the next startup of the software.
		[Save Cycle]	Set a time interval to save the backup data of a project automatically. The setting range is [5] minutes to [720] minutes. If GT Designer3 unexpectedly exits before the first backup data is generated, the project is not restored at the next startup of the software.
7)	[Initialize the input assist setting]		Select this item and click the [OK] button to reset the settings in the [Input Assist Setting] dialog to their defaults. After the settings are reset to their defaults, [Initialize the input assist setting] is automatically deselected.
8)	[Restructure the project data at the time of next data save]		Deletes unnecessary data from a project to reduce the project size when the project is saved. After the project is saved, this item is automatically deselected. Therefore, this setting is not maintained after the project is saved. When restructuring the project, note the following. • The verification results of the project before and after a restructuring may have inconsistencies. • If the personal computer, which the project is saved and restructured in, does not have Windows fonts used in the project, each Windows font is changed to the default font of each object. • When the restructured project is written to the GOT again, all the screen data are rewritten.

5.6.4 Customizing the settings related to editing operations

Customize the settings related to editing operations on GT Designer3.

1. Select [Tools] → [Option] from the menu to display the [Options] dialog.
2. Customize the settings on the [Edit] tab and click the [OK] button to apply changes.

☞ Page 199 [Options] dialog ([Edit] tab)

[Options] dialog ([Edit] tab)

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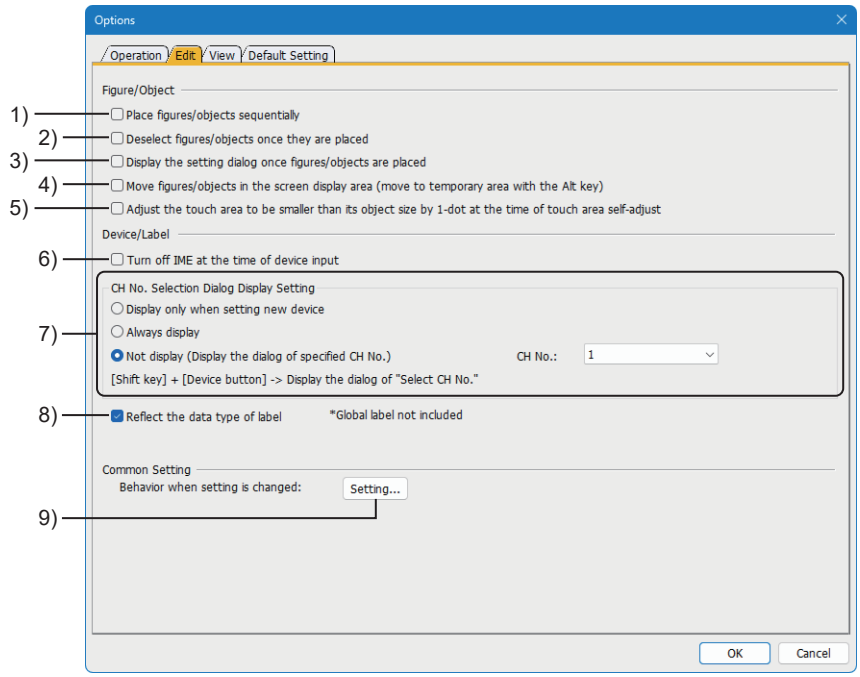

Item		Description
1)	[Place figures/objects sequentially]	Retains the control of the arrangement mode after a figure or an object is placed. The same figure or object can be placed repeatedly without selecting it from the menu. Right-click or press the Esc key to cancel placement mode.
2)	[Deselect figures/objects once they are placed]	Deselects figures and objects after they are placed.
3)	[Display the setting dialog once figures/objects are placed]	Displays the setting dialog automatically every time a figure or an object is placed.
4)	[Move figures/objects in the screen display area (move to temporary area with the Alt key)]	Limits the area where figures and objects can be placed to the screen display area on the screen editor. You can also place a figure or object in the temporary area by holding down the Alt key while manipulating it.
5)	[Adjust the touch area to be smaller than its object size by 1-dot at the time of touch area self-adjust]	Reduces the touch area to be inside the object area at the time of the touch area self-adjustment. The edge of the touch area becomes 1 dot away from the edge of the object area. For the touch area self-adjustment, refer to the following. ☞ Page 1030 Adjusting the touch area of an object (size, position)
6)	[Turn off IME at the time of device input]	Switches keyboard input to one-byte character input to specify a device.

Item			Description
7)	[CH No. Selection Dialog Display Setting]	—	Select whether to display or hide the [Select CH No.] dialog at the device setting. The [Select CH No.] dialog is displayed when two or more channels are set. ☞ Page 835 Setting a device in the device setting dialog The following shows selectable items. • [Display only when setting new device] Displays the [Select CH No.] dialog only when a device is newly set. • [Always display] Always displays the [Select CH No.] dialog at the device setting. • [Not display (Display the dialog of specified CH No.)] Does not display the [Select CH No.] dialog at the device setting. Displays the device setting dialog of the channel set for [CH No.].
		[CH No.]	Set these items when [Not display (Display the dialog of specified CH No.)] is selected. The following shows selectable items. • [Label (GT Designer3)]: Displays the [Select Label (GT Designer3)] dialog. • [Global Label]: Displays the [Select Global Label] dialog. • [1], [2], [3], [4]: Displays the device setting dialog of a set channel. • [Latest]: Displays the device setting dialog of the same channel as that of the latest device setting.
8)	[Reflect the data type of label]		Applies the data type of the label to the data type of objects and others when a label (GT Designer3) is set to the devices of objects and others.
9)	[Setting] button		Displays the [Setting] dialog. Select whether to reflect a number change to the related common settings and object settings. ☞ Page 200 [Setting] dialog (for customizing the settings related to editing operations)

■[Setting] dialog (for customizing the settings related to editing operations)

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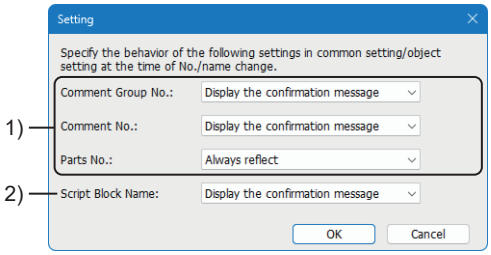


Item		Description
1)	[Comment Group No.] [Comment No.] [Parts No.]	If a number is changed for items such as a comment group registered in the project, select whether to reflect the number change to the related common settings or objects. The following shows selectable items. • [Always reflect] Reflects the number change to the related common settings or objects. • [Not reflect] Does not reflect the number change to the related common settings or objects. • [Display the confirmation message] Displays a confirmation dialog with each number change. Select whether to reflect the number change to the related common settings or objects.
2)	[Script Block Name]	If a script block name registered in the project is changed, select whether to reflect the name change to the related project script and screen script. The following shows selectable items. • [Always reflect] Reflects the script block name change to the related project script and screen script. • [Not reflect] Does not reflect the script block name change to the related project script and screen script. • [Display the confirmation message] Displays a confirmation dialog with each name change. Select whether to reflect the script block name change to the related project script and screen script.

5.6.5 Customizing the display

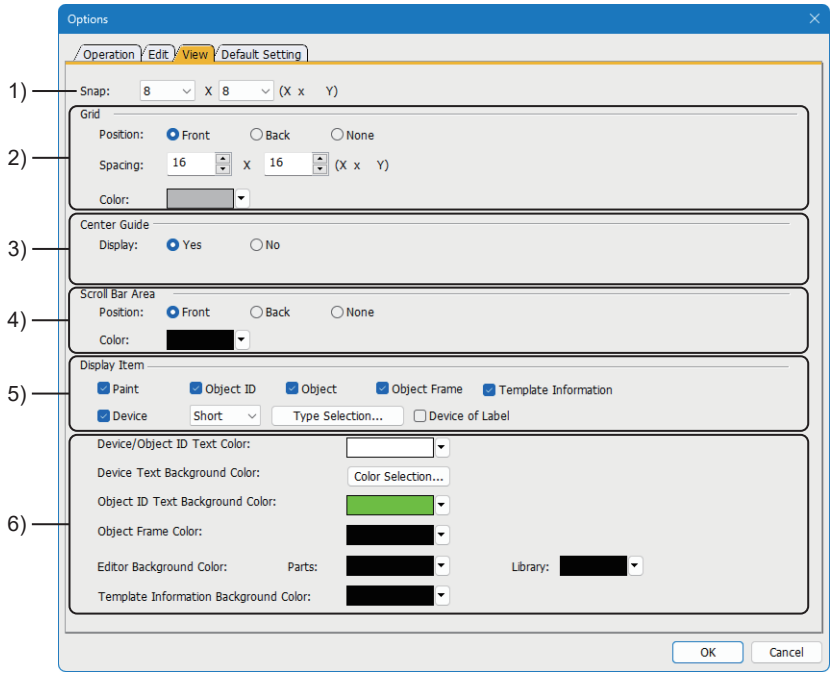
You can customize the settings related to the display of GT Designer3.

1. Select [Tools] → [Option] from the menu to display the [Options] dialog.
2. Change the setting of the [View] tab and click the [OK] button to get the setting reflected.

☞ Page 201 [Options] dialog ([View] tab)

[Options] dialog ([View] tab)

GT37 SoftGOT3000

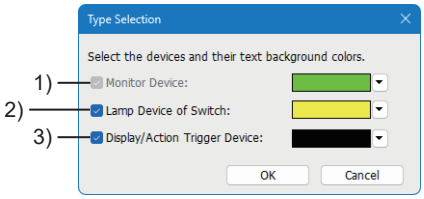


Item			Description
1)	[Snap]		Select the interval (in dots) between figures and objects when they are placed or moved on the screen editor.
2)	[Grid]	—	Set the position and the distance between the lines of the grid on the screen editor. The grid is set not for each project but for GT Designer3. The customized grid is enabled regardless of the project to be opened.
		[Position]	Select the display position of the grid.
		[Spacing]	Set the grid spacing (in dots). The setting range is [2] dots to [64] dots.
		[Color]	Select a grid color. ☞ Page 988 Color settings
3)	[Center Guide]		Select whether to display or hide the guidelines that indicate the center of the screen display area.
4)	[Scroll Bar Area]	—	This item is available when [Expand base screen sizes] is selected in [Basic Setting] in the [Type Setting] dialog. Set the display position and color of the following items on the screen editors for the expanded base screens. • Solid lines representing the scroll bar areas • Dotted lines representing partitions for GOT screens This item is not settable if the scroll bars are set to be hidden on the expanded base screens. For details on the base screen size expansion, refer to the following. ☞ Page 300 Displaying the scroll bar areas for editing the expanded base screens
		[Position]	Select the display position of the lines.
		[Color]	Select the color of the lines. ☞ Page 988 Color settings

Item			Description
5)	[Display Item]	—	Set the information to be displayed on the screen editor.
		[Paint]	Displays a color on the area to be filled.
		[Object ID]	Displays the object ID numbers on the objects.
		[Object]	Displays the objects on the screen editor.
		[Object Frame]	Displays the object frames on the screen editor.
		[Template Information]	Displays the template Information on the screen editor.
		[Device]	Displays the set devices on the objects. The display type can be selected. The following shows selectable items. • [Short]: Displays only the devices. (For labels (GT Designer3): Displays label names only.) • [Full]: Displays the channel numbers, network numbers, station numbers, CPU numbers, and devices. (For labels (GT Designer3): Displays label group names and label names.) Click the [Type Selection] button to display the [Type Selection] dialog. Whether to display or hide the devices other than monitor devices and display colors can be set. ☞ Page 202 [Type Selection] dialog
		[Device of Label]	Displays the devices assigned to the label (GT Designer3) on the objects.
6)	Color setting	—	Set a text color and background color. ☞ Page 988 Color settings
		[Device/Object ID Text Color]	Select the text color of the devices and object ID numbers displayed on the objects.
		[Device Text Background Color]	Select the text background color of the devices displayed on the objects. Click the [Color Selection] button to display the [Type Selection] dialog. Whether to display or hide the devices other than monitor devices and display colors can be set. ☞ Page 202 [Type Selection] dialog
		[Object ID Text Background Color]	Select the text background color of the object ID numbers displayed on the objects.
		[Object Frame Color]	Select the display color of the object frames.
		[Editor Background Color]	• [Parts] Select the background color of the parts editor. • [Library] Select the background color of the library editor.
		[Template Information Background Color]	Select the background color of the template information.

■[Type Selection] dialog

GT37 SoftGOT3000



Item		Description
1)	[Monitor Device]	Displays the monitor devices on the objects. This item cannot be deselected. Select the text background color of the devices.
2)	[Lamp Device of Switch]	Displays the devices set for the lamp function of touch switches. Select the text background color of the devices.
3)	[Display/Action Trigger Device]	Displays the devices set as display conditions or operating conditions. Select the text background color of the devices.

5.6.6 Customizing the default value

Default value refers to the initial value that is specified for a figure or object.

You can design a screen efficiently by specifying a frequently used value as a default value.

☞ Page 203 How to customize a default value

☞ Page 205 [Option] dialog ([Default Setting] tab)

How to customize a default value

☞ Page 203 Changing a default value in the [Option] dialog

☞ Page 204 Setting the user-specified value of a figure or object as the default value

☞ Page 204 Resetting the user-specified default value to the factory default value

☞ Page 204 Exporting the default values

☞ Page 204 Importing the default values

■Changing a default value in the [Option] dialog

1. Perform one of the following operations to display the [Option] dialog.

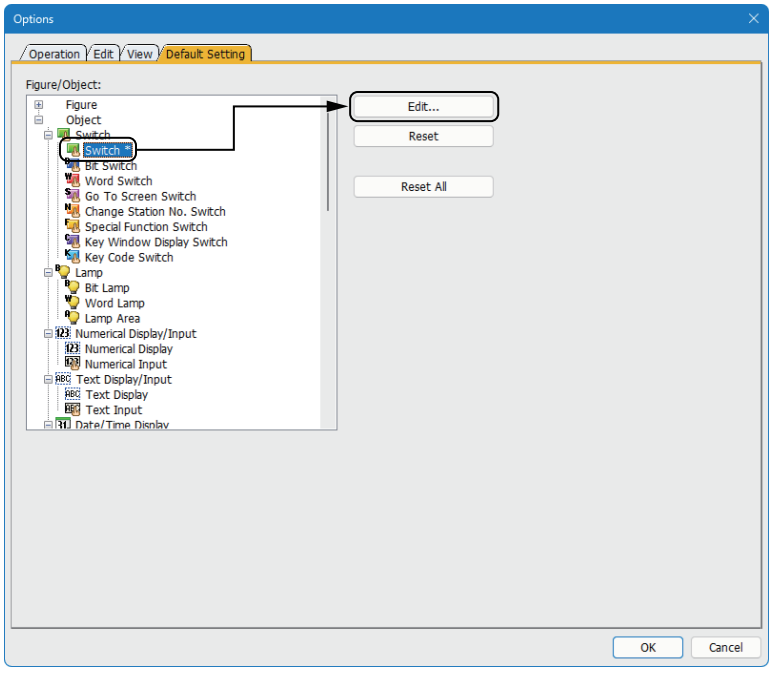
- Select [Tools] → [Default Setting] → [Edit] from the menu.
- Select [Tools] → [Option] from the menu.

2. Select a target figure or object in [Figure/Object] on the [Default Setting] tab, and click the [Edit] button.

☞ Page 205 [Option] dialog ([Default Setting] tab)

Ex.

Specifying the default value of the switch



3. The setting dialog for the selected figure or object appears.

Specify a new default value, and click the [OK] button.

4. In the [Option] dialog, click the [OK] button to apply the change.

■Setting the user-specified value of a figure or object as the default value

The following shows how to set the user-specified value of a figure or object as the default value.

1. Place a figure or an object on the screen editor, and change the set value in the setting dialog or others.

☞ Page 1001 Placing figures and objects

2. Select the figure or object, and select [Edit] → [Set to Default] from the menu to set the new value as the default value.

■Resetting the user-specified default value to the factory default value

1. Perform one of the following operations to display the [Option] dialog.

- Select [Tools] → [Default Setting] → [Edit] from the menu.
- Select [Tools] → [Option] from the menu.

2. Perform one of the following operations.

- Resetting the user-specified default value to the factory default value by figure or object

In the [Default Setting] tab, select a target figure or object in [Figure/Object], and click the [Reset] button.

- Resetting the user-specified default values of all figures and objects to the factory default values

Click the [Reset All] button in the [Default Setting] tab.

3. In the [Option] dialog, click the [OK] button to apply the change.

■Exporting the default values

1. Select [Tools] → [Default Setting] → [Export] from the menu to display the [Save As] dialog.

2. Set [File name] and click the [Save] button to export the default value settings.

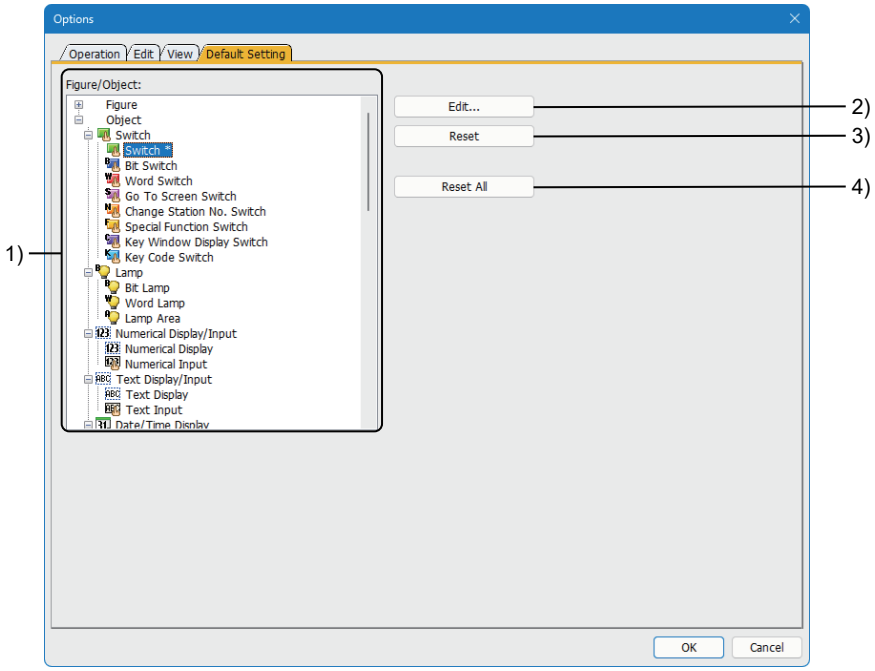
■Importing the default values

1. Select [Tools] → [Default Setting] → [Import] from the menu to display the [Open Default Setting File] dialog.

2. Set [File name] and click the [Open] button to import the default value settings.

[Option] dialog ([Default Setting] tab)

GT37 SoftGOT3000



Item		Description
1)	[Figure/Object]	Lists figures and objects. For the items of figures and objects that have got the default values changed, [*] is displayed to the right of the names. When an item is double-clicked, the setting dialog is displayed as it is displayed when the [Edit] button is clicked.
2)	[Edit] button	Displays the setting dialog of the figure/object selected in [Figure/Object]. The items for which no default value can be set are displayed in gray. After changing settings, click the [OK] button to change the default value.
3)	[Reset] button	Resets the default value of the figure/object selected in [Figure/Object] to the initial value.
4)	[Reset All] button	Resets the default value of all the figures and objects to the initial values.

PART 4 Creating a project, simulation, and data transfer

6 Project creation and operations

7 Simulation

8 Transferring data to the GOT

6 Project creation and operations

☞ Page 208 Creating a project
☞ Page 216 Basic operations of a project
☞ Page 226 Utilizing other project data
☞ Page 245 Verifying a project
☞ Page 263 Creating a screen
☞ Page 284 Basic operations of a screen
☞ Page 293 Basic operations of a screen editor
☞ Page 306 Setting a screen design
☞ Page 313 Changing screen property
☞ Page 334 Managing the created screen
☞ Page 336 Viewing the image of the created screen
☞ Page 343 Performing a data check
☞ Page 349 Checking data size

6.1 Creating a project

GT37 SoftGOT3000

☞ Page 208 Creating a new project
☞ Page 211 Utilizing a project

6.1.1 Creating a new project

GT37 SoftGOT3000

To create a project, the following settings are required.

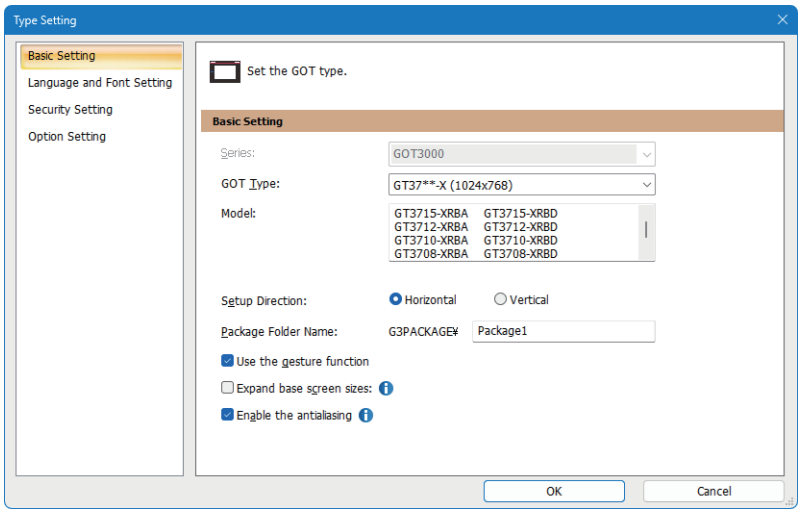
- [Type Setting] dialog: Set a GOT to be used for the project.
- [Controller Setting] window: Configure the settings relevant to communications between the GOT and the controller.
- [Environmental Setting] window ([Screen Switching/Window]): Configure the settings to display screens on the GOT.

1. Either of the following operations displays the [Type Setting] dialog.

- Click the [New] button in the [Select Project] dialog.
- Select [Project] → [New] from the menu.

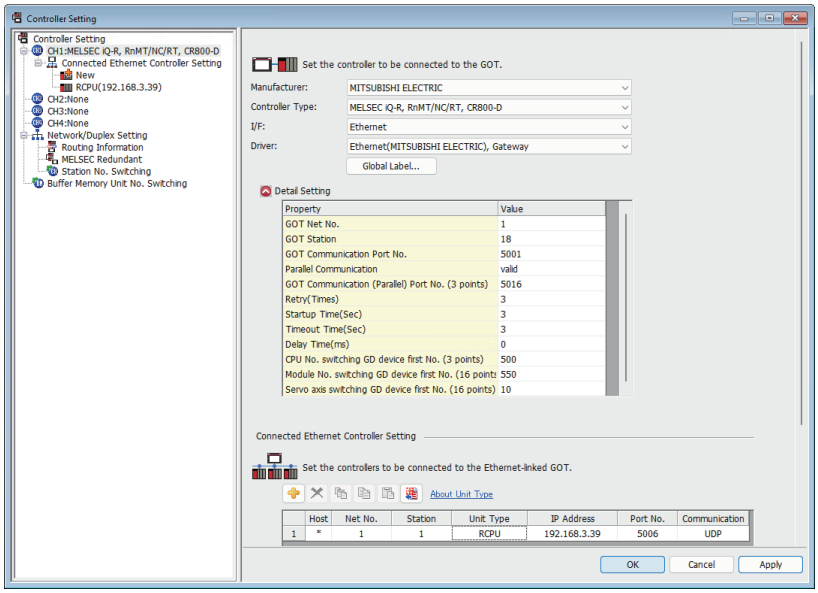
2. Configure the settings, and click the [OK] button. A project is created and the [Controller Setting] window appears.

☞ Page 519 [Type Setting] dialog



3. Select the manufacturer, model, GOT interface, and communication driver for the controller to be connected then click the [OK] button.

☞ Page 729 [Controller Setting]



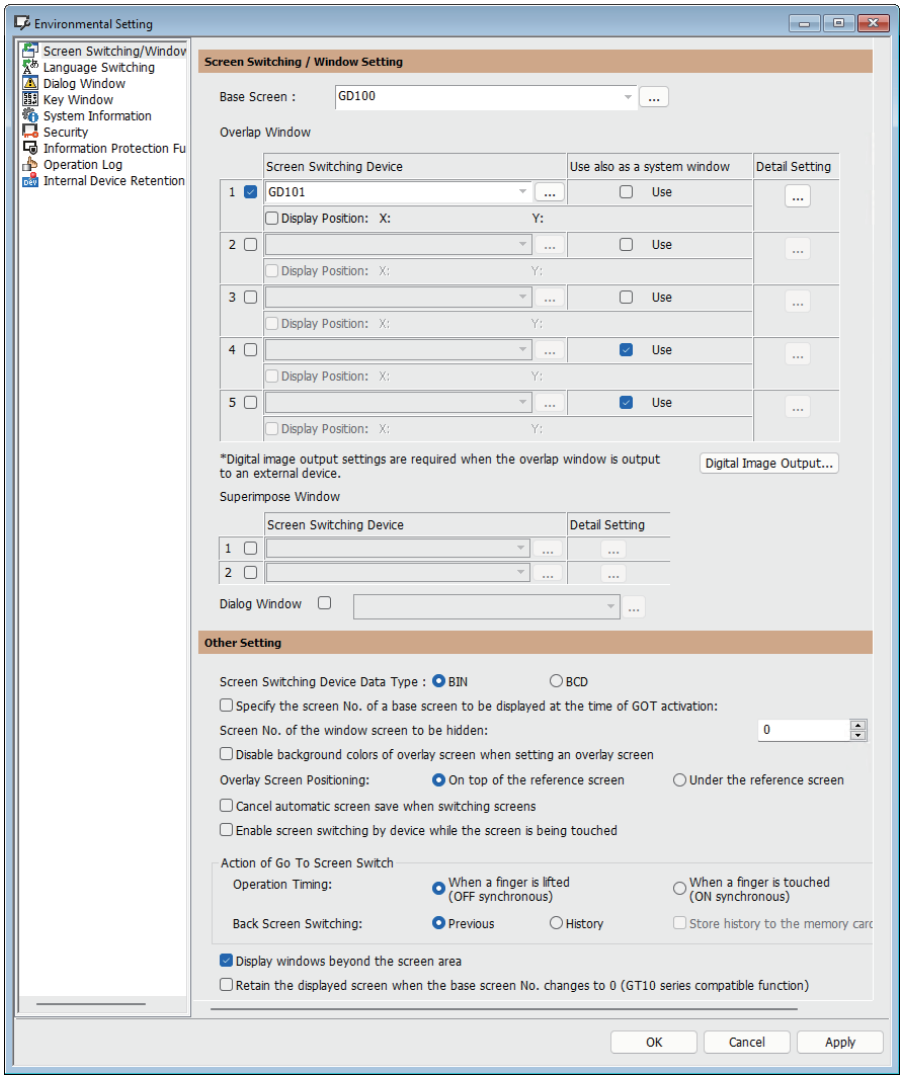
4. Select [Common] → [GOT Environmental Setting] → [Screen Switching/Windows] from the menu to display the [Screen Switching/Window] of the [Environmental Setting] window.

5. Set screen switching devices for the base screen and other necessary windows then click the [OK] button.

☞ Page 542 [Screen Switching/Window]

The creation of a project is complete.

Create screens and configure function settings as necessary.



Point

If [Perform type setting at the time of creating a new project] is deselected in the [Operation] tab in the [Options] dialog, a project is created without displaying the [Type Setting] dialog and [Controller Setting] window.

The settings of the last edited project will be applied for the newly created project.

☞ Page 197 [Options] dialog ([Operation] tab)

6.1.2 Utilizing a project

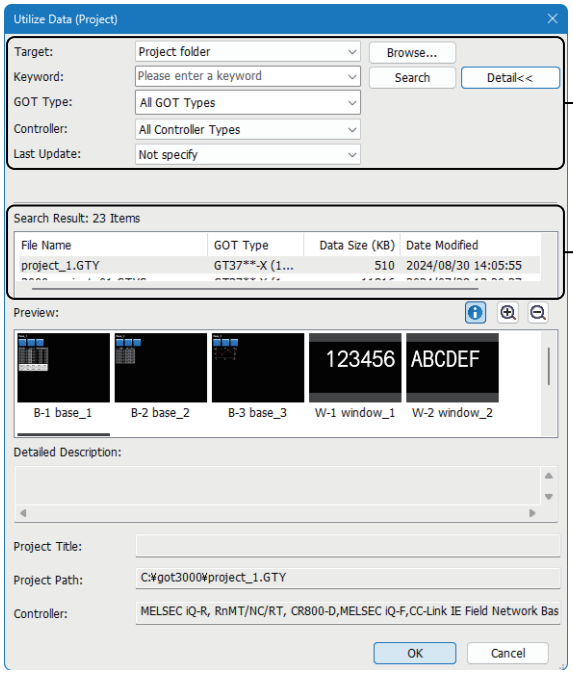
GT37 SoftGOT3000

Edit an existing project to create a project.

The project to be utilized can be searched by a keyword, the GOT type, or other criteria.

You can find utilizable data efficiently without the knowledge of the settings in the sample or existing projects.

This is helpful to determine an existing project to be copied to create a project by copying.



Search criteria

Utilizable data narrowed by search criteria

Point

If you know the settings in a project to be utilized, you can specify the necessary data to be read into the project being edited.

☞ Page 226 Utilizing other project data

☞ Page 212 Specifications of project utilization

☞ Page 213 Utilizing a project

☞ Page 214 [Utilize Data (Project)] dialog and [Search] dialog

Specifications of project utilization

GT37 SoftGOT3000

■Utilizable project formats

The following shows the utilizable project formats.

GOT	Project format
GOT3000 series	• *.GTY • *.GTYS • *.GTYP If a project is saved without deselecting [Include projects for the function of Utilize Data] in the [Project Information] dialog, the project is not utilizable.

■Settings to be changed when utilized

Item	Specifications
GOT type	Utilized data are converted according to the GOT type set for the destination project. Functions that does not correspond to the GOT type of the destination project are not eliminated.
Controller setting	When [Retain the CH No.] is selected in the [Utilize] dialog ([Controller Setting]), the devices set for the objects on the utilized screens will be changed as shown below. • The device name is changed according to the controller setting in the destination project. • The device to which the controller setting in the destination project does not correspond is changed to [??] (except the devices in the script data) Check and change the device settings.
Comment group	If the Windows fonts used for comment groups are not installed on the personal computer, the comments are displayed in different fonts. To display the comments in the specified Windows fonts, make sure that the fonts are installed on the personal computer before utilizing the project.

■Utilizing a project protected with project security

When project security is set in the search target project, user authentication is conducted.

When project security is set in the project that is being edited, the search target project that can be authenticated is automatically authenticated by the logged-in user name and password.

Only authenticated projects are displayed in the search result list.

In the following cases, the project is not displayed in the search result list and cannot be utilized.

- Authentication of the project has failed.
- Display of the project is prohibited with access privileges of an authenticated user.
- The project includes a screen whose display is prohibited with access privileges of an authenticated user.

If you preview the screen, a dummy screen appears.

☞ Page 2972 Protecting a project by registering users (Project security)

■Utilizing a project with the information protection function set

If a password is set by the information protection function for the search target project, password authentication is performed.

Only authenticated projects are displayed in the search result list.

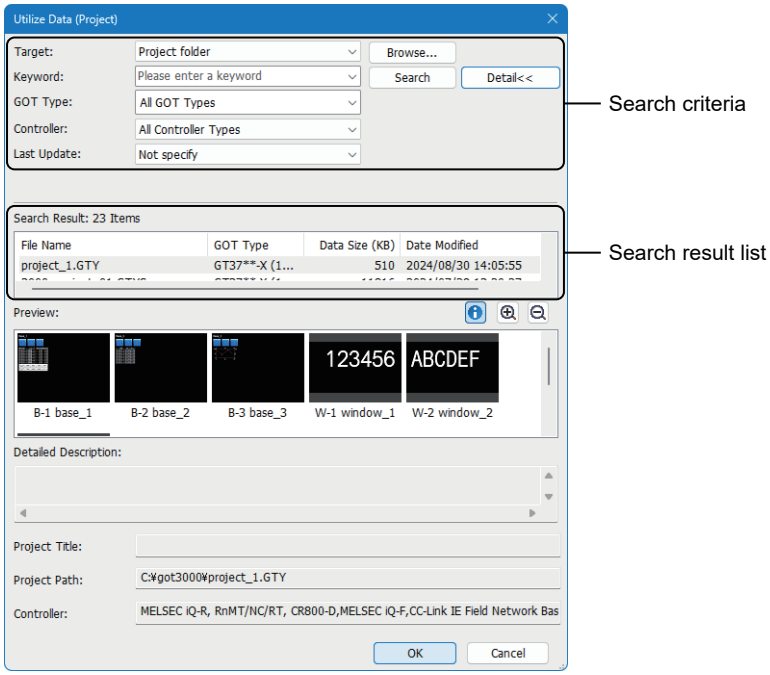
☞ Page 3065 Protecting the files in the GOT (Information protection function)

Utilizing a project

GT37 SoftGOT3000

1. Select [Project] → [Utilize Data] from the menu to display the [Utilize Data (Project)] dialog.
2. Set the search criteria and click the [Search] button to list the search results.

☞ Page 214 [Utilize Data (Project)] dialog and [Search] dialog



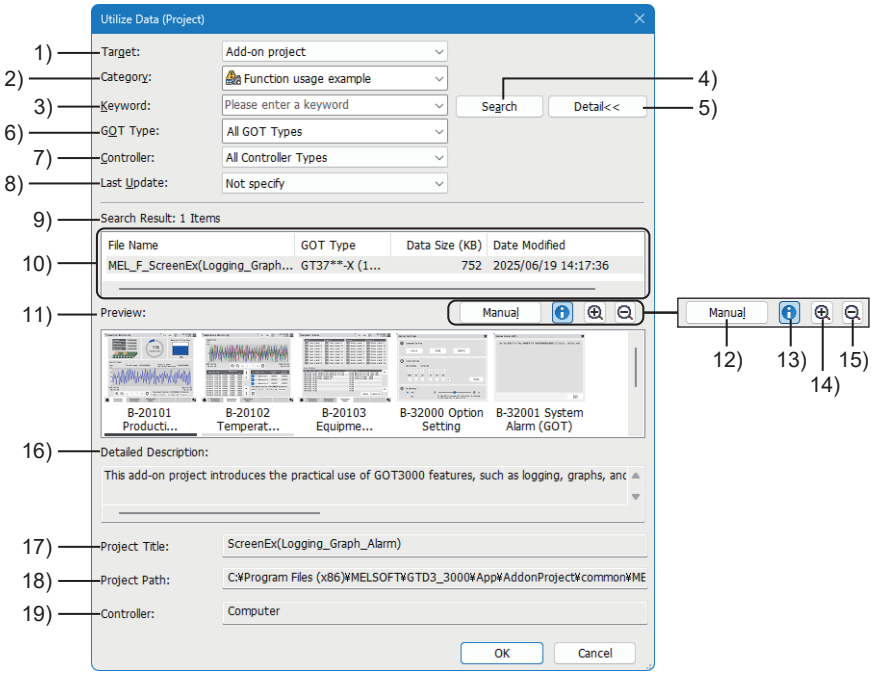
3. Select a project to be utilized and click the [OK] button to create a new project based on the selected project.

[Utilize Data (Project)] dialog and [Search] dialog

GT37 SoftGOT3000

The dialog name varies with the display method.

- The [Utilize Data (Project)] dialog is displayed by selecting [Project] → [Utilize Data] from the menu.
- The [Search] dialog is displayed from the [Utilize Project] dialog.



Item		Description
1)	[Target]	Select a search target.
		The search target for [Recently edited project] is up to five recently edited projects.
		The search target for [Project folder] is the projects in up to the third folder within the specified folder. Up to 200 projects are searched. Click the [Browse] button to specify a folder.
2)	[Category]	This item appears when [Target] is set to [Add-on project]. Select the project type.
3)	[Keyword]	Set a search keyword for the project file name or project title. Two-byte and one-byte characters are distinguished. Specifying keywords delimited with one-byte or two-byte spaces enables you to narrow the scope of a search to the projects containing the keywords. Adding "!" before keywords can search the projects on which the specified keywords are not included. Up to the last five searches are saved.
4)	[Search] button	Conducts a search.
5)	[Detail >>] button [Detail <<] button	Displays or hides the following setting items. • [GOT Type] • [Controller] • [Last Update] Even though the above setting items are not displayed, they can be included in the targets for a search.
6)	[GOT Type]	Select the type of GOTs for the project to be searched.
7)	[Controller]	Select the controller type for the project to be searched. The selectable items are the same as those for [Controller Type] in each channel setting in the [Controller Setting] window. ☞ Page 729 [Controller Setting]
8)	[Last Update]	Select the last update of the project to be searched.
9)	[Search Result]	Number of found projects.
10)	Search result list	Lists found projects.
11)	[Preview]	Displays the images of the screens used in the project selected in the search result list. Immediately after the project is read from the GOT, the screen images set in the project are not displayed. To display the screen images set in the project, open the project read from the GOT, and save the project again.

Item		Description
12)	[Manual] button	This item appears when an add-on project is selected in the search result list. Use this button to display the manual (PDF) for the add-on project.
13)	[Information] button	Displays or hides the following items. • [Detailed Description] • [Project Title] • [Project Path] • [Controller]
14)	[Zoom in] button	Zoom in the display of [Preview].
15)	[Zoom out] button	Zoom out the display of [Preview].
16)	[Detailed Description]	Detail description of the project selected in the search result list.
17)	[Project Title]	Title of the project selected in the search result list.
18)	[Project Path]	Save folder path of the project selected in the search result list.
19)	[Controller]	Controller type specified in the project that is selected in the search result list.

6.2 Basic operations of a project

GT37 SoftGOT3000

☞ Page 216 Opening a project
☞ Page 221 Closing a project
☞ Page 221 Saving a Project
☞ Page 224 Deleting a project
☞ Page 224 Giving a title to a project

6.2.1 Opening a project

☞ Page 217 Opening a GOT3000 project
☞ Page 218 Opening a GOT2000 project
☞ Page 219 Opening a GOT1000 project
☞ Page 220 Opening a GOT900 project
☞ Page 220 [Open Project] dialog

Opening a GOT3000 project

In GT Designer3, you can open a project in any of the following formats.

- *.GTY
- *.GTYS
- *.GTYP
- *.G3

1. Select [Project] → [Open] from the menu to display the [Open Project] dialog.

☞ Page 220 [Open Project] dialog

2. In the [Open Project] dialog, select the project , and then click the [Open] button to open the project.

Point

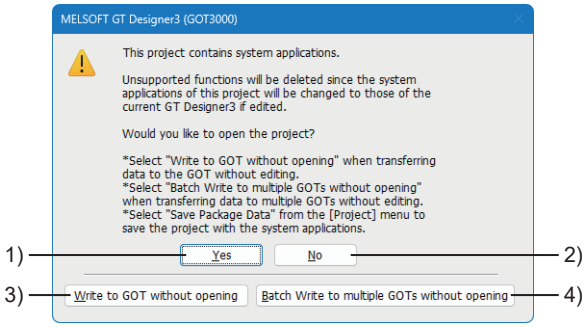
When a project protected with project security is opened, user authentication is performed.

☞ Page 2972 Protecting a project by registering users (Project security)

When a project with a password set by the information protection function is opened, password authentication is performed.

☞ Page 3065 Protecting the files in the GOT (Information protection function)

When the package data (*.GTYS) is opened, the following dialog appears.



Item		Description
1)	[Yes]	Opens the project.
2)	[No]	Stops opening the project and displays the [Select Project] dialog.
3)	[Write to GOT without opening] button	Transfers the package data to the GOT without opening it. The [Communication Configuration] dialog or [Communicate with GOT] dialog ([GOT Write] tab) appears. ☞ Page 451 [Communication Configuration] dialog ☞ Page 465 [GOT Write] tab
4)	[Batch Write to multiple GOTs without opening] button	Transfers the package data to multiple GOTs without opening it. Use this button to display the [Batch Write to multiple GOTs] dialog. ☞ Page 476 [Batch Write to multiple GOTs] dialog

Point

When opening the package data (*.GTYS), select whether to open the data in GT Designer3 or transfer the data to the GOT without opening.

If you open the package data and save it, the system applications and communication drivers of the data will be updated to the version supported by GT Designer3 in use.

The settings of the functions that are not supported by GT Designer3 will be deleted.

PART 4

Opening a GOT2000 project

In GT Designer3, you can open a project in any of the following formats.

The operation differs depending on the extension of the project to be opened.

Extension	Reference
*.GTX *.GTXS *.G2	☞ Page 218 When opening a GOT2000 project (*.GTX, *.G2), GT SoftGOT3000 execution file (*.GTXS)
*.GTCNV	☞ Page 219 When opening a GOT2000 project (*.GTCNV)

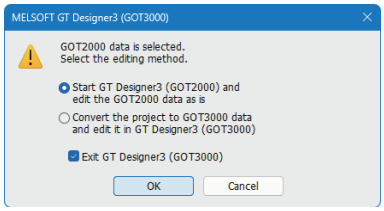
■When opening a GOT2000 project (*.GTX, *.G2), GT SoftGOT3000 execution file (*.GTXS)

There are two alternatives: convert the project into the GOT3000 equivalent, or start GT Designer3 (GOT2000) and edit the project as a GOT2000 project.

1. Select [Project] → [Open] from the menu to display the [Open Project] dialog.

☞ Page 220 [Open Project] dialog

2. In the [Open Project] dialog, select a project and click the [Open] button to display the following dialog.

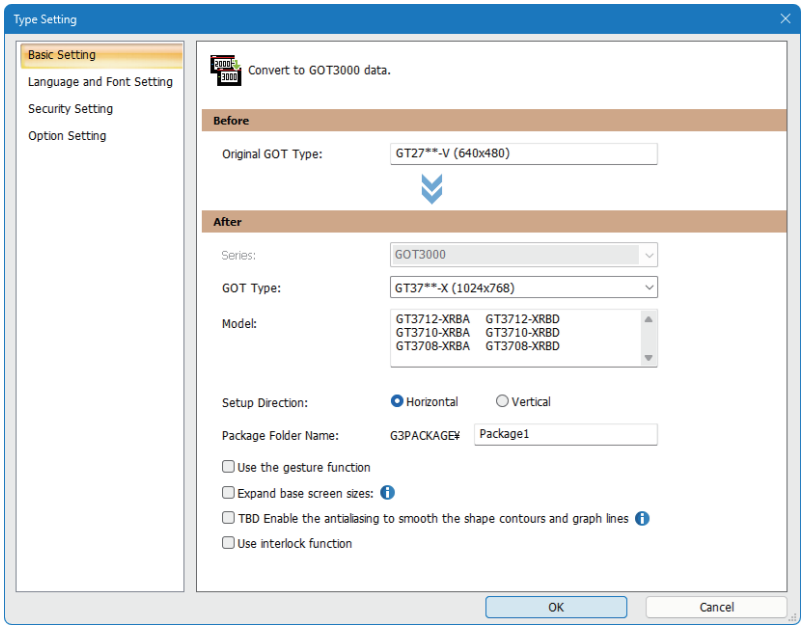


3. Select the editing method of the project and click the [OK] button.

Setting item	Description
[Start GT Designer3 (GOT2000) and edit the GOT2000 data as is]	Starts GT Designer3 (GOT2000) and opens the project.
[Convert the project to GOT3000 data and edit it in GT Designer3 (GOT3000)]	Converts the project into the GOT3000 equivalent. The [Type Setting] dialog appears. Proceed to Step 4.

4. Set the GOT type after the conversion, and click the [OK] button.

☞ Page 519 [Type Setting] dialog



The converted project opens, and the conversion results are listed in the [Output] window.

☞ Page 528 [Output] window

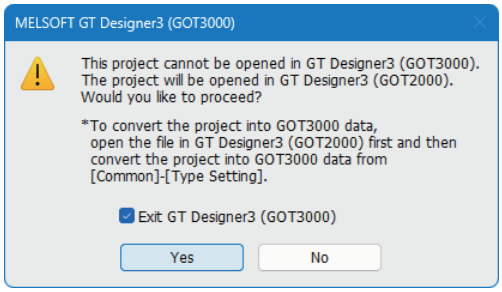
■When opening a GOT2000 project (*.GTCNV)

Start GT Designer3 (GOT2000), and open a project.

1. Select [Project] → [Open] from the menu to display the [Open Project] dialog.

☞ Page 220 [Open Project] dialog

2. In the [Open Project] dialog, select a project and click the [Open] button to display the following dialog.



3. Click the [Yes] button to switch the screen design software to GT Designer3 (GOT2000).

Opening a GOT1000 project

For a project in any of the following formats, start GT Designer3 (GOT1000) and open the project.

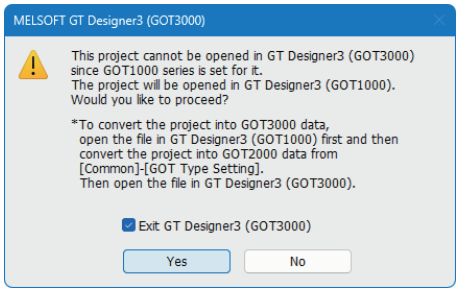
- *.GTW
- *.GTE
- *.G1

To convert the project into the GOT3000 equivalent, convert the project into the GOT2000 equivalent in advance.

1. Select [Project] → [Open] from the menu to display the [Open Project] dialog.

☞ Page 220 [Open Project] dialog

2. In the [Open Project] dialog, select a project and click the [Open] button to display the following dialog.



3. Click the [Yes] button to switch the screen design software to GT Designer3 (GOT1000).

Opening a GOT900 project

For a project in any of the following formats, start GT Designer3 (GOT1000) and convert the project into the GOT1000 equivalent.

• *.GTD

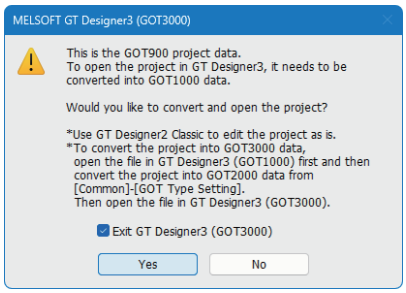
To edit the project as a GOT900 project, use GT Designer2 Classic.

To convert the project into the GOT3000 equivalent, convert the project into the GOT2000 equivalent in advance.

1. Select [Project] → [Open] from the menu to display the [Open Project] dialog.

☞ Page 220 [Open Project] dialog

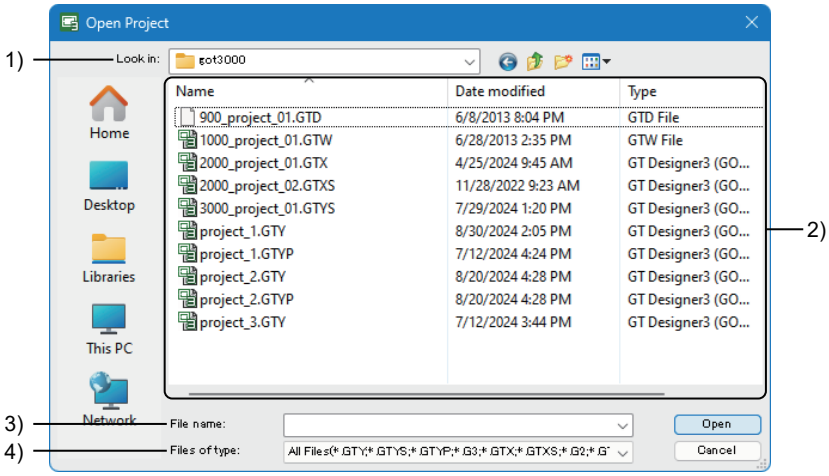
2. In the [Open Project] dialog, select a project and click the [Open] button to display the following dialog.



3. Click the [Yes] button to switch the screen design software to GT Designer3 (GOT1000).

Convert the project into the GOT1000 equivalent by using GT Designer3 (GOT1000).

[Open Project] dialog



Item		Description
1)	[Look in]	Select a location where the project has been saved.
2)	File list	Lists the files saved in the location specified in [Look in].
3)	[File name]	Input the file name of the project to be opened. Click the [Open] button to open the project having the input file name.
4)	[Files of type]	Select the file type of the files to be displayed in the file list.

6.2.2 Closing a project

Select [Project] → [Close] from the menu to close the open project.

6.2.3 Saving a Project

GT Designer3 saves a project as a file with one of the following extensions.

Extension	Description	Model
*.GTY	File format of a single file containing projects only.	GT37 SoftGOT3000
*.GTYS	File format of a single file containing a project and the related system package. Since the versions of the project and system package are fixed, if you have transferred the file to the GOT with an older version of GT Designer3, the relevant functions are usable without being downgraded. This provides convenience when you save a project as complete data. Data can be transferred to the GOT by using Data Transfer Tool without GT Designer3.	
*.GTYP	File format used to execute a project on the GT SoftGOT3000 module. Only *.GTYP projects can be opened with GT SoftGOT3000.	GT37 SoftGOT3000

☞ Page 222 Naming and saving the project as project data (*.GTY) or a GT SoftGOT3000 execution file (*.GTYP)
☞ Page 223 Naming and saving the project as package data (*.GTYS)
☞ Page 224 Overwriting a project

Naming and saving the project as project data (*.GTY) or a GT SoftGOT3000 execution file (*.GTYP)

GT37 SoftGOT3000

1. Select [Project] → [Save As] from the menu to display the [Save As Project] dialog.

☞ Page 222 [Save As Project] dialog

2. Click the [Save] button after the required settings to save the project.

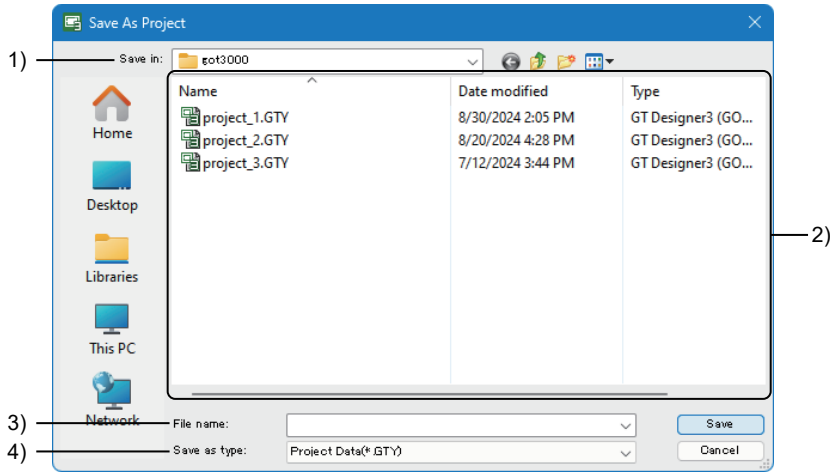
In the [GOT Environmental Setting] window ([Information Protection Function]), when [Use file protection function] in the [File Protection] tab is selected, the [Project Data Password Registration] dialog appears.

Set a password for the project data.

☞ Page 3068 [File Protection]

■[Save As Project] dialog

GT37 SoftGOT3000



Item		Description
1)	[Save in]	Select the destination to save the project. Do not save the project in the following path. • <Installation path>\GTD3_3000\App • <Installation path>\GTD3
2)	File list	Lists files in the destination to save the project.
3)	[File name]	Set a file name of the project to be saved. Click the [Save] button to save the project with the set file name.
4)	[Save as type]	Refers to the type of the file to be saved.

Naming and saving the project as package data (*.GTYS)

GT37 SoftGOT3000

Save a single file of package data containing a project and the related system package.

1. Select [Project] → [Save Package Data] from the menu to display the [Save As Package] dialog.

☞ Page 223 [Save As Package] dialog

2. Set [File name] and click the [Save] button to save the package data.

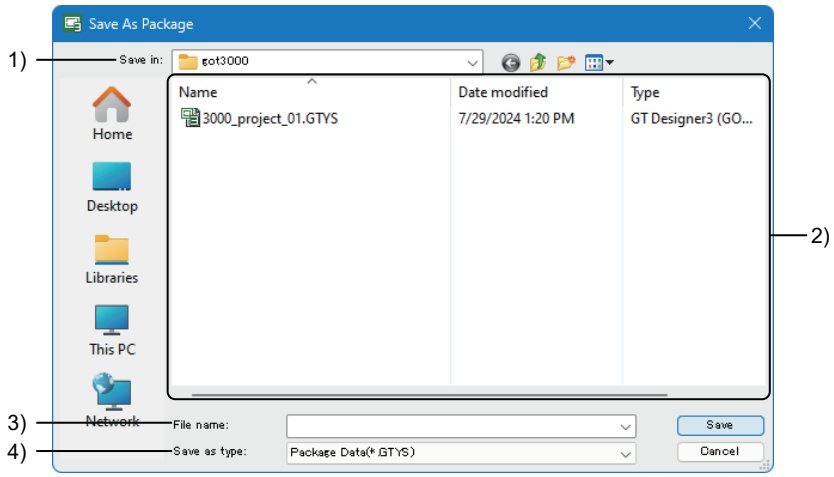
In the [GOT Environmental Setting] window ([Information Protection Function]), when [Use file protection function] in the [File Protection] tab is selected, the [Project Data Password Registration] dialog appears.

Set a password for the project data.

☞ Page 3068 [File Protection]

■[Save As Package] dialog

GT37 SoftGOT3000



Item		Description
1)	[Save in]	Select the destination to save the package data. Do not save the project in the following path. • <Installation path>\GTD3_3000\App • <Installation path>\GTD3
2)	File list	Lists files in the destination to save the package data.
3)	[File name]	Set a file name of the package data to be saved. Click the [Save] button to save the package data with the set file name.
4)	[Save as type]	Refers to the type of the file to be saved. The setting is fixed to [Package Data(*.GTYS)].

Overwriting a project

GT37 SoftGOT3000

Select [Project] → [Save] from the menu to save a project by overwriting.

However, when the currently edited project is in any of the following conditions, the [Save As Project] dialog is displayed.

- A project which has never been saved
- Project data (*.G3)
- Package data (*.GTYS)
- A GOT2000 project that is opened after converted to the GOT3000 equivalent

6.2.4 Deleting a project

Delete files of the project using Windows Explorer or other methods.

6.2.5 Giving a title to a project

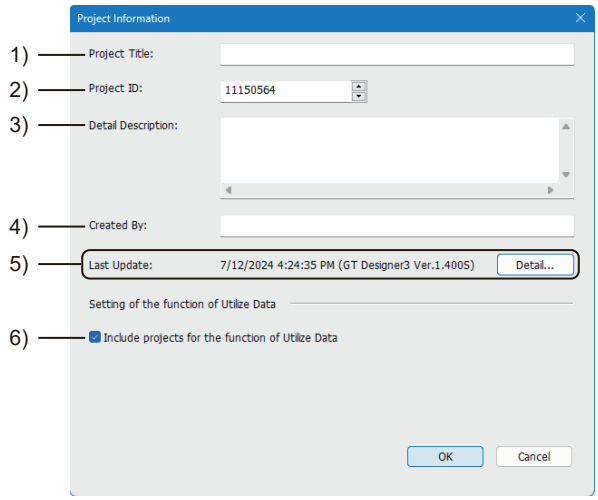
GT37 SoftGOT3000

Set a title, a creator's name, and other information for a project.

1. Select [Project] → [Project Information] from the menu to display the [Project Information] dialog.
2. Set each item, and then click the [OK] button to complete the settings.

[Project Information] dialog

GT37 SoftGOT3000

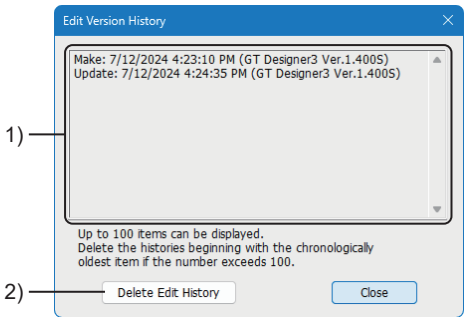


Item		Description
1)	[Project Title]	Set a title for the project. Up to 32 characters can be set. The project title is used as the search target for creating a project by utilizing another project.
2)	[Project ID]	Set a project ID. A project ID is automatically given to the project when a project is created.
3)	[Detail Description]	Set text information for the project. Up to 512 characters can be set. A line feed is counted as two characters.
4)	[Created By]	Set the creator's name of the project. Up to 64 characters can be set.
5)	[Last Update]	Displays the latest date and time at which the project was saved and the GT Designer3 version. Click the [Detail] button to display the [Edit Version History] dialog. ☞ Page 225 [Edit Version History] dialog

Item		Description
6)	[Include projects for the function of Utilize Data]	Enables the following. • The current project is included in the search targets for creating a project based on another project. • The display of screen images in the [Screen Image List] window or [Image List] dialog (screen) is sped up.

■[Edit Version History] dialog

GT37 SoftGOT3000

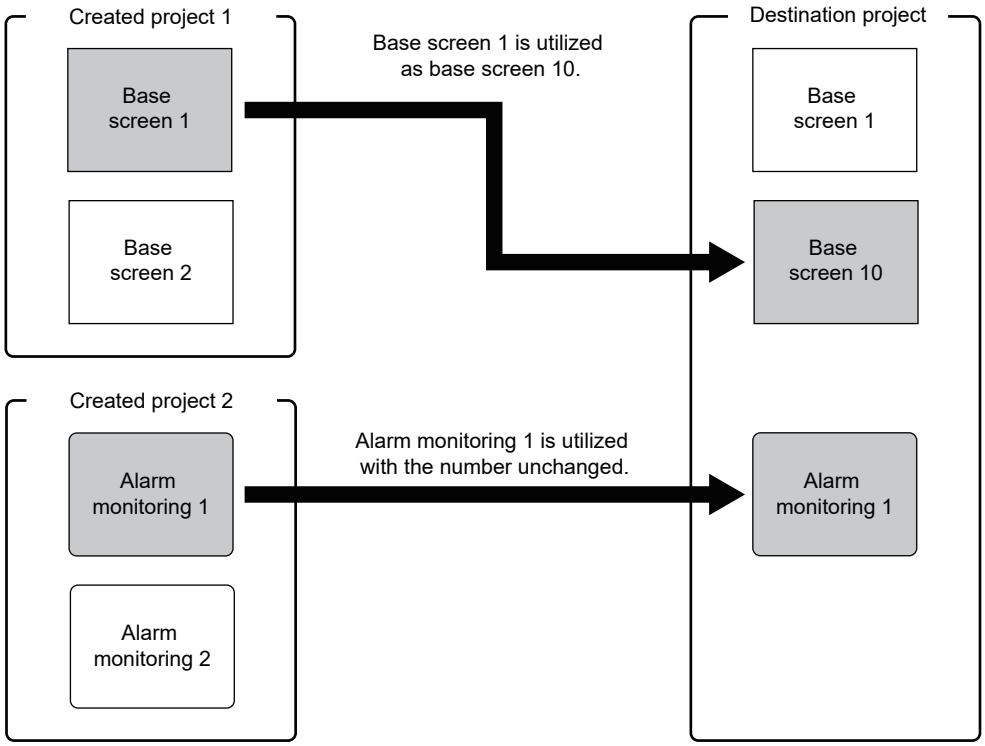


Item		Description
1)	Edit history	The edit history of the project is displayed.
2)	[Delete Edit History] button	Deletes the edit history.

6.3 Utilizing other project data

GT37 SoftGOT3000

The settings for screens and functions can be read from a specified project (source) into the project (destination) being edited. You can create a project efficiently by utilizing data of an existing project.



☞ Page 227 Specifications of the project utilization
☞ Page 229 Reading the settings of another project
☞ Page 234 [Utilize Project] dialog

6.3.1 Specifications of the project utilization

GT37 SoftGOT3000

☞ Page 227 Utilizable project formats
☞ Page 227 Utilizable data

Utilizable project formats

The following shows the utilizable project formats.

GOT	Project format
GOT3000 series	*.GTY *.GTYS *.GTYP

Utilizable data

Select data to utilize from [Source Project] of the [Utilize Project] dialog.

☞ Page 236 [Source Project] tree

Settings to be changed when utilized

Item	Specifications
GOT type	Utilized data are converted according to the GOT type set for the destination project. Functions that does not correspond to the GOT type of the destination project are not eliminated.
Controller setting	Utilized data are converted according to the controller type set for the destination project. According to the combination of the settings for the source project and those for the destination project, the devices set for utilized data are changed as described below. • The device name is changed according to the controller setting in the destination project. • The device to which the controller setting in the destination project does not correspond is changed to [??] (except the devices in the script data) Check and change the device settings.
Base screen	The window preview settings for the source project will be migrated to the destination project if [Apply to all base screens] is deselected in the [Window Preview] dialog in the destination project. If [Apply to all base screens] is selected in the destination project, the window preview settings of the destination project will be applied.
Comment group	If the Windows fonts used for comment groups are not installed on the personal computer, the comments are displayed in different fonts. To display the comments in the specified Windows fonts, make sure that the fonts are installed on the personal computer before utilizing the project.
Script	Even if the controller settings for the source project and destination project are different, the devices in script data are not automatically changed. Check and change the device settings.
Category	Categories cannot be utilized. When the categories set for figures and objects do not exist in the destination project, the categories are changed to [None] in utilization. Before utilizing, add categories that exist in the source project into the destination project.

■Utilizing the project edited with a different version of GT Designer3

When the version of GT Designer3 being used is older than that used to edit the source project, the functions unsupported by GT Designer3 being used are not utilized.

Utilizing a project protected with the security

■Utilizing a project protected with project security

If project security is set for the source project, user authentication is performed.

Only authenticated projects can be utilized.

In the following cases, the project cannot be opened and utilized.

- Authentication of the project has failed.
- Display of the project is prohibited with access privileges of an authenticated user.

The screens whose display is prohibited with access privileges of an authenticated user are not displayed in the source project's tree structure and cannot be utilized.

☞ Page 2972 Protecting a project by registering users (Project security)

■Utilizing a project with the information protection function set

If a password is set by the information protection function for the source project, password authentication is performed.

Only authenticated projects can be utilized.

☞ Page 3065 Protecting the files in the GOT (Information protection function)

6.3.2 Reading the settings of another project

GT37 SoftGOT3000

Before reading the settings of another project, close the following windows.

- [Environmental Setting] window
- [GOT Setup] window
- [Controller Setting] window

When the [Utilize Project] dialog is displayed while the above windows are open, the settings for the windows cannot be utilized.

1. Select [Project] → [Utilize Project] from the menu to display the [Utilize Project] dialog.

☞ Page 234 [Utilize Project] dialog

2. Perform one of the following operations in the [Utilize Project] dialog to display the setting tree of the source project.

- Click the [Browse] button to display the [Open Project] dialog, select the source project, and click the [Open] button.
- Click the [Search] button to display the [Search] dialog, and perform a search for the source project.
- Enter the path to the [Source Project], and press the Tab key.

Point

If project security is set for the source project, user authentication is performed.

☞ Page 2972 Protecting a project by registering users (Project security)

If a password is set by the information protection function for the source project, password authentication is performed.

☞ Page 3065 Protecting the files in the GOT (Information protection function)

3. Select the settings to be utilized in the setting tree.

If you select the settings for which numbers are set, the numbers set in [Destination] are enabled.

For the settings of the numbers used by the destination project, refer to the following.

☞ Page 230 Utilizing settings without changing the numbers set in the source project

☞ Page 231 Specifying a start number in utilizing settings for the source destination with their order and differences retained

☞ Page 232 Specifying a number for each setting to be utilized

4. Click the [Utilize] button to read the selected settings into the destination project.

If there is data that can be reused from another project, proceed to step 2.

When you have completed the utilization, close the [Utilize Project] dialog.

Utilizing settings without changing the numbers set in the source project

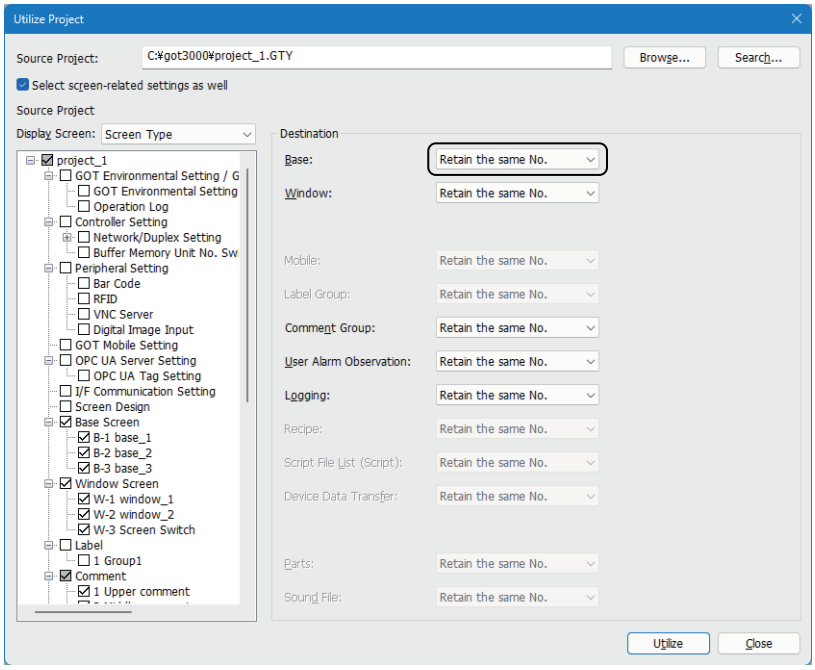
GT37 SoftGOT3000

The following shows the procedure for utilizing settings for a source project as those for a destination project without changing the associated numbers that have been set in the source project.

1. In [Destination] of the [Utilize Project] dialog, select [Retain the same No.].

☞ Page 234 [Utilize Project] dialog

Example) Utilizing a base screen



2. Click the [Utilize] button to read the settings selected in the [Source Project] tree into the destination project.
3. When you have completed the utilization, close the [Utilize Project] dialog.

Specifying a start number in utilizing settings for the source destination with their order and differences retained

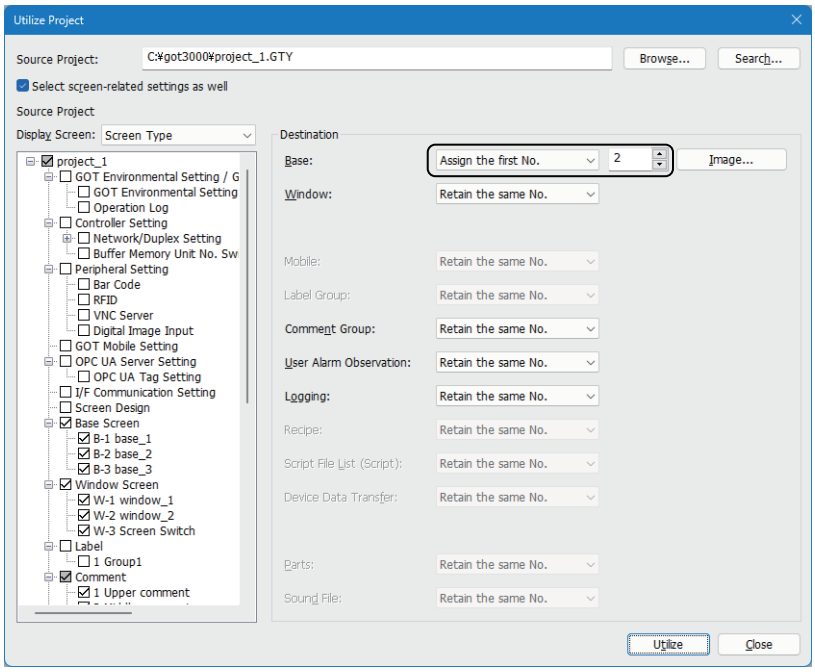
GT37 SoftGOT3000

The following shows the procedure for specifying a start number in utilizing settings for a source project as those for a destination project with their order and differences retained.

1. Select [Assign the first No.] in [Destination] of the [Utilize Project] dialog and set a start number.

☞ Page 234 [Utilize Project] dialog

Example) Utilizing a base screen



2. Click the [Utilize] button to read the settings selected in the [Source Project] tree into the destination project.

3. When you have completed the utilization, close the [Utilize Project] dialog.

Specifying a number for each setting to be utilized

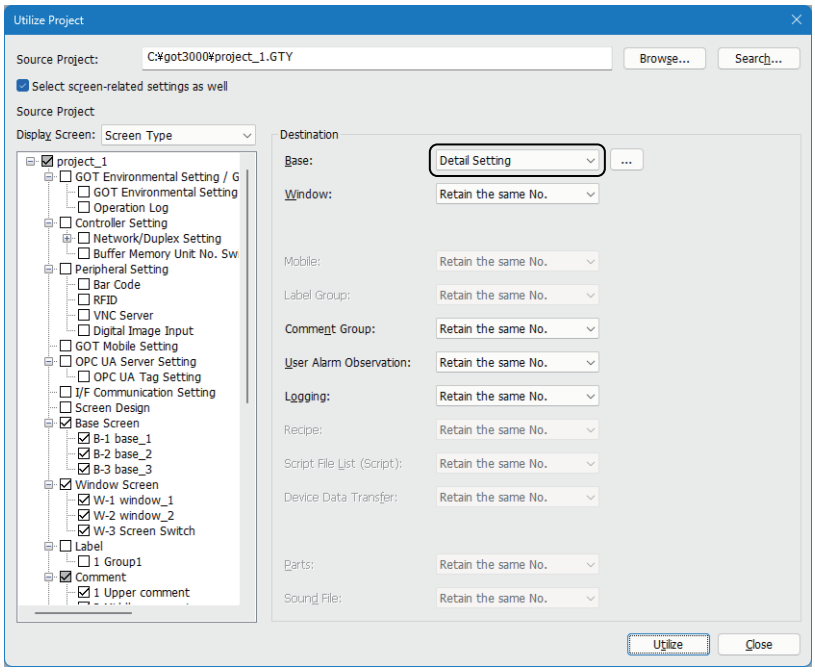
GT37 SoftGOT3000

The following shows how to specify a number for each setting to be utilized. The specified numbers are used in the destination project.

1. Select [Detail Setting] in [Destination] of the [Utilize Project] dialog and click the [...] button to display the [Detail Setting] dialog.

☞ Page 234 [Utilize Project] dialog

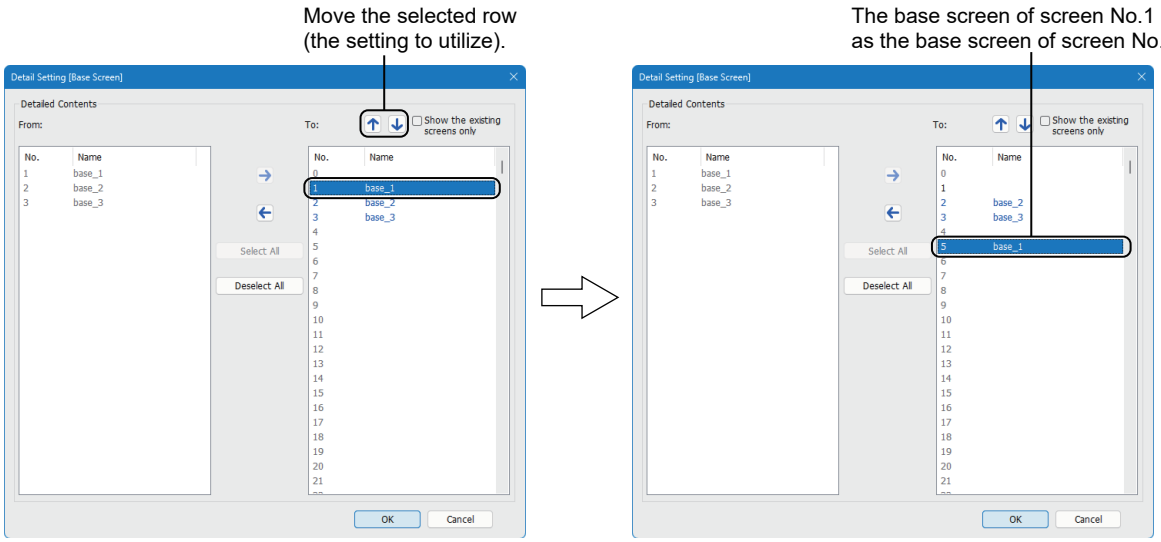
Example) Utilizing a base screen



2. In [Destination], select the setting to be utilized (the row with blue text).

Move the row you have selected with the [↑] or [↓] button into the row corresponding to the number used by the destination project.

Example) Utilizing a base screen of screen No.1 as that of screen No.5



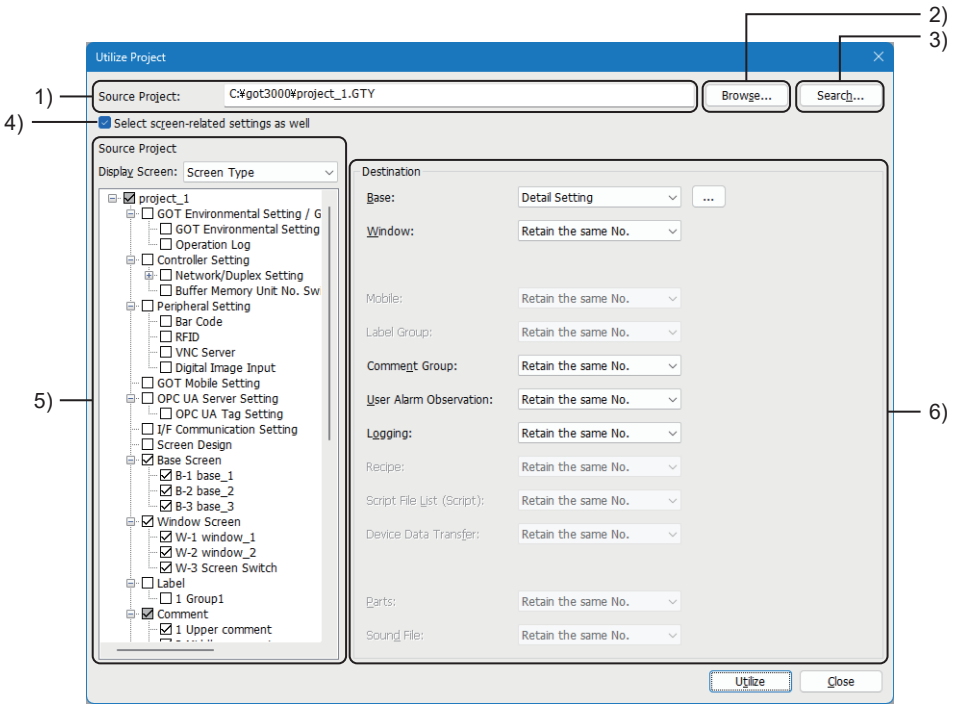
☞ Page 243 [Detail Setting] dialog

3. When you have completed the setting, click the [OK] button.

4. Click the [Utilize] button in the [Utilize Project] dialog to read the settings selected in the [Source Project] tree into the destination project.
5. When you have completed the utilization, close the [Utilize Project] dialog.

6.3.3 [Utilize Project] dialog

GT37 SoftGOT3000



Item			Description
1)	[Source Project]		Set the path to the source project.
2)	[Browse] button		Displays the [Open Project] dialog. Set the path to the source project.
3)	[Search] button		Displays the [Search] dialog. Searches for a project that can be utilized. ☞ Page 214 [Utilize Data (Project)] dialog and [Search] dialog
4)	[Select screen-related settings as well]		When items are selected in the [Source Project] tree, the relevant settings are also selected. Example) If a base screen for which a screen script has been set is selected, the script is also selected.
5)	[Source Project]	—	When a path is set for [Source Project], the utilizable source project settings are displayed in the tree structure. Select the settings to utilize. ☞ Page 236 [Source Project] tree The settings nonexistent in the source project or destination project are not displayed in the tree structure. When the following items are selected, the related settings in [Destination] become available to specify numbers or utilization methods. • [Base Screen] • [Window Screen] • [Mobile Screen] • [Label Group] • [Comment] • [User Alarm Observation] • [Logging] • [Recipe] • [Script] • [Device Data Transfer] • [Parts] • [Sound Files]
		[Display Screen]	Switches between the view modes of the screens in the tree. Even after the view mode is switched, the selected items in the tree remain selected.

Item		Description
6)	[Destination]	In each setting, specify a number to be used in the destination project or a utilization method.
		[Assign the first No.] specifies a start number in utilizing settings for the source project as those for the destination project with their order and differences retained. ☞ Page 242 [Assign the first No.] details
		[Detail Setting] specifies numbers setting by setting in utilization, which are used by the destination project. Click the [...] button to display the [Detail Setting] dialog. ☞ Page 243 [Detail Setting] dialog

[Source Project] tree

GT37 SoftGOT3000

The following shows the items displayed in the [Source Project] tree.

☞ Page 236 [GOT Environmental Setting / GOT Setup / GOT Ethernet Setting]
☞ Page 236 [SoftGOT Setting]
☞ Page 237 [Controller Setting]
☞ Page 237 [Peripheral Setting]
☞ Page 238 [GOT Network Interaction]
☞ Page 238 [GOT Mobile Setting]
☞ Page 238 [OPC UA Server Setting]
☞ Page 238 [I/F Communication Setting]
☞ Page 238 [Screen Design]
☞ Page 239 [Base Screen]
☞ Page 239 [Window Screen]
☞ Page 239 [Mobile Screen]
☞ Page 240 Screen group
☞ Page 240 [Label]
☞ Page 240 [Comment]
☞ Page 240 [Alarm]
☞ Page 240 [Logging]
☞ Page 240 [Recipe]
☞ Page 241 [Script]
☞ Page 241 [Device Data Transfer]
☞ Page 241 [Trigger Action (Project)]
☞ Page 241 [Time Action]
☞ Page 241 [Hard Copy]
☞ Page 241 [Parts]
☞ Page 241 [Sound Files]

■[GOT Environmental Setting / GOT Setup / GOT Ethernet Setting]

[Source Project]	Utilizable data	Model
[GOT Environmental Setting / GOT Setup / GOT Ethernet Setting]	Utilizes the following settings. • [Environmental Setting] window (except the setting for [Operation Log]) • [GOT Setup] window • [GOT Ethernet Setting] window	GT37 SoftGOT3000
[CSP+ for iQSS Data Write]	Utilizes the settings for [iQSS Utility] in the [GOT Setup] window.	GT37 SoftGOT3000
[Operation Log]	Utilizes the settings for [Operation Log] in the [Environmental Setting] window.	GT37 SoftGOT3000

■[SoftGOT Setting]

GT37 SoftGOT3000

Utilizes the settings in the [MELSOFT GT Designer3 (GOT3000) (SoftGOT Setting)] dialog.

■[Controller Setting]

Utilizes the settings for [Gateway Communication Setting] if the settings exist in the source project.

[Source Project]			Utilizable data	Model
[Network/Duplex Setting]	[Routing Information]		Utilizes the settings for [Routing Information] in the [Controller Setting] window.	GT37 SoftGOT3000
	[Gateway]	[Gateway Server]	Utilizes the settings for [Getaway Server] in the [Controller Setting] window.	GT37 SoftGOT3000
		[Gateway Client]	Utilizes the settings for [Gateway Client] in the [Controller Setting] window.	GT37 SoftGOT3000
	[Mail Send]		Utilizes the settings for [Mail Send] in the [Controller Setting] window.	GT37 SoftGOT3000
	[FTP Server]		Utilizes the setting for [FTP Server] in the [Controller Setting] window.	GT37 SoftGOT3000
	[File Transfer]		Utilizes the settings for [File Transfer] in the [Controller Setting] window.	
	[MELSEC Redundant]		Utilizes the settings for [MELSEC Redundant] in the [Controller Setting] window. The MELSEC redundant setting is not migrated if the corresponding channel is not set in the destination project.	GT37 SoftGOT3000
	[Station No. Switching]		Utilizes the settings for [Station No. Switching] in the [Controller Setting] window.	
[Buffer Memory Unit No. Switching]			Utilizes the settings for [Buffer Memory Unit No. Switching] in the [Controller Setting] window.	GT37 SoftGOT3000

■[Peripheral Setting]

[Source Project]	Utilizable data	Model
[Bar Code]	Utilizes the settings in the [Bar Code] dialog (except the setting for [Destination I/F]). To utilize the setting for [Destination I/F], utilize the settings in [I/F Communication Setting].	GT37 SoftGOT3000
[RFID]	Utilizes the settings in the [RFID] dialog (except the setting for [Destination I/F]). To utilize the setting for [Destination I/F], utilize the settings in [I/F Communication Setting].	
[PC Remote Operation]	Utilizes the settings in the [PC Remote Operation] dialog. To utilize the setting for [Destination I/F], utilize the settings in [I/F Communication Setting].	GT37 SoftGOT3000
[VNC Server]	Utilizes the settings in the [VNC Server] dialog (except the setting for [Destination I/F]). To utilize the setting for [Destination I/F], utilize the settings in [I/F Communication Setting].	GT37 SoftGOT3000
[Digital Image Input/Recording]	Utilizes the settings in the [Digital Image Input/Recording] dialog (except the setting for [Destination I/F]). To utilize the setting for [Destination I/F], utilize the settings in [I/F Communication Setting].	

[Source Project]	Utilizable data	Model
[Web Browser]	Utilizes the settings in the [Web Browser] dialog (except the setting for [Destination I/F]). To utilize the setting for [Destination I/F], utilize the settings in [I/F Communication Setting].	GT37 SoftGOT3000
[External I/O / Operation Panel]	Utilizes the settings in the [External I/O / Operation Panel] dialog (except the setting for [Destination I/F]). To utilize the setting for [Destination I/F], utilize the settings in [I/F Communication Setting].	GT37 SoftGOT3000

■[GOT Network Interaction]

GT37 SoftGOT3000

Utilizes the settings in the [GOT Network Interaction] dialog.

■[GOT Mobile Setting]

GT37 SoftGOT3000

Utilizes the settings in the [GOT Mobile Setting] window.

■[OPC UA Server Setting]

GT37 SoftGOT3000

Utilizes the following settings.

Setting to be utilized	Requirements
[OPC UA Server Setting]	None
[OPC UA Tag Setting]	None

■[I/F Communication Setting]

GT37 SoftGOT3000

Utilizes the following settings.

Setting to be utilized	Requirements
Interface setting for each channel	The same channel No. set for the source project must be enabled for the destination project.
The setting for [Destination I/F] in the setting for each peripheral device	None

■[Screen Design]

GT37 SoftGOT3000

Utilizes the settings in the [Screen Design] dialog.

■[Base Screen]

GT37 SoftGOT3000

This item appears when [Screen Type] is selected for [Display Screen].
Utilizes base screens.
Screens to be utilized can be selected individually.
The following settings for the screens to be utilized are also utilized.

Setting to be utilized	Requirements
Screen trigger action	None
Project script setting	A project script is utilized when the following item is selected in the [Script Edit] dialog. • [Include this script in a screen-related setting when utilizing project/screen]
Screen script setting	None
Script symbol	None

When utilized by the destination project, script data are associated with an existing script number + 1.
To specify a script number to be used in utilization by the destination project, select [Script].

■[Window Screen]

GT37 SoftGOT3000

This item appears when [Screen Type] is selected for [Display Screen].
Utilizes window screens.
Screens to be utilized can be selected individually.
The following settings for the screens to be utilized are also utilized.

Setting to be utilized	Requirements
Screen trigger action	None
Project script setting	A project script is utilized when the following item is selected in the [Script Edit] dialog. • [Include this script in a screen-related setting when utilizing project/screen]
Screen script setting	None
Script symbol	None

When utilized by the destination project, script data are associated with an existing script number + 1.
To specify a script number to be used in utilization by the destination project, select [Script].

■[Mobile Screen]

GT37 SoftGOT3000

This item appears when [Screen Type] is selected for [Display Screen].
Utilizes mobile screens.
Screens to be utilized can be selected individually.

■Screen group

GT37 SoftGOT3000

This item appears when [Screen Group] is selected for [Display Screen].

Utilizes the screen group that includes the utilization target screen.

[Source Project]	Utilizable data	Model
[Uncategorized]	Utilizes unclassified screens.	GT37 SoftGOT3000
Registered screen group	Utilizes the screens registered in the screen group.	

The following settings for the screens to be utilized are also utilized.

Setting to be utilized	Requirements
Screen trigger action	None
Project script setting	A project script is utilized when the following item is selected in the [Script Edit] dialog. • [Include this script in a screen-related setting when utilizing project/screen]
Screen script setting	None
Script symbol	None

■[Label]

GT37 SoftGOT3000

Utilizes the relevant label groups.

Label groups to be utilized can be selected individually.

■[Comment]

GT37 SoftGOT3000

Utilizes comment groups.

Comment groups to be utilized can be selected individually.

■[Alarm]

[Source Project]		Utilizable data	Model
[Alarm Common Setting]		Utilizes the settings in the [Alarm Common Setting] dialog.	GT37 SoftGOT3000
[User Alarm Observation]	Registered user alarm monitoring settings	Utilizes the user alarm monitoring settings. You can select individual user alarm monitoring settings to be utilized.	
[System Alarm Observation]		Utilizes the settings in the [System Alarm Observation] dialog.	
[Alarm Popup Display]		Utilizes the settings in the [Alarm Popup Display] dialog.	

■[Logging]

[Source Project]	Utilizable data	Model
Registered logging settings	Utilizes logging settings. Logging settings to be utilized can be selected individually.	GT37 SoftGOT3000

■[Recipe]

[Source Project]		Utilizable data	Model
[Recipe Common Setting]		Utilizes the settings in the [Recipe Common Setting] dialog.	GT37 SoftGOT3000
[Recipe]	Registered recipe settings	Utilizes recipe settings. Recipe settings to be utilized can be selected individually.	

■[Script]

[Source Project]		Utilizable data	Model
[Script (Project, Symbol)]		Utilizes the following settings. • Project script setting • Script symbol The script of a utilized project script setting is executed after the script of an existing project script setting in the destination project is executed.	GT37 SoftGOT3000
[Script File List (Script)]	Registered script text	Utilizes scripts. Scripts to be utilized can be selected individually.	
[Script File List (Script Block)]	Registered script block text	Utilizes script blocks. Script blocks to be utilized can be selected individually.	
[Object Script Symbol]		Utilizes the settings in the [Object Script Symbol] dialog.	

■[Device Data Transfer]

GT37 SoftGOT3000

Utilizes device data transfer settings.

Device data transfer settings to be utilized can be selected individually.

■[Trigger Action (Project)]

GT37 SoftGOT3000

Utilizes the settings for the trigger actions commonly used in a project.

To utilize the settings for the trigger actions of individual screens, utilize the screen for which the required trigger actions have been set.

■[Time Action]

GT37 SoftGOT3000

Utilizes the settings for the time action.

■[Hard Copy]

GT37 SoftGOT3000

Utilizes the settings in the [Hard Copy] dialog.

■[Parts]

[Source Project]	Utilizable data	Model
[Parts Setting]	Utilizes the settings in the [Parts Setting] dialog.	GT37 SoftGOT3000
Registered parts	Utilizes parts. Parts to be utilized can be selected individually.	

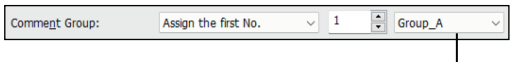
■[Sound Files]

[Source Project]	Utilizable data	Model
[Touch Key Sound Setting]	Utilizes the settings in the [Touch Key Sound Setting] dialog.	GT37 SoftGOT3000
Registered sound files	Utilizes sound files. Sound files to be utilized can be selected individually.	

[Assign the first No.] details

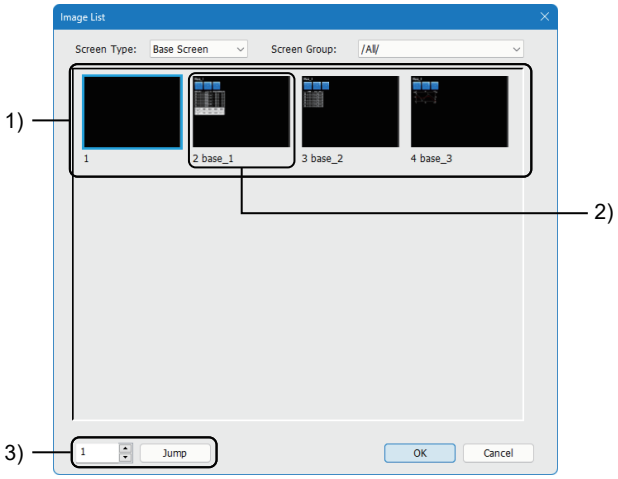
GT37 SoftGOT3000

The setting range for the first number depends on the item.

Item	Setting range	Remarks
[Base Screen]	0 to 32767	Click the [Image] button to display the [Image List] dialog (screen) dialog. The images of the screens existing in the project being edited can be checked. ☞ Page 3683 [Image List] dialog (screen)
[Window Screen]	0 to 32767	
[Mobile Screen]	0 to 32767	
[Label Group]	1 to 200	If the start number that is set is used in the destination project, the name of the setting is displayed. Example) If comment group No.1 has been used  The name of comment group No.1 is displayed.
[Comment Group]	1 to 500	
[User Alarm Observation]	1 to 32767	
[Logging]	1 to 32767	
[Recipe]	1 to 32767	
[Script File List (Script)]	1 to 32767	—
[Script File List (Script Block)]	1 to 32767	—
[Device Data Transfer]	1 to 255	If the start number that is set is used in the destination project, the name of the setting is displayed.
[Parts]	1 to 32767	Click the [Image] button to display the [Image List] dialog (parts). The images of the parts registered in the project being edited can be checked. ☞ Page 242 [Image List] dialog (parts)
[Sound File]	1 to 500	Click the [Browse] button to display the [Sound File List] dialog. The sound files registered in the project being edited can be checked. When the dialog is displayed from the [Utilize Project] dialog, sound files are not registered and deleted. ☞ Page 2715 [Sound File List] dialog

■[Image List] dialog (parts)

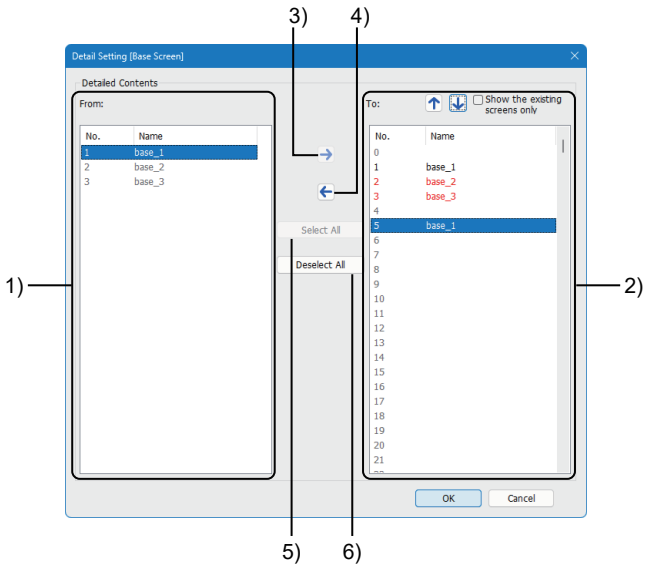
GT37 SoftGOT3000

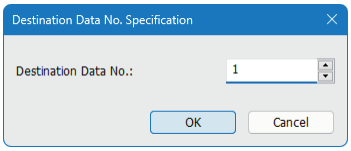


Item		Description
1)	Image type	Select the type of the images to be displayed in the parts image list.
2)	Parts image list	Display the images of parts.
3)	Jump	Set a part number and click the [Jump] button to display the images of the specified part on the parts image list.

[Detail Setting] dialog

GT37 SoftGOT3000



Item			Description
1)	[From]	—	Lists the settings utilizable from the source project. For mouse and keyboard operations, refer to the following. ☞ Page 244 Mouse and keyboard operations The text color of a setting represents the status of the setting. • Black Setting that is not added to [To]. To utilize a setting in the destination project, add the setting to [To] with the [→] button. • Gray Setting added to [To].
		[No.]	Number of each setting in the source project.
		[Name]	Name of each setting in the source project.
2)	[To]	—	Lists the settings in the destination project. The number of each setting in the destination project can be changed with the [↑] button or the [↓] button. For mouse and keyboard operations, refer to the following. ☞ Page 244 Mouse and keyboard operations • Black Setting existing in the destination project. • Blue Setting added from [From]. • Red Duplicate setting number in the destination project.
		[↑] button [↓] button	Moves the setting selected in [To] up or down.
		[Skip blank rows]	Only displays the rows where a setting is present.
		[No.]	Number of each setting in the destination project.
		[Name]	Name of each setting in the destination project.
3)	[→] button		Adds the setting selected in [From] to the row selected in [To]. If no row has been preselected in [To], the [Destination Data No. Specification] dialog appears.  • [Destination Data No.] Specify a setting number to be assigned in the destination project. The setting range varies depending on the setting to be utilized.
4)	[←] button		Deletes the setting selected in [To].

Item		Description
5)	[Select All] button	Adds all the settings listed in [From] to [To]. The settings are added to the selected row and subsequent rows in [To]. If no row has been preselected in [To], each setting is added with its setting number unchanged.
6)	[Deselect All] button	Deletes all the added settings from [To].

■Mouse and keyboard operations

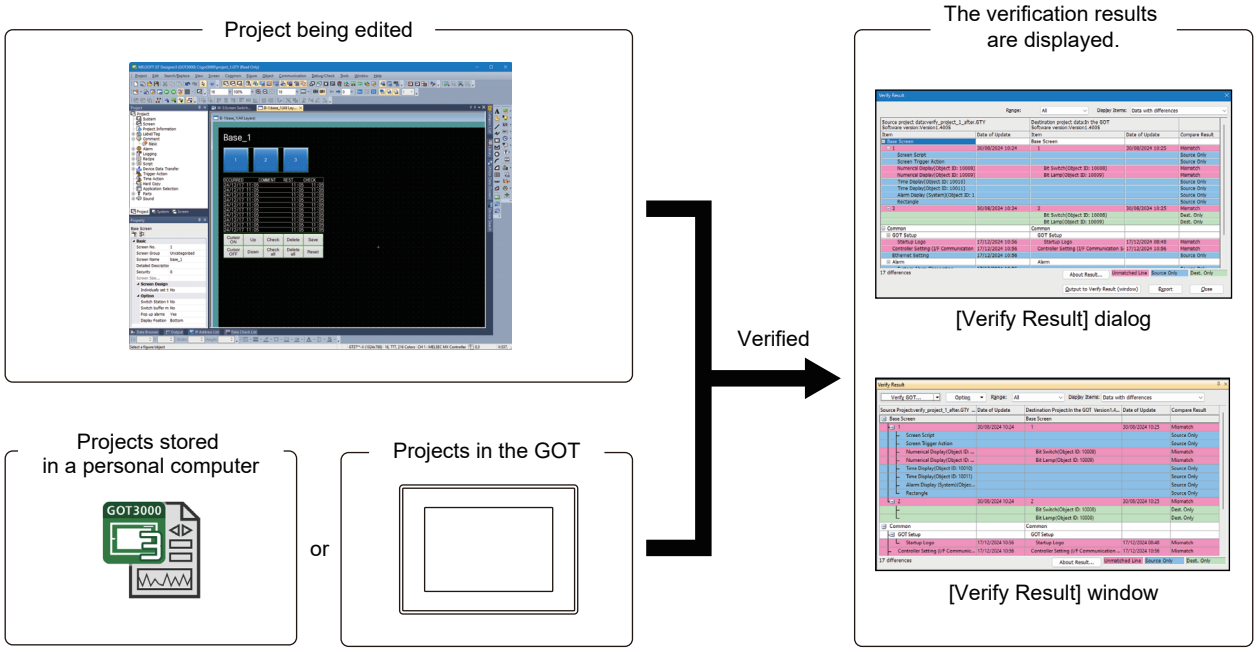
The following shows operating [From] and [To] with a mouse and keyboard.

Operation	[From]	[To]
↑ ↓	Moves the cursor.	
Shift + ↑ Shift + ↓	Moves the row while selecting the row where the cursor is positioned. The destination row of the cursor is also selected.	—
Home	Moves the cursor to the top row.	
End	Moves the cursor to the bottom row.	
PgUp	Moves the cursor from the row with the cursor to the corresponding row up one page.	
PgDown	Moves the cursor from the row with the cursor to the corresponding row down one page.	
Shift + Home	Selects the rows from the row where the cursor is positioned to the top row.	—
Shift + End	Selects the rows from the row where the cursor is positioned to the bottom row.	—
Shift + PgUp	Selects the rows from the row where the cursor is positioned to the corresponding row up one page.	—
Shift + PgDown	Selects the rows from the row where the cursor is positioned to the corresponding row down one page.	—
Shift + Click	Selects the rows from the row with the cursor to the row where the mouse is clicked.	—
Ctrl + Space	Selects or deselects a row.	Selects or deselects a row.
Ctrl + Click		—

6.4 Verifying a project

GT37 SoftGOT3000

Verify a project being edited in GT Designer3 against another project.
Differences can be checked by screen or by object.



☞ Page 246 Specification of verification
☞ Page 248 Verifying a project
☞ Page 249 [Verify Project] dialog
☞ Page 250 [Verify Result] window
☞ Page 261 [Verify Result] dialog
☞ Page 262 Details of the exported file

6.4.1 Specification of verification

GT37 SoftGOT3000

☞ Page 246 Verifiable projects
☞ Page 246 Verification method
☞ Page 247 Verifying against a project edited by GT Designer3 of another version
☞ Page 247 Verifying the current project against the project stored in the GOT after writing package data to multiple GOTs in one go
☞ Page 247 Verifying against a project for which security is set

Verifiable projects

GT37 SoftGOT3000

Verification is available for the following projects.

- Projects stored in a personal computer
- Projects in the GOT

■Verifying against a stored project in a personal computer

GT37 SoftGOT3000

The following shows the verifiable project formats.

GOT	Project format
GOT3000 series	• *.GTY • *.GTYS • *.GTYP • *.G3

Verification is unavailable between the projects that specify different GOT types.
If the verification target is the package data (*.GTYS), the system application is not verified.

■Verifying against a project in the GOT

GT37 SoftGOT3000

Verification against a project is available by establishing communications with the GOT3000 series.
Verification is unavailable between the projects that specify different GOT types.

Verification method

GT37 SoftGOT3000

The following shows the methods of verifying a project.

Verification method	Description
Data check	This method verifies settings.
Time stamp check	This method verifies time stamps of files. This method can be selected only for verifying against a project in GOT.

The following shows the verification target items of each method.

☞ Page 251 Verification items for data check
☞ Page 259 Verification items for time stamp check

Verifying against a project edited by GT Designer3 of another version

GT37 SoftGOT3000

If the version of GT Designer3 used to edit the verification target project and that being used for the project being edited are different, the verification results may be different from those obtained when the version is the same.

Verifying the current project against the project stored in the GOT after writing package data to multiple GOTs in one go

GT37 SoftGOT3000

When you write package data to multiple GOTs in one go, the individual identification information and the communication interface setting data are not written.

Accordingly, inconsistencies in the following settings may be detected as a result of the verification.

- [Individual Identification Information]
- [Controller Setting (I/F Communication Setting)]

Verifying against a project for which security is set

GT37 SoftGOT3000

■Verifying against a project protected with project security

If project security has been set for the verification target project, user authentication is performed.

Only authenticated projects can be verified.

If display-disabled screens or scripts exist in the project being edited or the verification target project, verification of the project is unavailable.

☞ Page 2972 Protecting a project by registering users (Project security)

■Verifying against a project with the information protection function set

If a password is set by the information protection function for the verification target project, password authentication is performed.

Only authenticated projects can be verified.

☞ Page 3065 Protecting the files in the GOT (Information protection function)

6.4.2 Verifying a project

GT37 SoftGOT3000

☞ Page 248 Verifying against a stored project in a personal computer
☞ Page 248 Verifying against a project in the GOT

Verifying against a stored project in a personal computer

GT37 SoftGOT3000

1. Perform one of the following operations to display the [Verify Project] dialog.

☞ Page 249 [Verify Project] dialog

- Select [Project] → [Verify Data] from the menu.
- In the [Verify Result] window, click the [Verify Project] button and select [Verify Project] from the pull-down menu.

2. Set [Target Project] and click the [Verify] button to display the verification results in the [Verify Result] window.

If different versions of GT Designer3 are used for the project being edited and the verification target project, a dialog appears, confirming that a verification is executed according to the version of GT Designer3 used for the project being edited.
Click [Yes] button to execute the verification.

Point

If security is set for the verification target project, user authentication is performed.

☞ Page 2972 Protecting a project by registering users (Project security)

If a password is set by the information protection function for the verification target, password authentication is performed.

☞ Page 3065 Protecting the files in the GOT (Information protection function)

3. Check the verification results in the [Verify Result] window.

☞ Page 250 [Verify Result] window

Verifying against a project in the GOT

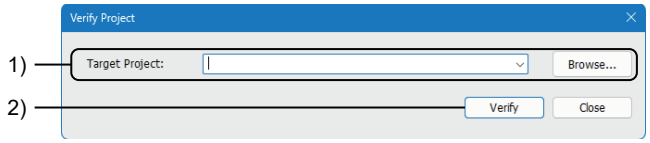
GT37 SoftGOT3000

For information on how to verify the project being edited against a project in GOT, refer to the following.

☞ Page 443 Verifying with the project data in the GOT

6.4.3 [Verify Project] dialog

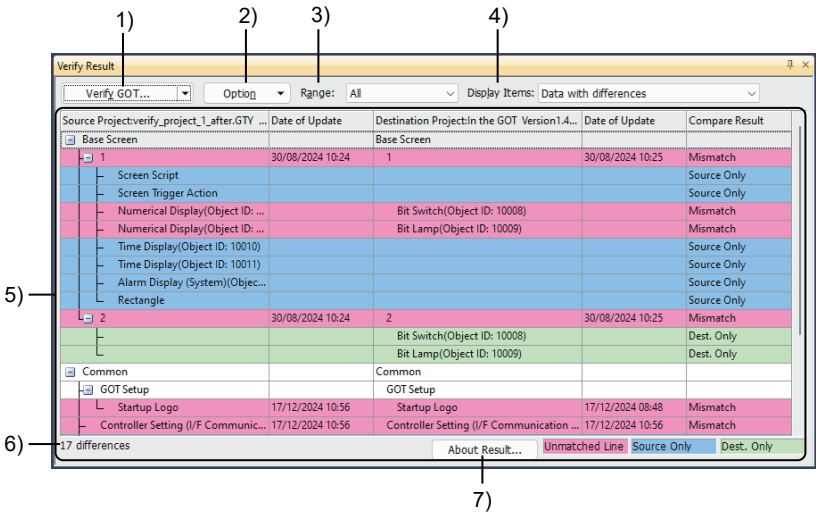
GT37 SoftGOT3000



Item		Description
1)	[Target Project]	Set the project being edited and the verification target project. The path can be set from the [Browse] button.
2)	[Verify] button	Starts verification and displays the [Verify Result] window. The verification results can be checked. ☞ Page 250 [Verify Result] window

6.4.4 [Verify Result] window

GT37 SoftGOT3000



Item			Description
1)	Verification start button	—	Starts verification. Select a verification method from the pull-down menu.
		[Verify Project]	Verifies the project being edited against a project saved in the personal computer.
		[Verify GOT]	Displays the [GOT Verification] tab of the [Communicate with GOT] dialog. ☞ Page 475 [GOT Verification] tab In the dialog, verify the project being edited against a project saved in the GOT.
2)	[Option] button	—	Select an item from the pull-down menu to operate the [Verify Result] window.
		[Export]	Saves the verification results as a Unicode text file. Set [File name] and click the [Save] button in the displayed dialog. ☞ Page 262 Details of the exported file
3)	[Range]		Narrow the displayed contents of the verification results by selecting a verification item.
4)	[Display Items]		Narrow the displayed contents of the verification results by selecting the type of differences.
5)	Verification results	—	Displays the results of verification. In each row, the target item for verification is shown. The item that has been set for neither the project being edited nor the verification target project is not displayed. The verified items differ depending on the verification method. (For the verification against a project stored in a personal computer, the verification method available is only the data check.) ☞ Page 251 Verification items for data check ☞ Page 259 Verification items for time stamp check The background color of a row varies according to the type of the difference. • Blue: The item exists only in the verification source project. • Green: The item exists only in the verification target project. • Red: The item exists in both projects and the data are not matched. Double-click an item in the verification source project to select the corresponding object or others, or display the corresponding dialog. For the behavior of double-clicking an item, refer to the following. ☞ Page 251 Verification items for data check Right-click a row and select [Open the Setting dialog] from the menu to display the corresponding setting dialog. This function is not available to the row indicating an order mismatch and the data existing only in the verification target project. The verification results are retained even if you close the [Verify Result] window. To delete the verification results, close the project or convert the GOT type set in the project.
		[Source Project]	Displays the information of the project being edited.
		[Destination Project]	Displays the information of the verification target project.
		[Compare Result]	Displays the presence/absence and the type of differences.

Item		Description
6)	Number of differences	This item appears when any difference exists. When the verification method is set to the data check, the item (screen number or title) immediately below the [Base Screen], [Window Screen], or [Mobile Screen] row is not counted.
7)	[About Result] button	Displays Help.

Verification items for data check

GT37 SoftGOT3000

The following shows the items to be verified by the data check.

In the [Verify Result] window, double-clicking an item in the verification source project selects the corresponding object or others, or displays the corresponding dialog.

■[Screen Design]

GT37 SoftGOT3000

Double-click this item to display the [Screen Design] dialog.

■[Base Screen]

Verifies the base screens that exist in a project by screen No.

Also verifies the following items set in each screen.

[Item]	Remarks	Model
[Screen Property]	Double-clicking this item displays the corresponding screen and the [Base Screen Property] dialog.	GT37 SoftGOT3000
[Screen Script]	Double-clicking this item displays the [Screen] tab of the [Script] dialog.	
[Screen Trigger Action]	Double-clicking this item displays the [Screen] tab of the [Trigger Action] dialog.	
Figure/object type name (Object ID) (Name)	The figures or objects having the same object ID are verified. The figure IDs are controlled internally and cannot be checked. When you cut or copy a figure and then paste it to the location where the original figure has been placed, if the original and pasted figures have different IDs, the figures are handled as different data. The name appears when it is set for a figure or object. Double-clicking this item selects the corresponding figure or object on the screen editor.	
[(Unmatched figure/object stacking order)]	The placement orders of figures or objects, and the states of grouping are verified. This item appears when the numbers of placed figures or objects are the same. The verification starts from the rearmost figure or object. Double-clicking this item selects a figure or object in which the first placement order difference is detected. When the placement order of a figure or object is directly changed, double-clicking this item may select any figure or object whose placement order is affected by the change. The placement order also differs when figures or objects are grouped.	

■[Window Screen]

Verifies the window screens that exist in a project by screen No.

Also verifies the following items set in each screen.

[Item]	Remarks	Model
[Screen Property]	Double-clicking this item displays the corresponding screen and the [Window Screen Property] dialog.	GT37 SoftGOT3000
[Screen Script]	Double-clicking this item displays the [Screen] tab of the [Script] dialog.	
[Screen Trigger Action]	Double-clicking this item displays the [Screen] tab of the [Trigger Action] dialog.	
Figure/object type name (Object ID) (Name)	The figures or objects having the same object ID are verified. The figure IDs are controlled internally and cannot be checked. When you cut or copy a figure and then paste it to the location where the original figure has been placed, if the original and pasted figures have different IDs, the figures are handled as different data. The name appears when it is set for a figure or object. Double-clicking this item selects the corresponding figure or object on the screen editor.	
[(Unmatched figure/object stacking order)]	The placement orders of figures or objects, and the states of grouping are verified. This item appears when the numbers of placed figures or objects are the same. The verification starts from the rearmost figure or object. Double-clicking this item selects a figure or object in which the first placement order difference is detected. When the placement order of a figure or object is directly changed, double-clicking this item may select any figure or object whose placement order is affected by the change. The placement order also differs when figures or objects are grouped.	

■[Mobile Screen]

Verifies the mobile screens that exist in a project by screen No.

Also verifies the following items set in each screen.

[Item]	Remarks	Model
[Screen Property]	Double-clicking this item displays the corresponding screen and the [Mobile Screen Property] dialog.	GT37 SoftGOT3000
Figure/object type name (Object ID) (Name)	The figures or objects having the same object ID are verified. The figure IDs are controlled internally and cannot be checked. When you cut or copy a figure and then paste it to the location where the original figure has been placed, if the original and pasted figures have different IDs, the figures are handled as different data. The name appears when it is set for a figure or object. Double-clicking this item selects the corresponding figure or object on the screen editor.	
[(Unmatched figure/object stacking order)]	The placement orders of figures or objects, and the states of grouping are verified. This item appears when the numbers of placed figures or objects are the same. The verification starts from the rearmost figure or object. Double-clicking this item selects a figure or object in which the first placement order difference is detected. When the placement order of a figure or object is directly changed, double-clicking this item may select any figure or object whose placement order is affected by the change. The placement order also differs when figures or objects are grouped.	

■[Common]

[Item]		Remarks	Model
[GOT Type Setting]		Double-clicking this item displays the [Type Setting] dialog.	GT37 SoftGOT3000
[GOT Environmental Setting]	[Screen Switching/ Windows]	Double-clicking this item displays the corresponding setting screen in the [Environmental Setting] window.	GT37 SoftGOT3000
	[Language Switching]		
	[Dialog Window]		
	[Key Window]		
	[System Information]		
	[Security]		
	[Information Protection Function]		
	[Operation Log]		
	[Internal Device Retention]		
	[Kana-Kanji/Pinyin Conversion]		
[SoftGOT Setting]		Double-click this item displays the [MELSOFT GT Designer3 (GOT3000) (SoftGOT Setting)] dialog.	GT37 SoftGOT3000
[GOT Setup] (Basic Setting)	[Display Setting/ Language Setting]	Double-clicking this item displays the corresponding setting screen in the [GOT Setup] window.	GT37 SoftGOT3000
	[GOT ID]		
	[Operation Setting/Utility Call Key]		
	[USB Common Setting]		GT37 SoftGOT3000
	[USB Host]		
	[Time Setting]		GT37 SoftGOT3000
	[Transparent Mode Setting]		GT37 SoftGOT3000
	[GOT internal device monitor]		
	[Startup Logo]		GT37 SoftGOT3000
	[Digital Image Output]		GT37 SoftGOT3000

[Item]		Remarks	Model
[GOT Setup] (Add-on Setting)	[SoftGOT-GOT Link]	Double-clicking this item displays the corresponding setting screen in the [GOT Setup] window.	GT37 SoftGOT3000
	[VNC Server]		GT37 SoftGOT3000
	[Seq. program monitor]		
	[Backup/Restoration]		GT37 SoftGOT3000
	[System Launcher]		GT37 SoftGOT3000
	[iQSS utility]		GT37 SoftGOT3000
	[CSP+ for iQSS Data Write]		
	[Contactless Tag]		
	[VPN Connection]		GT37 SoftGOT3000
	[Web Browser]		GT37 SoftGOT3000
[Controller Setting (I/F Communication Setting)]		Double-clicking this item displays the [I/F Communication Setting] dialog.	GT37 SoftGOT3000
[Controller Setting]		Double-clicking this item displays the [Controller Setting] window.	GT37 SoftGOT3000
[Ethernet Setting]		Double-clicking this item displays the [Controller Setting] window. Even when a setting difference is detected in any of the channels, the CH1 setting screen appears.	GT37 SoftGOT3000

[Item]		Remarks	Model
[Network/Duplex Setting]	[Routing Information]	Double-clicking this item displays the corresponding setting screen in the [Controller Setting] window.	GT37 SoftGOT3000
	[Gateway Server]		GT37 SoftGOT3000
	[Gateway Client]		GT37 SoftGOT3000
	[Mail Send]		GT37 SoftGOT3000
	[FTP Server]		GT37 SoftGOT3000
	[File Transfer]		
	[MELSEC Redundant]		GT37 SoftGOT3000
	[Station No. Switching]		GT37 SoftGOT3000
[Buffer Memory Unit No. Switching]		Double-clicking this item displays the [Buffer Memory Unit No. Switching] setting screen of the [Controller Setting] window.	GT37 SoftGOT3000

[Item]		Remarks	Model
[Peripheral Setting] (excluding destination I/F)	[Bar Code]	Double-clicking this item displays the [Bar Code] dialog.	GT37 SoftGOT3000
	[RFID]	Double-clicking this item displays the [RFID] dialog.	
	[PC Remote Operation]	Double-clicking this item displays the [PC Remote Operation] dialog.	GT37 SoftGOT3000
	[VNC Server]	Double-clicking this item displays the [VNC Server] dialog.	GT37 SoftGOT3000
	[Digital Image Input/Recording]	Double-clicking this item displays the [Digital Image Input/Recording] dialog.	GT37 SoftGOT3000
	[Web Browser]	Double-clicking this item displays the [Web Browser] dialog.	GT37 SoftGOT3000
	[External I/O / Operation Panel]	Double-clicking this item displays the [External I/O / Operation Panel] dialog.	GT37 SoftGOT3000
[GOT Network Interaction]		Double-clicking this item displays the [GOT Network Interaction] dialog.	GT37 SoftGOT3000
[GOT Mobile Setting]		Double-clicking this item displays the [GOT Mobile Setting] window.	
[OPC UA Server Setting]	[OPC UA Server Setting]	Double-clicking this item displays the [OPC UA Server Setting] window.	GT37 SoftGOT3000
	[OPC UA Tag Setting]	Double-clicking this item displays the [OPC UA Tag Setting] window.	
[Label] (label (GT Designer3))		The data is verified by label group No. Double-clicking this item displays the [Label Group] window for the corresponding label group.	GT37 SoftGOT3000
[Comment]		The data is verified by comment group No. Double-clicking this item displays the [Comment List] window for the corresponding comment group.	GT37 SoftGOT3000
[Alarm]	[Alarm Common Setting]	Double-clicking this item displays the [Alarm Common Setting] dialog.	GT37 SoftGOT3000
	[User Alarm Observation]	The data is verified by alarm ID. Double-clicking this item displays the [User Alarm Observation] dialog for the corresponding alarm ID.	
	[System Alarm Observation]	Double-clicking this item displays the [System Alarm Observation] dialog.	GT37 SoftGOT3000
	[Alarm Popup Display]	Double-clicking this item displays the [Alarm Popup Display] dialog.	GT37 SoftGOT3000

[Item]		Remarks	Model
[Logging]		The data is verified by logging ID. Double-clicking this item displays the [Logging] dialog for the corresponding logging ID.	GT37 SoftGOT3000
[Recipe]	[Recipe Common Setting]	Double-clicking this item displays the [Recipe Common Setting] dialog.	GT37 SoftGOT3000
	[Recipe]	The data is verified by recipe No. Double-clicking this item displays the [Recipe] dialog for the corresponding recipe No.	
[Device Data Transfer]		The data is verified by device data transfer ID. Double-clicking this item displays the [Device Data Transfer] dialog for the corresponding device data transfer ID.	GT37 SoftGOT3000
[Trigger Action]		Double-clicking this item displays the [Project] tab of the [Trigger Action] dialog.	GT37 SoftGOT3000
[Time Action]		Double-clicking this item displays the [Time Action List] dialog.	GT37 SoftGOT3000
[Hard Copy]		Double-clicking this item displays the [Hard Copy] dialog.	GT37 SoftGOT3000
[Script]	[Script]	Double-clicking this item displays the [Project] tab of the [Script] dialog.	GT37 SoftGOT3000
	[Script File List (Script)]	Double-clicking this item displays the [Script] tab of the [Script List] dialog.	
	[Script File List (Script Block)]	Double-clicking this item displays the [Script Block] tab of the [Script List] dialog.	
	[Object Script Symbol]	Double-clicking this item displays the [Object Script Symbol] dialog.	GT37 SoftGOT3000
[Application Selection]		Double-clicking this item displays the [System Application] tab of the [Application Selection] dialog.	GT37 SoftGOT3000
[Parts]	[Parts Setting]	Double-clicking this item displays the [Parts Setting] dialog.	GT37 SoftGOT3000
	[Parts]	The data is verified by registered part. Double-clicking this item displays the parts editor for the corresponding part.	GT37 SoftGOT3000
[Sound]	[Touch Key Sound Setting]	Double-clicking this item displays the [Touch Key Sound Setting] dialog.	GT37 SoftGOT3000
	[Sound Files]	The data is verified by registered sound file. Double-clicking this item displays the [Sound File List] dialog.	
[Project Information]		The latest update date and the edit version history are not included in the verification targets. Double-clicking this item displays the [Project Information] dialog.	GT37 SoftGOT3000

■[Individual Identification Information]

GT37 SoftGOT3000

Double-clicking this item displays the [Standard Port] tab of the [GOT Ethernet Setting] window ([GOT IP Address Setting]).
The following pieces of information are included in the individual identification information.

- [GOT ID]
- [GOT Net No.]
- [GOT Station]
- [GOT IP Address]
- [Subnet Mask]
- [Default Gateway]
- [Peripheral S/W Communication Port No.]
- [Transparent Port No.]
- [IP Filter Setting]

■[Communication Configuration/GOT Setting List]

GT37 SoftGOT3000

Double-clicking this item displays the [Communication Configuration] dialog.

Verification items for time stamp check

The following shows the items to be verified by the time stamp check.

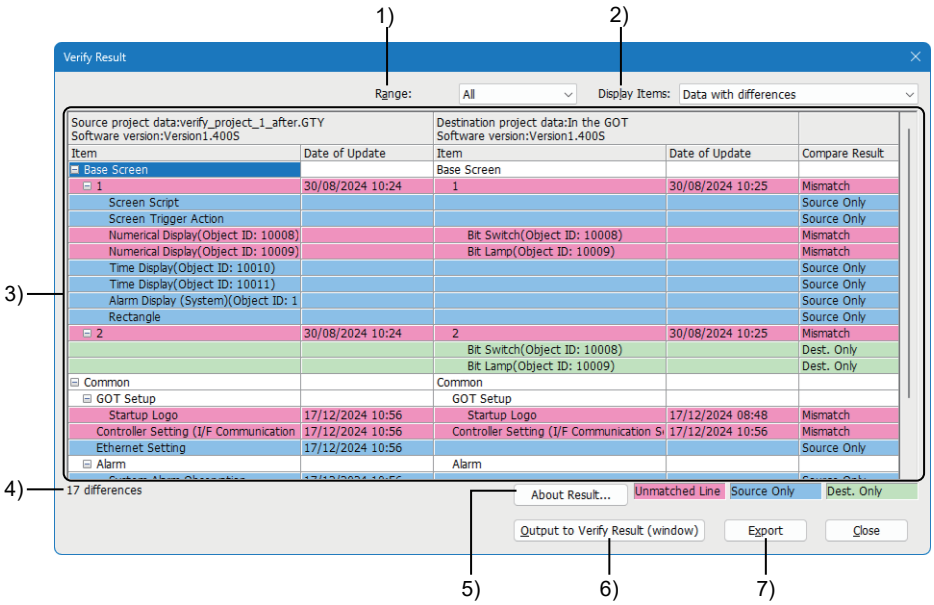
The time stamp check does not support displaying a setting dialog from a verification result.

[Item]		Remarks	Model
[Base Screen]		Verifies the base screens that exist in a project by screen No.	GT37 SoftGOT3000
[Window Screen]		Verifies the window screens that exist in a project by screen No.	GT37 SoftGOT3000
[Mobile Screen]		Verifies the mobile screens that exist in a project by screen No.	GT37 SoftGOT3000
[Common]		The following settings are also verified. • [Project Information] (except the last update date and the edit history) • [Screen Design] • [OPC UA Server Setting]	GT37 SoftGOT3000
[GOT Setup]		—	GT37 SoftGOT3000
[Startup Logo]		—	GT37 SoftGOT3000
[Controller Setting (I/F Communication Setting)]		—	GT37 SoftGOT3000
[Ethernet Setting]		—	GT37 SoftGOT3000
[Comment]		The data is verified by comment group No.	GT37 SoftGOT3000
[Recipe]	[Recipe Common Setting]	—	GT37 SoftGOT3000
	[Recipe]	The data is verified by recipe No.	GT37 SoftGOT3000
[Device Data Transfer]		—	GT37 SoftGOT3000

[Item]	Remarks	Model
[Application Selection]	—	GT37 SoftGOT3000
[Parts]	—	GT37 SoftGOT3000
[Sound]	—	GT37 SoftGOT3000
[Individual Identification Information]	—	GT37 SoftGOT3000
[Communication Configuration/GOT Setting List]	—	GT37 SoftGOT3000
[Label] (label (GT Designer3))	—	GT37 SoftGOT3000

6.4.5 [Verify Result] dialog

GT37 SoftGOT3000

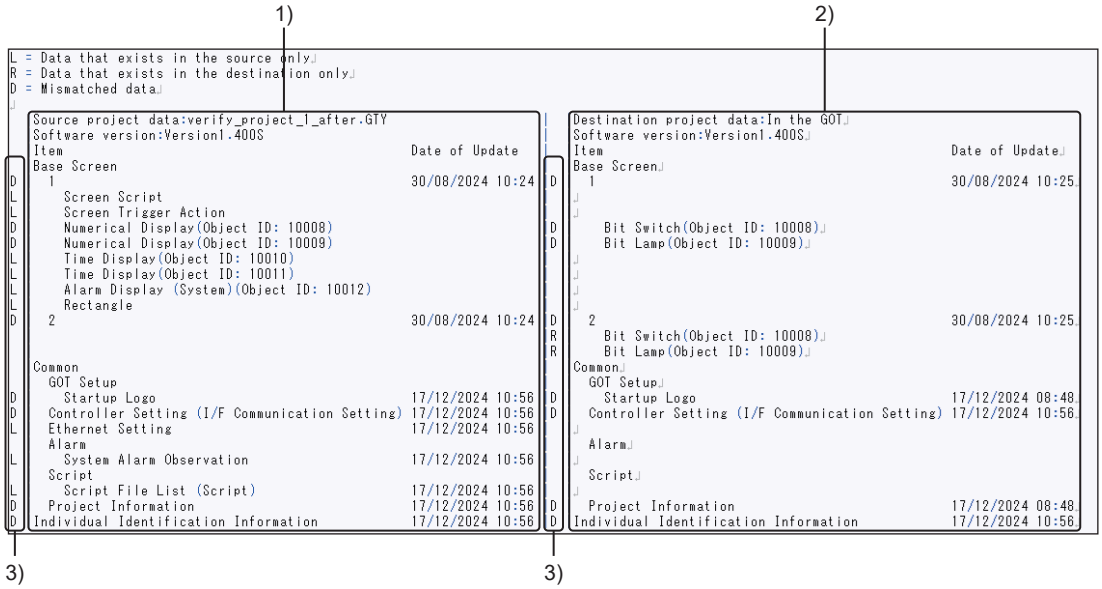


Item			Description
1)	[Range]		Narrow the displayed contents of the verification results by selecting a verification item.
2)	[Display Items]		Narrow the displayed contents of the verification results by selecting the type of differences.
3)	Verification results	—	Displays the results of verification. In each row, the target item for verification is shown. The item that has been set for neither the project being edited nor the verification target project is not displayed. The verified items differ depending on the verification method. (For the verification against a project stored in a personal computer, the verification method available is only the data check.) ☞ Page 251 Verification items for data check ☞ Page 259 Verification items for time stamp check The background color of a row varies according to the type of the difference. • Blue: The item exists only in the verification source project. • Green: The item exists only in the verification target project. • Red: The item exists in both projects and the data are not matched.
		[Source project data]	Displays the information of the project being edited.
		[Destination project data]	Displays the information of the verification target project.
		[Compare Result]	Displays the presence/absence and the type of differences.
4)	Number of differences		This item appears when any difference exists. When the verification method is set to the data check, the item (screen number or title) immediately below the [Base Screen], [Window Screen], or [Mobile Screen] row is not counted.
5)	[About Result] button		Displays Help.
6)	[Output to Verify Result (window)] button		This item appears only when the verification method is set to the data check. Displays the verification results in the [Verify Result] window. The settings of [Range] and [Display Items] are retained. Even if the [Verify Result] dialog is closed, you can check the verification results. ☞ Page 250 [Verify Result] window
7)	[Export] button		Saves the verification results as a Unicode text file. Set [File name] and click the [Save] button in the displayed dialog. ☞ Page 262 Details of the exported file

6.4.6 Details of the exported file

GT37 SoftGOT3000

The following shows the details of the exported file of verification results.



Item		Description
1)	[Source project data]	Displays the information of the project being edited. In each row, the target item for verification is shown.
2)	[Destination project data]	Displays the information of the verification target project. In each row, the target item for verification is shown.
3)	Types of differences	Displays the types of differences. • [L]: The item exists only in the verification source project. • [R]: The item exists only in the verification target project. • [D]: The item has a difference in its data.

6.5 Creating a screen

GT37 SoftGOT3000

The following shows how to create a screen.

Method	Description
Creating a new screen	Create a new screen. ☞ Page 264 Creating a base screen ☞ Page 265 Creating a window screen For information on how to create a mobile screen, refer to the following. ☞ Page 2800 Creating a mobile screen
Utilizing a screen	Read the screen data of another project to the project being edited. The screen data to be read can be searched by a keyword or other criteria. This is helpful to determine an existing screen to be copied to create a screen by copying. ☞ Page 266 Utilizing a screen
Utilizing screen data of another project	Read the specified screen data of another project to the project being edited. This is helpful when the settings of the project to be utilized are recognized. ☞ Page 226 Utilizing other project data
Copying a screen	Copy an existing screen. ☞ Page 290 Copying a screen

Point

If a login user has access on which project editing is banned, the user cannot create any screen.

☞ Page 2972 Protecting a project by registering users (Project security)

6.5.1 Creating a new screen

GT37 SoftGOT3000

☞ Page 264 Creating a base screen

☞ Page 265 Creating a window screen

PART 4

Creating a base screen

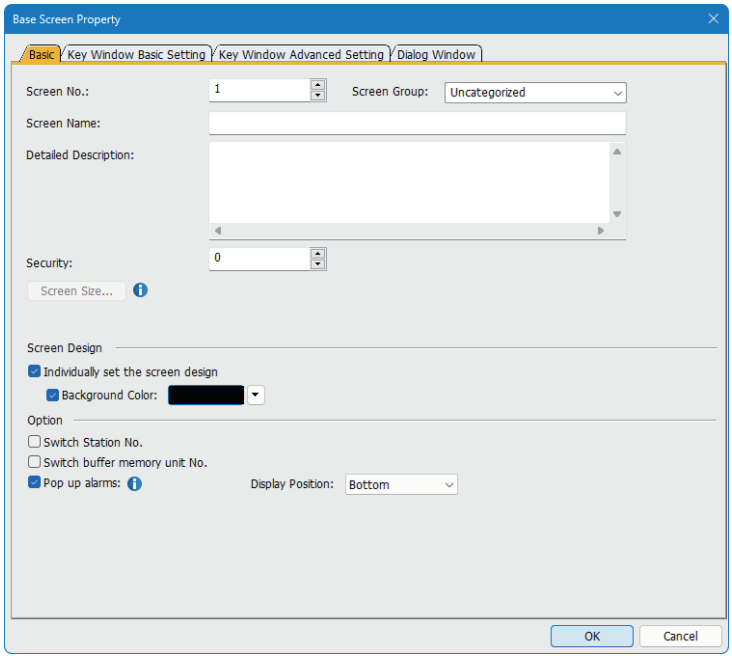
GT37 SoftGOT3000

For details on the screen sizes and registrable number of screens, refer to the following.

☞ Page 62 Specifications of base screens

1. Perform either of the following operations to display the [Base Screen Property] dialog.

- Select [Screen] → [New] → [Base Screen] from the menu.
- In the [Screen] window, click the [New Screen] button and select [Base Screen] from the pull-down menu.



2. Configure the settings, and click the [OK] button.

☞ Page 313 Base screen properties

3. A base screen is created and a screen editor appears on the work window.

Point

By enabling the base screen size expansion, you can create base screens that are larger than the GOT screen.

☞ Page 510 Expanding the base screen size

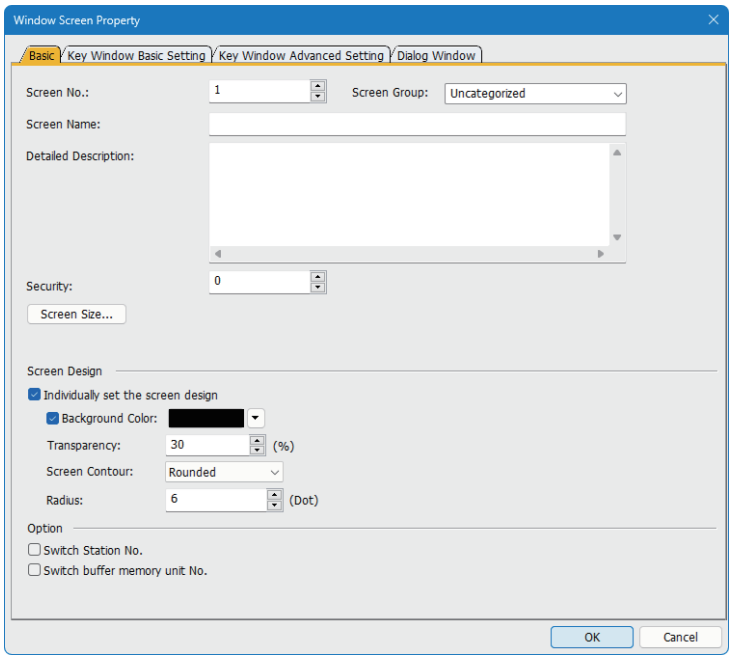
Creating a window screen

GT37 SoftGOT3000

The setting range for the window screen size depends on the display method of the window screen on the GOT.
For details on the screen sizes and registrable number of screens, refer to the following.
☞ Page 62 Specifications of base screens

1. Perform either of the following operations to display the [Window Screen Property] dialog.

- Select [Screen] → [New] → [Window Screen] from the menu.
- In the [Screen] window, click the [New Screen] button and select [Window Screen] from the pull-down menu.



2. Configure the settings, and click the [OK] button.
☞ Page 323 Window screen properties

3. A window screen is created and a screen editor appears on the work window.

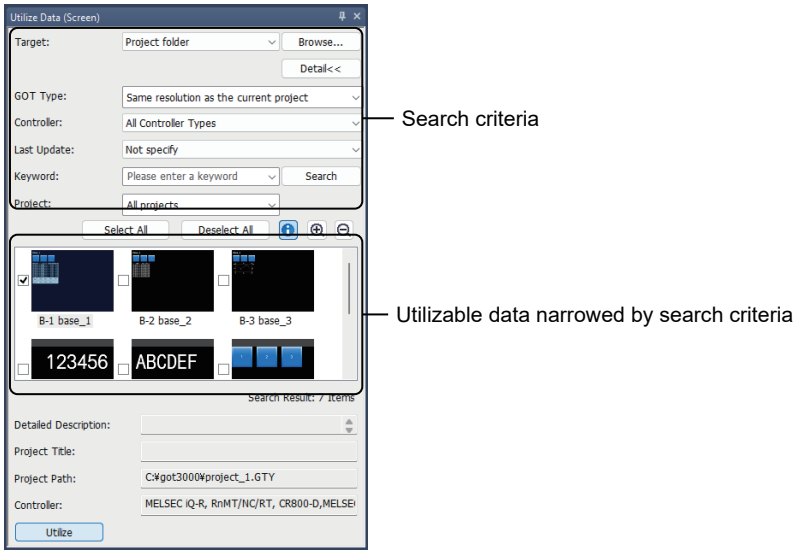
6.5.2 Utilizing a screen

GT37 SoftGOT3000

Read the screen data of another project to the project being edited.

The screen data to be read can be searched by a keyword or other criteria.

This is helpful to determine an existing screen to be copied to create a screen by copying.



Point

If you know the settings in a project to be utilized, you can specify the screens to be utilized and read the screen data to the project being edited.

☞ Page 226 Utilizing other project data

☞ Page 267 Specifications of screen utilization
☞ Page 268 Utilizing a screen
☞ Page 272 [Utilize Data (Screen)] window
☞ Page 274 [Utilize] dialog

Specifications of screen utilization

GT37 SoftGOT3000

■Utilizable project formats

The following shows the utilizable project formats.

GOT	Project format
GOT3000 series	• *.GTY • *.GTYS • *.GTYP If a project is saved without deselecting [Include projects for the function of Utilize Data] in the [Project Information] dialog, the project is not utilizable.

■Settings to be changed when utilized

Item	Specifications
GOT type	Utilized data are converted according to the GOT type set for the destination project. Functions that does not correspond to the GOT type of the destination project are not eliminated.
Controller setting	When [Retain the CH No.] is selected in the [Utilize] dialog ([Controller Setting]), the devices set for the objects on the utilized screens will be changed as shown below. • The device name is changed according to the controller setting in the destination project. • The device to which the controller setting in the destination project does not correspond is changed to [??] (except the devices in the script data) Check and change the device settings.
	If you use GT Designer3 version earlier than the version of GT Designer3 that has been used to create the source project, you cannot utilize the settings of controllers unsupported.
Base screen	The window preview settings for the source project will be migrated to the destination project if [Apply to all base screens] is deselected in the [Window Preview] dialog in the destination project. If [Apply to all base screens] is selected in the destination project, the window preview settings of the destination project will be applied.
Comment group	If the Windows fonts used for comment groups are not installed on the personal computer, the comments are displayed in different fonts. To display the comments in the specified Windows fonts, make sure that the fonts are installed on the personal computer before utilizing the project.

■Utilizing a project protected with project security

When project security is set in the search target project, user authentication is conducted.

When project security is set in the project that is being edited, the search target project that can be authenticated is automatically authenticated by the logged-in user name and password.

Only the screens of authenticated projects are displayed in the search result list.

In the following cases, the screen is not displayed in the search result list and cannot be utilized.

- Authentication of the project has failed.
- Display of the project is prohibited with access privileges of an authenticated user.

For screens whose display is prohibited with access privileges of an authenticated user, dummy screens are displayed in the search result list and cannot be utilized.

☞ Page 2972 Protecting a project by registering users (Project security)

■Utilizing a project with the information protection function set

If a password is set by the information protection function for the search target project, password authentication is performed.

Only the screens of authenticated projects are displayed in the search result list.

☞ Page 3065 Protecting the files in the GOT (Information protection function)

Utilizing a screen

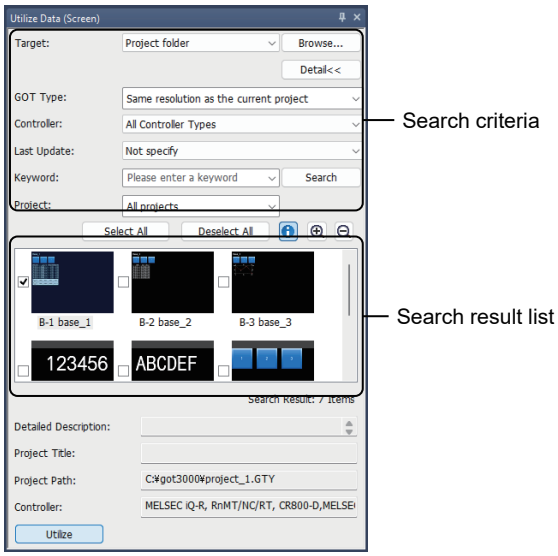
GT37 SoftGOT3000

1. Select [Screen] → [Utilize Data] from the menu to display the [Utilize Data (Screen)] window.

Point

The [Utilize Data (Screen)] window is one of the docking windows. It is docked with other windows in GT Designer3 by default.
For the operations of the docking windows, refer to the following.
☞ Page 194 Screen layout of the docking windows

2. Set the search criteria and click the [Search] button to list the search results.
☞ Page 272 [Utilize Data (Screen)] window

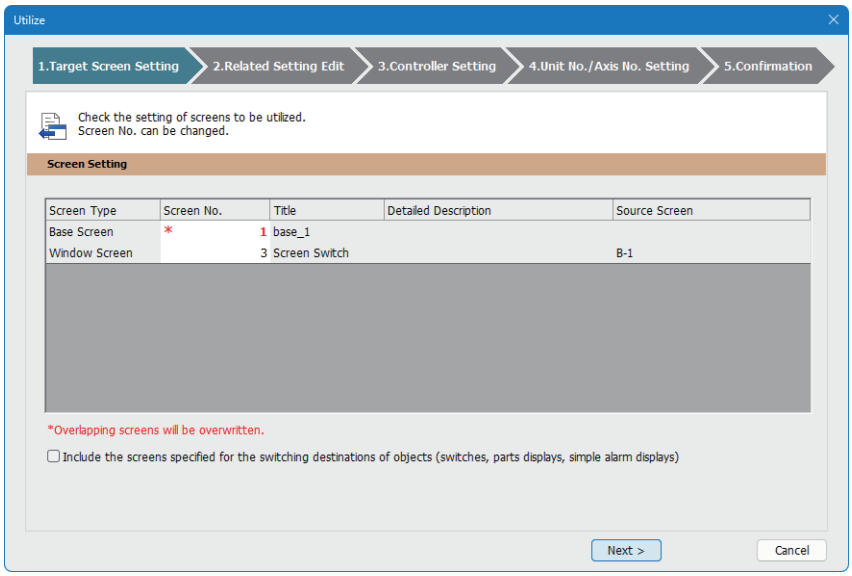


3. Select the screen to be utilized and perform one of the following operations to display the [Utilize] dialog.
☞ Page 274 [Utilize] dialog

- Click the [Utilize] button.
- Drag a target screen to the work window from the search result list.

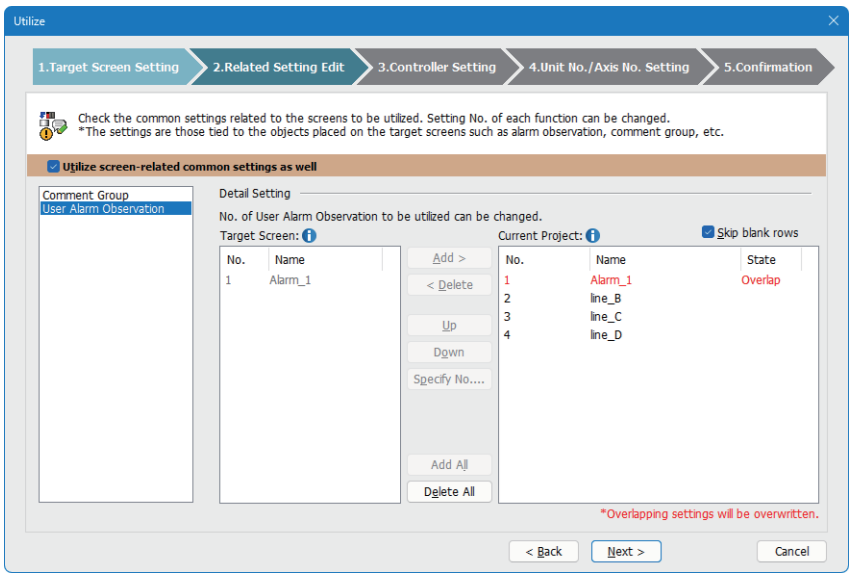
4. Set a screen number to be assigned in the destination project, and click the [Next] button.

☞ Page 275 [Target Screen Setting]



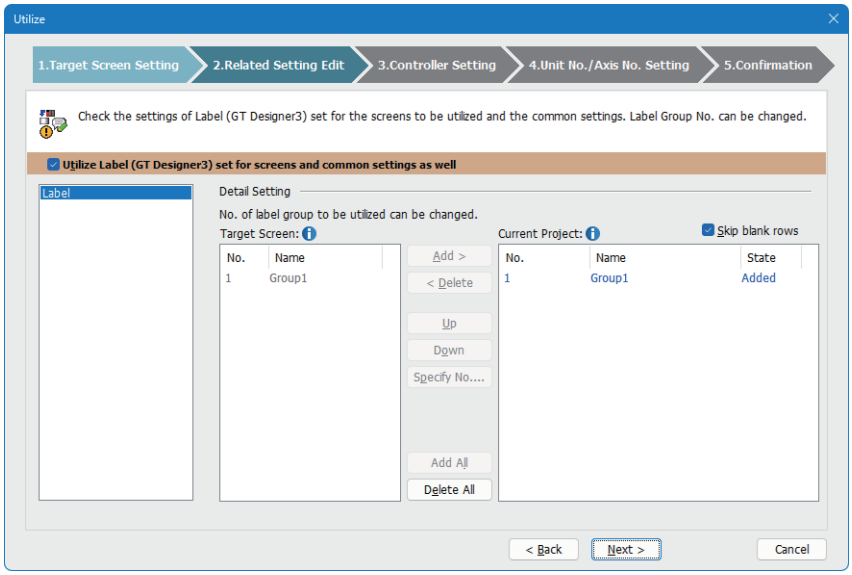
5. Set whether to utilize the settings related to the target screen, assign the setting numbers, and click the [Next] button.

☞ Page 278 [Related Setting Edit]



6. If labels (GT Designer3) are used in the target screen and the settings related to the screen, set whether to utilize the relevant label groups, assign label group numbers, and click the [Next] button.

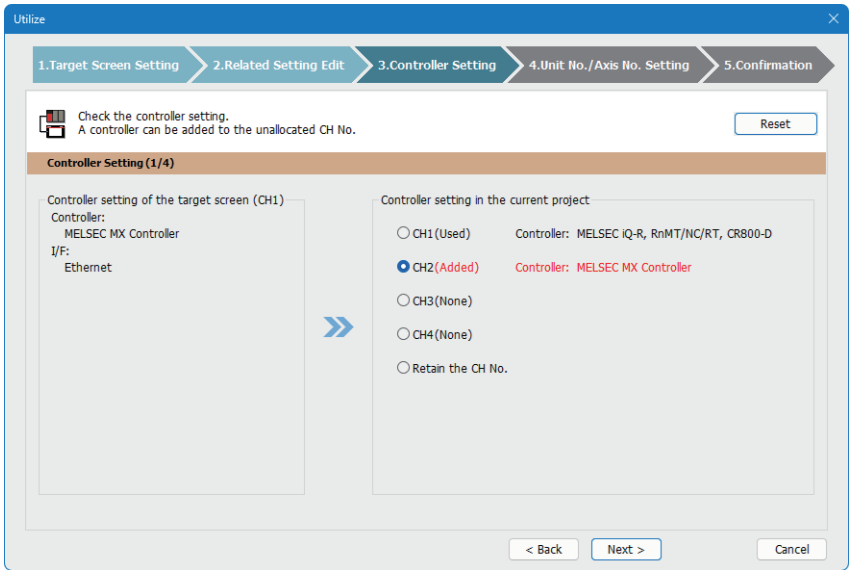
☞ Page 278 [Related Setting Edit]



7. Select a channel for each controller type to be used in the destination project, and click the [Next] button.

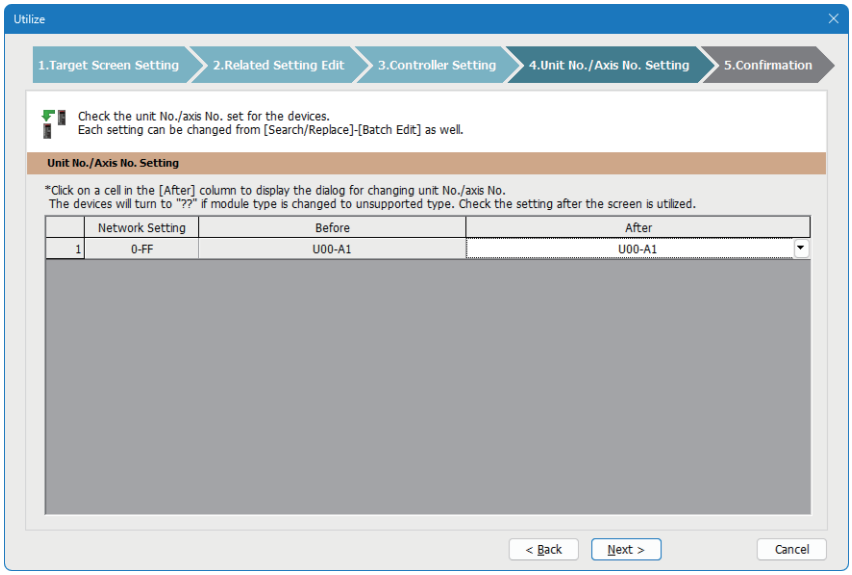
☞ Page 281 [Controller Setting]

If multiple channels are used in the source project, this step is repeated for each additional channel.



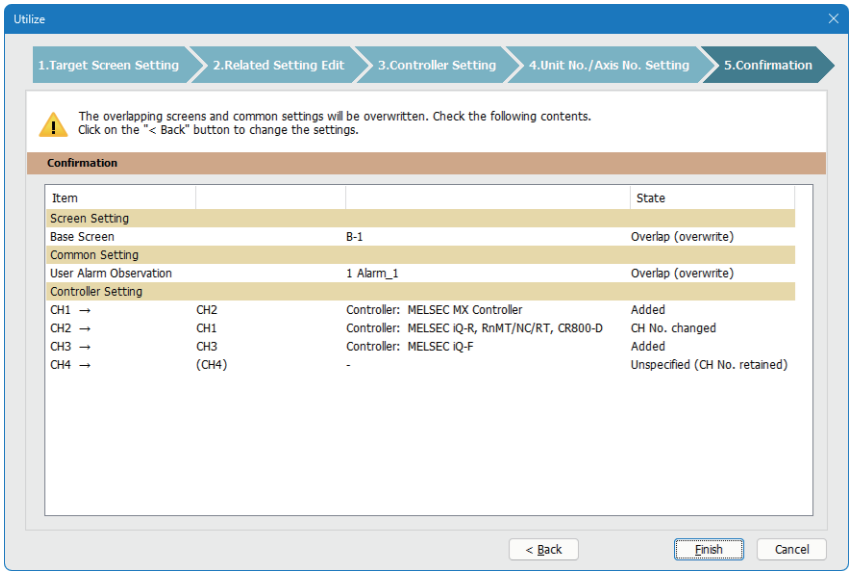
8. If necessary, change the unit number and axis number specified for an applicable device used in the target screen, and click the [Next] button.

☞ Page 282 [Unit No./Axis No. Setting]



9. Confirm the displayed contents and click the [Finish] button to execute the screen utilization.

☞ Page 283 [Confirmation]



[Utilize Data (Screen)] window

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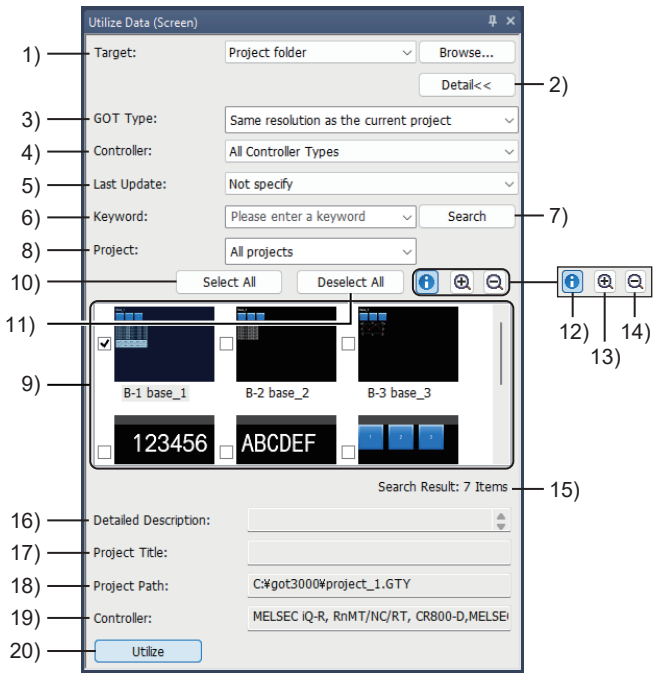

Item		Description
1)	[Target]	Select a search target.
		The search target for [Recently edited project] is up to five recently edited projects.
		The search target for [Project folder] is the projects in up to the third folder within the specified folder. Up to 200 projects are searched. Click the [Browse] button to specify a folder.
2)	[Detail >>] button [Detail <<] button	Displays or hides the following setting items. • [GOT Type] • [Controller] • [Last Update] Even though the above setting items are not displayed, they can be included in the targets for a search.
3)	[GOT Type]	Select the type of GOTs for the project to be searched.
4)	[Controller]	Select the controller type for the project to be searched. The selectable items are the same as those for [Controller Type] in each channel setting in the [Controller Setting] window. ☞ Page 729 [Controller Setting]
5)	[Last Update]	Select the last update of the project to be searched.
6)	[Keyword]	Specify a search keyword. Set a search keyword for the project file name or screen title. Two-byte and one-byte characters are distinguished. Specifying keywords delimited with one-byte or two-byte spaces enables you to narrow the scope of a search to the projects containing the keywords. Up to the last five searches are saved.
7)	[Search] button	Conducts a search.
8)	[Project]	Select a project, narrowing down the thumbnails of found screens in the search result list.
9)	Search result list	Thumbnails of found screens. Multiple screens are selectable from within the same project. Immediately after the project is read from the GOT, the screen images set in the project are not displayed. To display the screen images set in the project, open the project read from the GOT, and save the project again.
10)	[Select All] button	Selects all the screens in the project which includes the screen selected in the search result list.
11)	[Deselect All] button	Deselects all the screens selected in the search result list.

Item		Description
12)	[Information] button	Displays or hides the following items. • [Detailed Description] • [Project Title] • [Project Path] • [Controller]
13)	[Zoom in] button	Zoom in the display of search result list.
14)	[Zoom out] button	Zoom out the display of search result list.
15)	[Search Result]	Number of found screens.
16)	[Detailed Description]	Detail description of the screen selected in the search result list.
17)	[Project Title]	Title of the project including the screen selected in the search result list.
18)	[Project Path]	Save folder path of the project including the screen selected in the search result list.
19)	[Controller]	Controller type specified in the project that contains the screen selected in the search result list.
20)	[Utilize] button	Displays the [Utilize] dialog. ☞ Page 274 [Utilize] dialog

[Utilize] dialog

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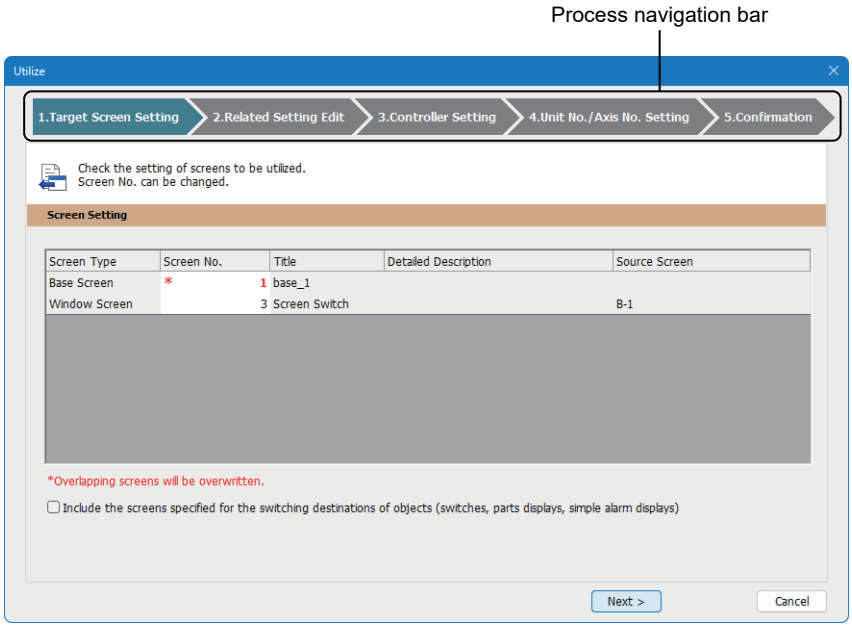
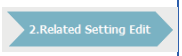
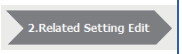
Configure the settings to utilize a screen.



In the process navigation bar, the color of each step represents the status of the step.

Display image	Status
	Active
	Done
	Undone

☞ Page 275 [Target Screen Setting]
☞ Page 278 [Related Setting Edit]
☞ Page 281 [Controller Setting]
☞ Page 282 [Unit No./Axis No. Setting]
☞ Page 283 [Confirmation]

■[Target Screen Setting]

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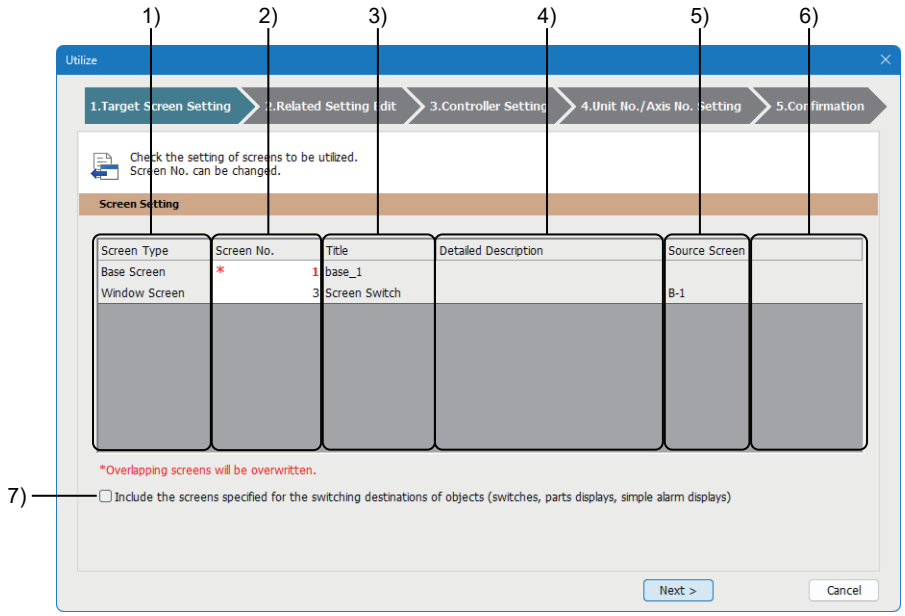
Set the screen number of a screen to be utilized in the destination project.



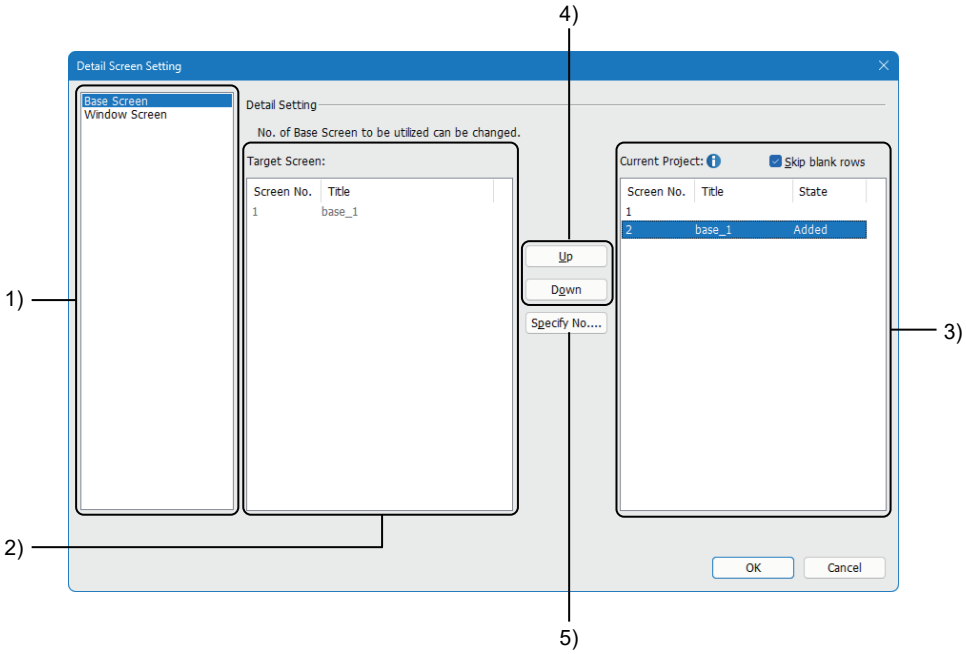
Item		Description
1)	[Screen Type]	Type of the screen to be utilized
2)	[Screen No.]	Set a screen number for each screen to be utilized in the destination project. Change the screen number as necessary. The screen number is displayed in red if it is used in the destination project. Click the [...] button to display the [Detail Screen Setting] dialog. ☞ Page 276 [Detail Screen Setting] dialog In the [Detailed Screen Settings] dialog, you can set screen numbers while checking the listed screens of the source project and destination project.
3)	[Title]	Title of the screen to be utilized
4)	[Detailed Description]	Detail description of the screen to be utilized
5)	[Source Screen]	If a target screen is specified as a called screen for the set overlay screen function, the screen number of the calling screen is displayed.
6)	[Previous Screen]	If a target screen is specified as the screen to be switched to in a touch switch setting, the screen number of the switched screen is displayed.
7)	[Include the screens specified for the switching destinations of objects (switches, parts displays, simple alarm displays)]	Utilizes the screen that is specified as the screen to be switched to in the setting of a touch switch, parts display, or simple alarm display.

■[Detail Screen Setting] dialog

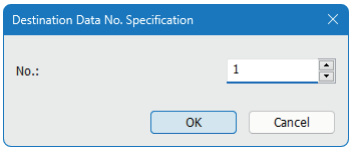
GT37 SoftGOT3000

Set a screen number for each screen to be utilized in the destination project.

To display this dialog, click the [...] button for the intended row in the column of [Screen No.] in the [Utilize] dialog ([Target Screen Setting]).



Item			Description
1)	Screen type		The screen types of target screens are listed. • [Base Screen] • [Window Screen] • [Mobile Screen]
2)	[Target Screen]	—	Lists the utilizable screens.
		[Screen No.]	Screen number of each screen in the source project.
		[Title]	Title of each screen in the source project.
3)	[Current Project]	—	Lists the settings in the destination project. In the destination project, the assigned number is user-changeable with the [Up] button or the [Down] button. The text color of a screen setting represents the assignment status of the setting. • Black Screen setting existing in the destination project. • Blue Screen setting added from [Target Screen]. • Red Duplicate screen number in the destination project.
		[Skip blank rows]	Only displays the rows where a screen setting is present.
		[Screen No.]	Screen number of each screen in the destination project.
		[Title]	Title of each screen in the destination project.
		[State]	Assignment status of each screen setting. • [Added]: Screen setting added from [Target Screen] • [Overlap]: Duplicate screen number in the destination project
4)	[Up] button [Down] button		Moves the screen setting selected in [Current Project] up or down.

Item		Description
5)	[Specify No.] button	Displays the [Destination Data No. Specification] dialog. Change the screen number of the screen selected in [Current Project].  Set the screen number of a screen to be utilized in the destination project. The setting range is [0] to [32767].

■[Related Setting Edit]

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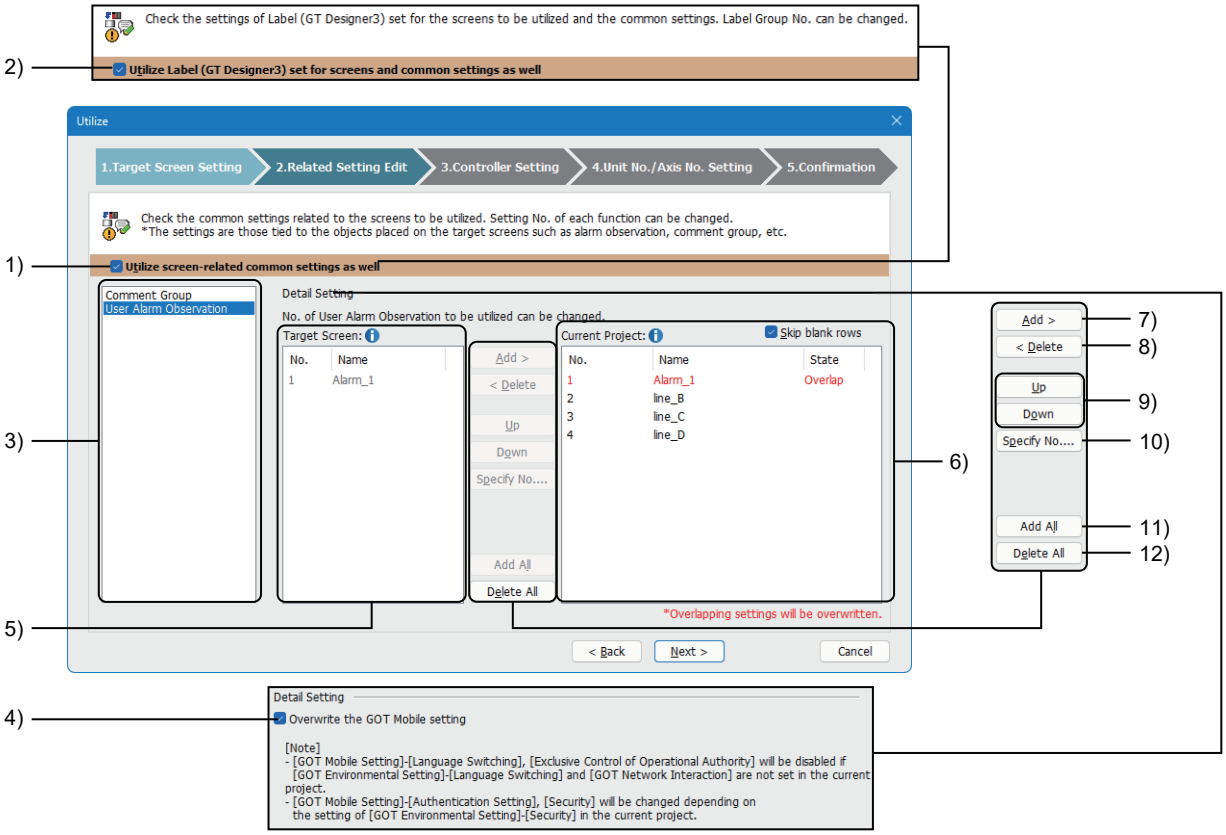
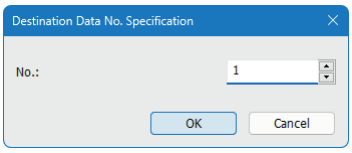
Set whether to utilize the settings related to the screen to be utilized, and assign setting numbers.



When [GOT Mobile Setting] is selected in the setting list

Item			Description
1)	[Utilize screen-related common settings as well]		Utilizes the settings related to the target screen.
2)	[Utilize Label (GT Designer3) set for screens and common settings as well]		This item appears when labels (GT Designer3) are used in the target screen and the settings related to the screen. Utilizes the relevant label groups. For information on how to display this item, refer to the following. ☞ Page 268 Utilizing a screen
3)	Setting list		Lists the settings related to the target screen. Only applicable items are displayed.
4)	[Overwrite the GOT Mobile setting]		This item is displayed when [GOT Mobile Setting] is selected in the setting list. Utilizes the settings for the GOT Mobile function.
5)	[Target Screen]	—	Lists the utilizable settings. The text color of a setting represents the status of the setting. • Black Setting that is not added to [Current Project]. To utilize a setting in the destination project, add the setting to [Current Project] with the [Add] button. • Gray Setting added to [Current Project].
		[No.]	Number of each setting in the source project.
		[Name]	Name of each setting in the source project.

Item			Description
6)	[Current Project]	—	Lists the settings in the destination project. In the destination project, the assigned number is user-changeable with the [Up] button or the [Down] button. For mouse and keyboard operations, refer to the following. ☞ Page 280 Mouse and keyboard operations The text color of a setting represents the status of the setting. • Black Setting existing in the destination project. • Blue Setting added from [Target Screen]. • Red Duplicate setting number in the destination project.
		[Skip blank rows]	Only displays the rows where a setting is present.
		[No.]	Number of each setting in the destination project.
		[Name]	Name of each setting in the destination project.
		[State]	Assignment status of each setting. • [Added]: Setting added from [Target Screen] • [Overlap]: Duplicate setting number in the destination project
7)	[Add] button		Adds the setting selected in [Target Screen] to the row selected in [Current Project]. If no row has been preselected in [Current Project], the [Destination Data No. Specification] dialog appears. Specify a setting number to be assigned in the destination project.
8)	[Delete] button		Deletes the setting selected in [Current Project].
9)	[Up] button [Down] button		Moves the setting selected in [Current Project] up or down.
10)	[Specify No.] button		Displays the [Destination Data No. Specification] dialog. Change the setting number of the setting selected in [Current Project].  Specify a setting number to be assigned in the destination project. The setting range varies depending on the setting to be utilized.
11)	[Add All] button		Adds all the settings listed in [Target Screen] to [Current Project]. The settings are added to the selected row and subsequent rows in [Current Project]. If no row has been preselected in [Current Project], each setting is added with its setting number unchanged.
12)	[Delete All] button		Deletes all the added settings from [Current Project].

■Mouse and keyboard operations

The following shows the mouse and keyboard operations in [Target Screen] and [Current Project].

Operation	[Target Screen]	[Current Project]
↑ ↓	Moves the cursor.	
Shift + ↑ Shift + ↓	Moves the row while selecting the row where the cursor is positioned. The destination row of the cursor is also selected.	—
Home	Moves the cursor to the top row.	
End	Moves the cursor to the bottom row.	
PgUp	Moves the cursor from the row with the cursor to the corresponding row up one page.	
PgDown	Moves the cursor from the row with the cursor to the corresponding row down one page.	
Shift + Home	Selects the rows from the row where the cursor is positioned to the top row.	—
Shift + End	Selects the rows from the row where the cursor is positioned to the bottom row.	—
Shift + PgUp	Selects the rows from the row where the cursor is positioned to the corresponding row up one page.	—
Shift + PgDown	Selects the rows from the row where the cursor is positioned to the corresponding row down one page.	—
Shift + Click	Selects the rows from the row with the cursor to the row where the mouse is clicked.	—
Ctrl + Space	Selects or deselects a row.	Selects or deselects a row.
Ctrl + Click		—

■[Controller Setting]

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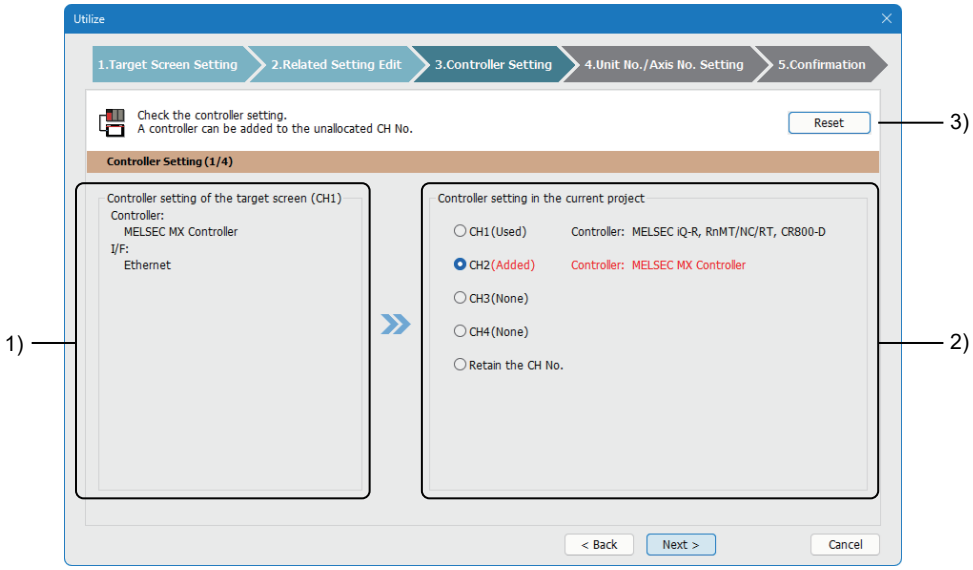
Select a channel for each controller type to be used in the destination project.



Item		Description
1)	[Controller setting of the target screen]	Controller settings in the source project.
2)	[Controller setting in the current project]	Controller settings in the destination project. Select a channel for the controller type displayed in [Controller setting of the target screen]. Unavailable items are grayed out. You can select the channel used for a different controller type in the destination project. In this case, the channel number and controller type specified in the destination project will be applied. Check the device setting after the utilization.
		When [Controller Type] of the source project is [GT SoftGOT3000], only the [Controller Type] setting in the [Controller Setting] window is utilized. For other settings (such as [I/F]), check the settings for each channel in the [Controller Setting] window after utilization. ☞ Page 729 [Controller Setting]
3)	[Reset] button	Resets the settings in [Controller setting in the current project] for all channels.

■[Unit No./Axis No. Setting]

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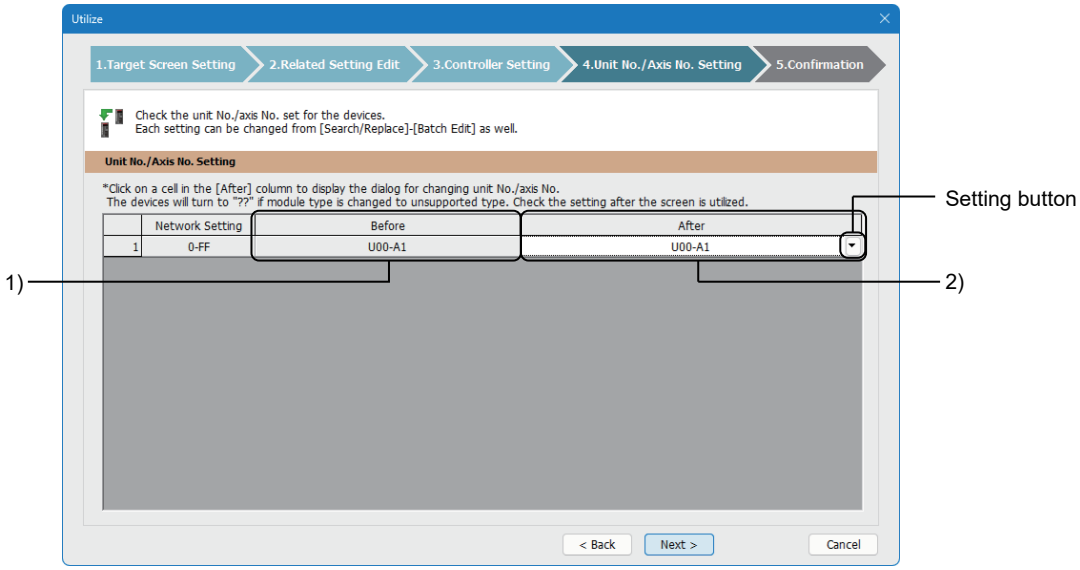
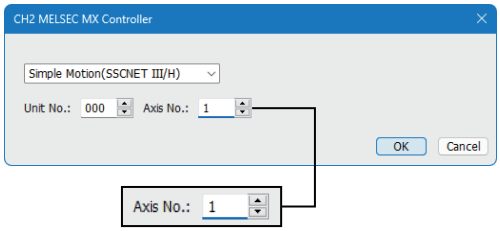
If necessary, change the unit number and the axis number (axis designation) set to an applicable device used in the target screens.

The settings are configurable in the [Unit No./Axis No. Batch Edit] dialog as well.

☞ Page 157 [Unit No./Axis No. Batch Edit] dialog



Item		Description
1)	[Before]	Unit number and axis number (axis designation) set to each applicable device used in the target screens.
2)	[After]	If necessary, change the unit number and axis number (axis designation) to be used in the destination project. Click the setting button to display the unit No./axis No. setting dialog. The setting items vary according to the selected module.  • Unit Select a module to be routed to. • [Unit No.] Specify a unit number. • [Axis No.] Specify an axis number. • [Axis Designation] Specify an axis.

■[Confirmation]

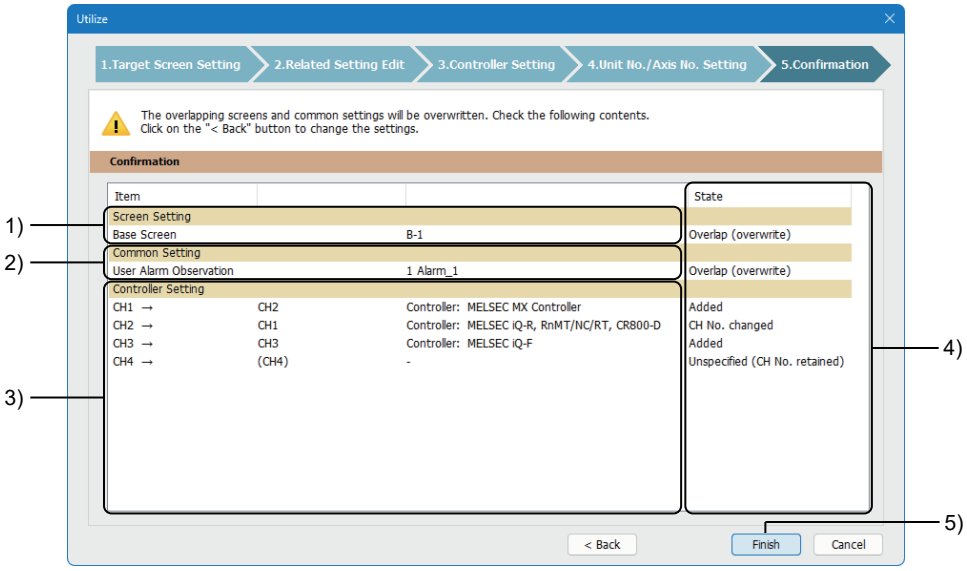
GT37 SoftGOT3000

The following set contents are displayed.

- Duplicate screen number or setting number
- Controller setting

Confirm the set contents, and execute the screen utilization.

To change the settings, go back to the relevant step with the [Back] button or the process navigation bar.



Item		Description
1)	[Screen Setting]	If a duplicate screen number exists in the destination project, the screen type and screen number are displayed. ☞ Page 275 [Target Screen Setting]
2)	[Common Setting]	If a duplicate setting number exists in the destination project, the setting type and setting number are displayed. ☞ Page 278 [Related Setting Edit]
3)	[Controller Setting]	Settings made in [Controller Setting].
4)	[State]	Assignment status of each setting. • [Overlap (overwrite)] A duplicate screen number or setting number exists in the destination project. If you click the [Finish] button without resolving of the duplication, the existing setting is overwritten. • [CH No./controller change] The channel number and controller type are changed to the ones specified in the destination project. • [Controller changed] The controller type is changed to the one specified in the destination project. • [CH No. changed] The channel number is changed to the one specified in the destination project. • [Unchanged] The channel number and controller type remain unchanged. • [New] The controller settings are assigned to an unused channel in the destination project. • [Unspecified (CH No. retained)] The channel number remains unchanged, and the controller type is changed to the one specified in the destination project.
5)	[Finish] button	Executes the screen utilization. If a label (GT Designer3) error occurs after the screen utilization, the [Label Check] dialog will appear. Correct the setting of the relevant label (GT Designer3). ☞ Page 883 Checking for errors in the label (GT Designer3) If you select a channel being used in the destination project, check the device settings after the screen utilization.

6.6 Basic operations of a screen

GT37 SoftGOT3000

☞ Page 284 Opening a screen
☞ Page 289 Closing a screen
☞ Page 290 Copying a screen
☞ Page 292 Deleting a screen

6.6.1 Opening a screen

GT37 SoftGOT3000

☞ Page 285 Opening a screen from the [Screen] window
☞ Page 286 Opening a screen from the [Screen Image List] window
☞ Page 286 Opening a screen from the menu
☞ Page 288 [Open Screen] dialog

Point

- Up to 25 screens can be opened. A number smaller than 25 can be set as the maximum number of screens that can be opened.

☞ Page 197 [Options] dialog ([Operation] tab)

- When project security is set for each screen, displaying or editing screens is disabled according to the access level set for each screen.

☞ Page 2972 Protecting a project by registering users (Project security)

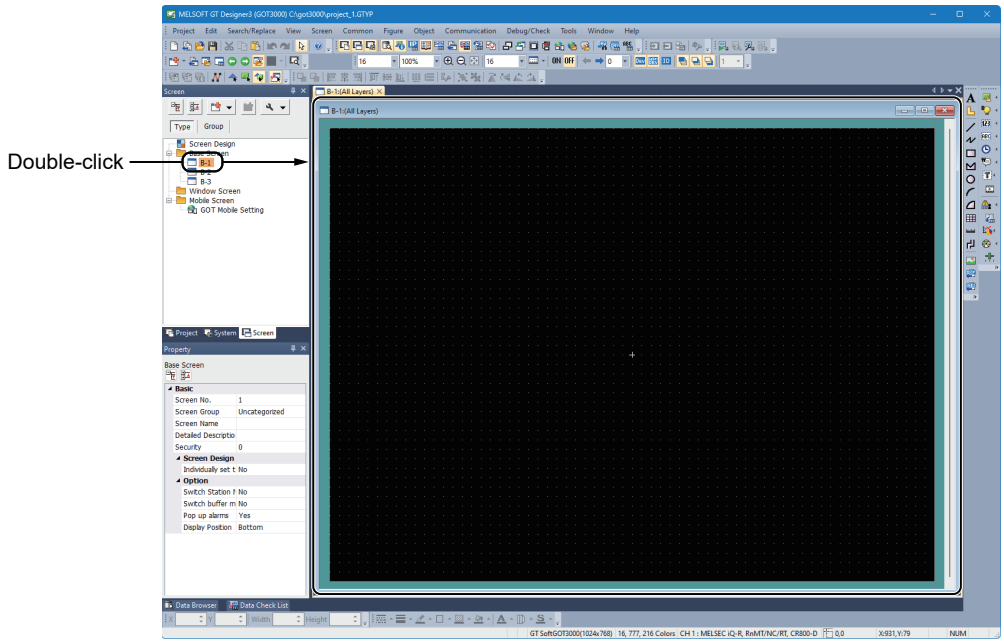
Opening a screen from the [Screen] window

GT37 SoftGOT3000

☞ Page 285 Opening screens one by one
☞ Page 285 Opening multiple screens simultaneously

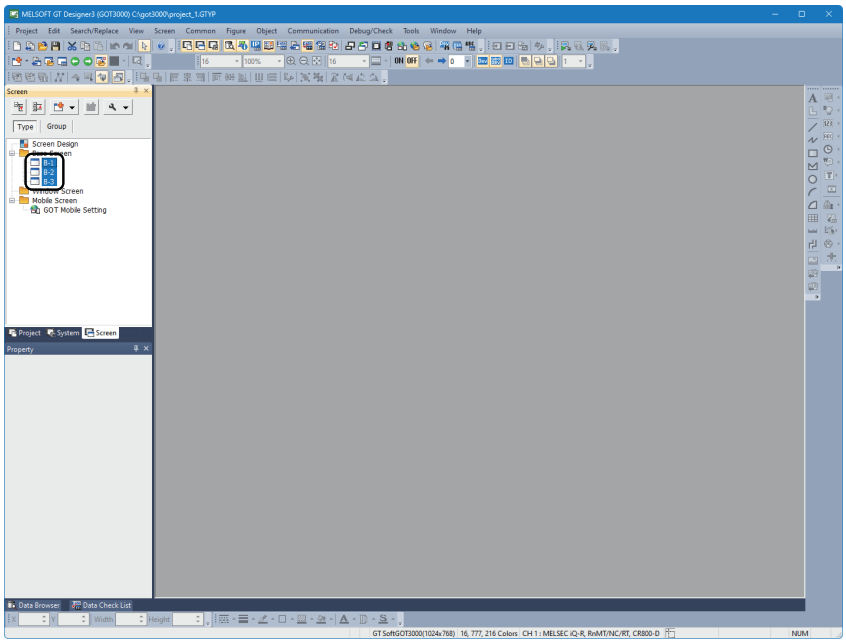
■Opening screens one by one

Double-click the screen to be opened on the [Screen] window to display a screen editor on the work window.



■Opening multiple screens simultaneously

1. Select multiple screens to be opened while pressing the Ctrl or Shift key.



2. Either of the following operations displays a screen editor on the work window.

- Press the Enter key.
- Right-click on the selected screen and select [Open] from the menu.

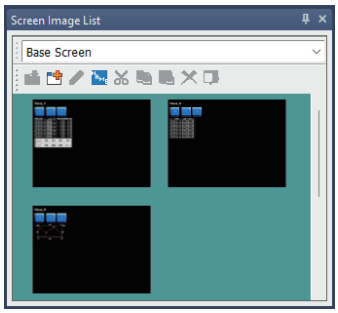
Opening a screen from the [Screen Image List] window

GT37 SoftGOT3000

Base screens, window screens, and mobile screens are displayable from the [Screen Image List] window.

1. Select [View] → [Docking Window] → [Screen Image List] from the menu to display the [Screen Image List] window.

☞ Page 335 [Screen Image List] window



2. Double-click the image of a screen to be opened to display a screen editor on the work window.

Opening a screen from the menu

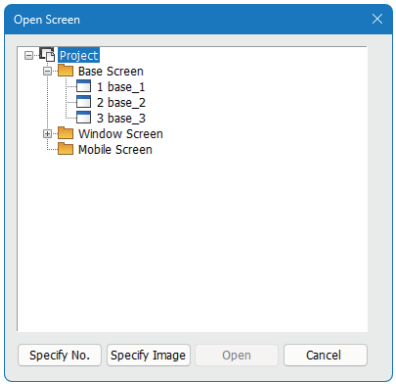
GT37 SoftGOT3000

☞ Page 286 Opening a screen specifying the screen number
☞ Page 287 Opening a screen checking the corresponding screen image

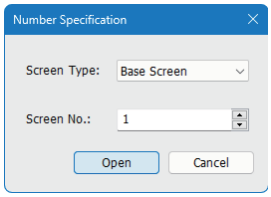
■Opening a screen specifying the screen number

1. Select [Screen] → [Open] from the menu to display the [Open Screen] dialog.

☞ Page 288 [Open Screen] dialog



2. Click the [Number Specification] button to display the [Number Specification] dialog.

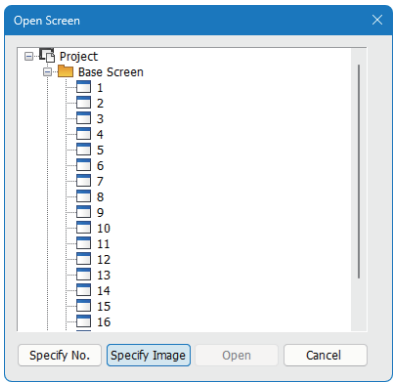


3. Set [Screen Type] and [Screen No.] then click the [Open] button to display a screen editor on the work window.

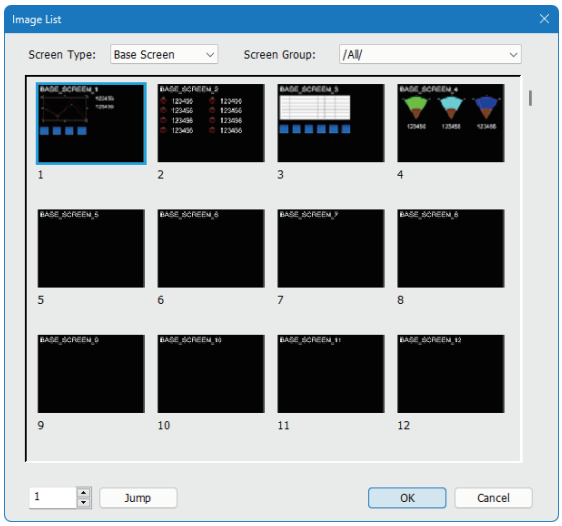
■Opening a screen checking the corresponding screen image

1. Select [Screen] → [Open] from the menu to display the [Open Screen] dialog.

☞ Page 288 [Open Screen] dialog



2. Click the [Specify Image] button to display the [Image List] dialog (screen).



3. Select a screen and click the [OK] button to display a screen editor on the work window.

[Open Screen] dialog

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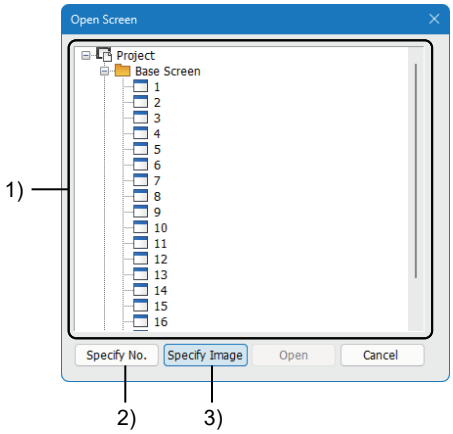

Item		Description
1)	List of screens	Lists the created base screens, window screens, and mobile screens.
2)	[Specify No.] button	Displays the [Number Specification] dialog. Specify a screen number to open the corresponding screen. ☞ Page 288 [Number Specification] dialog
3)	[Specify Image] button	Displays the [Image List] dialog (screen). You can open a screen by selecting the corresponding screen image. ☞ Page 3683 [Image List] dialog (screen)

■[Number Specification] dialog

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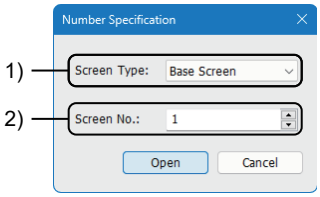


Item		Description
1)	[Screen Type]	Select the type of a screen to be opened.
2)	[Screen No.]	Set the screen number of a screen to be opened.

6.6.2 Closing a screen

GT37 SoftGOT3000

Closing a single screen

Either of the following operations closes a screen being edited.

- Select [Screen] → [Close] from the menu.
- Click the [×] button on the title bar on the screen editor.

Closing all screens

Select [Screen] → [Close All] from the menu to close all screens.

6.6.3 Copying a screen

GT37 SoftGOT3000

☞ Page 290 Specifications of screen copy
☞ Page 290 Copying a screen
☞ Page 291 [Copy Screen] dialog

Point

For information on how to copy a base screen or window screen to create a mobile screen, refer to the following.

☞ Page 2800 Creating a mobile screen

Specifications of screen copy

GT37 SoftGOT3000

■Setting of the screen trigger action and screen script

When the trigger action or script is set to the screen to be copied, the setting of the trigger action or script is also copied.

■Projects protected with project security

For operating the project for which project security is set, refer to the following.

☞ Page 2972 Protecting a project by registering users (Project security)

Copying a screen

GT37 SoftGOT3000

Screens can be copied from the [Screen] window, [Screen Image List] window, and menu.

For the operation of the [Screen] window and [Screen Image List] window, refer to the following.

☞ Page 122 [Screen] window
☞ Page 335 [Screen Image List] window

The following shows how to copy screens from the menu.

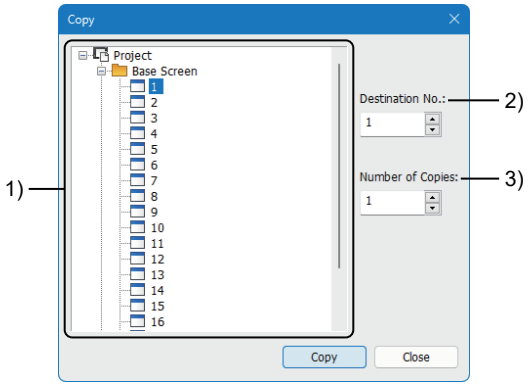
1. Select [Screen] → [Copy] from the menu to display the [Copy] dialog.

☞ Page 291 [Copy Screen] dialog

2. Select the screen to be copied in the screen list and set [Destination No.] and [Number of Copy].
3. Click the [Copy] button to create a screen.

[Copy Screen] dialog

GT37 SoftGOT3000



Item		Description
1)	List of screens	List of the created screens Select a screen to be copied. Use the Ctrl key or Shift key to select up to 25 screens of the same type.
2)	[Destination No.]	Set the screen number of the screen to be created. The setting range is [0] to [32767].
3)	[Number of Copies]	Set the number of copies. The setting range is [1] to [100]. The screen numbers after the second copied screen are set sequentially from the number set in [Destination No.]. If you copy the screens exceeding the number of the maximum number of the screen setting or range of the screen number, the screens cannot be copied.

6.6.4 Deleting a screen

GT37 SoftGOT3000

☞ Page 292 Specifications of screen deletion
☞ Page 292 Deleting a screen
☞ Page 292 [Delete Screen] dialog

Specifications of screen deletion

GT37 SoftGOT3000

■Projects protected with project security

When the display or editing of a screen is disabled by the project security, the screen image is not listed in the [Delete Screen] dialog.

Deleting a screen

GT37 SoftGOT3000

Screens can be deleted from the [Screen] window, [Screen Image List] window, and the menu.
For the operation of the [Screen] window and [Screen Image List] window, refer to the following.

☞ Page 122 [Screen] window
☞ Page 335 [Screen Image List] window

The following shows how to delete screens from the menu.

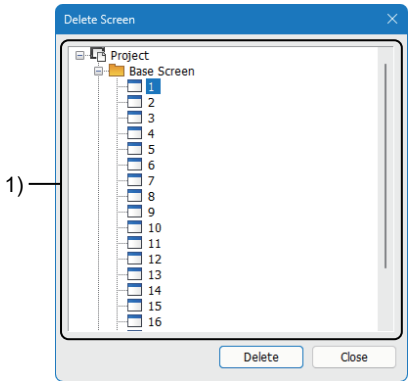
1. Select [Screen] → [Delete] from the menu to display the [Delete Screen] dialog.

☞ Page 292 [Delete Screen] dialog

2. Select the screen to be deleted in the screen list and click the [Delete] button to delete the screen.

[Delete Screen] dialog

GT37 SoftGOT3000

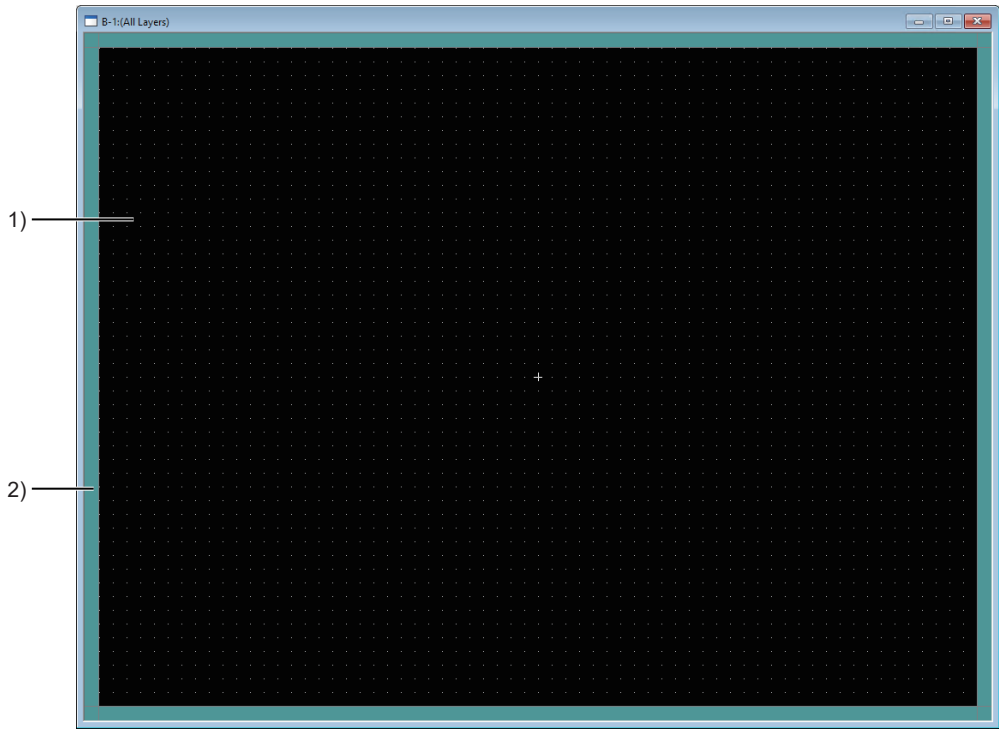


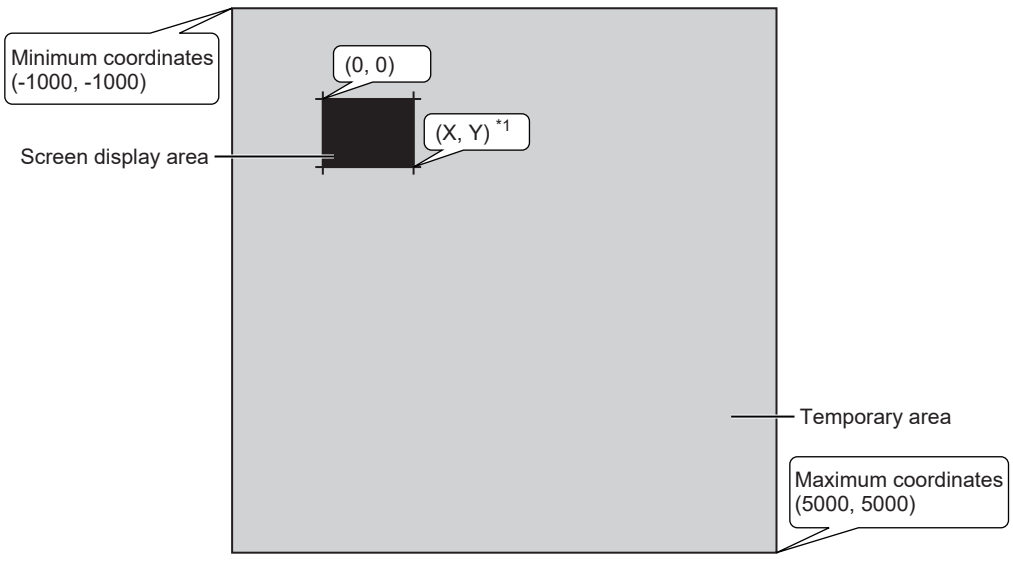
Item		Description
1)	List of screens	List of the created screens Select a screen to be deleted. Use the Ctrl key or Shift key to select multiple screens of the same type.

6.7 Basic operations of a screen editor

GT37 SoftGOT3000

The following shows the layout of the screen editor.



Item		Description
1)	Screen display area	This area is displayed on the GOT. Figures and objects can be arranged on this area. The [+] sign indicates the center of the screen. On an expanded base screen with its base point at the upper left corner, this sign indicates the center of the GOT screen.
2)	Temporary area	This area is not displayed on the GOT. Figures and objects can be temporarily arranged on this area. The data size of a screen includes the size of the figures and objects arranged on the temporary area. Before writing package data to the GOT, delete the figures and objects on the temporary area. The size of the temporary area is -1000 to 5000 for both X and Y coordinates. 

*1 Varies by GOT type.

For information on how to arrange and set figures and objects, refer to the following.

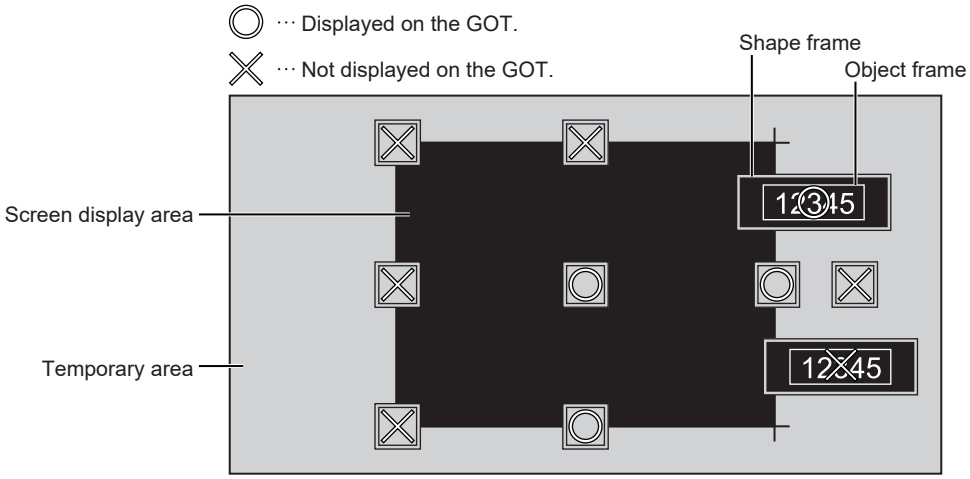
☞ Page 995 Basics of figures and objects

For the operations of the screen editor, refer to the following.

☞ Page 295 Selecting a screen editor to be edited
☞ Page 296 Switching the display status of objects to be displayed on the screen editor
☞ Page 296 Redisplaying a selected screen editor
☞ Page 297 Setting information to be displayed on the screen editor
☞ Page 299 Displaying the grid
☞ Page 300 Displaying the scroll bar areas for editing the expanded base screens
☞ Page 301 Switching the layer display
☞ Page 302 Displaying guidelines
☞ Page 304 Scaling the size of items on the screen editor
☞ Page 305 Cascading or arranging open screen editors
☞ Page 305 Copying the image of a screen editor to the clip board

Display of a figure or object on the border between the screen display area and the temporary area

Figures and objects appear on the GOT when all the following conditions are satisfied.

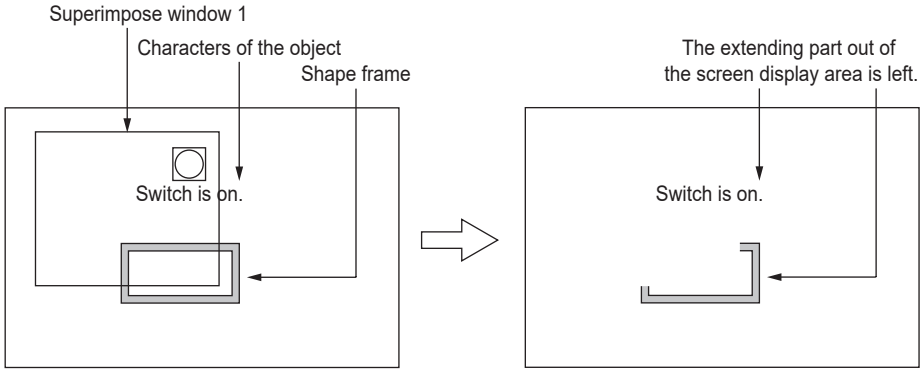
Condition	Remarks
A part of the object is included in the screen display area.	If only the frame of a figure is included in the screen display area, the figure is ineffective. Ineffective figures and objects are not displayed on the GOT, and the actions set to the figures and objects such as data operations and scripts are not executed.  On the screen editor of GT Designer3, [×] is displayed in the upper right corner of invalid objects. However, If the upper-left coordinates of the object are negative values, [×] is not displayed in the upper-right corner of the object.
The upper-left coordinates of the object are not negative values.	If the upper-left coordinates of the object are negative, the following operations cannot be performed. • Saving as package data • Saving as a GT SoftGOT3000 execution file • Data transfer to/from the GOT • Writing to a memory card • Starting or updating GT Simulator3

How a superimpose window is displayed

When a window, on which an arranged figure or object extends to the temporary area, is displayed as a superimpose window on the GOT, the extending part is displayed on the GOT.

When the superimpose window is hidden, the extending part is left on the base screen.

Switching the base screen updates the screen to remove the left extending part.



When the superimpose window is displayed. When the superimpose window is hidden.

6.7.1 Selecting a screen editor to be edited

GT37 SoftGOT3000

To select a screen editor to be edited, click any part of the screen editor displayed on the work window.

The selected screen editor is displayed at the topmost position.

When multiple screen editors are displayed, the followings are more useful.

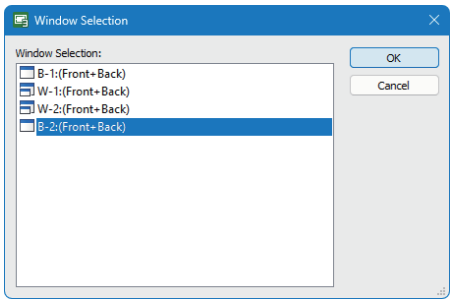
Selecting a screen editor with the editor tab

Select a screen editor with the editor tab to display the selected editor at the topmost position.

☞ Page 114 Editor tab, work window

Selecting a screen editor in the [Window Selection] dialog

1. Select [Window] → [Select Windows] from the menu to display the [Window Selection] dialog.



2. Select a screen editor to be edited and click the [OK] button to display the selected editor at the topmost position.

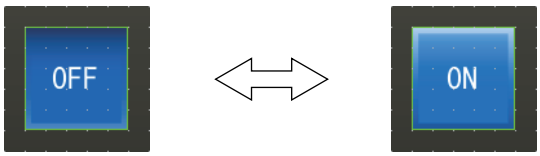
6.7.2 Switching the display status of objects to be displayed on the screen editor

GT37 SoftGOT3000

Switching the display status between ON and OFF

Select [View] → [Switch ON/OFF Display] from the menu to switch between on and off the display status of the objects on the screen editor.

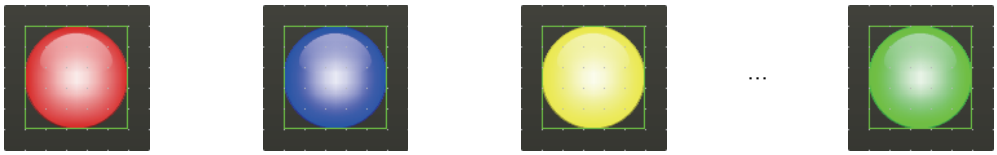
If a condition is set to an object, the image of the object switches between OFF with the condition No.0 and ON with the condition No.1.



Switching the display status by specifying the state No.

Select [View] → [State No.] → [Previous State] or [Next State] from the menu to switch between displaying and hiding the objects on the screen editor according to the state No.

If the display status of an object is switched between ON and OFF, the display of the object switches between OFF with state No.0 and ON with state No.1 or more.



State No.0 State No.1 State No.2 State No.63

6.7.3 Redisplaying a selected screen editor

GT37 SoftGOT3000

In some cases such as when an object placed on a paint is moved, a part of the figure may be left unpainted.

To display the screen correctly, redisplay the screen editor.

1. Select a screen editor to be redisplayed.
2. Select [View] → [Redisplay] from the menu to redisplay the contents of the selected screen editor.

6.7.4 Setting information to be displayed on the screen editor

GT37 SoftGOT3000

The following shows how to set information to be displayed on the screen editor.

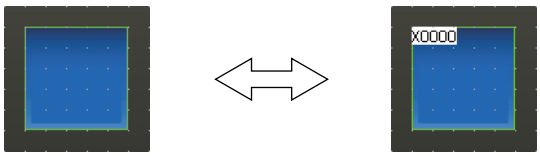
☞ Page 297 [Device]
☞ Page 297 [Device of Label]
☞ Page 297 [Object ID]
☞ Page 298 [Paint]
☞ Page 298 [Object]
☞ Page 298 [Object Frame]
☞ Page 298 [Template Information]
☞ Page 298 [Touch Area]
☞ Page 299 [Frame]

Point

Select [View] → [Display Items] → [Option] from the menu to display the [Option] dialog.
In this dialog, you can configure the settings displayed on the screen editor.
☞ Page 201 [Options] dialog ([View] tab)

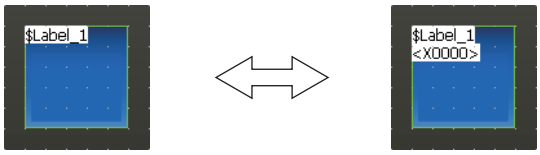
[Device]

Select [View] → [Display Items] → [Device] from the menu to display or hide devices on the screen editor.



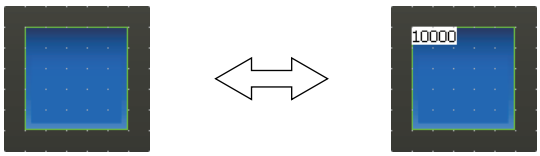
[Device of Label]

Select [View] → [Display Items] → [Device of Label] from the menu to display or hide the devices assigned to the labels (GT Designer3) on the screen editor.



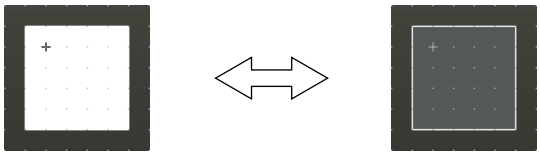
[Object ID]

Select [View] → [Display Items] → [Object ID] from the menu to display or hide object IDs on the screen editor.
The object ID is displayed only for objects.



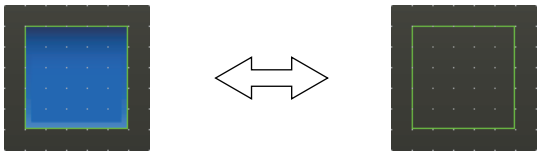
[Paint]

Select [View] → [Display Items] → [Paint] from the menu to display or hide paints on the screen editor.



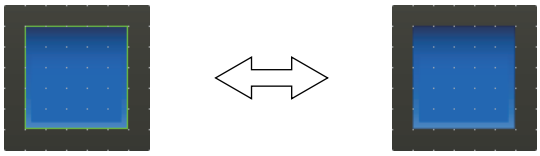
[Object]

Select [View] → [Display Items] → [Object] from the menu to display or hide objects on the screen editor.



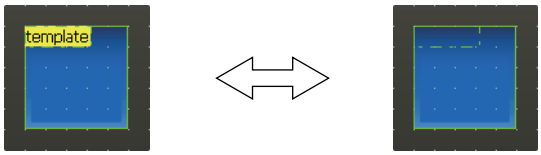
[Object Frame]

Select [View] → [Display Items] → [Object Frame] from the menu to display or hide object frames on the screen editor.



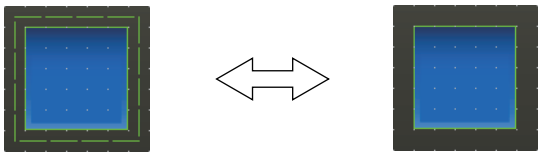
[Template Information]

Select [View] → [Display Items] → [Template Information] from the menu to display or hide the template information on the screen editor.



[Touch Area]

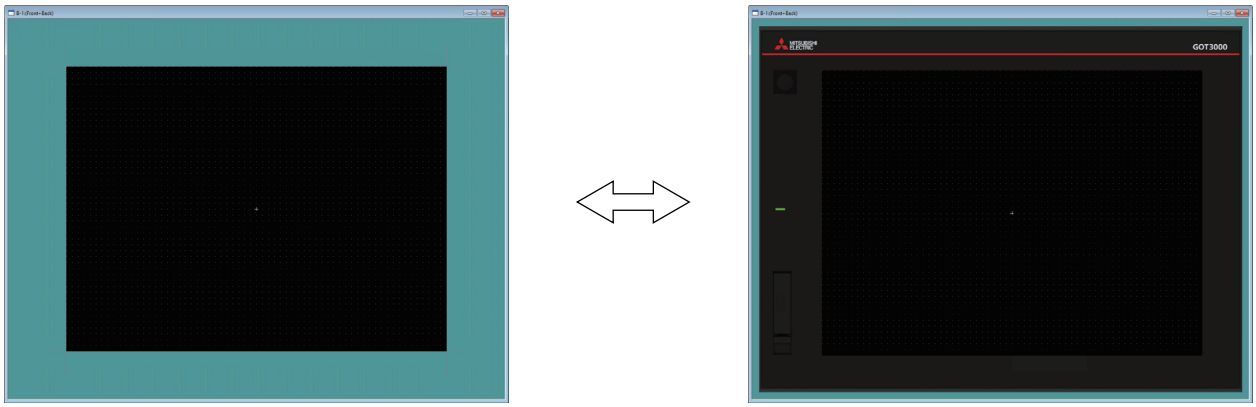
Select [View] → [Display Items] → [Touch Area] from the menu to display or hide the touch area on the screen editor.



[Frame]

The item is not displayed for expanded base screens.

Select [View] → [Display Items] → [Frame] from the menu to display or hide the GOT frame on the screen editor.

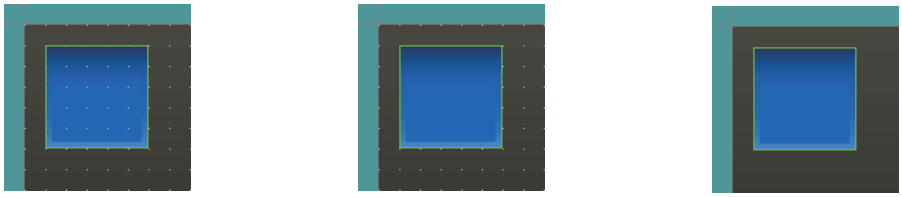


6.7.5 Displaying the grid

GT37 SoftGOT3000

You can display the screen editor with equally-spaced points (a grid) which give an indication to arrange figures and objects.

Select [View] → [Grid] → [Front], [Back], or [None] from the menu to display or hide the grid on the screen editor.



[Front] [Back] [None]

6.7.6 Displaying the scroll bar areas for editing the expanded base screens

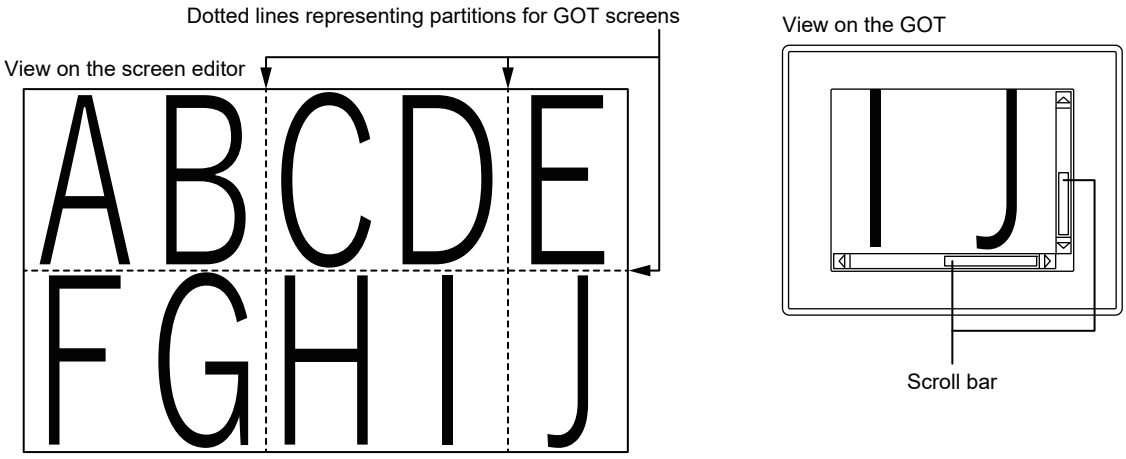
GT37 SoftGOT3000

The following lines are displayable on screen editors.

Line type	Description
Solid line	Appears when either the vertical or horizontal size of the base screen is larger than the vertical or horizontal size of the GOT screen. Represents the areas of the scroll bars to appear on the GOT. Appears 40 dots from the right or bottom edge of the screen display area. Place figures and objects so that they do not overlap the scroll bar areas.
Broken line	Represents a partition for one GOT screen. Represents partitions for multiple GOT screens. The lines are usable as guidelines to specify the size of a base screen to an integral multiple of the GOT screen size.

Example) Displaying an expanded base screen (2560 × 1536) on GT37-X (1024 × 768)

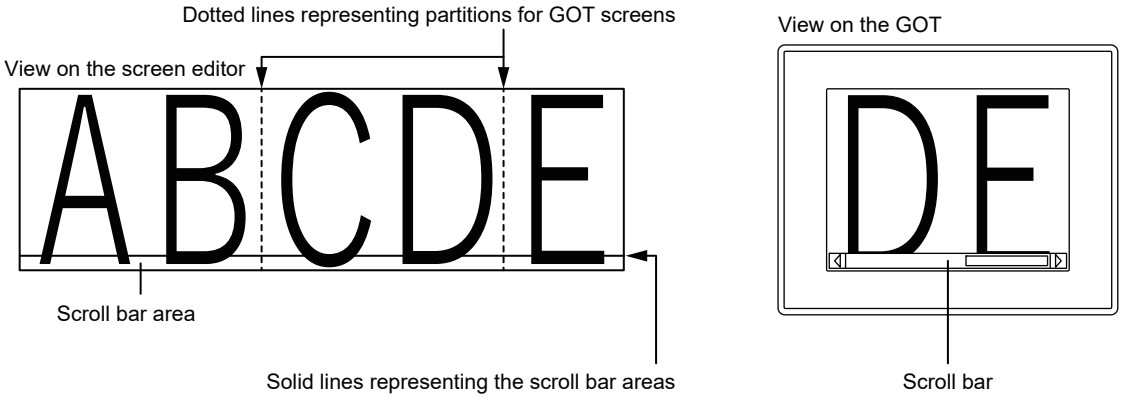
The scroll bar areas are not displayed because the base screen is vertically and horizontally expanded.



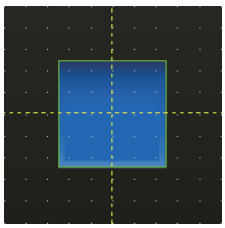
Example) Displaying an expanded base screen (2560 × 768) on GT37-X (1024 × 768)

A solid line representing the scroll bar area is displayed in the lower part of the base screen because the screen is horizontally expanded.

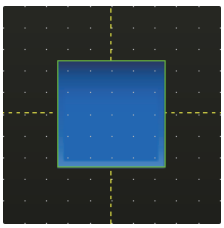
A scroll bar appears in the scroll bar area when the base screen is displayed on the GOT.



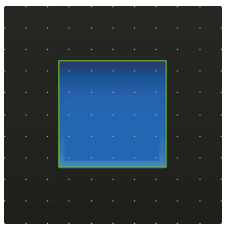
Select [View] → [Scroll Bar Area] → [Front], [Back], or [None] from the menu to display or hide the polyline on the screen editor.



[Front]



[Back]



[None]

In the following cases, no scroll bar is displayed on the GOT, and no lines representing the scroll bar areas and partitions for GOT screens are displayed on the screen editors.

- The base screen is smaller than the GOT screen.
- The scroll bars are set to be hidden.

For details on the base screen size expansion, refer to the following.

☞ Page 510 Expanding the base screen size

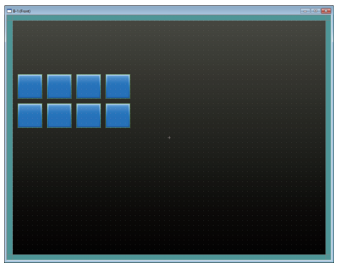
6.7.7 Switching the layer display

GT37 SoftGOT3000

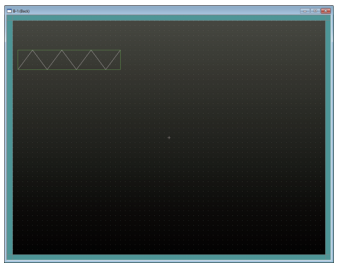
Select [View] → [Layer] → [All screens] from the menu to switch between all screen editors and individual screen editor as the target for the layer switching.

Select [View] → [Layer] → [Front], [Back], or [Backmost] from the menu to switch the display status of each layer.

Select [View] → [Layer] → [All Layers] from the menu to display all layers.



[Front]



[Back]

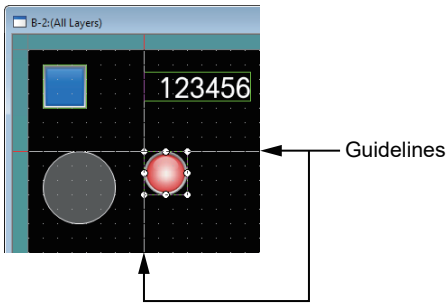
[Backmost]

[All Layers]

6.7.8 Displaying guidelines

GT37 SoftGOT3000

When moving a figure or object, you can display guidelines to indicate a position relation between other figures and objects.



Point

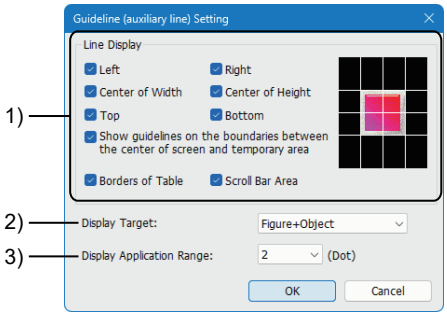
- When figures and objects are grouped together, guidelines are displayed for the group.
- Within the touch area of a touch switch and when operations are performed with a keyboard, guidelines are not displayed.

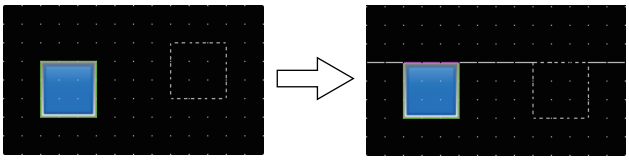
Select [View] → [Guideline (auxiliary line)] from the menu and then select one of the following items to change the display of guidelines.

Menu	Description
[Display]	Displays or hides guidelines.
[Figure]	Displays guidelines in relation to existing figures.
[Object]	Displays guidelines in relation to existing objects.
[Figure + Object]	Displays guidelines in relation to existing figures and objects.
[Same Type]	Displays guidelines in relation to the same type of existing figures or objects as those being moved.
[Custom]	[Displays the Guidelines (auxiliary line)] dialog. You can customize guidelines such as where they are displayed. ☞ Page 303 [Guidelines (auxiliary line) setting] dialog

[Guidelines (auxiliary line) setting] dialog

GT37 SoftGOT3000



Item			Description
1)	[Line Display]	—	Set where to display guidelines.
		[Left] [Right] [Center of Width] [Center of Height] [Top] [Bottom]	Set the position of guidelines displayed on a figure or an object being moved. Select each item to display the image of corresponding guideline in the [Guidelines (auxiliary line)] dialog.
		[Show guidelines on the boundaries between the center of screen and temporary area]	Displays the guidelines at the center of the screen ([+]) and the boundary between the screen display area and the temporary area.
		[Borders of Table]	Displays the guidelines for table borders.
		[Scroll Bar Area]	Displays the guidelines for the following items on the expanded base screens. • Solid lines representing the scroll bar areas • Dotted lines representing partitions for GOT screens
2)	[Display Target]		Select targets for guidelines.
3)	[Display Application Range]		A figure or object can be automatically in alignment with an existing figure or object. Select the distance (in dot) between a figure/object to be moved and existing figures/objects. Moving an existing figure or object while pressing the Alt key disables the setting for [Display Application Range]. Example) Correcting the vertical position when selecting [8] for [Display Application Range] Drag the figure or object, which should be vertically aligned, within 8 dots from the target for the alignment. Doing so horizontally aligns the figure or object being moved with the target figure or object.  Before correction (away more than 8 dots) After correction (moved within 8 dots)

PART 4

6.7.9 Scaling the size of items on the screen editor

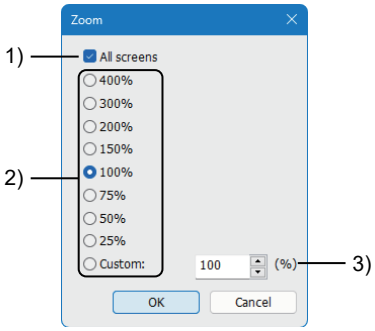
GT37 SoftGOT3000

Select [View] → [Zoom] from the menu and then select one of the following items to change the display magnification of the screen editor.

Menu	Description
[All Screens]	Applies a specified display magnification to all screen editors.
[400%] [300%] [200%] [150%] [100%] [75%] [50%] [25%]	Changes the display magnification of the screen editor to the selected magnification.
[Custom]	Displays the [Zoom] dialog. The display magnification of the screen editor is customizable. ☞ Page 304 [Zoom] dialog
[Whole Screen]	Resizes the screen display area of the screen editor according to the editor window size. This item is not selectable when [All Screens] is selected.

[Zoom] dialog

GT37 SoftGOT3000

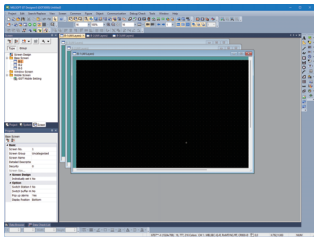


Item		Description
1)	[All Screens]	Applies a specified display magnification to all screen editors.
2)	Display magnification	Select the display magnification of a selected screen editor.
3)	Custom magnification	Specify the display magnification in units of 1%. The setting range is [25] to [400].

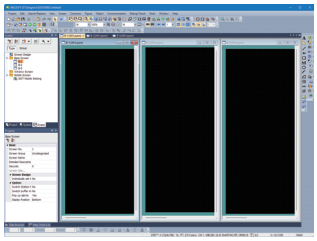
6.7.10 Cascading or arranging open screen editors

GT37 SoftGOT3000

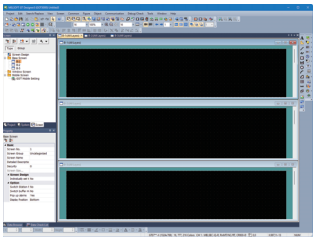
Select [Window] → [Cascade], [Arrange Sideways], or [Arrange Lengthways] from the menu to cascade or arrange the screen editors and windows in the work window.



[Cascade]



[Arrange Sideways]



[Arrange Lengthways]

6.7.11 Copying the image of a screen editor to the clip board

GT37 SoftGOT3000

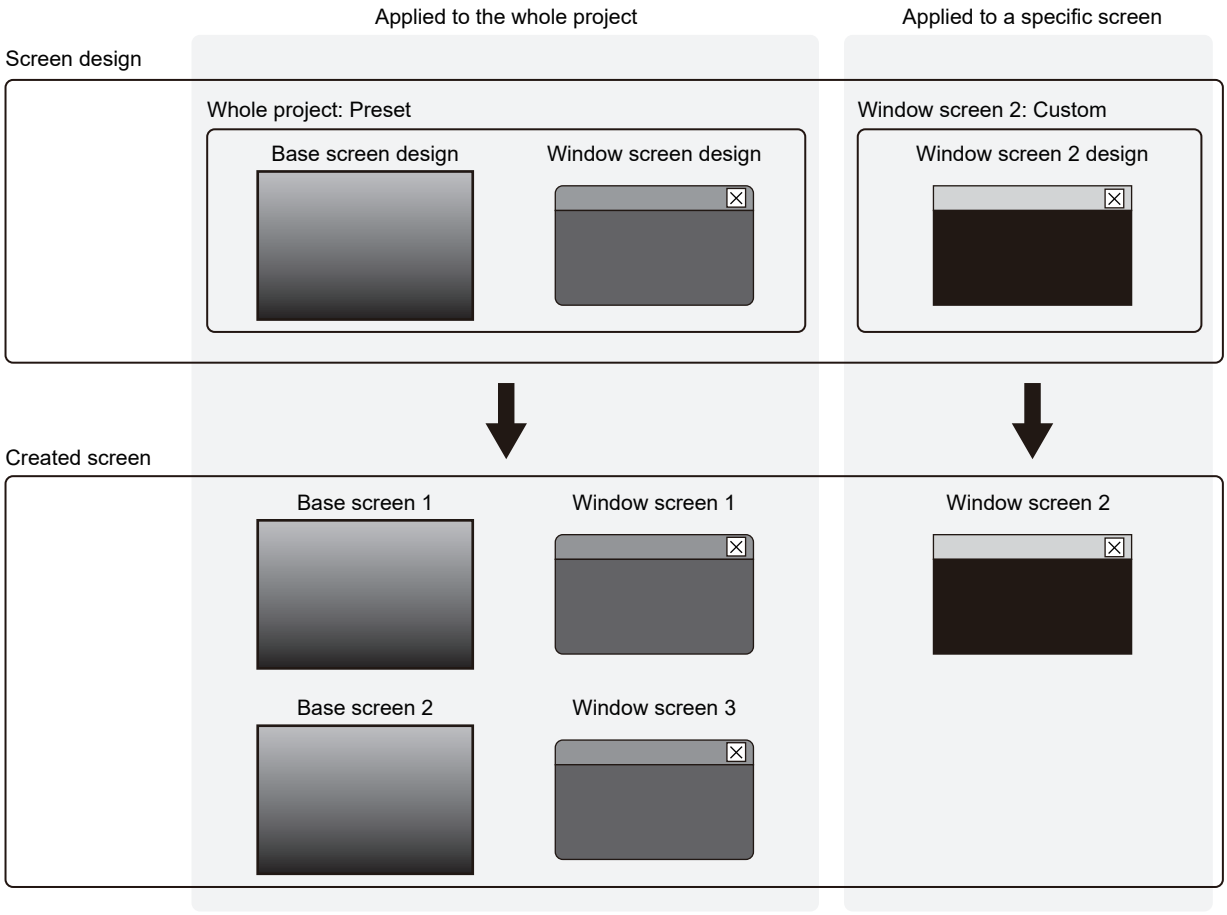
Select [Screen] → [Copy Screen Image to the Clip Board] from the menu to copy the image of the active screen editor to the clip board.

Only the image within the screen display area is copied.

6.8 Setting a screen design

GT37 SoftGOT3000

Set a background color and a shape of the windows displayed on the GOT.
Selecting a registered (preset) setting enables a batch change of all the screen designs.
Part of a preset design can be customized.
Individual screen design can also be changed.



The screen design setting is applied to the following screens.

- Base screen
- Window screen
- Mobile screen

The following shows how to select a screen design.

☞ Page 307 Changing the designs of all the screens
☞ Page 308 Changing a specified screen design

Point

If editing of a project is prohibited by project security, the following operations are not available.

- Changing a screen design in the [Screen Design] dialog
- Pasting a copied screen design

6.8.1 Changing the designs of all the screens

GT37 SoftGOT3000

Change the designs of all the screens registered in the project collectively.

1. Select [Screen] → [Screen Design] from the menu to display the [Screen Design] dialog ([Preset]).

☞ Page 310 [Screen Design] dialog

2. Selecting a design from the design list switches the display of the open screen.

Click the [OK] button to apply the new setting.

3. Perform either of the following operations according to your purpose.

Purpose	Operation
Using a preset design	Click the [OK] button to apply the selected design to the screen.
Customizing a preset design	Select [Custom] in the [Screen Design] dialog. The preset settings are applied. Proceed to Step 4.

4. Changing each setting switches the display of the open screen.

Click the [OK] button to apply the new setting.

☞ Page 312 [Custom]

5. Click the [OK] button to apply the new design to the screen.

PART 4

6.8.2 Changing a specified screen design

GT37 SoftGOT3000

Change the screen design individually by screen.

Change the screen properties of each screen.

For the screen properties of each screen, refer to the following.

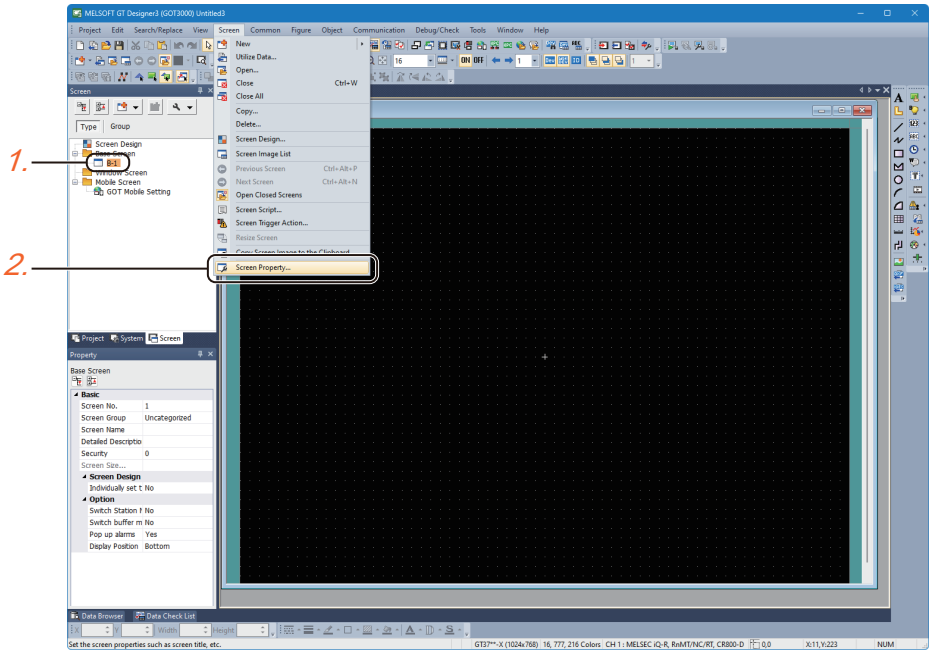
☞ Page 313 Base screen properties

☞ Page 323 Window screen properties

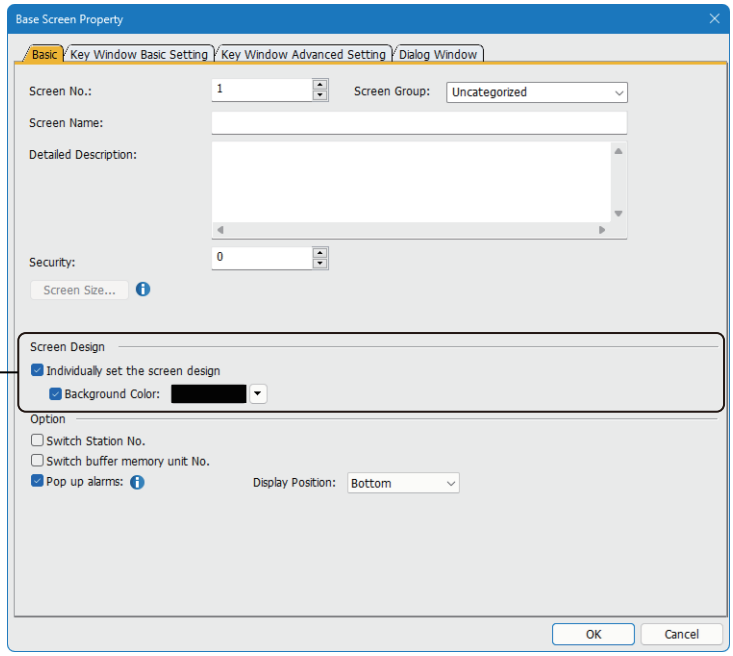
☞ Page 2831 Mobile screen properties

The following shows the procedure for setting an individual screen design for base screen 1 as an example.

1. Select base screen 1.
2. Select [Screen] → [Screen Property] from the menu to display the [Base Screen Property] dialog.



3. Select [Individually set the screen design] to enable the individual screen design setting.
4. Change each setting for [Screen Design] and click the [OK] button to apply the new design to the screen.



[Screen Design]

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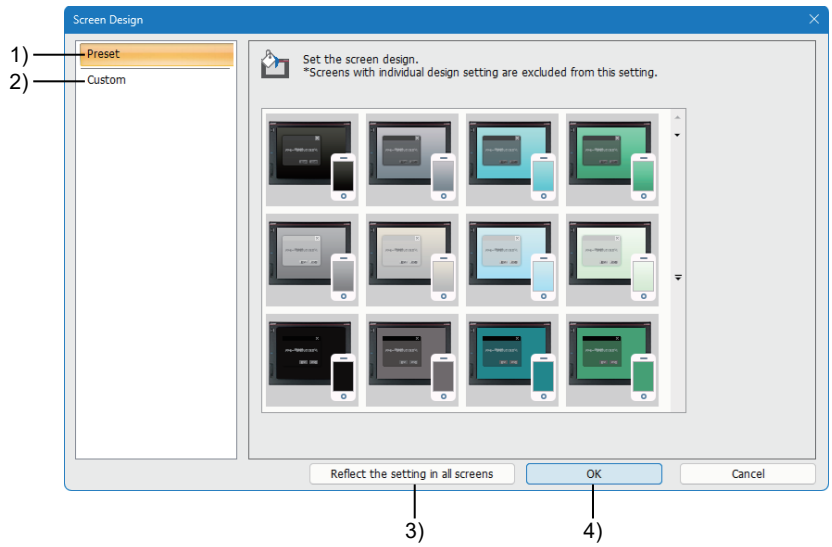
6.8.3 [Screen Design] dialog

GT37 SoftGOT3000

Select [Screen] → [Screen Design] from the menu to display the [Screen Design] dialog.

The screen design setting is saved when the project is saved.

The saved screen design setting is retained upon exit from GT Designer3 and applied at the next GT Designer3 startup.

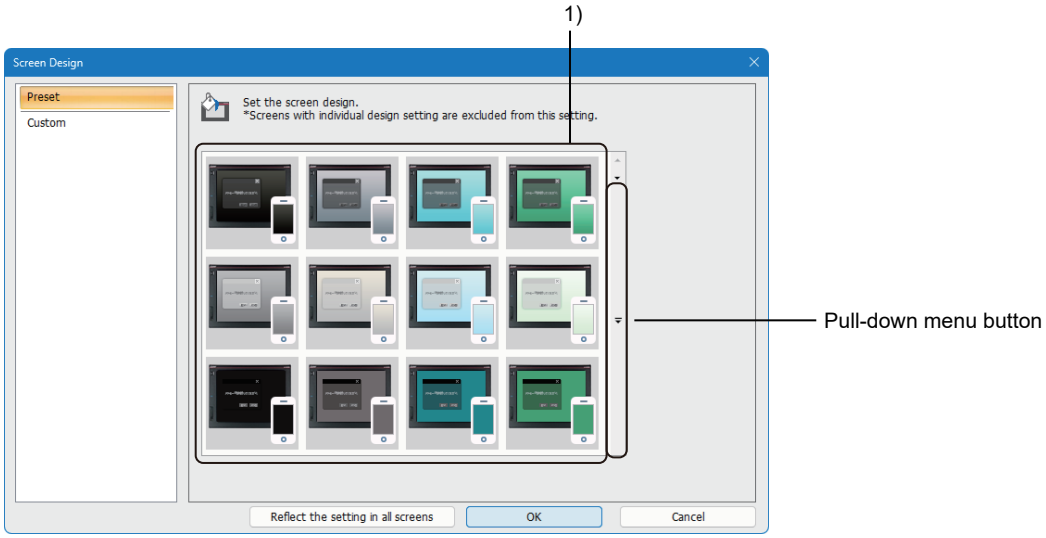


Item		Description
1)	[Preset]	Displays screen designs. Select a design. ☞ Page 311 [Preset]
2)	[Custom]	Displays customizable settings for base screens, window screens, and mobile screens. Customize the settings of the screen design selected from the pre-installed screen designs. ☞ Page 312 [Custom]
3)	[Reflect the setting in all screens] button	Applies the set design to all screens. The design is also applied to a screen for which [Individually set the screen design] is selected in the [Screen Property] dialog. Upon the application of the design, [Individually set the screen design] is deselected in the [Screen Property] dialog. After clicking this button, you cannot restore the screens to their former design. The specified design is not applied to the screens satisfying all the following conditions. • Editing a screen is prohibited by project security. • [Individually set the screen design] is selected in the [Screen Property] dialog.
4)	[OK] button	Applies the set design to all screens. The design is not applied to a screen for which [Individually set the screen design] is selected in the [Screen Property] dialog.

Point

As the screen display method differs between the GOT and a personal computer, a screen with a gradient background may look different on the GOT.

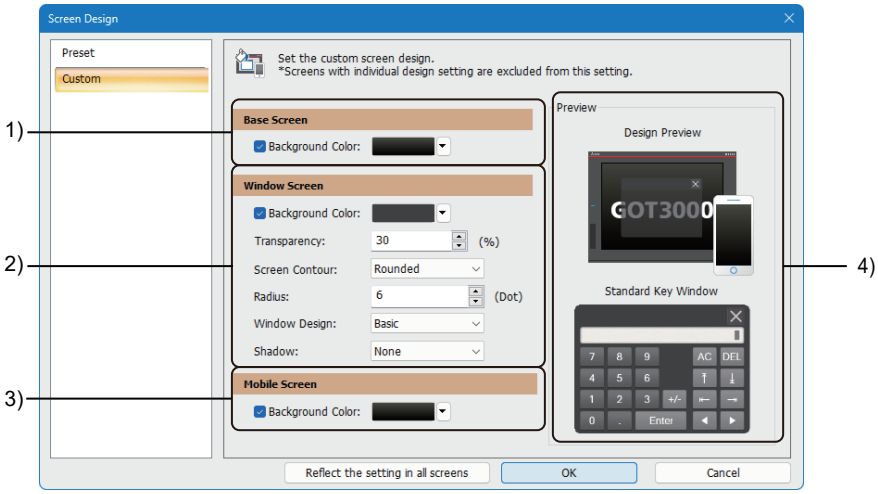
[Preset]



Item		Description
1)	Design list	Select a screen design. Click the pull-down menu button to display all designs. The selectable designs differ depending on the selection for [Graphics Setting] in the [Type Setting] dialog. ☞ Page 519 [Type Setting] dialog

[Custom]

Customize the background color, transparency, and other settings based on the screen design setting selected in [Preset]. When you select a screen design in [Preset] while changing the settings in [Custom], the changes in [Custom] are canceled and the screen design selected in [Preset] is set.



Item			Description
1)	[Base Screen]		Select a background color for base screens. For instruction on the color setting, refer to the following. ☞ Page 988 Color settings
2)	[Window Screen]	—	Set a design for window screens.
		[Background Color]	Select a background color. For instruction on the color setting, refer to the following. ☞ Page 988 Color settings
		[Transparency]	Set the transparency of the window screen. The setting range is [0]% to [100]%.
		[Screen Contour]	Set the contours of the window screen.
		[Radius]	When [Rounded] is selected for [Screen Contour], set the circle radius. The setting range is [0] to [599]. The radius may be adjusted automatically depending on the size of the window screen.
		[Window Design]	Set a design for the title bar of window screens and the standard key window.
		[Shadow]	Set a shadow to window screens and the standard key window.
3)	[Mobile Screen]		Select a background color for mobile screens. For instruction on the color setting, refer to the following. ☞ Page 988 Color settings
4)	[Preview]		Previews a base screen, window screen, mobile screen, and standard key window.

6.9 Changing screen property

GT37 SoftGOT3000

You can change the screen properties including the screen number, background color, and the key window setting that can be enabled per screen.

☞ Page 313 Base screen properties
☞ Page 323 Window screen properties

For information on how to set the mobile screen properties, refer to the following.

☞ Page 2831 Mobile screen properties

6.9.1 Base screen properties

GT37 SoftGOT3000

1. Perform either of the following operations to select a base screen for changing its properties.

- Clicking any part of the screen editor
- Selecting a screen in the [Screen] window (If you select multiple screens with the Ctrl key or Shift key, you can change the screen properties at a time.)

☞ Page 122 [Screen] window

2. Select [Screen] → [Screen Property] from the menu to display the [Base Screen Property] dialog.

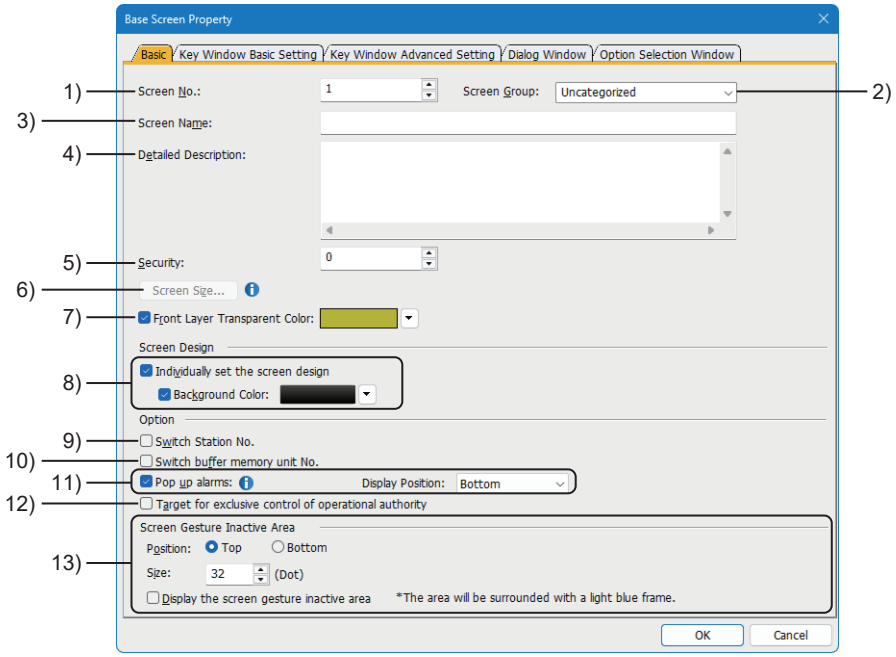
☞ Page 314 [Basic] tab
☞ Page 316 [Key Window Basic Setting] tab
☞ Page 319 [Key Window Advanced Setting] tab
☞ Page 321 [Dialog Window] tab
☞ Page 322 [Option Selection Window] tab

3. Configure the settings and click the [OK] button to apply the setting changes.

When you select multiple screens in the [Screen] tree, the settings are applied to all the selected screens.

[Basic] tab

GT37 SoftGOT3000

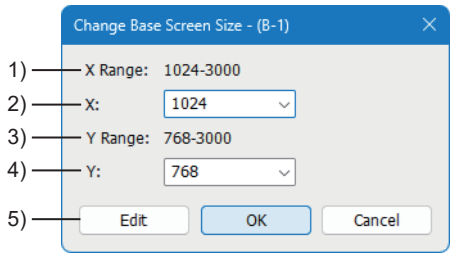


Item			Description
1)	[Screen No.]		Set a screen number. The setting range is [0] to [32767]. If this dialog is displayed with multiple screens selected, the value cannot be changed.
2)	[Screen Group]		Set a screen group. Up to 100 characters can be set.
3)	[Screen Name]		Set a title for the screen. Up to 100 characters can be set.
4)	[Detailed Description]		Set the explanation of the screen. Up to 512 characters can be set. A line feed is counted as two characters.
5)	[Security]		Set the security level. The setting range is [0] to [15]. If you do not use the security function of the GOT, select [0]. ☞ Page 2989 Restricting GOT screen operations and access from external devices (operator authentication (Mode 2)) ☞ Page 3038 Restricting display and operation on the GOT (Screen security)
6)	[Screen Size] button		This item is available when [Expand base screen sizes] is selected in [Basic Setting] in the [Type Setting] dialog. The [Change Base Screen Size] dialog appears. You can enter values to change the base screen size. ☞ Page 315 [Change Base Screen Size] dialog
7)	[Front Layer Transparent Color]		This item appears only when [Enable the antialiasing] is deselected in the [Type Setting] dialog ([Basic Setting]). Set the transparent color of the objects on the front layer. The parts of the objects whose colors are set to the transparent color become transparent, and the back layer can be seen through them.
8)	[Individually set the screen design]	—	Enables the individual screen design (including the background color), instead of the design selected in the [Screen Design] dialog.
		[Background Color]	Select a background color. For instruction on the color setting, refer to the following. ☞ Page 988 Color settings
9)	[Switch Station No.]		Enables station No. switching by screen. ☞ Page 747 Configuring settings for switching the target station number for monitoring

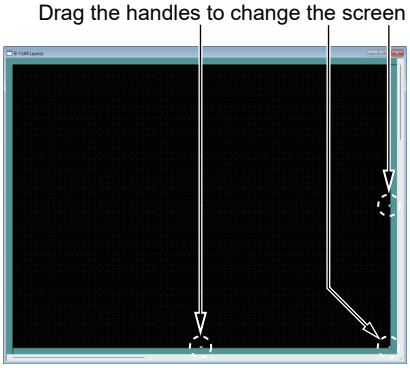
Item			Description
10)	[Switch buffer memory unit No.]		Enables buffer memory unit No. switching by screen. ☞ Page 755 Configuring the settings for switching the monitoring target buffer memory unit number
11)	[Pop up alarms]	—	An alarm pops up when an alarm occurs. Configure the following settings additionally. • User alarm settings or system alarm settings ☞ Page 2045 [User Alarm Observation] dialog ☞ Page 2097 [System Alarm Observation] dialog • Alarm popup display settings ☞ Page 2118 [Alarm Popup Display] dialog
		[Display Position]	Select the position to display an alarm to be popped up.
12)	[Target for exclusive control of operational authority]		Enables the authorization control for the base screen. ☞ Page 762 Setting the interaction function for equipment on Ethernet ([GOT Network Interaction])
13)	[Screen Gesture Inactive Area]	—	Available for GT37-W. This item is not available when [Expand base screen sizes] is selected in the [Type Setting] dialog ([Basic Setting]). Set an area (screen gesture inactive area) where object operations are enabled even in the screen gesture mode. ☞ Page 502 Zooming and scrolling the monitor screen of the GOT (screen gesture function)
		[Position]	Select a position to arrange the screen gesture inactive area.
		[Size]	Set the height of the screen gesture inactive area. The setting range is [16] dots to [100] dots.
		[Display the screen gesture inactive area]	Displays the frame indicating the screen gesture inactive area on the screen editor. Place the switch for switching to the screen gesture mode in the screen gesture inactive area. ☞ Page 502 Zooming and scrolling the monitor screen of the GOT (screen gesture function)

■[Change Base Screen Size] dialog

GT37 SoftGOT3000



Item		Description
1)	[X Range]	Setting range of the horizontal size
2)	[X]	Set the horizontal size (dot).
3)	[Y Range]	Setting range of the vertical size
4)	[Y]	Set the vertical size (dot).

Item		Description
5)	[Edit] button	This button is not displayed when the screen is newly created. Changes the size of window screens on the screen editor. Drag the handles to change the screen size.  Change the screen size and click any part other than the handles to confirm the change.

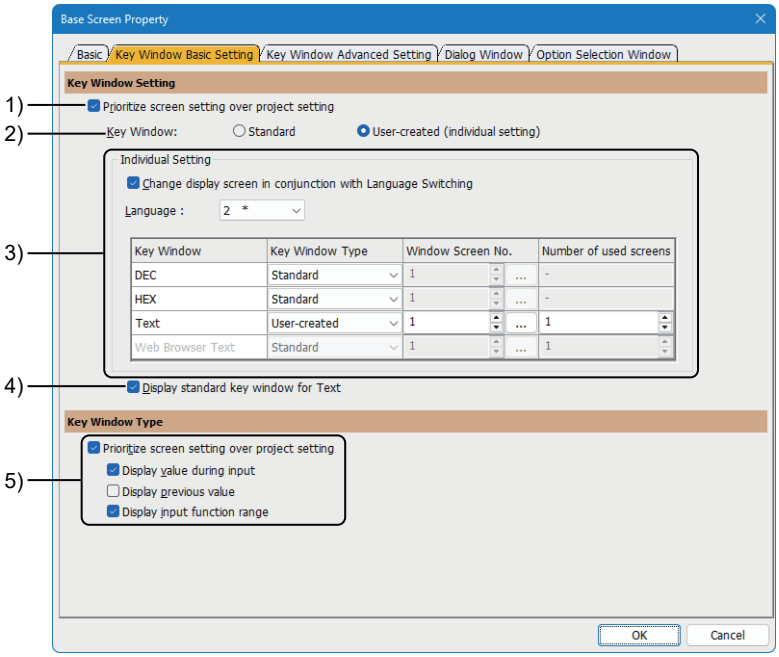
[Key Window Basic Setting] tab

GT37 SoftGOT3000

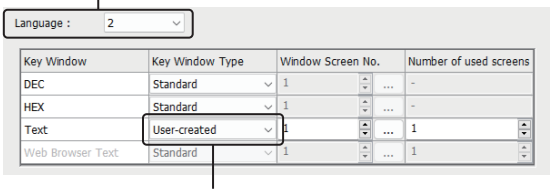
The following shows the basic settings of key windows for each screen.

To configure project-by-project settings, use the [Environmental Setting] window.

☞ Page 570 [Basic] tab



Item		Description
1)	[Prioritize screen setting over project setting]	Enables the individual settings in [Key Window Setting], instead of the settings in the [Environmental Setting] window.
2)	[Key Window]	Select the type of a key window to be used. If you select [User-created (individual setting)], set a key window to be used for each input target (decimal, hexadecimal, character string, and Web browser character string) in [Individual Setting].

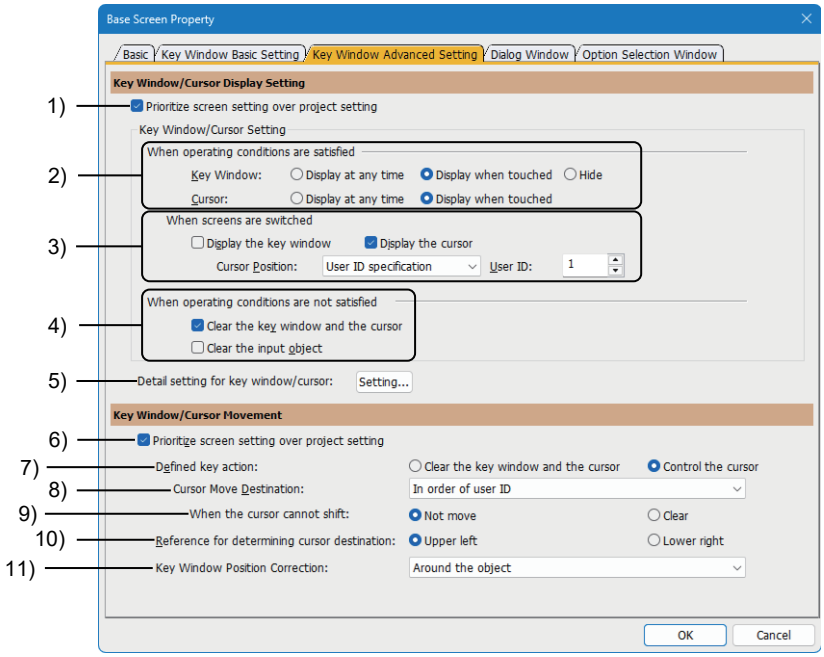
Item			Description
3)	[Individual Setting]	—	Set the key window to be used for each input target. This item is enabled when [User-created (individual setting)] is selected in [Key Window Setting].
		[Change display screen in conjunction with Language Switching]	Enable the settings for switching the key windows to be displayed in conjunction with the value (1 to 30) of the language switching device. For the language switching device, refer to the following. ☞ Page 546 Setting for switching the language displayed on the GOT ([Language Switching]) For each of the values (1 to 30) of [Language], set a key window to be used. Select a value in [Language], and set a key window to be used for each input target (decimal, hexadecimal, character string, and Web browser character string). If you change the default value, [*] is added to the selected value. For each value of the language switching device, you can set a key window to be used. If you select [User-created] in [Key Window Type], [*] is added to the value of the selected range. Example) If you select [2] in [Language] and change the key window type from the default [*] is added to the value.  The default setting has been changed.
		[Key Window]	The use of each key window [Web Browser Text] cannot be set in the screen property settings. The setting can be configured only in the [Environmental Setting] window ([Key Window]). ☞ Page 570 [Key Window] [Web Browser Text] is not displayed in GT SoftGOT3000.
		[Key Window Type]	Select the type of key windows according to their uses. If you select [User-created], select the window screen to be used as a user-created key window in [Window Screen No.].
		[Window Screen No.]	Set the number of the window screen to be displayed as a user-created key window. The setting range is [1] to [32767]. Click the [...] button to display the [Image List] dialog (screen). You can check the image on the screen when selecting a window screen. ☞ Page 3683 [Image List] dialog (screen)
		[Number of used screens]	This item is settable for [Text] and [Web Browser Text] only. Set the number of key windows used for text input. With the window screen set in [Window Screen No.] as the first on the list, window screens are used for the set number as key windows. To switch key windows, arrange key code switches to which the following operations are set. • [Switch window screens for ASCII (to the next)] • [Switch window screens for ASCII (to the previous)] • [Switch window screens for ASCII (screen no. specification)] ☞ Page 1251 [Key Code Switch] dialog
4)	[Display standard key window for Text]		Set whether to display or hide the standard key window for character string. Clear this checkbox if the standard key window for character string is not necessary because character strings are input from the key code switch on the screen.

Item			Description
5)	[Prioritize screen setting over project setting]	—	Enables the individual settings in [Key Window Type], instead of the settings in the [Environmental Setting] window.
		[Display value during input]	Displays the value being input in the key window. To display the value in the user-created key window, arrange the input value area setting on the window screen. ☞ Page 1887 Placing an object to display the input information
		[Display previous value]	Displays the previous value in the key window. To display the previous value in the user-created key window, arrange the previous value area setting on the window screen. ☞ Page 1887 Placing an object to display the input information
		[Display input function range]	Displays the valid input range in the key window. To display the valid input range in the user-created key window, arrange the input range area setting on the window screen. ☞ Page 1887 Placing an object to display the input information

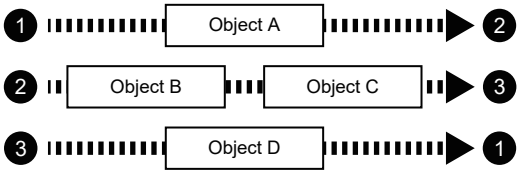
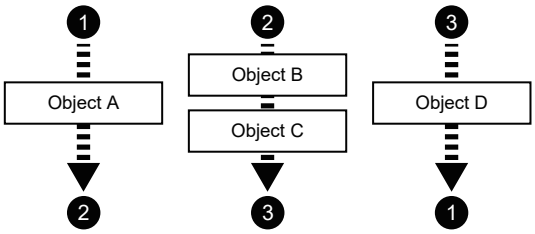
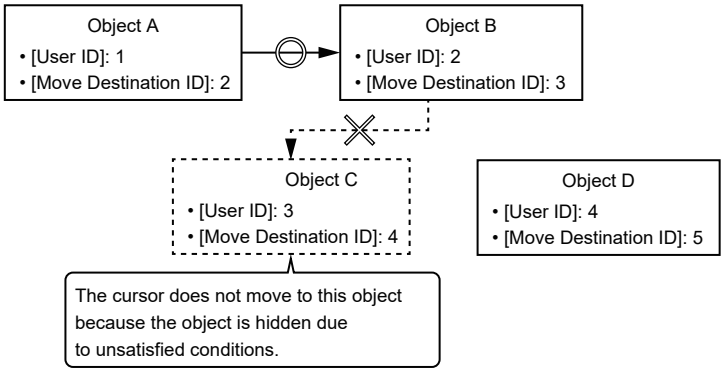
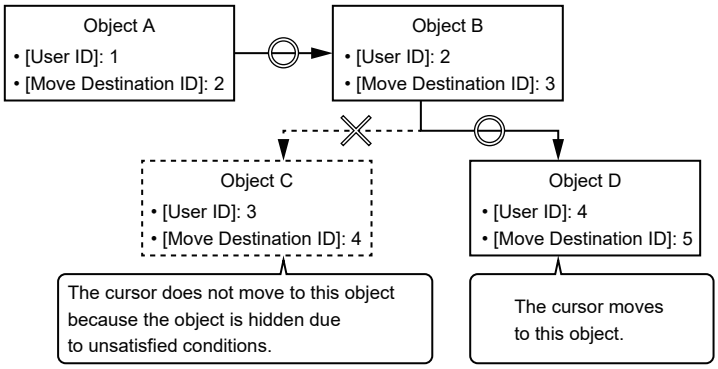
[Key Window Advanced Setting] tab

GT37 SoftGOT3000

The following shows the advanced settings of key windows for each screen.
To configure project-by-project settings, use the [Environmental Setting] window.
☞ Page 572 [Advanced Setting] tab



Item			Description
1)	[Prioritize screen setting over project setting]		Enables the individual settings in [Key Window/Cursor Display Setting], instead of the settings in the [Environmental Setting] window.
2)	[When operating conditions are satisfied]	—	Configure the display settings of the key window and cursor for when the operating conditions of the objects for input are satisfied.
		[Key Window]	Configure the display settings of the key window for when the operating conditions of the objects for input are satisfied.
		[Cursor]	Configure the display settings of the cursor for when the operating conditions of the object for input are satisfied.
3)	[When screens are switched]	—	Configure the display settings of the key window and cursor to switch screens for when the operating conditions of the object for input are satisfied.
		[Display the key window]	Displays a key window when the screen is switched.
		[Display the cursor]	Displays a cursor when the screen is switched. Set the position to display the cursor in [Cursor Position].
		[Cursor Position]	Select the position to display the cursor when the screen is switched.
		[User ID]	Sets the user ID of the object on which the cursor is displayed. The setting range is [1] to [65535].
4)	[When operating conditions are not satisfied]	—	Configure the display settings of the key window and cursor for when the operating conditions of the objects for input are not satisfied.
		[Clear the key window and the cursor]	Deletes the key window and cursor when the operating conditions of the objects for input are not satisfied.
		[Clear the input object]	Deletes the key window, the cursor, and the objects for input when the operating conditions of the objects for input are not satisfied.
5)	[Detail setting for key window/cursor]		Click the [Setting] button to display the [Display Detail Setting] dialog. ☞ Page 574 [Display Detail Setting] dialog
6)	[Prioritize screen setting over project setting]		Enables the settings in [Key Window/Cursor Movement], instead of the settings in the [Environmental Setting] window.
7)	[Defined key action]		Select the action of the key window and cursor when the enter key is touched.

Item			Description
8)	[Cursor Move Destination]	—	Select a position to move the cursor. The following shows selectable items.
		[Same operation as the right arrow key]	Moves the cursor using the specified coordinate point of the active object as a reference. Specify the reference coordinates with [Reference for determining cursor destination]. The cursor moves as shown below. 
		[Same operation as the down arrow key]	Moves the cursor using the specified coordinate point of the active object as a reference. Specify the reference coordinates with [Reference for determining cursor destination]. The cursor moves as shown below. 
		[In order of user ID]	Moves the cursor to the object that has the same user ID number as the move destination ID number of the active object. If the destination object is hidden due to unsatisfied conditions, the cursor does not move. To control the cursor movement, set [User ID] and [Move Destination ID] of the relevant objects. 
		[Subsequently valid user ID]	Moves the cursor to the object that has the same user ID number as the move destination ID number of the active object. If the destination object is hidden due to unsatisfied conditions, the cursor moves to the object specified with [Move Destination ID] of the hidden destination object. To control the cursor movement, set [User ID] and [Move Destination ID] of the relevant objects. 
		[Not move]	Does not move the cursor even after the entry is confirmed.

Item		Description
9)	[When the cursor cannot shift]	This item is displayed when [Cursor Move Destination] is set to [In order of user ID] or [Subsequently valid user ID]. Select how the cursor moves when no destination object exists.
10)	[Reference for determining cursor destination]	Select the standard to determine a position to move the cursor.
11)	[Key Window Position Correction]	Select an action of the key window when it overlaps the input target object. When [To the four corners of the screen] is selected, the key window is displayed in one of the four corners so that it will not overlap the input target object. If the key window inevitably overlaps the input target object, it is displayed in the lower right of the screen.

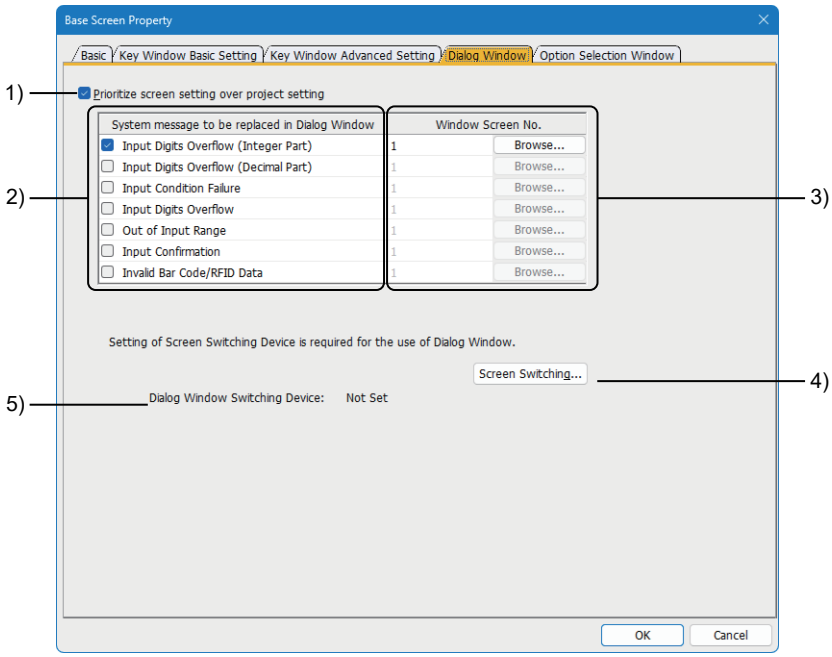
[Dialog Window] tab

GT37 SoftGOT3000

The following shows the settings of the dialog window for each screen.

To configure project-by-project settings, use the [Environmental Setting] window.

☞ Page 557 [Dialog Window]



Item		Description
1)	[Prioritize screen setting over project setting]	Prioritizes the settings in the dialog window of the [Base Screen Property] dialog over the project-by-project settings in the [Environmental Setting] window.
2)	[System message to be replaced in Dialog Window]	Select a system message to be replaced by the dialog window. Replaces the selected system message with the window screen set in [Window Screen No.]. For the system messages of each item, refer to the following. ☞ Page 555 How to use dialog windows
3)	[Window Screen No.]	Set a screen number of the window screen to be displayed instead of the system message. The setting range is [0] to [32767]. Click the [Browse] button to display the [Image List] dialog (screen). You can check the image on the screen when selecting a window screen. ☞ Page 3683 [Image List] dialog (screen)
4)	[Screen Switching] button	Displays the [Environmental Setting] window. ☞ Page 557 [Dialog Window]
5)	[Dialog Window Switching Device]	The currently set screen switching device for a dialog window

[Option Selection Window] tab

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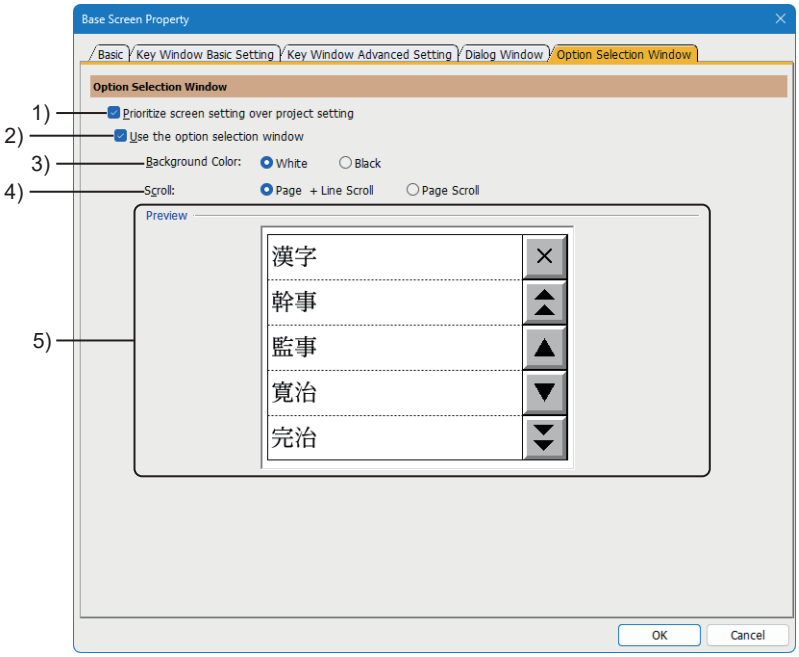
Displays the settings in the option selection window for screen-by-screen Kana-Kanji or Pinyin conversion.
To configure project-by-project settings, use the [Environmental Setting] window.
☞ Page 610 [Kana-Kanji/Pinyin Conversion]



Item		Description
1)	[Prioritize screen setting over project setting]	Prioritizes the settings in [Option Selection Window] of the [Base Screen Property] dialog over the project-by-project settings in the [Environmental Setting] window.
2)	[Use the option selection window]	Select this item to display the option selection window for Kana-Kanji or Pinyin conversion.
3)	[Background Color]	Select the background color for the option selection window.
4)	[Scroll]	Select the keys to be displayed on the option selection window. • [Page + Line Scroll]: Displays the keys for scrolling by page or by line. • [Page Scroll]: Displays the keys for scrolling by page.
5)	[Preview]	Displays a preview of the option selection window with the [Background Color] and [Scroll] settings applied.

6.9.2 Window screen properties

GT37 SoftGOT3000

1. Perform either of the following operations to select a window screen for changing its properties.

- Clicking any part of the screen editor
- Selecting a screen in the [Screen] window (If you select multiple screens with the Ctrl key or Shift key, you can change the screen properties at a time.)

☞ Page 122 [Screen] window

2. Select [Screen] → [Screen Property] from the menu to display the [Window Screen Property] dialog.

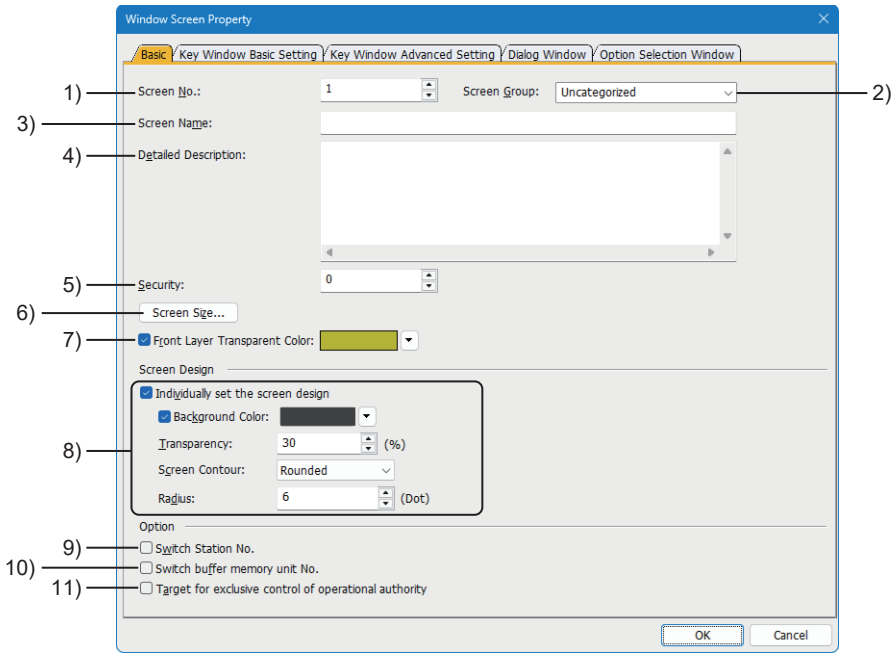
☞ Page 323 [Basic] tab
☞ Page 326 [Key Window Basic Setting] tab
☞ Page 329 [Key Window Advanced Setting] tab
☞ Page 332 [Dialog Window] tab
☞ Page 333 [Option Selection Window] tab

3. Configure the settings and click the [OK] button to apply the setting changes.

When you select multiple screens in the [Screen] tree, the settings are applied to all the selected screens.

[Basic] tab

GT37 SoftGOT3000

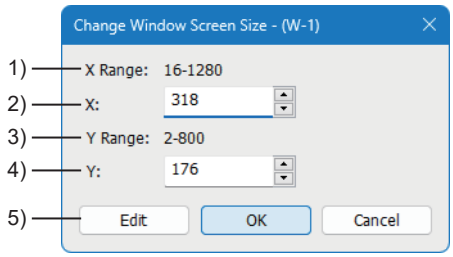


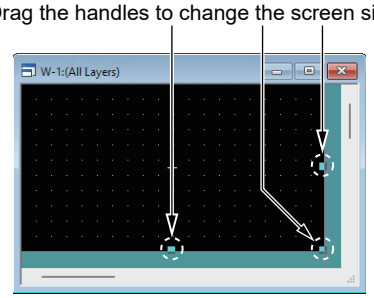
Item		Description
1)	[Screen No.]	Set a screen number. The setting range is [0] to [32767]. If this dialog is displayed with multiple screens selected, the value cannot be changed.
2)	[Screen Group]	Set a screen group. Up to 100 characters can be set.
3)	[Screen Name]	Set a title for the screen. Up to 100 characters can be set.
4)	[Detailed Description]	Set the explanation of the screen. Up to 512 characters can be set. A line feed is counted as two characters.

Item			Description
5)	[Security]		Set the security level. The setting range is [0] to [15]. If you do not use the security function of the GOT, select [0]. ☞ Page 2989 Restricting GOT screen operations and access from external devices (operator authentication (Mode 2)) ☞ Page 3038 Restricting display and operation on the GOT (Screen security)
6)	[Screen Size] button		Displays the [Change Window Size] dialog. Specify a numerical value to change the size of the window screen. ☞ Page 325 [Change Window Size] dialog
7)	[Front Layer Transparent Color]		This item appears only when [Enable the antialiasing] is deselected in the [Type Setting] dialog ([Basic Setting]). Set the transparent color of the objects on the front layer. The parts of the objects whose colors are set to the transparent color become transparent, and the back layer can be seen through them.
8)	[Individually set the screen design]	—	Enables the individual screen design (including the background color), instead of the design selected in the [Screen Design] dialog.
		[Background Color]	Select a background color. For instruction on the color setting, refer to the following. ☞ Page 988 Color settings For a window screen, if [Screen Contour] is set to [Rounded], the gradient area of the window screen varies depending on whether its title bar is displayed. Position the window screen on the screen editor of the base screen, and check the window screen image in the [Screen Preview] window. ☞ Page 336 Displaying a preview
		[Transparency]	Set the transparency of the window screen. The setting range is [0]% to [100]%.
		[Screen Contour]	Set the contours of the window screen.
		[Radius]	When [Rounded] is selected for [Screen Contour], set the circle radius. The following shows the setting range. [0] dots to (n - 1) / 2 dots n: Window screen height or width, whichever is smaller (dots) The fractional portion of the result is rounded off.
9)	[Switch Station No.]		Enables station No. switching by screen. ☞ Page 747 Configuring settings for switching the target station number for monitoring
10)	[Switch buffer memory unit No.]		Enables buffer memory unit No. switching by screen. ☞ Page 755 Configuring the settings for switching the monitoring target buffer memory unit number
11)	[Target for exclusive control of operational authority]		Enables the authorization control for the window screen. ☞ Page 762 Setting the interaction function for equipment on Ethernet ([GOT Network Interaction])

■[Change Window Size] dialog

GT37 SoftGOT3000



Item		Description
1)	[X Range]	Setting range of the horizontal size
2)	[X]	Set the horizontal size (dot).
3)	[Y Range]	Setting range of the vertical size
4)	[Y]	Set the vertical size (dot).
5)	[Edit] button	This button is not displayed when the screen is newly created. Changes the size of window screens on the screen editor. Drag the handles to change the screen size.  Change the screen size and click any part other than the handles to confirm the change.

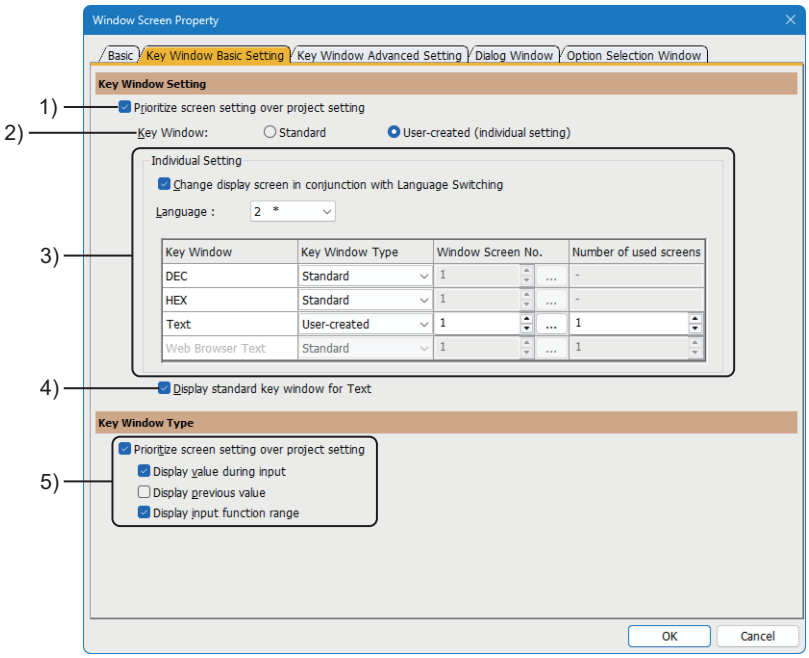
[Key Window Basic Setting] tab

GT37 SoftGOT3000

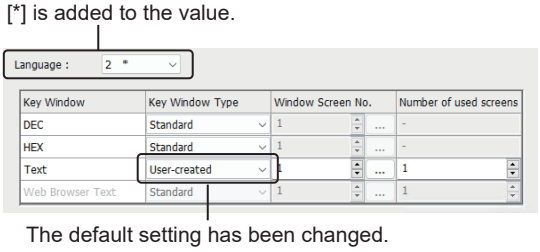
The following shows the basic settings of key windows for each screen.

To configure project-by-project settings, use the [Environmental Setting] window.

☞ Page 570 [Basic] tab



Item		Description
1)	[Prioritize screen setting over project setting]	Enables the individual settings in [Key Window Setting], instead of the settings in the [Environmental Setting] window.
2)	[Key Window]	Select the type of a key window to be used. If you select [User-created (individual setting)], set a key window to be used for each input target (decimal, hexadecimal, character string, and Web browser character string) in [Individual Setting].

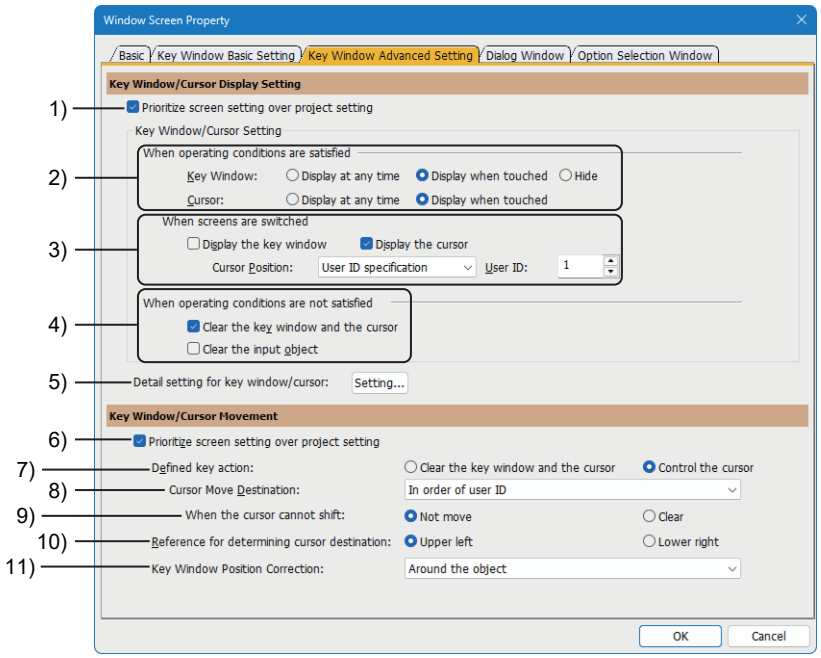
Item			Description
3)	[Individual Setting]	—	Set the key window to be used for each input target. This item is enabled when [User-created (individual setting)] is selected in [Key Window Setting].
		[Change display screen in conjunction with Language Switching]	Enable the settings for switching the key windows to be displayed in conjunction with the value (1 to 30) of the language switching device. For the language switching device, refer to the following. ☞ Page 546 Setting for switching the language displayed on the GOT ([Language Switching]) For each of the values (1 to 30) of [Language], set a key window to be used. Select a value in [Language], and set a key window to be used for each input target (decimal, hexadecimal, character string, and Web browser character string). If you change the default value, [*] is added to the selected value. For each value of the language switching device, you can set a key window to be used. If you select [User-created] in [Key Window Type], [*] is added to the value of the selected range. Example) If you select [2] in [Language] and change the key window type from the default [*] is added to the value.  The default setting has been changed.
		[Key Window]	The use of each key window [Web Browser Text] cannot be set in the screen property settings. The setting can be configured only in the [Environmental Setting] window ([Key Window]). ☞ Page 570 [Key Window] [Web Browser Text] is not displayed in GT SoftGOT3000.
		[Key Window Type]	Select the type of key windows according to their uses. If you select [User-created], select the window screen to be used as a user-created key window in [Window Screen No.].
		[Window Screen No.]	Set the number of the window screen to be displayed as a user-created key window. The setting range is [1] to [32767]. Click the [...] button to display the [Image List] dialog (screen). You can check the image on the screen when selecting a window screen. ☞ Page 3683 [Image List] dialog (screen)
		[Number of used screens]	This item is settable for [Text] and [Web Browser Text] only. Set the number of key windows used for text input. With the window screen set in [Window Screen No.] as the first on the list, window screens are used for the set number as key windows. To switch key windows, arrange key code switches to which the following operations are set. • [Switch window screens for ASCII (to the next)] • [Switch window screens for ASCII (to the previous)] • [Switch window screens for ASCII (screen no. specification)] ☞ Page 1251 [Key Code Switch] dialog
4)	[Display standard key window for Text]		Set whether to display or hide the standard key window for character string. Clear this checkbox if the standard key window for character string is not necessary because character strings are input from the key code switch on the screen.

Item			Description
5)	[Prioritize screen setting over project setting]	—	Enables the individual settings in [Key Window Type], instead of the settings in the [Environmental Setting] window.
		[Display value during input]	Displays the value being input in the key window. To display the value in the user-created key window, arrange the input value area setting on the window screen. ☞ Page 1887 Placing an object to display the input information
		[Display previous value]	Displays the previous value in the key window. To display the previous value in the user-created key window, arrange the previous value area setting on the window screen. ☞ Page 1887 Placing an object to display the input information
		[Display input function range]	Displays the valid input range in the key window. To display the valid input range in the user-created key window, arrange the input range area setting on the window screen. ☞ Page 1887 Placing an object to display the input information

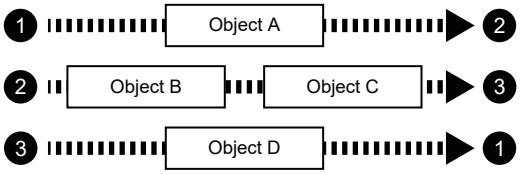
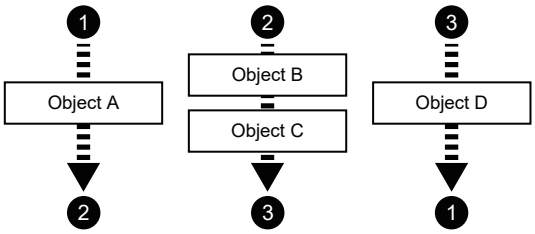
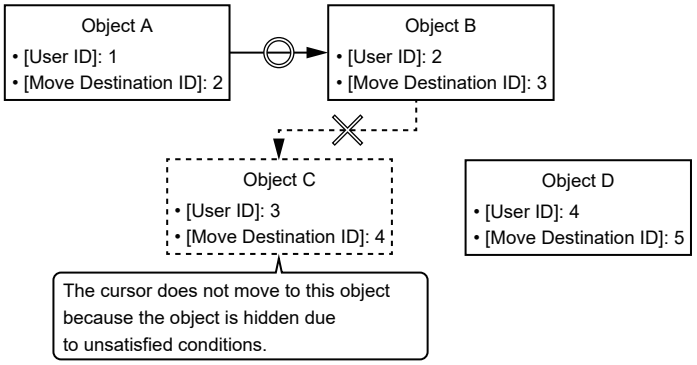
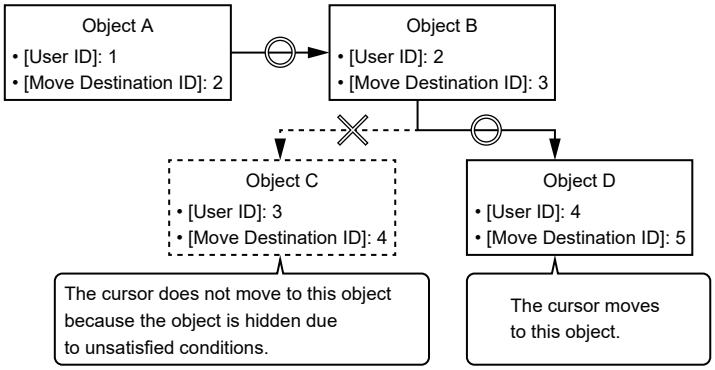
[Key Window Advanced Setting] tab

GT37 SoftGOT3000

The following shows the advanced settings of key windows for each screen.
To configure project-by-project settings, use the [Environmental Setting] window.
☞ Page 572 [Advanced Setting] tab



Item			Description
1)	[Prioritize screen setting over project setting]		Enables the individual settings in [Key Window/Cursor Display Setting], instead of the settings in the [Environmental Setting] window.
2)	[When operating conditions are satisfied]	—	Configure the display settings of the key window and cursor for when the operating conditions of the objects for input are satisfied.
		[Key Window]	Configure the display settings of the key window for when the operating conditions of the objects for input are satisfied.
		[Cursor]	Configure the display settings of the cursor for when the operating conditions of the object for input are satisfied.
3)	[When screens are switched]	—	Configure the display settings of the key window and cursor to switch screens for when the operating conditions of the object for input are satisfied.
		[Display the key window]	Displays a key window when the screen is switched.
		[Display the cursor]	Displays a cursor when the screen is switched. Set the position to display the cursor in [Cursor Position].
		[Cursor Position]	Select the position to display the cursor when the screen is switched.
		[User ID]	Sets the user ID of the object on which the cursor is displayed. The setting range is [1] to [65535].
4)	[When operating conditions are not satisfied]	—	Configure the display settings of the key window and cursor for when the operating conditions of the objects for input are not satisfied.
		[Clear the key window and the cursor]	Deletes the key window and cursor when the operating conditions of the objects for input are not satisfied.
		[Clear the input object]	Deletes the key window, the cursor, and the objects for input when the operating conditions of the objects for input are not satisfied.
5)	[Detail setting for key window/cursor]		Click the [Setting] button to display the [Display Detail Setting] dialog. ☞ Page 574 [Display Detail Setting] dialog
6)	[Prioritize screen setting over project setting]		Enables the settings in [Key Window/Cursor Movement], instead of the settings in the [Environmental Setting] window.
7)	[Defined key action]		Select the action of the key window and cursor when the enter key is touched.

Item			Description
8)	[Cursor Move Destination]	—	Select a position to move the cursor. The following shows selectable items.
		[Same operation as the right arrow key]	Moves the cursor using the specified coordinate point of the active object as a reference. Specify the reference coordinates with [Reference for determining cursor destination]. The cursor moves as shown below. 
		[Same operation as the down arrow key]	Moves the cursor using the specified coordinate point of the active object as a reference. Specify the reference coordinates with [Reference for determining cursor destination]. The cursor moves as shown below. 
		[In order of user ID]	Moves the cursor to the object that has the same user ID number as the move destination ID number of the active object. If the destination object is hidden due to unsatisfied conditions, the cursor does not move. To control the cursor movement, set [User ID] and [Move Destination ID] of the relevant objects. 
		[Subsequently valid user ID]	Moves the cursor to the object that has the same user ID number as the move destination ID number of the active object. If the destination object is hidden due to unsatisfied conditions, the cursor moves to the object specified with [Move Destination ID] of the hidden destination object. To control the cursor movement, set [User ID] and [Move Destination ID] of the relevant objects. 
		[Not move]	Does not move the cursor even after the entry is confirmed.

Item		Description
9)	[When the cursor cannot shift]	This item is displayed when [Cursor Move Destination] is set to [In order of user ID] or [Subsequently valid user ID]. Select how the cursor moves when no destination object exists.
10)	[Reference for determining cursor destination]	Select the standard to determine a position to move the cursor.
11)	[Key Window Position Correction]	Select an action of the key window when it overlaps the input target object. When [To the four corners of the screen] is selected, the key window is displayed in one of the four corners so that it will not overlap the input target object. If the key window inevitably overlaps the input target object, it is displayed in the lower right of the screen.

[Dialog Window] tab

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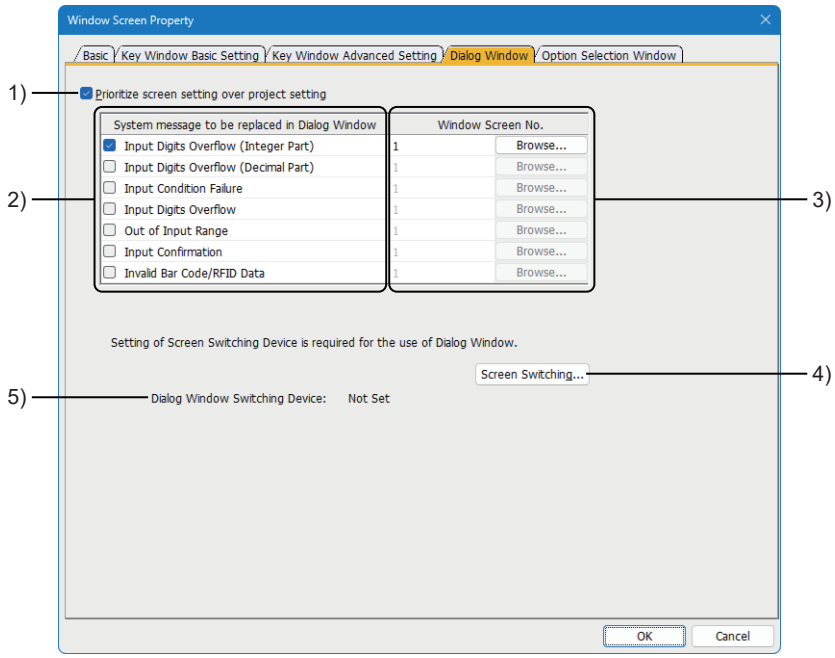
The following shows the settings of the dialog window for each screen.

To configure project-by-project settings, use the [Environmental Setting] window.

☞ Page 557 [Dialog Window]



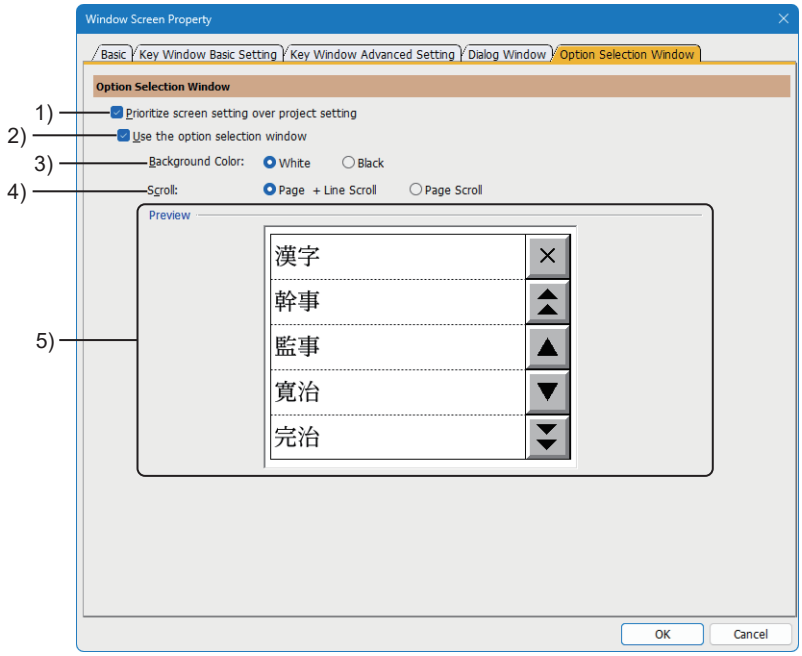
Item		Description
1)	[Prioritize screen setting over project setting]	Prioritizes the settings in the dialog window of the [Window Screen Property] dialog over the project-by-project settings in the [Environmental Setting] window.
2)	[System message to be replaced in Dialog Window]	Select a system message to be replaced by the dialog window. Replaces the selected system message with the window screen set in [Window Screen No.]. For the system messages of each item, refer to the following. ☞ Page 555 How to use dialog windows
3)	[Window Screen No.]	Set a screen number of the window screen to be displayed instead of the system message. The setting range is [0] to [32767]. Click the [Browse] button to display the [Image List] dialog (screen). You can check the image on the screen when selecting a window screen. ☞ Page 3683 [Image List] dialog (screen)
4)	[Screen Switching] button	Displays the [Environmental Setting] window. ☞ Page 557 [Dialog Window]
5)	[Dialog Window Switching Device]	The currently set screen switching device for a dialog window

[Option Selection Window] tab

Displays the settings in the option selection window for screen-by-screen Kana-Kanji or Pinyin conversion.

To configure project-by-project settings, use the [Environmental Setting] window.

☞ Page 610 [Kana-Kanji/Pinyin Conversion]



Item		Description
1)	[Prioritize screen setting over project setting]	Prioritizes the settings in [Option Selection Window] of the [Screen Property] dialog over the project-by-project settings in the [Environmental Setting] window.
2)	[Use the option selection window]	Select this item to display the option selection window for Kana-Kanji or Pinyin conversion.
3)	[Background Color]	Select the background color for the option selection window.
4)	[Scroll]	Select the keys to be displayed on the option selection window. • [Page + Line Scroll]: Displays the keys for scrolling by page or by line. • [Page Scroll]: Displays the keys for scrolling by page.
5)	[Preview]	Displays a preview of the option selection window with the [Background Color] and [Scroll] settings applied.

6.10 Managing the created screen

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The created screen is displayed on the [Screen] window and [Screen Image List] window.
You can copy or delete the screen on each window.

Window	Description
[Screen] window	Displays the screen view tree with the screen number and title of the created screens. Whether the script and trigger action is set for each screen can be displayed. ☞ Page 122 [Screen] window
[Screen Image List] window	Displays the icons of created base screens, window screens, and mobile screens. ☞ Page 335 [Screen Image List] window

6.10.1 [Screen Image List] window

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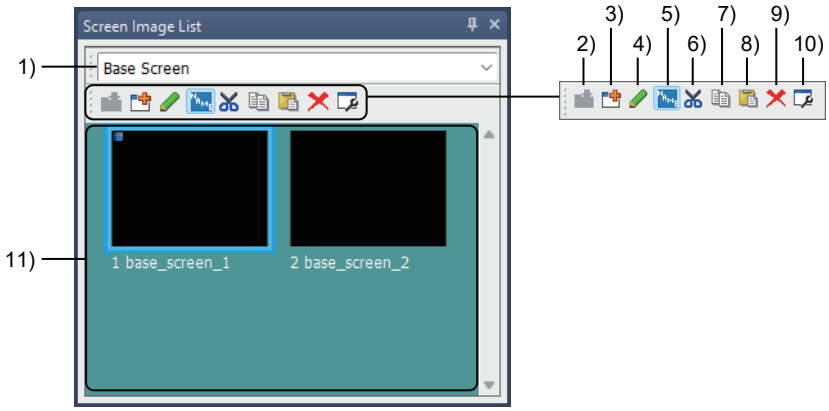
Either of the following operations displays the [Screen Image List] window.

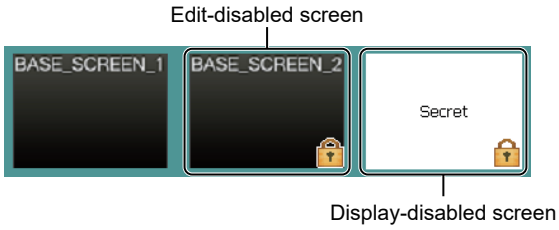
- Select [View] → [Docking Window] → [Screen Image List] from the menu.
- Select [Screen] → [Screen Image List] from the menu.

Point

To speed up the display of screen images, select [Include projects for the function of Utilize Data] in the [Project information] dialog.

☞ Page 224 [Project Information] dialog



Item		Description
1)	Screen type	Select the type of the screen to be displayed in the screen image list.
2)	[Register] button	Creates a new screen utilizing the figure or object selected on the screen editor.
3)	[New] button	Creates a new screen of the type selected in the screen types.
4)	[Edit] button	Opens the screen selected in the screen image list.
5)	[Name] button	Switches between displaying and hiding screen numbers and titles in the screen image list.
6)	[Cut] button	Cuts the screen selected in the screen image list.
7)	[Copy] button	Copies the screen selected in the screen image list.
8)	[Paste] button	Pastes the screen cut or copied in the screen image list. The screen appears after the paste.
9)	[Delete] button	Deletes the screen selected in the screen image list.
10)	[Property] button	Displays the screen properties of the screen selected in the screen image list.
11)	Screen image list	Lists the images of the created screens. When the display or edit of a screen is disabled by project security, the screen image is displayed as shown below. 

6.11 Viewing the image of the created screen

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☞ Page 336 Displaying a preview
☞ Page 340 Displaying the preview of a window screen on the screen editor

6.11.1 Displaying a preview

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1. Select the screen editor of the base screen or window screen to display the preview.

☞ Page 295 Selecting a screen editor to be edited

2. Select [View] → [Preview] from the menu to display the [Screen Preview] window.

Edit the screen editor to apply the edit contents to the [Screen Preview] window.

☞ Page 337 [Screen preview] window

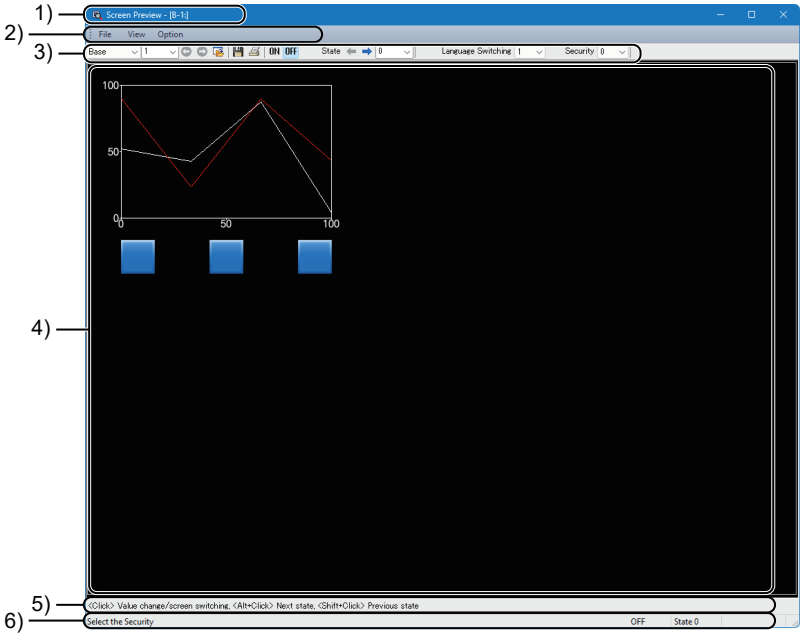
Point

The following items are not displayed in the [Screen Preview] window.

- Frame animation
- Animation route

[Screen preview] window

GT37 SoftGOT3000



Item		Description
1)	Title bar	Screen number and title of the previewed screen
2)	Menu bar	Operate the [Screen Preview] window from the pull-down menu. ☞ Page 338 [File] menu ☞ Page 338 [Display] menu ☞ Page 338 [Option] menu
3)	Toolbar	Use the buttons and other items to operate the [Screen Preview] window. ☞ Page 339 Toolbar
4)	Display section	Displays the preview of the screen editor. The scroll bars appear on the expanded base screens. Each time you click the superimposed part of objects while holding down the Ctrl key, the selected object is shifted in order from the topmost object. Right-click the display section to display the menu. The available items are the same as those in [Display] in the menu. ☞ Page 338 [Display] menu Click a Go To Screen switch for which an option other than [Fixed] is selected in [Next Station] to display the [Screen No. Specification] dialog. In this dialog, you can set the destination screen number. ☞ Page 339 [Screen No. Specification] dialog Click the numerical display, numerical input, text display, or text input to display the [Preview Value] dialog. ☞ Page 339 [Preview Value] dialog
5)	Description bar	Displays the operation description of the [Screen Preview] window.
6)	Status bar	The following are displayed according to the position of the mouse cursor and setting of the preview. • Type and condition of an object which the mouse cursor is pointed to • Condition in preview • Number of colors being previewed

PART 4

■[File] menu

Item	Description
[Save]	Saves the image of the display section in the BMP format. Shortcut key: Ctrl + Shift + S
[Print]	Prints the image of the display section.
[Printer Settings]	Sets the printer for printing.
[Output in reverse]	Switches between reversing the color and leaving the color unreversed when an image is output to a printer or file.
[Fill Black at Text BG]	Outputs an image with the text in white and background in black to a printer or file.
[Dithering]	Outputs an image with the intermediated color added to the two-tone monochrome to a printer or file.
[Copy Screen Image to the Clipboard]	Captures the image of the display section.
[Close]	Closes the [Screen Preview] window.

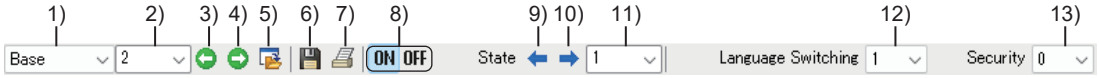
■[Display] menu

Item	Description
[Menu and Title]	Switches between displaying and hiding the menu bar and title bar.
[Toolbar]	Switches between displaying and hiding the toolbar.
[Status Bar]	Displays or hides the status bar.
[Description Bar]	Switches between displaying and hiding the description bar.
[Next Screen]	Switches to a screen whose screen number is one greater than that of the currently displayed screen.
[Previous Screen]	Switches to a screen whose screen number is one smaller than that of the currently displayed screen.
[Use Preview No.]	Switches between enabling and disabling the preview number as the column No. of the comment group.
[ON Image]	Switches between on and off of the object to be displayed.
[Next State]	Switches the states of objects to be displayed on screen editors in ascending order.
[Previous State]	Switches the states of objects to be displayed on screen editors in descending order.
[Overlap1]	Switches between displaying and hiding the overlap window 1.
[Overlap2]	Switches between displaying and hiding the overlap window 2.
[Overlap3]	Switches between displaying and hiding the overlap window 3.
[Overlap4]	Switches between displaying and hiding the overlap window 4.
[Overlap5]	Switches between displaying and hiding the overlap window 5.
[Superimpose1]	Switches between displaying and hiding the superimpose window 1.
[Superimpose2]	Switches between displaying and hiding the superimpose window 2.
[Key Window]	Switches between displaying and hiding the key window.
[Dialog Window]	Switches between displaying and hiding the dialog window.
[PC Remote Operation]	Displays or hides the remote screen.
[Web Browser]	Switches between displaying and hiding the web browser window.
[Show the entire base screen]	Switches between the view modes of the expanded base screens. The following shows the view modes. • The area of the base screen for the GOT to display • The entire expanded base screen
[Show the Screen Only]	Deletes the menu bar and other bars to display only the image of the display section. Double-clicking the display section also switches the display. Shortcut key: Shift + F4

■[Option] menu

Item	Description
[Open the editing screen in conjunction with Screen Preview]	Switches between displaying and hiding the screen editor of the screen displayed on the [Screen Preview] window.
[Display the frame around the selected item]	Switches between displaying and hiding the frame of the target which mouse cursor is pointed to.

■Toolbar



Item		Description
1)	[Screen Type]	Select the type of the screen to be displayed.
2)	[Screen No.]	Select the screen number of the screen to be displayed.
3)	[Previous Screen]	Switches to a screen whose screen number is one smaller than that of the currently displayed screen.
4)	[Next Screen]	Switches to a screen whose screen number is one greater than that of the currently displayed screen.
5)	[Open Editing Screen]	Displays the screen editor of the screen displayed on the [Screen Preview] window.
6)	[Save]	Saves the image of the display section in the BMP format.
7)	[Print]	Prints the image of the display section.
8)	[ON] [OFF]	Switches between on and off of the object to be displayed.
9)	[Previous State]	Switches the states of objects to be displayed on screen editors in descending order.
10)	[Next State]	Switches the states of objects to be displayed on screen editors in ascending order.
11)	[State No.]	Switches the states of objects to be displayed on screen editors by selecting the state No.
12)	[Language Switching]	Select the column No. for a comment group to be displayed.
13)	[Security]	Select the security level. Only the objects which can be displayed in the selected security level are displayed.

■[Screen No. Specification] dialog

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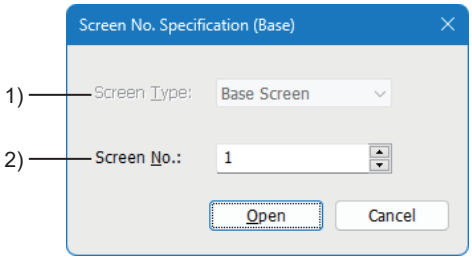

Item		Description
1)	[Screen Type]	Displays the screen type.
2)	[Screen No.]	Set the destination screen number. The setting range is [0] to [32767].

■[Preview Value] dialog

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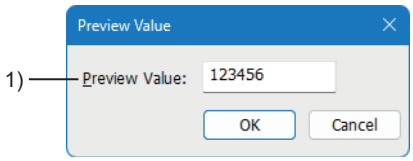

Item		Description
1)	[Preview Value]	Set the value to be displayed.

6.11.2 Displaying the preview of a window screen on the screen editor

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When arranging a window position object on the screen editor, you can display the preview of the window screen.

1. Select [View] → [Window Preview] → [Custom] from the menu to display the [Window Preview] dialog.

☞ Page 341 [Window Preview] dialog

2. Set the window screen to be displayed in the preview of each screen. Then click the [OK] button.

Point

When a window screen is previewed on a mobile device, if the window screen is set to preview another window screen, that window screen will not be previewed.

[Window Preview] dialog

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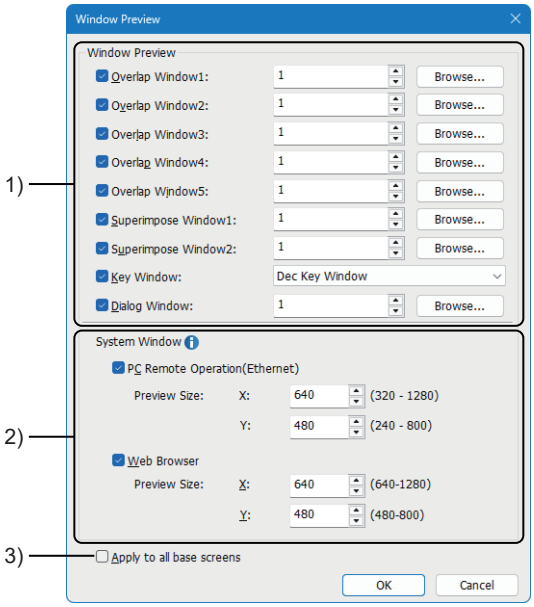
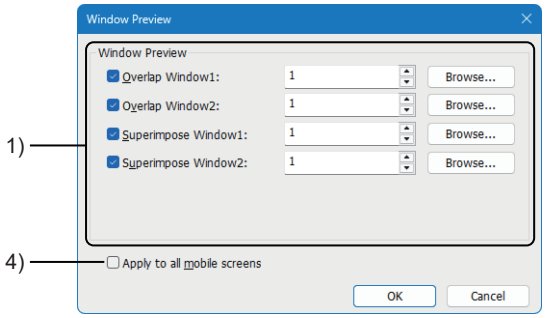


Base screen



Mobile screen

Item			Description
1)	[Window Preview]	—	Set the window screens, such as an overlap window, to be displayed on the screen editor. Set the screen number of window screens to be displayed. The setting range is [0] to [32767]. Click the [Browse] button to display the [Image List] dialog (screen). You can check the image on the screen when selecting a window screen. ☞ Page 3683 [Image List] dialog (screen)
		[Overlap Window1]	Displays a preview of overlap window 1.
		[Overlap Window2]	Displays a preview of overlap window 2.
		[Overlap Window3]	Displays a preview of overlap window 3.
		[Overlap Window4]	Displays a preview of overlap window 4.
		[Overlap Window5]	Displays a preview of overlap window 5.
		[Superimpose Window1]	Displays a preview of superimpose window 1.
		[Superimpose Window2]	Displays a preview of superimpose window 2.
		[Key Window]	Displays a preview of the key window. Select a standard key window to be displayed. Not available for mobile screens. The size of the displayed standard key window reflects the setting for [Standard Key Window Size] in the [GOT Setup] window ([Display Setting/Language Setting]). ☞ Page 618 [Display Setting/Language Setting]
		[Dialog Window]	Displays a preview of the dialog window. Not available for mobile screens.

Item			Description
2)	[System Window]	—	Displays a preview of the system window. The preview replaces and displays the preview of the overlap window used as the system window. Example) Using overlap window 4 as a system window When a window position object for overlap window 4 is placed, a preview of the window such as a web browser window is displayed.
		[PC Remote Operation (Ethernet)]	Enabled when selecting [Use PC Remote Operation (Ethernet)] in the [PC Remote Operation] dialog. ☞ Page 2622 [PC Remote Operation] dialog Displays a preview of the remote screen. Set the window size using [Preview Size]. The width setting range is from [640] dots to the horizontal resolution of the GOT. The height setting range is from [480] dots to the vertical resolution of the GOT. The window size set for the special function switch is applied to the size of the remote screen displayed by touching the special function switch on the [Screen Preview] window.
		[Web Browser]	Displays a preview of the web browser window. Set the window size using [Preview Size]. The width setting range is from [640] dots to the horizontal resolution of the GOT. The height setting range is from [480] dots to the vertical resolution of the GOT. The window size set for the special function switch is applied to the size of the web browser window displayed by touching the special function switch on the [Screen Preview] window.
3)	[Apply to all base screens]		Applies the settings in the [Window Preview] dialog to all the base screens.
4)	[Apply to all mobile screens]		Applies the settings in the [Window Preview] dialog to all the mobile screens.

6.12 Performing a data check

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Check if there is any invalid device, setting that exceeds the upper limit, or other incorrectness in the project.

6.12.1 Narrowing down the items to be checked

All items are to be checked by default.

Narrow down the items to be checked according to the following procedure.

1. Perform either of the following operations to display the [Check Item Setting] dialog.
- Select [Debug/Check] → [Data Check] → [Item Setting] from the menu.
- Click the [Option] button in [Data Check List] to select [Check Item Setting] from the pull-down menu.

☞ Page 345 [Check Item Setting] dialog

2. Change the setting, and click the [OK] button.

6.12.2 Executing a data check

Select [Debug/Check] → [Data Check] → [Check] from the menu to display the check results in the [Data Check List] window.

☞ Page 344 [Data Check List] window

6.12.3 Exporting the check result

You can export the check result in a CSV format or Unicode text format.

1. Click the [Option] button in the [Data Check List] window and select [Export] from the pull-down menu to display the [Save As] dialog.
2. Set [File name] and [Files of type] and click the [OK] button to export the check result.

☞ Page 348 Details of the exported file

6.12.4 [Data Check List] window

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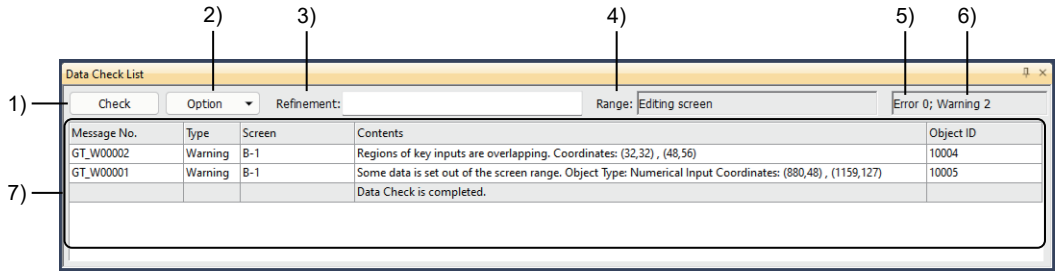

Item			Description
1)	[Check] button		Checks the items selected in the [Check Item Setting] dialog.
2)	[Option] button	—	Operates the [Data Check List] window from the pull-down menu.
		[Check Item Setting]	Displays the [Check Item Setting] dialog. In this dialog, you can set the check target and check item. ☞ Page 345 [Check Item Setting] dialog
		[Export]	Exports the check result as a CSV file or Unicode text file. Set [File name] and [Files of type] in the displayed dialog and click the [Save] button. ☞ Page 348 Details of the exported file
3)	[Refinement]		Narrow the displayed contents of the check result by keywords. Up to 128 characters can be set. To narrow the contents using multiple keywords, separate each keyword with one-byte spaces.
4)	[Range]		Range selected in [Object No.] of the [Check Item] dialog
5)	Number of errors		Number of settings which do not perform operation
6)	Number of warnings		Number of settings which cause unintentional operation
7)	List of check results	—	Displays the check result. Double-click a result to jump to the position which causes an error or warning.
		[Message No.]	Message No. of an error or warning
		[Type]	Type of a detected event • [Error]: Setting which does not perform operation • [Warning]: Setting which causes unintentional operation
		[Screen]	Screen with the cause of an error or warning • [B-n]: Base screen ("n" represents the screen number.) • [W-n]: Window screen ("n" represents the screen number.) • [M-n]: Mobile screen ("n" represents the screen number.)
		[Contents]	Message which shows the description of an error or warning
		[Object ID]	Object ID of the cause of an error or warning

6.12.5 [Check Item Setting] dialog

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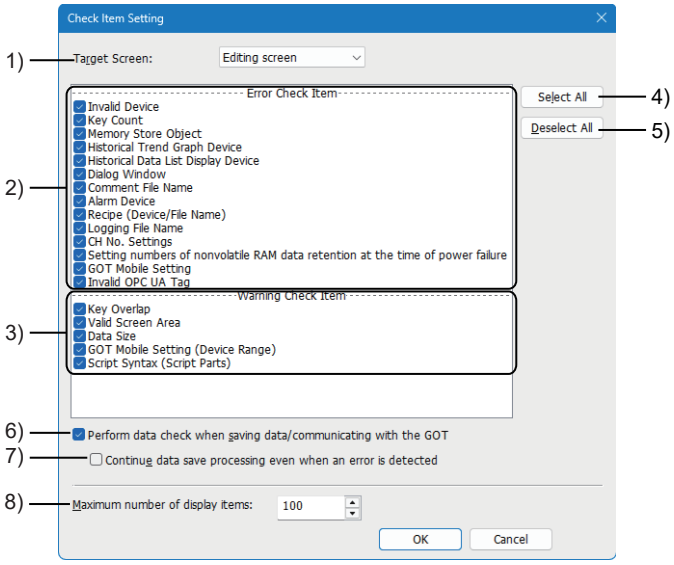

Item		Description
1)	[Target Screen]	Select the check target. Regardless of the selected items, the common settings are checked.
2)	[Error Check Item]	Items for checking whether any setting which does not perform operation exists Select the items to check. ☞ Page 346 Details of [Error Check Item]
3)	[Warning Check Item]	Items for checking that any setting which causes unintentional operation does not exist. Select the items to check. ☞ Page 347 Details of [Warning Check Item]
4)	[Select All] button	Selects all the items in the check item.
5)	[Deselect All] button	Deselects all the items in the check item.
6)	[Perform data check when saving data/communicating with the GOT]	Performs a data check when a project is saved and package data is transferred.
7)	[Continue data save processing even when an error is detected]	Saves a project even if an error is found when the project is saved.
8)	[Maximum number of display items]	Set the maximum number of errors and warnings displayed in the [Data Check List] window. The setting range is [1] to [1000].

Details of [Error Check Item]

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Item	Description
Invalid device	Checks that any device for which [??] is set does not exist.
[Key Count]	Checks whether more than 1000 touch switches are placed on one screen.
[Memory Store Object]	Checks whether more than 16 scatter graphs (when [Store Memory] is set) are placed on one screen.
[Historical Trend Graph Device]	Checks whether a mismatch exists in the logging setting and device setting in the historical trend graph.
[Historical Data List Display Device]	Checks whether a mismatch exists in the following settings. • Logging setting and device setting in the historical data list display • Device format in the historical data list display and device display
[Dialog Window]	Checks the properties of the base screens and window screens or the settings of [Dialog Window] in the [Environmental Setting] window, regarding the following. • Checks whether the screen number of a window screen which does not exist is set to a dialog window. • Checks whether the screen size of the window screen is 320 × 240 or more.
[Comment File Name]	Checks the comment group settings for duplicate comment text file paths. For comment text files, refer to the following. ☞ Page 785 Import/Export
[Alarm Device]	Checks that the alarm device and alarm range are set correctly in the user alarm monitoring settings.
[Recipe (Device/Alarm name)]	Checks the following for the setting in the [Recipe Common Setting] dialog and [Recipe] dialog. • Checks that the common control device and external notification device are not duplicated with the screen switching device or station No. switching device. • Checks that the recipe files (file path) in each recipe setting are not duplicated.
[Logging File Name]	Checks that the settings(file path) of the destination to save files in each logging setting are not duplicated.
[CH No. Settings]	Checks that any channel which is not used is not set to the following settings. • [CH No. for Station No. Switching] in [Station No. Switching] in the [Controller Setting] window • [Adjust CH No.] in the [Adjust] tab in [Time Setting] in the [GOT Setup] window • [Broadcast CH No.] in the [Broadcast] tab in [Time Setting] in the [GOT Setup] window • [Controller CH No.] in [Transparent Mode Setting] in the [GOT Setup] window
[Setting numbers of nonvolatile RAM data retention at the time of power failure]	Checks the following. • Checks that the nonvolatile RAM power-failure backup function is enabled for less than 10 logging settings. • Checks that the nonvolatile RAM power-failure backup function is enabled for less than 20 logging settings.
[GOT Mobile Setting]	Checks the following. • Checks that GOT Mobile devices (VGB and VGD) are only specified in the mobile screens and in the [GOT Mobile Setting] window. • Checks that specified GOT Mobile devices (VGB and VGD) are within the setting ranges. • Checks that [Use GOT Mobile function] is selected when a mobile screen is used. • When [Action] is set to [Auto Connection of GOT Mobile Function] for [Contactless Tag] in the [GOT Setup] window, checks that [Use GOT Mobile function] is selected in the [GOT Mobile Setting] window.
[Invalid OPC UA Tag]	Checks that no invalid OPC UA tag is set in device settings.

Details of [Warning Check Item]

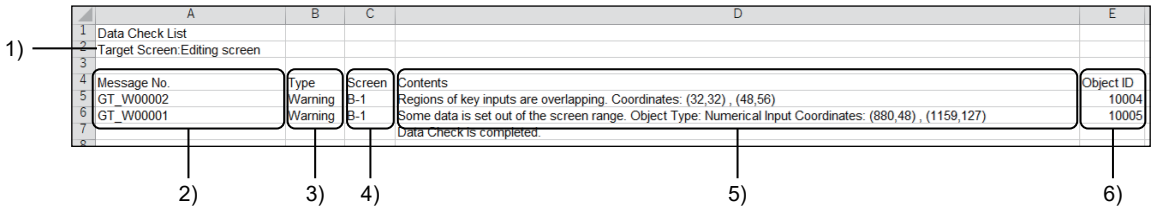
GT37 SoftGOT3000

Item	Description
[Valid Screen Area]	Checks that objects are not arranged out of the screen display area.
[Data Size]	Checks the following. • Checks that the ROM data size in a project does not exceed the ROM size of the GOT. • Checks that the RAM data size in a project does not exceed the RAM size of the GOT. • Checks that the total data size in the nonvolatile RAM user area used for alarm monitoring, logging, and recipe function does not exceed 500 KB.
[GOT Mobile Setting (device range)]	Checks that the GOT internal devices (GB and GD) assigned to GOT Mobile devices (VGB and VGD) are not specified for other settings.
[Key Overlap]	Checks whether the following objects are overlapped. • Touch switch • Numerical input • Text input • Historical data list (when [Single Touch Operation] is set) • Trend graph (when [Single Touch Operation] is set) • Historical trend graph (when [Single Touch Operation] is set) • Alarm display • Simple alarm display (when [Operation] is selected in [Touch Mode]) • Slider • Recipe display (record list) Objects in the temporary area are not checked. The overlap of an object on a screen opened using the set overlay screen and an object on the basic screen is not checked.
[Script Syntax (Script Parts)]	Checks the script parts for possible errors in their scripts.

6.12.6 Details of the exported file

GT37 SoftGOT3000

The following shows the details of the exported file of a check result.



Item		Description
1)	[Target Screen]	Target screens which are selected in [Target screen] of the [Check Item Setting] dialog
2)	[Message No.]	Message No. of a detected error or warning
3)	[Type]	Type of a detected event • [Error]: Setting which does not perform operation • [Warning]: Setting which causes unintentional operation
4)	[Screen]	Screen with the cause of a detected error or warning • [B-n]: Base screen ("n" represents the screen number.) • [W-n]: Window screen ("n" represents the screen number.) • [M-n]: Mobile screen ("n" represents the screen number.)
5)	[Contents]	Message which shows the description of a detected error or warning
6)	[Object ID]	Object ID of the cause of a detected error or warning

6.13 Checking data size

GT37 SoftGOT3000

The data size of created screens or projects can be checked.
For the relationship between the GOT storage memory (ROM)/operation memory (RAM) and the data to be transferred, refer to the following.
☞ Page 415 Storage and expansion destination memories of transferred data

6.13.1 Checking the data size of a screen

GT37 SoftGOT3000

1. Select the screen to check the data size.
2. Select [Debug/Check] → [Data Size] → [Screen] from the menu to display the [Data Size (Screen)] dialog.

Check the data size.
☞ Page 349 [Data Size (Screen)] dialog

[Data Size (Screen)] dialog

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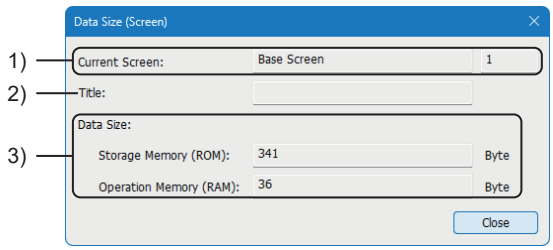

Item			Description
1)	[Current Screen]		Displays the type of the screen being edited and the associated number.
2)	[Title]		Displays the title of the screen being edited.
3)	[Data Size]	—	Displays the data size of the screen.
		[Storage Memory (ROM)]	Displays the data size of the screen saved in the GOT storage memory (ROM).
		[Operation Memory (RAM)]	Displays the data size of the screen expanded in the GOT operation memory (RAM).

6.13.2 Checking data size of project

GT37 SoftGOT3000

Select [Debug/Check] → [Data Size] → [Project] from the menu to display the [Data Size (Project)] dialog.
Check the data size.
☞ Page 350 [Data Size (Project)] dialog

[Data Size (Project)] dialog

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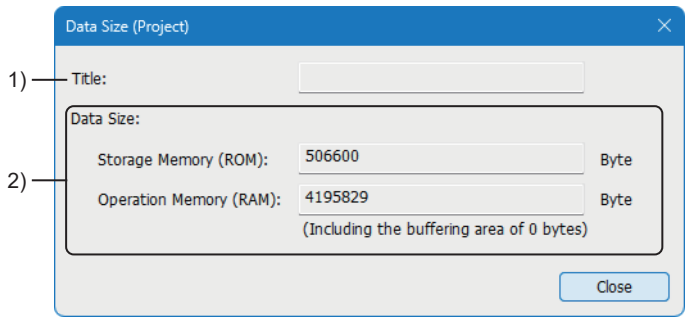

Item			Description
1)	[Title]		Displays the title of the project.
2)	[Data Size]	—	Displays the data size of the project.
		[Storage Memory (ROM)]	Displays the data size of the screen saved in the GOT storage memory (ROM).
		[Operation Memory (RAM)]	Displays the data size of the screen expanded in the GOT operation memory (RAM).

7 Simulation

GT37 SoftGOT3000

In GT Designer3 (3000), you can launch GT Simulator3 (3000) (hereafter GT Simulator3) to simulate the project data being edited and check the operation on the GOT.

☞ Page 352 Specifications
☞ Page 367 Connecting
☞ Page 375 Simulation procedure
☞ Page 379 Screen layout of GT Simulator3
☞ Page 381 Connection and environment settings in GT Simulator3
☞ Page 392 Basic operations of GT Simulator3
☞ Page 393 Useful functions of GT Simulator3
☞ Page 407 Troubleshooting

7.1 Specifications

GT37 SoftGOT3000

☞ Page 352 Operating environment
☞ Page 352 Simulation-supported GOTs
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☞ Page 366 Clock specifications
☞ Page 366 Precautions

7.1.1 Operating environment

A network adapter is required for personal computers and other devices that operate GT Simulator3.
The other requirements are the same as those for the operating environment of GT Designer3.
For information on the operating environment of GT Designer3, refer to the following.
☞ Page 54 Operating environment

7.1.2 Simulation-supported GOTs

The following shows the GOTs compatible with simulation with GT Simulator3.

Name	Resolution (dot)	Display color
GT37**-FH	1920×1080	16 million colors
GT37**-WX	1280×800	
GT37**-X	1024 × 768	
GT SoftGOT3000	640 × 480 to 1920 × 1200 (1200 × 1920)	16 million colors

Precautions

The display on GT Simulator3 may differ from that on the GOT.
Check the actual display on the GOT.

7.1.3 Monitoring-supported controllers

☞ Page 353 Controller simulator
☞ Page 358 Mitsubishi Electric products

Point

For the devices that can be monitored with GT Simulator3, refer to the following.

☞ Page 359 Device range for monitoring

Precautions

When non-Mitsubishi Electric controller is selected for CH1 in [Controller Setting], the simulator menu is not displayed in GT Designer3.

Controller simulator

GT Simulator3 can be connected to controller simulators to monitor virtual controllers.

In this section, controller simulator refers to the following software applications.

The supported software version differs depending on the controller simulator to be connected.

Controller simulator to be connected	Supported software version
GX Simulator3	GX Works3 1.105K or later
GX Simulator2	GX Works2 1.621X or later
MT Simulator2	MT Works2 1.189X or later
MELSOFT Mirror	MELSOFT Mirror 1.000A or later

■Combinations of monitoring-supported controller simulators and PLCs

The following shows combinations of controller simulators and PLCs that can be connected from GT Simulator.

Use the latest version of the controller simulator.

Series name	Model	GX Works3 (GX Simulator3)	GX Works2 (GX Simulator2)	MT Simulator2	MELSOFT Mirror
MELSEC MX Controller	MXR300-16	○*1	—*6	—	—
	MXR300-32	○*1	—*6	—	—
	MXR300-64	○*1	—*6	—	—
	MXR500-128	○*1	—*6	—	—
	MXR500-256	○*1	—*6	—	—
	MXF100-8-N32	○*1	—*6	—	—
	MXF100-8-P32	○*1	—*6	—	—
	MXF100-16-N32	○*1	—*6	—	—
	MXF100-16-P32	○*1	—*6	—	—

Series name	Model	GX Works3 (GX Simulator3)	GX Works2 (GX Simulator2)	MT Simulator2	MELSOFT Mirror
MELSEC iQ-R series	R00CPU	○	—*6	—	—
	R01CPU	○	—*6	—	—
	R02CPU	○	—*6	—	—
	R04CPU	○	—*6	—	—
	R08CPU	○	—*6	—	—
	R16CPU	○	—*6	—	—
	R32CPU	○	—*6	—	—
	R120CPU	○	—*6	—	—
	R08PCPU	○*2	—*6	—	—
	R16PCPU	○*2	—*6	—	—
	R32PCPU	○*2	—*6	—	—
	R120PCPU	○*2	—*6	—	—
	R08SFCPU	○	—*6	—	—
	R16SFCPU	○	—*6	—	—
	R32SFCPU	○	—*6	—	—
	R120SFCPU	○	—*6	—	—
	R08PSFCPU*4	○	—*6	—	—
	R16PSFCPU*4	○	—*6	—	—
	R32PSFCPU*4	○	—*6	—	—
	R120PSFCPU*4	○	—*6	—	—
	R04ENCPU	○	—*6	—	—
	R08ENCPU	○	—*6	—	—
	R16ENCPU	○	—*6	—	—
	R32ENCPU	○	—*6	—	—
	R120ENCPU	○	—*6	—	—
	R12CCPU-V	○*1	—*6	—	—
MELSEC iQ-F series	FX5U	○	—*6	—	—
	FX5UC	○	—*6	—	—
	FX5UJ	○	—*6	—	—
	FX5S	○	—*6	—	—
MELSEC iQ-L series	L04HCPU	○	—*6	—	—
	L08HCPU	○	—*6	—	—
	L16HCPU	○	—*6	—	—
	L32HCPU	○*1	—*6	—	—

Series name	Model	GX Works3 (GX Simulator3)	GX Works2 (GX Simulator2)	MT Simulator2	MELSOFT Mirror
MELSEC-Q series	Q00JCPU	—	○	—	—
	Q00CPU	—	○	—	—
	Q01CPU	—	○	—	—
	Q02CPU	—	○	—	—
	Q02HCPU	—	○	—	—
	Q06HCPU	—	○	—	—
	Q12HCPU	—	○	—	—
	Q25HCPU	—	○	—	—
	Q02PHCPU	—	○	—	—
	Q06PHCPU	—	○	—	—
	Q12PHCPU	—	○	—	—
	Q25PHCPU	—	○	—	—
	Q12PRHCPU	—	○	—	—
	Q25PRHCPU	—	○	—	—
	Q00UJCPU	—	○	—	—
	Q00UCPU	—	○	—	—
	Q01UCPU	—	○	—	—
	Q02UCPU	—	○	—	—
	Q03UDCPU	—	○	—	—
	Q04UDHCPU	—	○	—	—
	Q06UDHCPU	—	○	—	—
	Q10UDHCPU	—	○	—	—
	Q13UDHCPU	—	○	—	—
	Q20UDHCPU	—	○	—	—
	Q26UDHCPU	—	○	—	—
	Q03UDECPU	—	○	—	—
	Q04UDEHCPU	—	○	—	—
	Q06UDEHCPU	—	○	—	—
	Q10UDEHCPU	—	○	—	—
	Q13UDEHCPU	—	○	—	—
	Q20UDEHCPU	—	○	—	—
	Q26UDEHCPU	—	○	—	—
	Q50UDEHCPU	—	○	—	—
	Q100UDEHCPU	—	○	—	—
	Q03UDVCPU	—	○	—	—
	Q04UDVCPU	—	○	—	—
	Q06UDVCPU	—	○	—	—
	Q13UDVCPU	—	○	—	—
	Q26UDVCPU	—	○	—	—
	Q04UDPVCPU	—	○	—	—
	Q06UDPVCPU	—	○	—	—
	Q13UDPVCPU	—	○	—	—
	Q26UDPVCPU	—	○	—	—

Series name	Model	GX Works3 (GX Simulator3)	GX Works2 (GX Simulator2)	MT Simulator2	MELSOFT Mirror
MELSEC-L series	L02CPU	—	○	—	—
	L06CPU	—	○	—	—
	L26CPU	—	○	—	—
	L26CPU-BT	—	○	—	—
	L02CPU-P	—	○	—	—
	L06CPU-P	—	○	—	—
	L26CPU-P	—	○	—	—
	L26CPU-PBT	—	○	—	—
	L02SCPU	—	○	—	—
	L02SCPU-P	—	○	—	—
MELSEC-F series	FX3G	—	○	—	—
	FX3GC	—	○	—	—
	FX3U	—	○	—	—
	FX3UC	—	○	—	—
	FX3S	—	○	—	—
	FX3GE	—	○	—	—
MELSEC-A series	A2UCPU	—	○*3	—	—
	A2UCPU- S1	—	○*3	—	—
	A3UCPU	—	○*3	—	—
	A4UCPU	—	○*3	—	—
	A2ACPU	—	○*3	—	—
	A2ACPUP21	—	○*3	—	—
	A2ACPUR21	—	○*3	—	—
	A2ACPU-S1	—	○*3	—	—
	A2ACPUP21-S1	—	○*3	—	—
	A2ACPUR21-S1	—	○*3	—	—
	A3ACPU	—	○*3	—	—
	A3ACPUP21	—	○*3	—	—
	A3ACPUR21	—	○*3	—	—
	A1NCPU	—	○*3	—	—
	A1NCPUP21	—	○*3	—	—
	A1NCPUR21	—	○*3	—	—
	A2NCPU	—	○*3	—	—
	A2NCPUP21	—	○*3	—	—
	A2NCPUR21	—	○*3	—	—
	A2NCPU-S1	—	○*3	—	—
	A2NCPUP21-S1	—	○*3	—	—
	A2NCPUR21-S1	—	○*3	—	—

Series name		Model	GX Works3 (GX Simulator3)	GX Works2 (GX Simulator2)	MT Simulator2	MELSOFT Mirror
MELSEC-A series		A3NCPU	—	○*3	—	—
		A3NCPUP21	—	○*3	—	—
		A3NCPUR21	—	○*3	—	—
		A2USCPU	—	○*3	—	—
		A2USCPU-S1	—	○*3	—	—
		A2USHCPU-S1	—	○*3	—	—
		A1SCPU	—	○*3	—	—
		A1SCPUC24-R2	—	○*3	—	—
		A1SHCPU	—	○*3	—	—
		A2ASCPU	—	○*3	—	—
		A2ASCPU-S1	—	○*3	—	—
		A2ASCPU-S60	—	○*3	—	—
		A2SCPU	—	○*3	—	—
		A2SCPU-S1	—	○*3	—	—
		A2SHCPU	—	○*3	—	—
		A2SHCPU-S1	—	○*3	—	—
		A1SJCPU	—	○*3	—	—
		A1SJCPU-S3	—	○*3	—	—
		A1SJHCPU	—	○*3	—	—
		A0J2HCPU	—	○*3	—	—
		A0J2HCPUP21	—	○*3	—	—
		A0J2HCPUR21	—	○*3	—	—
		A0J2HCPU-DC24	—	○*3	—	—
Motion CPU (MELSEC-Q series)		Q172DSCPU	—	—	○	○
		Q173DSCPU	—	—	○	○
		Q170MSCPU	—	○*5	—	—
		Q170MSCPU-S1	—	○*5	—	—
CNC	CNC C80	R16NCCPU-S1	○*1	○*3	—	—
	CNC C70	Q173NCCPU	—	○*3	—	—
Robot controller		CR800-R(R16RTCPU)	○*1	○*3	—	—
		CR800-D	○*1	○*3	—	—
		CRnQ-700(Q172DRCPU)	—	○*5	—	○
		CR800-Q(Q172DSRCPU)	—	○*3	—	—

*1 Simulation with GT Simulator3 is not supported for projects created in GX Works3 when the applicable PLC is specified.
Create a project for the MELSEC iQ-R series (general CPU) in GX Works3, and perform a simulation with GT Simulator3.

*2 When using the redundant function module (R6RFM), create a project for the MELSEC iQ-R series (general CPU) in GX Works3 and perform a simulation with GT Simulator3.

*3 Simulation with GT Simulator3 is not supported for projects created in GX Works2 when the applicable PLC is specified.
Create a project for the MELSEC-Q series in GX Works2, and perform a simulation with GT Simulator3.

*4 To monitor the module, a SIL2 function module and a redundant function module are required.

*5 Simulation with GT Simulator3 is not supported for projects created in GX Works2 when the applicable PLC is specified.
Create a project for the Q03UDCPU in GX Works2, and perform a simulation with GT Simulator3.

*6 In GX Works2, a project cannot be created when the applicable PLC is specified.
Create a project for the MELSEC-Q in GX Works2, and perform a simulation with GT Simulator3.

Mitsubishi Electric products

The following shows Mitsubishi Electric products that can be monitored with GT Simulator3.

Type		Model			
MELSEC MX Controller		MXF100-8-N32	MXF100-8-P32	MXF100-16-N32	MXF100-16-P32
MELSEC iQ-R series		R00CPU	R01CPU	R02CPU	R04CPU
		R08CPU	R16CPU	R32CPU	R120CPU
		R08PCPU*1	R16PCPU*1	R32PCPU*1	R120PCPU*1
		R08SFCPU	R16SFCPU	R32SFCPU	R120SFCPU
		R08PSFCPU*2	R16PSFCPU*2	R32PSFCPU*2	R120PSFCPU*2
		R04ENCPU*3	R08ENCPU*3	R16ENCPU*3	R32ENCPU*3
		R120ENCPU*3			
		R12CCPU-V*5			
MELSEC iQ-F series		FX5UJ	FX5S		
MELSEC iQ-L series		L04HCPU	L08HCPU	L16HCPU	L32HCPU
MELSEC-Q series (Q mode)		Q02HCPU	Q06HCPU	Q12HCPU	Q25HCPU
		Q02PHCPU	Q06PHCPU	Q12PHCPU	Q25PHCPU
		Q12PRHCPU	Q25PRHCPU		
		Q00UJCPU	Q00UCPU	Q01UCPU	Q02UCPU
		Q03UDCPU	Q04UDHCPU	Q06UDHCPU	Q10UDHCPU
		Q13UDHCPU	Q20UDHCPU	Q26UDHCPU	
		Q03UDECPU	Q04UDEHCPU	Q06UDEHCPU	Q10UDEHCPU
		Q13UDEHCPU	Q20UDEHCPU	Q26UDEHCPU	Q50UDEHCPU
		Q100UDEHCPU			
		Q03UDVCPU	Q04UDVCPU	Q06UDVCPU	Q13UDVCPU
		Q26UDVCPU			
MELSEC-L series		L02CPU	L06CPU	L26CPU	L26CPU-BT
		L02CPU-P	L06CPU-P	L26CPU-P	L26CPU-PBT
		L02SCPU	L02SCPU-P		
MELSEC-F series		FX3G	FX3GC	FX3S	
		FX3GE			
MELSEC-A series*8		A2UCPU	A2UCPU-S1	A3UCPU	A4UCPU
		A2ACPU	A2ACPUP21	A2ACPUR21	A2ACPU-S1
		A2ACPUP21-S1	A2ACPUR21-S1	A3ACPU	A3ACPUP21
		A3ACPUR21	A1NCPU	A1NCPUP21	A1NCPUR21
		A2NCPU	A2NCPUP21	A2NCPUR21	A2NCPU-S1
		A2NCPUP21-S1	A2NCPUR21-S1	A3NCPU	A3NCPUP21
		A3NCPUR21	A2USCPU	A2USCPU-S1	A2USHCPU-S1
		A1SCPU	A1SCPUC24-R2	A1SHCPU	A2ASCPU
		A2ASCPU-S1	A2ASCPU-S60	A2SCPU	A2SCPU-S1
		A2SHCPU	A2SHCPU-S1	A1SJCPU	A1SJCPU-S3
		A1SJHCPU	A0J2CPU	A0J2CPUP23	A0J2CPUR23
		A0J2CPU	A0J2HCPU	A0J2HCPUP21	A0J2HCPUR21
		A0J2HCPU-DC24	A2CCPU-P21	A2CCPU-R21	A2CCPUC24
		A2CCPUC24-PRF	A2CJCPU	A2CJCPU-S3	A1FXCPU
Motion CPU	MELSEC iQ-R series	R16MTCPU	R32MTCPU	R64MTCPU	
	MELSEC-Q series	Q172DSCPU	Q173DSCPU		
		Q170MCPU*4	Q170MSCPU*4	Q170MSCPU-S1*4	
	MELSEC-A series	A273UCPU	A273UHCPU	A273UHCPU-S3	A373UCPU
		A373UCPU-S3	A171SCPU	A171SCPU-S3	A171SCPU-S3N
		A171SHCPU	A171SHCPUN	A172SHCPU	A172SHCPUN
		A173UHCPU	A173UHCPU-S1		
CNC	CNC C80	R16NCCPU-S1*5			
	CNC C70	Q173NCCPU*7			

Type	Model			
Robot controller	CR800-R (R16RTCPU)*5	CRnQ-700 (Q172DRCPU)*6	CR800-Q (Q172DSRCPU)*6	
CC-Link IE Field Network head unit	RJ72GF15-T2	LJ72GF15-T2		

*1 The MELSEC redundant system is configurable by mounting the redundant function module (R6RFM).
*2 To monitor the module, a SIL2 function module and a redundant function module are required.
*3 The multiple CPU system cannot be monitored.
*4 The model can be connected only to the PLC CPU area (CPU No. 1).
*5 Monitor the module via a MELSEC iQ-R in the multiple CPU system.
*6 Monitor the module via a MELSEC-Q in the multiple CPU system.
*7 Perform a simulation as the MELSEC iQ-R series (general CPU).
*8 Perform a simulation as the MELSEC-Q series.

7.1.4 Monitoring-supported channels

If the project data supports multiple channels, only channel 1 can be monitored.

The other channels are ignored.

To monitor a device on a channel other than channel 1, select [Search/Replace] → [Batch Edit] → [CH No.] from the menu and set channel 1 for the debug target channel in GT Designer3.

Ex.

When channel 1 and 2 are used and channel 2 is to be monitored

1. Change channel 1 to channel 3 in a batch.
2. Change channel 2 to channel 1 in a batch.

For the batch edit of the channels, refer to the following.

☞ Page 147 Changing the set values collectively (Batch Edit)

7.1.5 Device range for monitoring

☞ Page 359 When connected to the controller simulator
☞ Page 359 When connected to Mitsubishi Electric products

When connected to the controller simulator

The devices that can be monitored with GT Simulator3 when the GOT is connected to the controller simulator are shown below.

For the PLCs that can be monitored with GT Simulator3, refer to the following.

☞ Page 353 Monitoring-supported controllers

■Mitsubishi Electric products

Devices that satisfy all of the following conditions can be monitored.

Condition	Reference
Devices supported by the controller simulator	📖GX Works3 Operating Manual 📖GX Works2 Version □ Operating Manual (Common) 📖MT Developer2 Help
Devices that can be monitored by the GOT (The timer setting (TS) and counter setting (CS) of the Mitsubishi Electric PLC are excluded.)	☞ Page 3128 Device range and settings of Mitsubishi Electric equipment

When connected to Mitsubishi Electric products

GT Simulator3 can monitor the devices that are monitored by the GOT.

For the devices that can be monitored with the GOT, refer to the following.

☞ Page 3128 Device range and settings of Mitsubishi Electric equipment

For the PLC CPUs that can be monitored with GT Simulator3, refer to the following.

☞ Page 353 Monitoring-supported controllers

7.1.6 Simulation-supported/unsupported functions

GT37 SoftGOT3000

The following shows the functions that are compatible and incompatible with simulation with GT Simulator3.

☞ Page 360 Figures and objects
☞ Page 361 Functions running in the background
☞ Page 361 Functions used with peripheral devices
☞ Page 362 Common functions for screen display/control and other relevant/extended functions
☞ Page 363 Utility function

Figures and objects

○: Supported, —: Unsupported

Function	Simulation support	
	GT37	GT SoftGOT3000
Figure	○	○
Logo text	○	○
Touch switch	○	○
Lamp	○	○
Numerical display	○	○
Numerical input	○	○
Text display	○	○
Text input	○	○
Key window	○	○
Date display, time display	○	○
Comment display	○	○
Parts display	○	○
Historical data list display	○	○
Simple alarm display	○	○
System alarm display	○	○
Alarm display (user)	○	○
Alarm display (system)	○	○
Recipe display (record list)	○	○
Line graph	○	○
Trend graph	○	○
Bar graph	○	○
Band graph	○	○
Pie graph	○	○
Scatter graph	○	○
Historical trend graph	○	○
Graphical meter	○	○
Level	○	○
Panel meter	○	○
Slider	○	○
Document display	○	○
Script parts	○	○
Frame animation	○	○
Hyperlink	—	—

Precautions

- When [Real] is set for [Format] in [Numerical Display], if the specified device stores an invalid value, GT Simulator3 displays that value (the GOT displays [non]).

Functions running in the background

○: Supported, —: Unsupported

Function	Simulation support	
	GT37	GT SoftGOT3000
Logging	○	○
Operation log	○	○
Recipe	○	○
Device data transfer	○	○
Trigger action	○	○
Time action	○	○
System information	○	○
Hard copy	○	○
Project/screen script	○	○
Object script	○	○

Precautions

• The following hard copy functions do not support simulation.

◇[Invert]

◇[Writing Notification Device]

◇[Take a hard copy of a screen other than the displayed monitor screen]

◇Output to a PDF file

◇System information about the hard copy function

• The data cannot be output directly using the hard copy function or other methods.

Data will be output to a file (TXT, CSV, or BMP format) on the hard disk of the personal computer. Output the file to a printer.

☞ Page 365 For functions involving data saving into a data storage

• The system alarm is not displayed when the hard copy is executed.

Functions used with peripheral devices

○: Supported, —: Unsupported

Function	Simulation support	
	GT37	GT SoftGOT3000
Barcode function	—	—
RFID function	—	—
GOT Mobile function	—	—
Remote personal computer operation function (Ethernet)	—	—
VNC server function	—	—
Digital image input/recording function	—	—
Video output function	—	—
Sound output function	○	○
External I/O function	—	—
Operation panel function	—	○
Server function, client function	—	—
Mail send function	—	—
FTP server function	—	—
File transfer function (FTP transfer)	—	—
File transfer function (GOT internal transfer)	—	—
USB mouse/keyboard function	○	○
Web browser function	—	—
Contactless tag function	—	—
OPC UA server function	—	—
VPN connection function	—	—

Precautions

• The sound output function is executed with the sound function (sound card) or speaker of the personal computer.
If the personal computer to be used cannot output sound, the sound output function is unavailable.
• If you mute GT Simulator3 in Windows sound settings, GT Simulator3 is automatically unmuted at its startup.
However, if you mute all sounds on Windows, GT Simulator3 remains mute.

Common functions for screen display/control and other relevant/extended functions

○: Supported, —: Unsupported

Function	Simulation support	
	GT37	GT SoftGOT3000
Base screen	○	○
Overlap window	○	○
Superimpose window	○	○
Dialog window	○	○
Mobile screen	—	—
Key window	○	○
Screen switching	○	○
System language switching	○	○
User language switching	○	○
Monitoring of the labels or tags set to the monitored device	○	○
FA transparent	—	—
Multi-channel function	—	—
Station number switching	○	○
Buffer memory unit number switching	○	○
CPU number switching	○	○
Module number switching (indirect specification with a GD device)	○	○
Servo axis switching (indirect specification with a GD device)	○	○
Offset	○	○
Startup logo	○	○
Screen gesture	—	—
IP filter function	—	—
Vertical display	○	—
Kana-Kanji/Pinyin conversion	○	○
SoftGOT-GOT link	—	—
Backup/restoration	—	—
GOT network interaction function	—	—
Transition to the utility	○	○
Level authentication	○	○
Operator authentication (mode 1)*1	○	○
Device monitor	—	—
Sequence program monitor	—	—
iQSS utility	—	—

*1 In GT Simulator3, operation is fixed to that in security mode 1 regardless of the project data settings.

Precautions

• If you forget the administrator password for operator authentication, delete the operator management information file (OPEPASSINF.G3G) and register all operator management information again.
If you select [Delete operator information at the time of initial simulation] in [Environment Setup] ([Action Setup]) and start GT Simulator3, the operator management information file (OPEPASSINF.G3G) is deleted and a new file is created.

Utility function

○: Supported, —: Unsupported

Function		Simulation support	
		GT37	GT SoftGOT3000
[GOT basic set]	[Display]	○	○
	[Language]	○	○
	[Unique info]	—	—
	[IP address]	—	—
	[IP filter setting]	—	—
	[Operation]	○	○
	[Utility call key]	○	○
	[USB device/host]	—	—
	[Time]	—	—
	[Controller]	—	—
	[Ethernet]	—	—
	[Transparent mode]	—	—
	[GOT internal device monitor]	—	—
	[Security]	○	○
	[Operator authentication management]	○	○
	[Opr authn. Password change]	○	○
	[Brightness adjustment]	—	—
[Add-on setting]	[SoftGOT-GOT link function]	—	—
	[VNC server function]	—	—
	[Seq. program monitor]	—	—
	[Backup restoration]	—	—
	[License]	—	—
	[System launcher]	—	—
	[iQSS utility]	—	—
	[File transfer]	—	—
	[Mail]	—	—
	[Web browser function]	—	—
	[ANDON connection]	—	—
	[VPN connection function]	—	—
	[Contactless tag function]	—	—
[Maintenance]	[Batch Self Check]	—	—
	[USB device management]	—	—
	[Screen cleaning]	—	—
	[Touch panel]	—	—
	[System alarm]	○	○
	[Drawing check]	—	—
	[Font check]	—	—
	[Touch panel check]	—	—
	[I/O check]	—	—
	[Ethernet status check]	—	—
	[GOT information]	—	—
	[GOT Mobile Information]	—	—

Function		Simulation support	
		GT37	GT SoftGOT3000
[Monitor]	[System launcher]	—	—
	[Seq. program monitor(Q/L Ladder)]	—	—
	[Seq. program mon.(iQ-R/iQ-L Ladder)]	—	—
	[Seq. program mon.(iQ-F Ladder)]	—	—
	[R Motion monitor]	—	—
	[Network status display]	—	—
	[iQSS utility]	—	—
	[CC-Link IE diagnostics]	—	—
[Data mng.]	[File manager]	—	—
	[Image file management]	○	○
	[Recipe information]	○	○
	[Logging information]	○	○
	[Operation log information]	○	○
	[Alarm information]	○	○
	[Package management]	○*1	○*1
	[Backup/Restore Function]	—	—
	[NVRAM management]	○*2	○*2
	[Memory card format]	—	—
	[Memory check]	—	—
	[GOT data pkg. acquisition]	—	—
	[Full GOT reset]	—	—
	[Certificate management]	—	—

*1 [Delete all labels] and [Sort out labels] are supported.

*2 [Initialize all] and [Initialize selected area] are supported.

7.1.7 Destination to save data

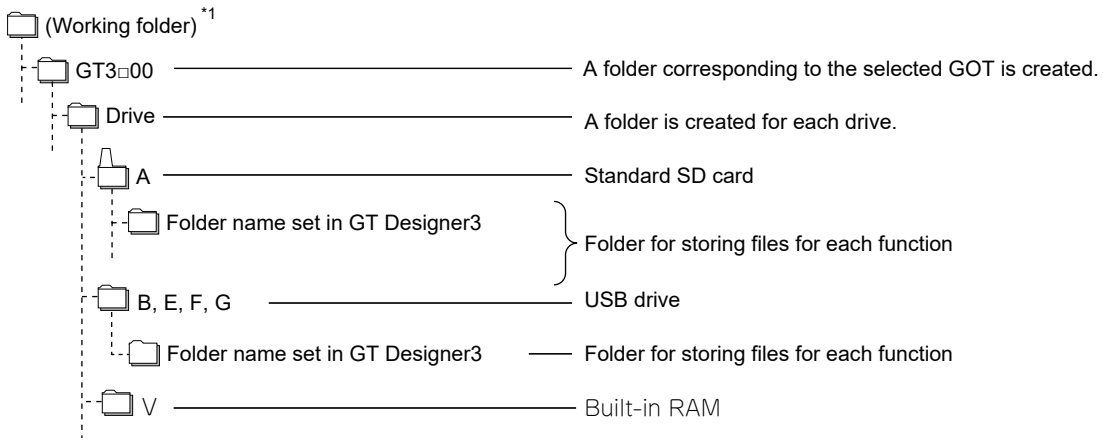
GT Simulator3 uses the folders on the hard drive of the personal computer as virtual drives.

☞ Page 365 For functions involving data saving into a data storage
☞ Page 366 For functions requiring the user to save data into a data storage
☞ Page 366 Working folder

For functions involving data saving into a data storage

When a data storage is specified to save files for functions including object functions and add-on functions, data is saved onto the hard drive of the personal computer.

Files of functions are stored in the following folders.



The drive unavailable to the simulation target GOT is not usable.

*1 For the working folder, refer to the following.
☞ Page 366 Working folder

Precautions

To store image files in drive V and use them for parts displays, satisfy all the following conditions.

- Store the image files directly under drive V using the FTP server function or other Windows-supported functions.
- Use IMG1.jpg, IMG2.jpg, IMG3.jpg, and IMG4.jpg only for the file name and extension.
- Do not store any file other than IMG1.jpg, IMG2.jpg, IMG3.jpg, and IMG4.jpg.
- Limit the total file size to less than 8 MB.

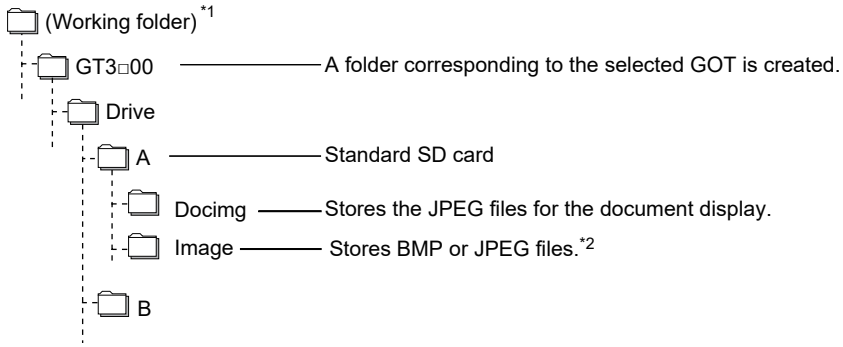
The files in drive V are deleted when a simulation is started, refreshed, or ended.

For functions requiring the user to save data into a data storage

When registering BMP files, JPEG files, or PNG files used as parts or data for document display, save them in the hard disk of the personal computer.

Store each data in the following (user-created) folders.

The drive to be used depends on the specifications and settings of the object.



*1 For the working folder, refer to the following.
☞ Page 366 Working folder

*2 You can change the file name.
For instructions on how to use BMP files or JPEG files, refer to the following.
☞ Page 816 How to use parts ([Parts])

Working folder

The working folder is located below.

```
Users\(user name)\AppData\Local\MITSUBISHI\GSS3_3000
```

To display the following hidden folders, configure the setting in Windows.

Users\(user name)\AppData\Local

7.1.8 Clock specifications

The clock display during simulation with GT Simulator3 uses the data of the personal computer (the GOT reads the clock data from the PLC CPU).

[Adjust for daylight saving time automatically] on the personal computer is not applicable. Do not enable this setting.

7.1.9 Precautions

The following shows the precautions for using GT Simulator3.

Screen save function

The screen is displayed even in screen save mode during simulation with GT Simulator3.

When the Forced Screen Saver Enable signal (System signal 1-1.b1) is turned on, the GOT enters screen save mode and key input is disabled.

When the Forced Screen Saver Enable signal (System signal 1-1.b1) is turned off, key input is enabled.

If you perform input operation with the mouse or keyboard or others in screen save mode, the first input will cancel the mode.

For details on the system signal, refer to the following.

☞ Page 577 System signal 1-1

The automatic screen save function is not available.

When using project data that involve file saving

Make sure that your personal computer has enough hard disk space, and delete output files as necessary.

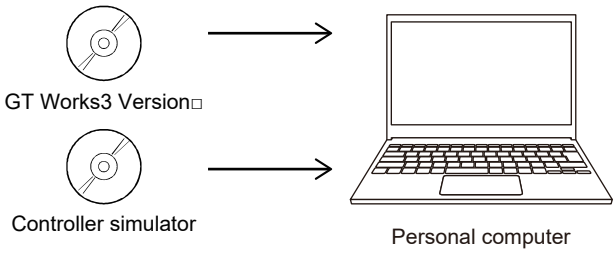
The output files will not be deleted automatically even upon exit from GT Simulator3.

7.2 Connecting

GT37 SoftGOT3000

☞ Page 367 Connecting with the controller simulators
☞ Page 368 Connecting with Mitsubishi Electric products

7.2.1 Connecting with the controller simulators



Install a controller simulator to be connected.

Controller simulator to be connected	Required software
GX Simulator3	GX Works3 For the installation method, refer to the following. GX Works3 Installation Instructions
GX Simulator2	GX Works2 For the installation method, refer to the following. GX Works2 Installation Instructions
MT Simulator2	GX Works2 MT Developer2 GT Simulator3 monitors MT Simulator2 as another module of one station of GX Simulator2. To monitor MT Simulator2, GX Simulator2 is also required. For the installation method, refer to the following. GX Works2 Installation Instructions MELSOFT MT Works2 Installation Instructions
MELSOFT Mirror	MELSOFT Mirror

7.2.2 Connecting with Mitsubishi Electric products

GT37 SoftGOT3000

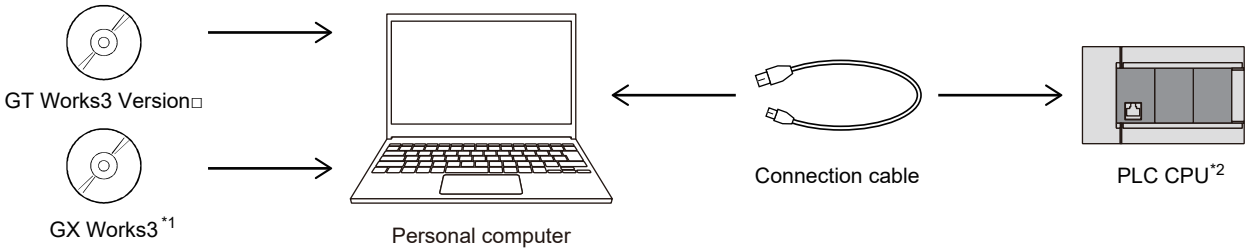
☞ Page 368 Connecting with MELSEC MX Controller
☞ Page 369 Connecting with MELSEC iQ-R or Motion CPU (MELSEC iQ-R series)
☞ Page 369 Connecting with MELSEC iQ-F series
☞ Page 370 Connecting with MELSEC iQ- L series
☞ Page 370 Connecting with MELSEC-Q series or Motion CPU (MELSEC-Q series)
☞ Page 371 Connecting with MELSEC-L series
☞ Page 371 Connecting with MELSEC-F series
☞ Page 373 Connecting with MELSEC-A series or Motion CPU (MELSEC-A series)
☞ Page 374 Connecting with CC-Link IE Field Network head module

The access range when connecting to each controller from GT Simulator3 is the same as when connecting from GT SoftGOT3000.

For details, refer to the following.

GOT3000 Series User's Manual (Connection)

Connecting with MELSEC MX Controller



*1 For information on how to install GX Works3, refer to the following manual.
GX Works3 Installation Instructions

*2 For the PLCs that can be monitored with GT Simulator3, refer to the following.
☞ Page 358 Mitsubishi Electric products

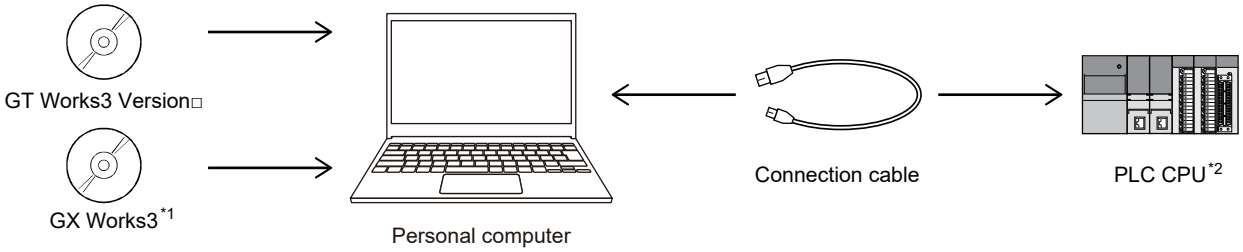
■Connection cable

The following shows the cables validated by Mitsubishi Electric Corporation.

The adapter FX5-232ADP (manufactured by Mitsubishi Electric Corporation) is required for the direct RS-232 connection.

Manufacturer	Model	Interface type	
		Personal computer	Controller
Mitsubishi Electric RS-232 cable	GT01-C30R2-9S (3 m)	DSUB9P	DSUB9P

Connecting with MELSEC iQ-R or Motion CPU (MELSEC iQ-R series)



*1 For information on how to install GX Works3, refer to the following manual.
GX Works3 Installation Instructions

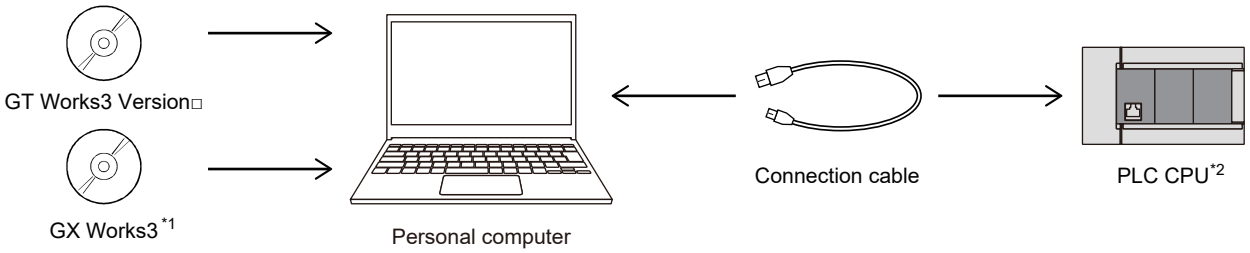
*2 For the PLCs that can be monitored with GT Simulator3, refer to the following.
Page 358 Mitsubishi Electric products

■Connection cable

The following shows the cables validated by Mitsubishi Electric Corporation.

Manufacturer	Model	Interface type	
		Personal computer	Controller
Mitsubishi Electric USB cable	MR-J3USBCBL3M (3 m)	USB Type-A	USB Mini-B
Mitsubishi Electric System & Service USB cable	GT09-C30USB-5P (3 m)	USB Type-A	USB Mini-B

Connecting with MELSEC iQ-F series



*1 For information on how to install GX Works3, refer to the following manual.
GX Works3 Installation Instructions

*2 For the PLCs that can be monitored with GT Simulator3, refer to the following.
Page 358 Mitsubishi Electric products

The following shows the cables validated by Mitsubishi Electric Corporation.

Page 369 Connection using a USB cable

Page 369 Connection using an RS-232 cable

■Connection using a USB cable

Manufacturer	Model	Interface type	
		Personal computer	Controller
Mitsubishi Electric Corporation	MR-J3USBCBL3M (3 m)	USB Type-A	USB Mini-B
Mitsubishi Electric System & Service	GT09-C30USB-5P (3 m)	USB Type-A	USB Mini-B

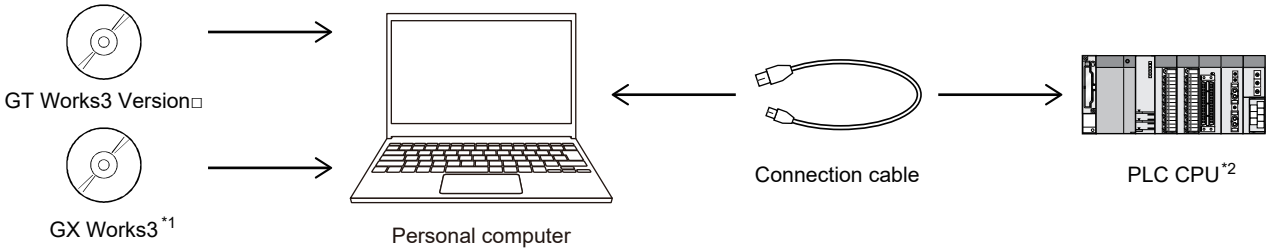
■Connection using an RS-232 cable

Manufacturer	Model	Interface type	
		Personal computer	Controller
Mitsubishi Electric Corporation	GT01-C30R2-9S (3 m)	DSUB9P	DSUB9P

The above-mentioned cables can be used for the following connection types.

Series	Function extension board	Special adapter
FX5U	FX5-232-BD	—
FX5U FX5UC FX5UJ	—	FX5-232ADP

Connecting with MELSEC iQ- L series



*1 For information on how to install GX Works3, refer to the following manual.
GX Works3 Installation Instructions

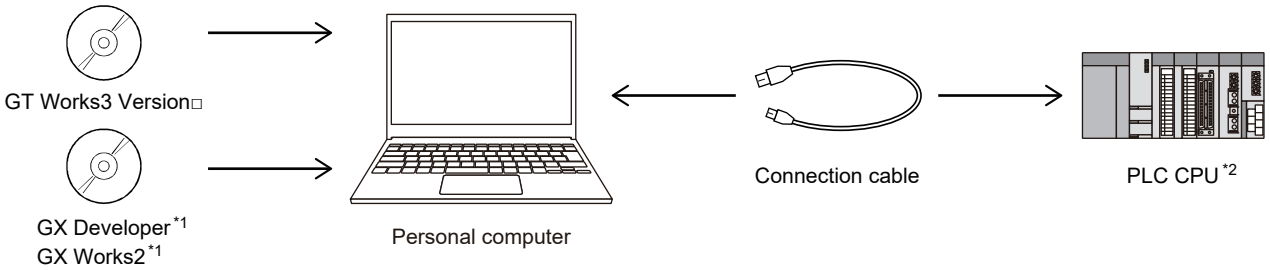
*2 For the PLCs that can be monitored with GT Simulator3, refer to the following.
Page 358 Mitsubishi Electric products

■Connection cable

The following shows the cables validated by Mitsubishi Electric Corporation.

Manufacturer	Model	Interface type	
		Personal computer	Controller
Mitsubishi Electric USB cable	MR-J3USBCBL3M (3 m)	USB Type-A	USB Mini-B
Mitsubishi Electric System & Service USB cable	GT09-C30USB-5P (3 m)	USB Type-A	USB Mini-B

Connecting with MELSEC-Q series or Motion CPU (MELSEC-Q series)



*1 For information on how to install GX Developer or GX Works2, refer to the following.
GX Developer Version□ Operating Manual (Startup)
GX Works2 Installation Instructions

*2 For the PLCs that can be monitored with GT Simulator3, refer to the following.
Page 358 Mitsubishi Electric products

The following shows the cables validated by Mitsubishi Electric Corporation.

Page 370 Connection using a USB cable

Page 370 Connection using an RS-232 cable

■Connection using a USB cable

The following shows the cables validated by Mitsubishi Electric Corporation.

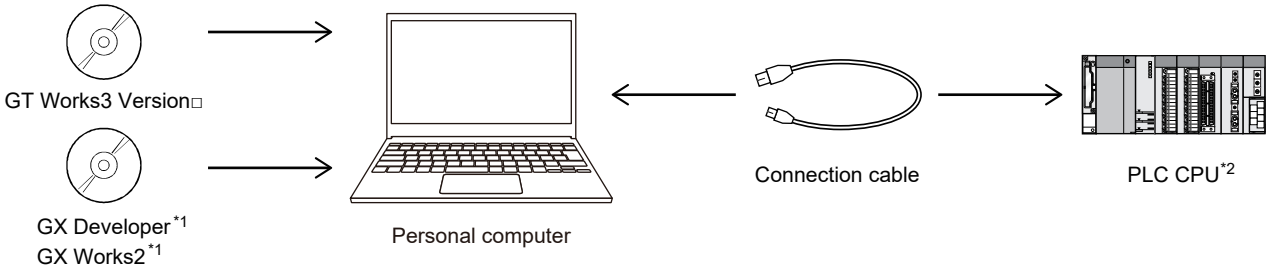
Manufacturer	Model	Interface type	
		Personal computer	Controller
Mitsubishi Electric Corporation	MR-J3USBCBL3M (3 m)	USB Type-A	USB Mini-B
Mitsubishi Electric System & Service	GT09-C30USB-5P (3 m)	USB Type-A	USB Mini-B

■Connection using an RS-232 cable

The following shows the cables validated by Mitsubishi Electric Corporation.

Manufacturer	Model	Interface type	
		Personal computer	Controller
Mitsubishi Electric System & Service	GT01-C30R2-6P (3 m)	DSUB9P	Mini-DIN6P

Connecting with MELSEC-L series



*1 For information on how to install GX Developer or GX Simulator2, refer to the following.
GX Developer Version□ Operating Manual (Startup)
GX Works2 Installation Instructions

*2 For the PLCs that can be monitored with GT Simulator3, refer to the following.
Page 358 Mitsubishi Electric products

The following shows the cables validated by Mitsubishi Electric Corporation.

Page 371 Connection using a USB cable

Page 371 Connection using an RS-232 cable

■Connection using a USB cable

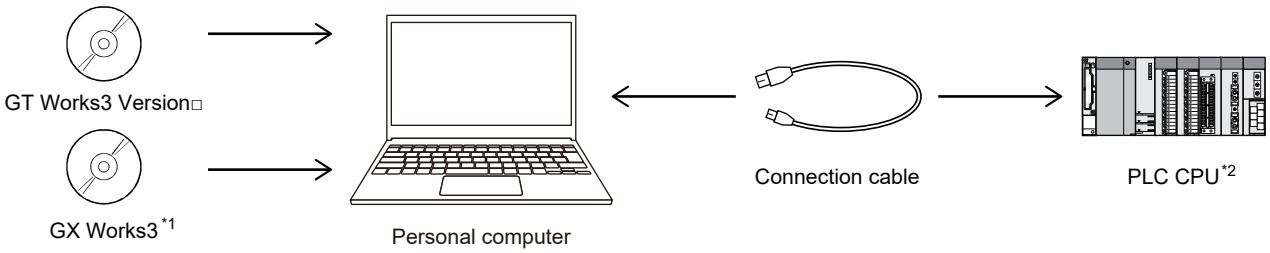
Manufacturer	Model	Interface type	
		Personal computer	Controller
Mitsubishi Electric Corporation	MR-J3USBCBL3M (3 m)	USB Type-A	USB Mini-B
Mitsubishi Electric System & Service	GT09-C30USB-5P (3 m)	USB Type-A	USB Mini-B

■Connection using an RS-232 cable

The adapter L6ADP-R2 (manufactured by Mitsubishi Electric Corporation) is required for the direct RS-232 connection.

Manufacturer	Model	Interface type	
		Personal computer	Controller
Mitsubishi Electric System & Service	GT01-C30R2-6P (3 m)	DSUB9P	Mini-DIN6P

Connecting with MELSEC-F series



*1 For information on how to install GX Developer or GX Simulator2, refer to the following.
GX Developer Version□ Operating Manual (Startup)
GX Works2 Installation Instructions

*2 For the PLCs that can be monitored with GT Simulator3, refer to the following.
Page 359 Mitsubishi Electric products

The following shows the cables validated by Mitsubishi Electric Corporation.

Page 372 Connection using a USB cable

Page 372 Connection using an RS-232 cable

Page 373 Connection using a USB cable, a USB/RS-422 converter, and an RS-422 cable

Page 373 Connection using a USB cable, a USB communication board, and a USB cable

Page 373 Connection using a Mitsubishi Electric RS-232 cable, an RS-232/RS-422 converter, and an RS-422 cable

■Connection using a USB cable

The following cables can be used when connecting via the built-in USB port of the FX3G, FX3GC, or FX3S series.

Manufacturer	Model	Interface type	
		Personal computer	Controller
Mitsubishi Electric Corporation	MR-J3USBCBL3M (3 m)	USB Type-A	USB Mini-B
Mitsubishi Electric System & Service	GT09-C30USB-5P (3 m)	USB Type-A	USB Mini-B

■Connection using an RS-232 cable

The following cables can be used when connecting to the MELSEC-F series function expansion board or special adapter.

Manufacturer	Model	Interface type	
		Personal computer	Controller
Mitsubishi Electric Corporation	GT01-C30R2-9S (3 m)	DSUB9P	DSUB9P
	GT01-C30R2-25P (3 m)	DSUB9P	DSUB25P

The above-mentioned cables can be used for the following connection types.

Interface type of personal computer	Series	Function extension board	Special adapter	RS-232 cable
DSUB9P	FX3U FX3UC series (FX3UC-□□-LT)	FX3U-232-BD	—	GT01-C30R2-9S
		FX3U-***-BD	FX3U-232ADP	
	FX3UC	—	FX3U-232ADP	
	FX3S	FX3G-232-BD	—	
		—	FX3S-CNV-ADP+FX3U-232ADP	
	FX3G FX3GA	FX3G-232-BD	—	
		FX3G-CNV-BD	FX3U-232ADP	
	FX3GC	—	FX3U-232ADP	
	FX3GE	FX3G-232-BD	—	
		—	FX3U-232ADP	
	FX2N	FX2N-232-BD	—	
		FX2N-CNV-BD	FX2NC-232ADP	
		FX2N-CNV-BD	FX0N-232ADP	GT01-C30R2-25P
	FX1NC FX2NC	—	FX0N-232ADP	GT01-C30R2-9S
		—	FX2NC-232ADP	
	FX1S, FX1N	FX1N-CNV-BD	FX2NC-232ADP	
		FX1N-232-BD	—	
		FX1N-CNV-BD	FX0N-232ADP	GT01-C30R2-25P
DSUB25P	FX3U FX3UC series (FX3UC-□□-LT)	FX3U-232-BD	—	GT01-C30R2-25P
		FX3U-***-BD *** is replaced with 232, 485, 422, USB, or CNV.	FX3U-232ADP	
	FX3UC	—	FX3U-232ADP	
	FX3S	FX3G-232-BD	—	
		—	FX3S-CNV-ADP+FX3U-232ADP	
	FX3G FX3GA	FX3G-232-BD	—	
		FX3G-CNV-BD	FX3U-232ADP	
	FX3GC	—	FX3U-232ADP	
	FX3GE	FX3G-232-BD	—	
		—	FX3U-232ADP	
	FX2N	FX2N-232-BD	—	
		FX2N-CNV-BD	FX2NC-232ADP	
	FX1NC FX2NC	—	FX2NC-232ADP	
	FX1S FX1N	FX1N-232-BD	—	
		FX1N-CNV-BD	FX2NC-232ADP	

■Connection using a USB cable, a USB/RS-422 converter, and an RS-422 cable

Personal computer side (USB cable)	USB/RS-422 converter	Controller side (RS-422 cable)
Included with FX-USB-AW	FX-USB-AW	None (Directly connect the FX-USB-AW to the FXCPU.)

■Connection using a USB cable, a USB communication board, and a USB cable

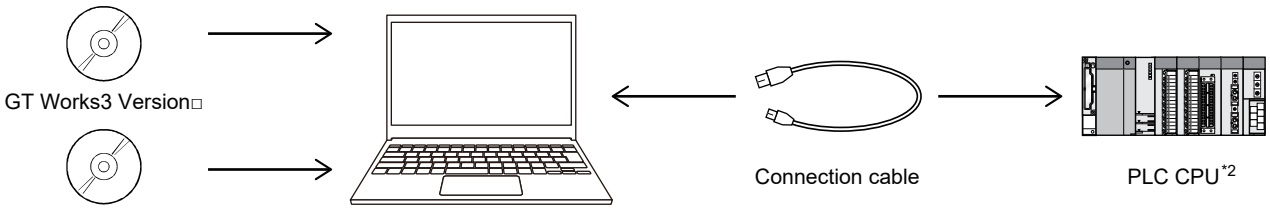
Personal computer side (USB cable)	USB/RS-422 converter	Controller side (USB cable)
Included with FX3U-USB-BD	FX3U-USB-BD (3UC, FX3U only)	None (Install the FX3U-USB-BD to the CPU.)

■Connection using a Mitsubishi Electric RS-232 cable, an RS-232/RS-422 converter, and an RS-422 cable

Personal computer side (RS-232 cable)		RS-232/RS-422 converter	Controller side (RS-422 cable)		
Manufacturer	Model		Manufacturer	Model	
Mitsubishi Electric Corporation	F2-232CAB (3 m) (DSUB25P-DSUB25P)	FX-232AWC-H*1	Mitsubishi Electric Corporation	When connecting with the following FX1, FX2	FX-422CAB (0.3 m) (DSUB25P-DSUB25P)
					FX-422CAB-150 (1.5 m) (DSUB25P–DSUB25P)
	F2-232CAB-1 (3 m)*2 (DSUB9P-DSUB25P)			When connecting with the following FX0, FX0S, FX0N, FX1S, FX1N, FX1NC, FX2N, FX2NC, FX3G(C)(A)(E), FX3U, FX3UC, FX3S	FX-422CAB0 (1.5 m) (DSUB25P-Mini-DIN8P)
	AC30N2A (3 m)*1 (DSUB25P-DSUB25P)				

*1 When connecting the FX3UC or FX3U via the FX-232AWC-H, transmission speeds of 9600, 19200, 38400, 57600, and 115200 bps are available.

Connecting with MELSEC-A series or Motion CPU (MELSEC-A series)



*1 For information on how to install GX Developer or GX Simulator2, refer to the following.
GX Developer Version□ Operating Manual (Startup)
GX Works2 Installation Instructions

*2 For the PLCs that can be monitored with GT Simulator3, refer to the following.
☞ Page 359 Mitsubishi Electric products

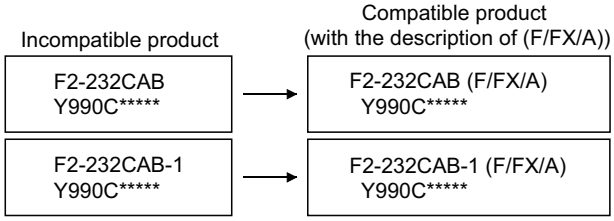
The following shows the cables validated by Mitsubishi Electric Corporation.
☞ Page 374 Connection using an RS-232 cable and an RS-422 cable manufactured by Mitsubishi Electric Corporation

■Connection using an RS-232 cable and an RS-422 cable manufactured by Mitsubishi Electric Corporation

Personal computer side (RS-232 cable)		RS-232/RS-422 converter	Controller side (RS-422 cable)		
Manufacturer	Model		Manufacturer	Model	
Mitsubishi Electric Corporation	F2-232CAB (3 m)*1*2 (DSUB25P-DSUB25P)	FX-232AW FX-232AWC FX-232AWC-H	Mitsubishi Electric Corporation	When connecting with the following MELSEC-A series Motion CPU (MELSEC-A series)	FX-422CAB (0.3 m) (DSUB25P-DSUB25P)
	F2-232CAB-1 (3 m)*2 (DSUB9P-DSUB25P)				FX-422CAB-150 (1.5 m) (DSUB25P–DSUB25P)
	AC30N2A (3 m)*1 (DSUB25P-DSUB25P)				

*1 When using this cable for a DOS/V personal computer, a straight cable for conversion between 9-pin D-sub and 25-pin D-sub is required separately.

*2 To check whether the cable is compatible with the MELSEC-A series, check the model name label on the cable. Incompatible products cannot be used.



Connecting with CC-Link IE Field Network head module

■Connection cable

The following shows the cables validated by Mitsubishi Electric Corporation.

Manufacturer	Model	Interface type	
		Personal computer	Controller
Mitsubishi Electric USB cable	MR-J3USBCBL3M (3 m)	USB Type-A	USB Mini-B
Mitsubishi Electric System & Service USB cable	GT09-C30USB-5P (3 m)	USB Type-A	USB Mini-B

7.3 Simulation procedure

GT37 SoftGOT3000

Simulate the project data being edited in GT Designer3.

☞ Page 375 Connecting with a controller simulator to perform a simulation

☞ Page 378 Connecting with the PLC CPU to perform a simulation

Simulators of different series can be used simultaneously.

7.3.1 Connecting with a controller simulator to perform a simulation

Simulation is executed differently depending on the controller simulator to be connected.

☞ Page 375 When using GX Simulator3

☞ Page 376 When using GX Simulator2 or MT Simulator2

☞ Page 377 When using MELSOFT Mirror

When using GX Simulator3

During the simulation in GT Simulator3, GX Simulator3 is automatically started with the default project, even if the project data of GX Works is not specified.

To perform a simulation on the created GX Works3 project, specify the GX Works3 project file to be used for simulation in [Connection] in GT Simulator3 in advance, and start GX Simulator3 before performing the simulation with GT Simulator3.

For details on GX Simulator3, refer to the following.

GX Works3 Operating Manual

1. Open a project in GT Designer3, and select [Debug/Check] → [Simulator] → [Setting] from the menu.

The [MELSOFT GT Simulator3(3000)] dialog appears.

2. Configure each setting in [Connection].

Setting item	Description
[I/F]	Select [MELSOFT Simulator3].
[Simulator]	Select [GX Simulator3].
[GX Simulator3 Settings]	Configure each setting. When performing a simulation for the project created with GX Works3, specify the GX Works3 project file to be used for simulation with [Project Name]. When the project file is specified, start GX Simulator3 before step 4. If no project is set, GX Simulator3 will start with the default project. ☞ Page 381 Connection and environment settings in GT Simulator3

3. Click the [OK] button in the [MELSOFT GT Simulator3(3000)] dialog.

4. Select [Debug/Check] → [Simulator] → [Activate] from the GT Designer3 menu.

GT Simulator3 starts.

GX Simulator3 starts automatically with the project specified in step 2 and starts a simulation.

When you start GX Simulator3 from GT Simulator3, changes to whether [The window is automatically closed when the operation is completed successfully.] is selected in the [Write to PLC] dialog are not saved.

To retain the selected/deselected status, start GX Simulator3 from GX Works3 and change the setting in the [Write to PLC] dialog.

5. Debug the project in GT Simulator3.

☞ Page 392 Basic operations of GT Simulator3

☞ Page 393 Useful functions of GT Simulator3

6. Correct the project data in GT Designer3 as necessary.

7. When you corrected the project data, select [Debug/Check] → [Simulator] → [Update] from the menu.

The updates are reflected in GT Simulator3.

8. Select [Debug/Check] → [Simulator] → [Exit] from the GT Designer3 menu.

GT Simulator3 exits.

When using GX Simulator2 or MT Simulator2

Perform the following procedure while the GX Simulator2 or MT Simulator2 module of the project specified in step 2 is not running in other applications.

1. Open a project in GT Designer3, and select [Debug/Check] → [Simulator] → [Setting] from the menu.

The [MELSOFT GT Simulator3(3000)] dialog appears.

2. Configure each setting in [Connection].

Setting item	Description
[I/F]	Select [MELSOFT Simulator3].
[Simulator]	Select [GX Simulator2/MT Simulator2].
[GX Simulator2 Settings] [MT Simulator2 Settings]	Configure each setting as necessary. Specify the project to be used for simulation for [Project Name]. ☞ Page 381 Connection and environment settings in GT Simulator3

3. Click the [OK] button in the [MELSOFT GT Simulator3(3000)] dialog.

4. Open project data with GX Works2, and start GX Simulator2.

Also to monitor MT Simulator2, GX Simulator2 must be running.

For details on GX Simulator2, refer to the following.

📖GX Works2 Version1 Operating Manual (Common)

5. Select [Debug/Check] → [Simulator] → [Activate] from the GT Designer3 menu.

GT Simulator3 starts and begins a simulation.

When MT Simulator2 is used, the simulator starts automatically with the project specified in step 2.

6. Debug the project in GT Simulator3.

☞ Page 392 Basic operations of GT Simulator3

☞ Page 393 Useful functions of GT Simulator3

7. Correct the project data in GT Designer3 as necessary.

8. When you corrected the project data, select [Debug/Check] → [Simulator] → [Update] from the menu.

The updates are reflected in GT Simulator3.

9. Select [Debug/Check] → [Simulator] → [Exit] from the GT Designer3 menu.

GT Simulator3 exits.

When using MELSOFT Mirror

1. Start MELSOFT Mirror.

2. Open a project in GT Designer3, and select [Debug/Check] → [Simulator] → [Setting] from the menu.

The [MELSOFT GT Simulator3(3000)] dialog appears.

3. Configure each setting in [Connection].

Setting item	Description
[I/F]	Select [MELSOFT Simulator3].
[Simulator]	Select [MELSOFT Mirror].
[Connection Destination Setting] [Monitor Target Setting] [Detail]	Configure each setting as necessary. ☞ Page 381 Connection and environment settings in GT Simulator3

4. Click the [OK] button in the [MELSOFT GT Simulator3(3000)] dialog.

5. Select [Debug/Check] → [Simulator] → [Activate] from the GT Designer3 menu.

GT Simulator3 starts and begins a simulation.

6. Debug the project in GT Simulator3.

☞ Page 392 Basic operations of GT Simulator3

☞ Page 393 Useful functions of GT Simulator3

7. Correct the project data in GT Designer3 as necessary.

8. When you corrected the project data, select [Debug/Check] → [Simulator] → [Update] from the menu.

The updates are reflected in GT Simulator3.

9. Select [Debug/Check] → [Simulator] → [Exit] from the GT Designer3 menu.

GT Simulator3 exits.

7.3.2 Connecting with the PLC CPU to perform a simulation

The following shows the steps to connect with the PLC CPU and perform a simulation.

1. Connect the personal computer and the PLC CPU.

2. Open a project in GT Designer3, and select [Debug/Check] → [Simulator] → [Setting] from the menu.

The [MELSOFT GT Simulator3(3000)] dialog appears.

3. Configure the basic settings in GT Simulator3 and click the [OK] button.

☞ Page 381 Connection and environment settings in GT Simulator3

4. Power on the PLC CPU.

5. Select [Debug/Check] → [Simulator] → [Activate] from the GT Designer3 menu.

A simulation starts with GT Simulator3.

6. Debug the project in GT Simulator3.

☞ Page 392 Basic operations of GT Simulator3
☞ Page 393 Useful functions of GT Simulator3

7. Correct the project data in GT Designer3 as necessary.

8. When you corrected the project data, select [Debug/Check] → [Simulator] → [Update] from the menu.

The updates are reflected in GT Simulator3.

9. Select [Debug/Check] → [Simulator] → [Exit] from the GT Designer3 menu.

GT Simulator3 exits.

Point

When [USB] is selected for [Connection Method]

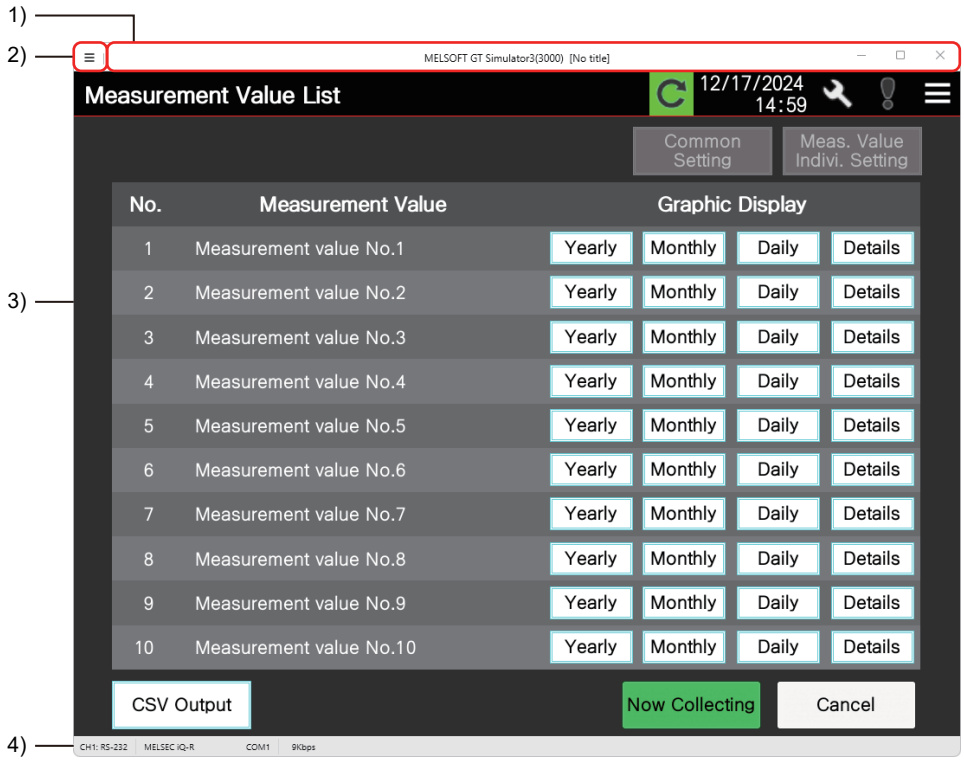
The setting of [Connection] is not retained after GT Designer3 is exited.

The next time you start GT Designer3, set [Connection] according to the connection type.

7.4 Screen layout of GT Simulator3

GT37 SoftGOT3000

This section describes the screen layout.



Item		Description
1)	Title bar	Displays the software name and the project name. The icons to minimize, maximize, and close the screen are also displayed. Select [Debug/Check] → [Simulator] → [Setting] from the GT Designer3 menu to display the [Environment] dialog ([Display]). In [Items displayed in the title bar], select the items to be displayed on the title bar.
2)	Menu button	Clicking this button displays the GT Simulator3 operation menu. ☞ Page 380 Menu
3)	Screen for simulation	Displays the contents of the simulation.
4)	Status bar	Displays the status of GT Simulator3 and the settings in [Controller Setting] (channel number, interface, and model).

7.4.1 Menu

The following shows the menu structure.

Menu items except [Project] can also be executed from the right-click context menu on the simulation screen.

Menu		Description	Shortcut key
[Project]	[Snap Shot]	Saves a screen as a file. (BMP format and JPEG format) ☞ Page 393 Taking snap shots	Ctrl + H
	[Printer Settings]	Set a printer. ☞ Page 394 Configuring the printer settings	—
	[Page Settings]	Adjusts the page layout for printing. ☞ Page 394 Page settings	—
	[Print Preview]	Displays a print preview. ☞ Page 394 Previewing print image	—
	[Print]	Outputs the contents of the settings of the project into a file. ☞ Page 394 Printing	Ctrl + P
[Display]	[Scroll Bar]	Switches display or non-display of a scroll bar. ☞ Page 395 Displaying scroll bars	—
	[Full Screen Mode]	Sets and cancels the full screen mode. ☞ Page 396 Displaying the screen in full screen mode	Alt + F9
[Tool]	[Start or Stop Device Monitor]	Starts or ends the device monitor. ☞ Page 397 Using the device monitor	—
	[Resource Data]	Refer to resource data. ☞ Page 404 Opening resource data files	Ctrl + R
	[Keyboard Input]	Enables or disables the keyboard input. ☞ Page 395 Operating the numerical input or text input with a keyboard	—
[Diagnostics]	[GOT Diagnostics]	Executes GOT diagnostics. ☞ Page 404 Checking the causes and corrective actions for errors (GOT diagnostics)	—
[Help]	[GT Designer3 Help]	Displays GT Designer3 Help.	F1
	[Connection to MITSUBISHI ELECTRIC FA Global Website]	Connects to the MITSUBISHI ELECTRIC FA Global Website.	—
[Exit]		Exits GT Simulator3.	Alt + F4

7.5 Connection and environment settings in GT Simulator3

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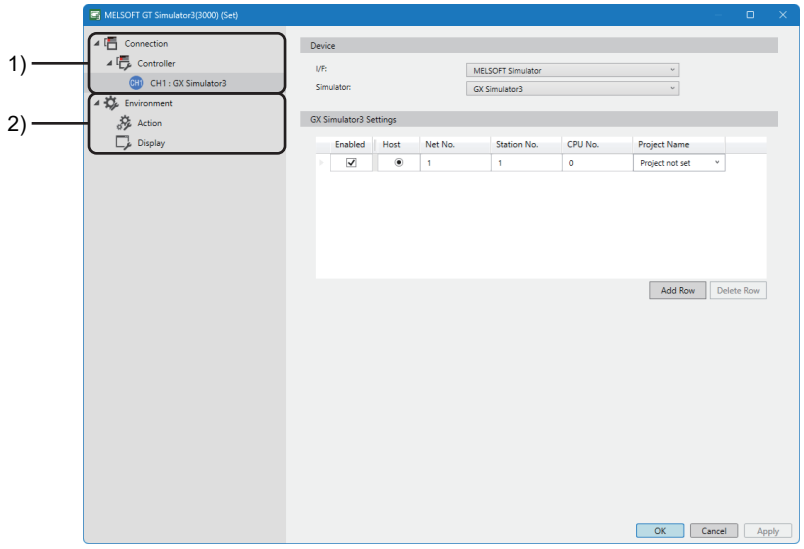
Before using GT Simulator3, configure the connection and environment settings.

1. Select [Debug/Check] → [Simulator] → [Set] from the GT Designer3 menu.

The setting dialog appears.

2. Select the setting category from the setting tree on the left.



Setting		Description
1)	☞ Page 382 [Connection]	Configure the settings for connection with the target controller for simulation.
2)	☞ Page 390 [Environment]	Configure the operation settings and screen display settings to execute GT Simulator3.

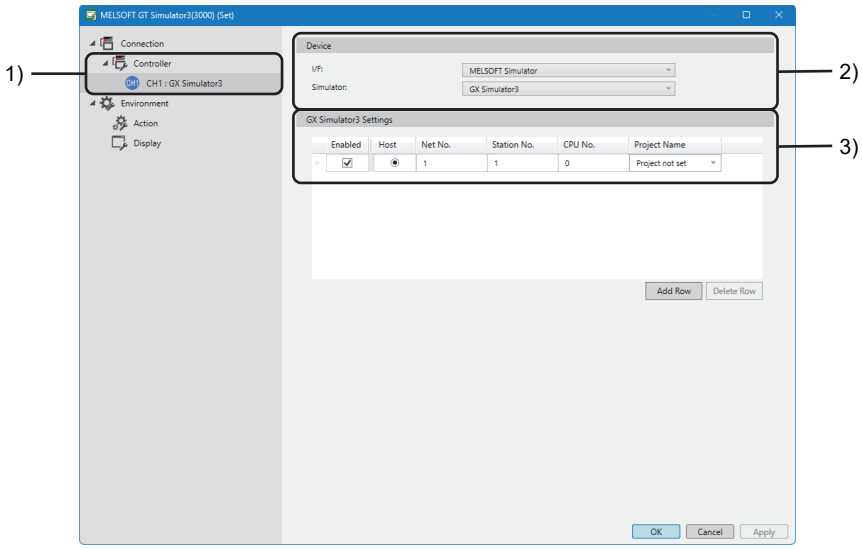
3. Click the [Apply] button to save the settings.

Click the [OK] button to save the settings and close the screen.

PART 4

7.5.1 [Connection]

Configure the settings for connection with the target controller for simulation.



Item			Description
1)	[Controller]		Select the target channel to configure the settings.
2)	[Device]	[I/F]	Specify the method of connection with the controller. • [RS-232] Select this option when connecting with a Mitsubishi Electric PLC via RS-232. • [MELSOFT Simulator] Select this option when connecting with the controller simulator. • [USB] Select this option when connecting with a Mitsubishi Electric PLC via USB. For the settings for [I/F] corresponding to the controller setting in GT Designer3, refer to the following. ☞ Page 383 Settings for [I/F] and the corresponding controller settings in GT Designer3
3)	Advanced settings		Configure the advanced settings according to the settings in [Device]. For details, refer to the following. ☞ Page 384 Advanced settings

Settings for [I/F] and the corresponding controller settings in GT Designer3

The following shows the settings for [I/F] in the simulator and the corresponding controller settings in GT Designer3.

Precautions

If the controller setting of the project data and the controller setting (model) of the simulator are different, the simulation does not start and an error occurs.

■For [MELSOFT Simulator]

Setting of [Simulator]	Controller setting in GT Designer3
[GX Simulator3]	MELSEC-A MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700 MELSEC-L MELSEC iQ-R, RnMT/NC/RT, CR800-D MELSEC iQ-L MELSEC iQ-F MELIPC MELSEC MX Controller
[GX Simulator2/MT Simulator2]	MELSEC-A MELSEC-FX MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700 MELSEC-L MELSEC iQ-R, RnMT/NC/RT, CR800-D MELSEC iQ-L MELSEC iQ-F MELIPC MELSEC MX Controller
[MELSOFT Mirror]	MELSEC-A MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700 MELSEC-L MELSEC iQ-R, RnMT/NC/RT, CR800-D MELSEC iQ-L MELSEC iQ-F MELIPC MELSEC MX Controller

■For [RS-232]

Setting for [Model]	Controller setting in GT Designer3
MELSEC MX Controller	MELSEC MX Controller
MELSEC iQ-F	MELSEC iQ-F
MELSEC-A	MELSEC-A
MELSEC-Q	MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700
MELSEC-FX	MELSEC-FX
MELSEC-L	MELSEC-L

■For [USB]

Setting for [Model]	Controller setting in GT Designer3
MELSEC iQ-R	MELSEC iQ-R, RnMT/NC/RT, CR800-D
MELSEC iQ-L	MELSEC iQ-L
MELSEC iQ-F	MELSEC iQ-F
MELSEC-Q	MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700
MELSEC-L	MELSEC-L
MELSEC-FX	MELSEC-FX

Advanced settings

The advanced settings differ depending on the settings in [Device].

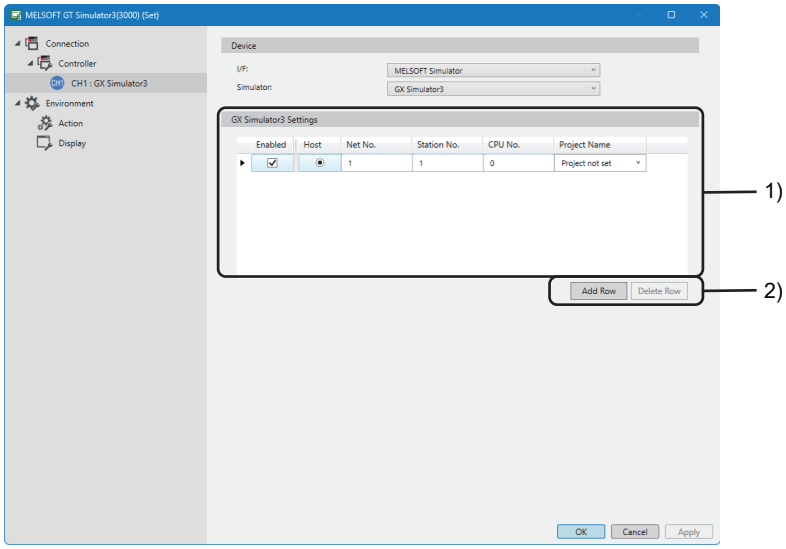
☞ Page 384 Settings when [GX Simulator3] is selected
☞ Page 385 Settings when [GX Simulator2/MT Simulator2] is selected
☞ Page 387 Settings when [MELSOFT Mirror] is selected
☞ Page 388 Settings when [RS-232] is selected
☞ Page 389 Settings when [USB] is selected

■Settings when [GX Simulator3] is selected

When you select [GX Simulator3] for [Simulator] under [Device], configure the settings for connection with GX Simulator3 to be monitored.

Multiple GX Simulator3 modules can be started simultaneously and each of these modules can be treated as a different station or module.

When connection with GX Simulator3 is established, dynamic global labels can be simulated.



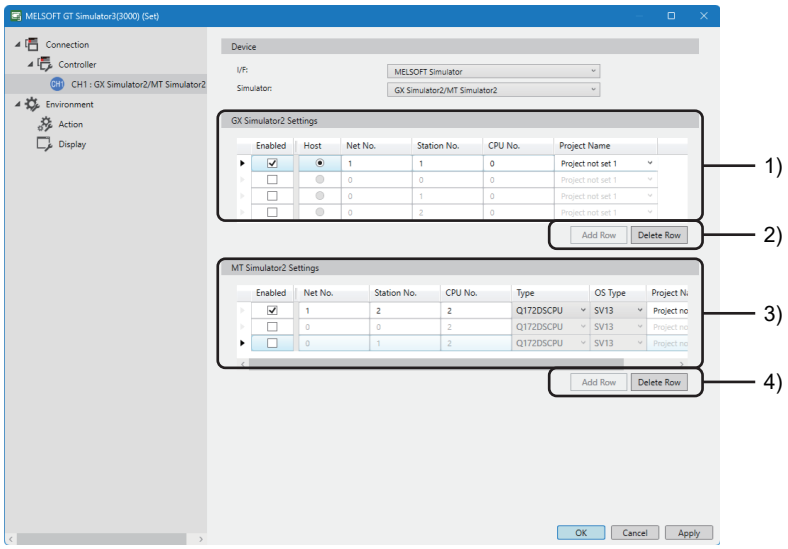
Item			Description
1)	[GX Simulator3 Settings]	-	Set the controller simulator to be monitored. Match the settings with those of [Network] of the device set in the project. When the GOT monitors the device of the host station, the device set in the project does not have the network number and station number settings. [0-FF] is set internally for the device. Set values corresponding to the host station (0-FF) to [Net No.] and [Station No.] according to the system configuration of the monitoring target. For a connection without a network such as serial connection, set [0] to [Net No.] and [255] to [Station No.]. If the following conditions are both satisfied, no applicable station for monitoring exists. The GOT monitors the host station. • A device of other stations is set in the project. • No controller simulator on other stations is set in GT Simulator3.
		Checkbox	Select this to enable the settings.
		[Host]	Set a simulator as the host station.
		[Net No.]	Set a network number. The setting range is [0] to [239].
		[Station No.]	Set a station number. The setting range is [0] to [255].
		[CPU No.]	Set a CPU number. The setting range is [0] to [4].
		[Project Name]	When performing a simulation for the project created with GX Works3, specify the GX Works3 project file to be used for simulation. Specify a project that does not generate errors when starting a simulation with GX Works3. If you set no project, start GX Simulator3 with the default project provided in the GX Simulator3 installation folder "\App\GSS3(3000)".

Item		Description
2)	[Add Row] button	Adds a row for configuring settings. Up to 32 rows can be added.
	[Delete Row] button	Deletes the selected setting row.

■Settings when [GX Simulator2/MT Simulator2] is selected

When you select [GX Simulator2/MT Simulator2] for [Simulator] under [Device], configure the settings for connection with GX Simulator2/MT Simulator2 to be monitored.

Connection with up to four GX Simulator2 modules is possible, and each of these modules can be handled as a different station or module. Connection with up to three MT Simulator2 modules is possible, each of them is handled as a module of one station of GX Simulator2.

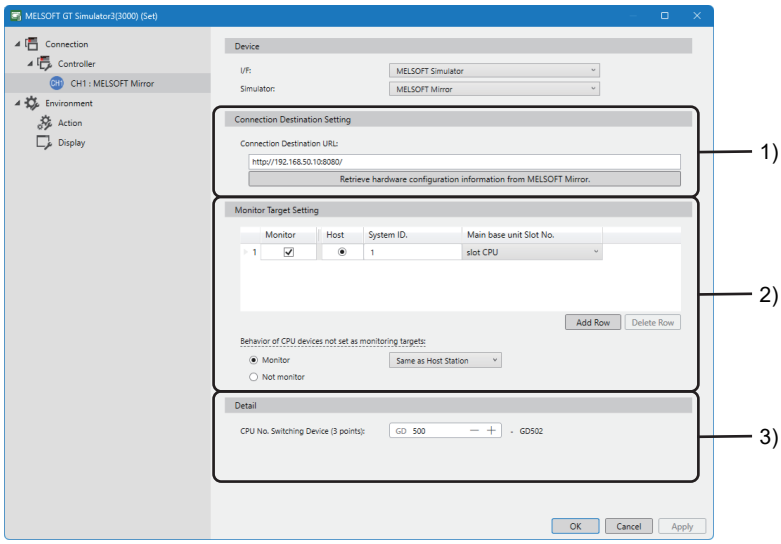


Item			Description
1)	[GX Simulator2 Settings]	-	Set the connection method for GX Simulator2. Set the controller simulator to be monitored. Match the settings with those of [Network] of the device set in the project. When the GOT monitors the device of the host station, the device set in the project does not have the network number and station number settings. [0-FF] is set internally for the device. Set values corresponding to the host station (0-FF) to [Net No.] and [Station No.] according to the system configuration of the monitoring target. For a connection without a network such as serial connection, set [0] to [Net No.] and [255] to [Station No.]. If the following conditions are both satisfied, no applicable station for monitoring exists. The GOT monitors the host station. • A device of other stations is set in the project. • No controller simulator on other stations is set in GT Simulator3.
		Checkbox	Select this to enable the settings.
		[Host]	Set a simulator as the host station.
		[Net No.]	Set a network number. The setting range is [0] to [239].
		[Station No.]	Set a station number. The setting range is [0] to [255].
		[CPU No.]	Set a CPU number. The setting range is [0] to [4].
		[Project Name]	Set the project name for GX Simulator2. The following shows the available project formats. • Workspace format project (*.gd2) • Single file format project (*.GXW)
2)	[Add Row] button		Adds a row for configuring settings. Up to 4 rows can be added.
	[Delete Row] button		Deletes the selected setting row.

Item			Description
3)	[MT Simulator2 Settings]	-	Set the connection method for MT Simulator2. Set the controller simulator to be monitored. Match the settings with those of [Network] of the device set in the project. When the GOT monitors the device of the host station, the device set in the project does not have the network number and station number settings. [0-FF] is set internally for the device. Set values corresponding to the host station (0-FF) to [Net No.] and [Station No.] according to the system configuration of the monitoring target. For a connection without a network such as serial connection, set [0] to [Net No.] and [255] to [Station No.]. If the following conditions are both satisfied, no applicable station for monitoring exists. The GOT monitors the host station. • A device of other stations is set in the project. • No controller simulator on other stations is set in GT Simulator3.
		Checkbox	Select this to enable the settings.
		[Net No.]	Set a network number. The setting range is [0] to [239].
		[Station No.]	Set a station number. The setting range is [0] to [255].
		[CPU No.]	Set a CPU number. The setting range is [2] to [4].
		[Type]	Select the model.
		[OS Type]	Select the OS type.
		[Project Name]	Set the project name for MT Simulator2. The following shows the available project formats. • Workspace format project (*.mt2) • Single file format project (*.MTW)
4)	[Add Row] button		Adds a row for configuring settings. Up to 3 rows can be added.
	[Delete Row] button		Deletes the selected setting row.

■Settings when [MELSOFT Mirror] is selected

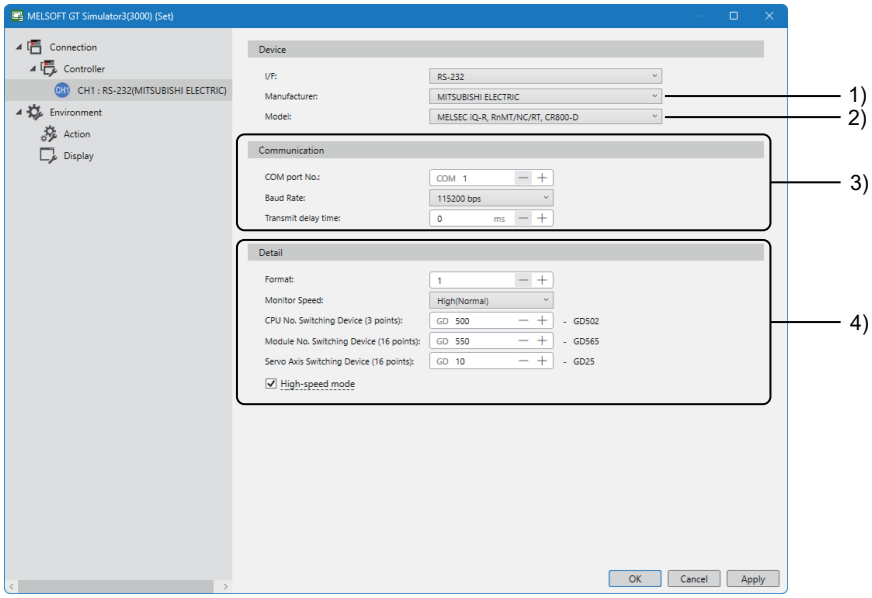
When you select [MELSOFT Mirror] for [Simulator] under [Device], configure the settings for connection with MELSOFT Mirror to be monitored.



Item			Description
1)	[Connection Destination Setting]	[Connection Destination URL]	Specify the URL for connection with the MELSOFT Mirror server. Specify the URL with one-byte alphanumerics and symbols within 2083 characters.
		[Retrieve hardware configuration information from MELSOFT Mirror.]	Acquires the hardware configuration being simulated in MELSOFT Mirror. When this button is pressed, the hardware configuration information of MELSOFT Mirror is displayed in the detail setting table for [Monitor Target Setting].
2)	[Monitor Target Setting]	Detail setting table	Configure the monitoring target settings. • No. Displays the item number. • [Monitor] Select the checkbox when monitoring the network information. • [Host] Select a host station. Only one station can be set. • [System ID.] Set the system ID of the system to be simulated. The setting range is [1] to [59]. • [Main base unit Slot No.] Set the slot number of the CPU module which is set to the main base unit of the system to be simulated with MELSOFT Mirror. The setting range is [slot CPU] or [slot I/O 0] to [slot I/O 6].
		[Add Row] button	Adds a row for configuring settings. Up to 64 rows can be added.
		[Delete Row] button	Deletes the selected setting row.
		[Behavior of CPU devices not set as monitoring targets]	Set the behavior of the CPU devices not targeted for monitoring. • [Monitor] All the CPU devices not targeted for monitoring are monitored. [Same as Host Station] is automatically set and displayed in the same way as the devices of the monitored host station. • [Not monitor] The CPU devices not targeted for monitoring are not monitored.
3)	[Detail]	[CPU No. Switching Device (3 points)]	Set the start device number of the GOT data registers (GD) that specifies the CPU number. The setting range is [0] to [65520]. Specify the value of [CPU No. switching GD device first No. (3 points)] set in the [Controller Setting] window in GT Designer3. If you set a different number, the simulation is not performed properly.

■Settings when [RS-232] is selected

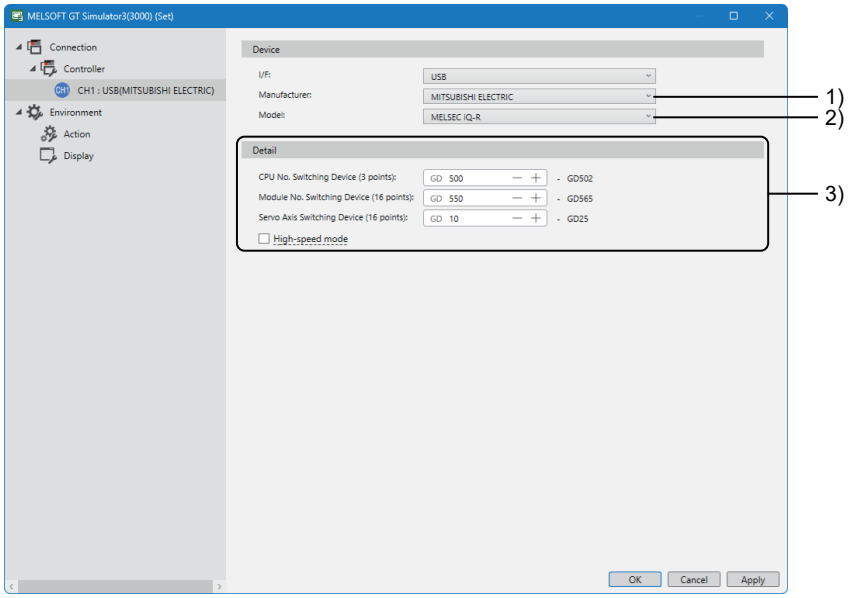
When setting [RS-232] for [I/F] under [Device], configure the settings for connection with the controller.



Item			Description
1)	[Manufacturer]		Fixed to [MITSUBISHI ELECTRIC].
2)	[Model]		Select the model of the controller to be monitored.
3)	[Communication]	-	Configure the settings for connection with the controller.
		[COM Port No.]	Specify the COM port number. The selectable range is [COM1] to [COM63].
		[Baud Rate]	Select a communication baud rate.
		[Transmit delay time]	Set the transmission delay time. The selectable range is [0] to [300].
4)	[Detail]	-	Configure the settings for connection with the controller.
		[Format]	Specify the communication format. The selectable range is [1] to [2].
		[Monitor Speed]	Specify the monitoring speed.
		[CPU No. Switching Device (3 points)]	When you select [MELSEC-FX] in the [Controller Type], this item is not displayed. Set the start device number of the GD devices that specifies the CPU number. Specify the value of [CPU No. switching GD device first No. (3 points)] set in the [Controller Setting] window in GT Designer3. If you set a different number, the simulation is not performed properly.
		[Module No. Switching Device (16 points)]	When you select [MELSEC-FX] in the [Controller Type], this item is not displayed. Set the start device number of the GD devices that specifies the module number. Specify the value of [Module No. switching GD device first No. (16 points)] set in the [Controller Setting] window in GT Designer3. If you set a different number, the simulation is not performed properly.
		[Servo Axis Switching Device (16 points)]	When you select [MELSEC-FX] in the [Controller Type], this item is not displayed. Set the start device number of the GD devices that specifies the axis number. Specify the value of [Servo axis switching GD device first No. (16 points)] set in the [Controller Setting] window in GT Designer3. If you set a different number, the simulation is not performed properly.
		[High-speed mode]	When you select [MELSEC-A] in the [Controller Type], this item is not displayed. Configure this setting to speed up communication using the entry monitor. When using high-speed mode, the continuous simulation time is approximately two hours.

■Settings when [USB] is selected

When setting [USB] for [I/F] under [Device], configure the settings for connection with the controller.



Item			Description
1)	[Manufacturer]		Fixed to [MITSUBISHI ELECTRIC].
2)	[Model]		Select the model of the controller to be monitored.
3)	[Detail]	-	Configure the settings for connection with the controller. The setting items displayed in [Detail Setting] differ depending on the selection for [Type].
		[CPU No. Switching Device (3 points)]	Configure this setting when selecting [MELSEC iQ-R] or [MELSEC-Q] for [Type]. Set the start device number of the GOT data registers (GD) that specifies the CPU number. The setting range is [0] to [65520]. Specify the value of [CPU No. switching GD device first No. (3 points)] set in the [Controller Setting] window in GT Designer3. If you set a different number, the simulation is not performed properly.
		[Module No. Switching Device (16 points)]	Configure this setting when selecting [MELSEC iQ-R] or [MELSEC iQ-F] for [Type]. Set the start device number of the GOT data registers (GD) to specify the module number. The setting range is [0] to [65520]. Specify the value of [Module No. switching GD device first No. (16 points)] set in the [Controller Setting] window in GT Designer3. If you set a different number, the simulation is not performed properly.
		[Servo Axis Switching Device (16 points)]	Configure this setting when selecting [MELSEC iQ-R] or [MELSEC iQ-F] for [Type]. Set the start device number of the GOT data registers (GD) that specifies the axis number. The setting range is [0] to [65520]. Specify the value of [Servo axis switching GD device first No. (16 points)] set in the [Controller Setting] window in GT Designer3. If you set a different number, the simulation is not performed properly.
		[High-speed mode]	Select this option when using the high-speed mode. In the high-speed mode, the continuous simulation time is two hours.

Precautions

- When connection is established between GT Simulator3 and the controller via USB, connecting another MELSOFT product via USB may cause a communication error.

In this case, monitor that MELSOFT product via a different route or stop the monitoring.

- If the USB cable is connected/disconnected or the controller is reset or turned on/off frequently during communication, a communication timeout (system alarm 402) may occur and may not be reset.

Connect/disconnect the USB cable or reset or turn on/off the controller before starting the monitoring with GX Simulator.

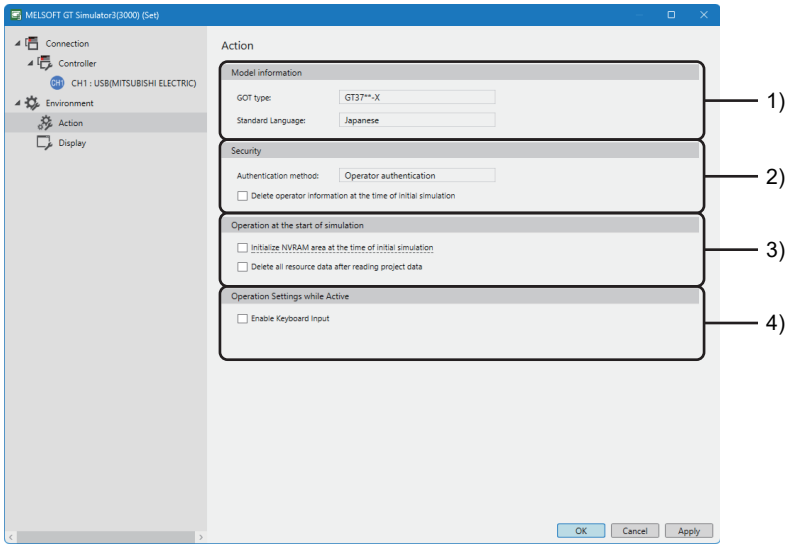
If the communication error is not reset, disconnect the USB cable, wait at least 5 seconds, and then connect the cable again. Even after this operation, an error may occur at the first communication. However, communication can be performed normally from the second attempt onwards.

7.5.2 [Environment]

Configure the operation settings and screen display settings to execute GT Simulator3.

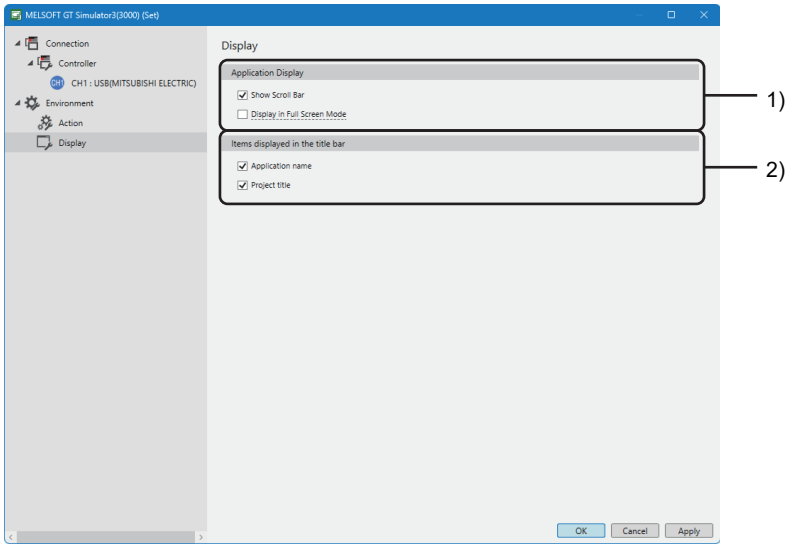
☞ Page 390 [Action]
☞ Page 391 [Display]

[Action]



Item			Description
1)	[Model information]	[GOT Type]	Displays the GOT model to be simulated.
		[Standard Language]	Displays the standard language.
2)	[Security]	[Authentication method]	Displays the authentication method.
		[Delete operator information at the time of initial simulation]	Select this option to delete the operator information when a simulation starts.
3)	[Operation at the start of simulation]	[Initialize NVRAM area at the time of initial simulation]	Select this option to initialize the nonvolatile RAM area when a simulation starts. The following functions save data to the nonvolatile RAM area. • User alarm monitoring • System alarm monitoring • Logging • Recipe • Internal device retention
		[Delete all resource data after reading project data]	Select this option to delete all the user data in the working folder when a simulation starts. Hierarchies under folders A, B, E, F, and G found in "Users\(User name)\AppData\Local\MITSUBISHI\GSS3_3000" When this setting is enabled, system alarms can be prevented when there is inconsistency between the recipe file or alarm data in the working folder and the recipe settings or alarm history settings of the screen data that has been read.
4)	[Operation Settings while Active]	[Enable Keyboard Input]	Select this option to enable keyboard input during simulation.

[Display]



Item			Description
1)	[Application Display]	[Show Scroll Bar]	Select this option to display scroll bars on the simulator screen.
		[Display in Full Screen Mode]	Select this option to execute the full screen display (with the title bar and status bar hidden) when starting the simulator.
2)	[Items displayed in the title bar]		Select the options to be displayed in the title bar.

7.6 Basic operations of GT Simulator3

GT37 SoftGOT3000

☞ Page 392 Operating on the simulation screen
☞ Page 392 Updating the project to be simulated
☞ Page 392 Exiting GT Simulator3
☞ Page 392 Switching the display language of GT Simulator3

7.6.1 Operating on the simulation screen

In GT Simulator3, use the mouse instead of touching the screen.
The input range is narrower than that of the GOT. Check the input by buzzer.

7.6.2 Updating the project to be simulated

If a project is edited in GT Designer3 during simulation, the editing can be reflected to the simulation data.
You can update GT Simulator3 project data by selecting [Debug/Check] → [Simulator] → [Update] from the GT Designer3 menu.

7.6.3 Exiting GT Simulator3

One of the following operations exits GT Simulator3.

- Select [Debug/Check] → [Exit] from the GT Designer3 menu.
- Select [Exit] from the GT Simulator3 menu.
- Right-click on the GT Simulator3 screen and select [Exit] from the menu.
- Click the [×] button on the title bar.

GX Simulator3, which is automatically started when GT Simulator3 is started, automatically exits.

7.6.4 Switching the display language of GT Simulator3

The display language of GT Simulator3 is switched according to that of GT Designer3.
The following shows how to switch the display language.

1. Exit GT Simulator3.
2. Switch the display language of GT Designer3.

For information on how to switch the display language of GT Designer3 and precautions, refer to the following.
☞ Page 88 Switching the display language
Start GT Simulator3 again to switch the display language.
In the following cases, the display language of GT Simulator3 is not switched.

- GT Simulator3 is not exited before the display language of GT Designer3 is switched.
- After the display language of GT Designer3 is switched, GT Simulator3 is started before GT Designer3 is exited.

7.7 Useful functions of GT Simulator3

GT37 SoftGOT3000

☞ Page 393 Taking snap shots
☞ Page 394 Printing the screen
☞ Page 395 Operating the numerical input or text input with a keyboard
☞ Page 397 Using the device monitor
☞ Page 404 Opening resource data files
☞ Page 395 Displaying scroll bars
☞ Page 396 Displaying the screen in full screen mode

7.7.1 Taking snap shots

Save the screen image as a BMP (24-bit BMP) or JPEG format file.

1. Select [Project] → [Snap Shot] from the menu or press Ctrl + H.
2. When the [Save As] dialog appears, select the save destination folder, enter a file name, select a file type, and click the [Save] button.

7.7.2 Printing the screen

Output a screen image to a printer.

☞ Page 394 Configuring the printer settings
☞ Page 394 Page settings
☞ Page 394 Previewing print image
☞ Page 394 Printing

Configuring the printer settings

Set the printer to be used, paper, and print orientation.

1. Select [Project] → [Print Setup] from the menu.

The [Print] dialog of Windows is displayed.

2. Configure the printer settings (printer, paper size, print orientation, etc.), and click the [OK] button.

Precautions

Printer settings are retained for each simulator model (or for each monitored GOT model for the GOT offline monitor). However, when you perform one of the following operations, the printer selected for [Set as default printer] in Windows is specified.

- Deleting the selected printer
- Selecting a printer whose name contains 31 characters or more

Depending on the printer used, some print settings are not retained.

Page settings

Set the printing margins.

1. Select [Project] → [Page Setup] from the menu.

Displays the page settings dialog.

2. Set the top, bottom, left, and right margins and click the [OK] button.

Previewing print image

The print preview allows you to preview the print image on the screen.

1. Select [Project] → [Print Preview] from the menu.

The print preview screen appears.

Precautions

- The print preview of the simulator screen may look smaller than the actual simulator screen (or monitor screen for the GOT offline monitor) depending on the paper type, paper size, and screen resolution.

Therefore, what is printed may not match the print preview.

Check what has been printed.

- To preview the print image at 100% magnification, adjust the paper type and size so that the simulator screen can be displayed at 100% magnification.

Printing

1. Select [Project] → [Print] from the menu or press Ctrl + P.

The [Print] dialog of Windows is displayed.

2. Click the [OK] button to start printing.

7.7.3 Operating the numerical input or text input with a keyboard

Numerical input and text input can be operated with the personal computer keyboard.

Data can be entered without creating a touch switch for numerical or text input in the project data.

Perform one of the following operations to enable or disable the keyboard input.

- Select [Debug/Check] → [Simulator] → [Setting] from the GT Designer3 menu, and select [Action] then select [Enable Keyboard Input] in the displayed dialog.
- Select [Tool] → [Keyboard Input] and select the checkbox.
- Select [Tool] → [Keyboard Input] from the right-click menu and select the checkbox.

The following shows how to operate the numerical input or text input with a keyboard.

Keyboard operation	GOT key code (hexadecimal)	Operation on the numerical input	Operation on the text input
Back space	0008	Deletes the character immediately before the cursor.	
Enter *1	000D	Writes to a device, displays the cursor, moves the cursor, or closes the key window.	
Esc	001B	Cancels the entry.	
- (Hyphen)	002D	Reverses the sign of the value.	—
. (Period)	002E	Enters a decimal point.	—
[0] to [9]	0030 to 0039	Enters a numeric character.	Enters an ASCII or Unicode 2.1-compatible character.
[A] to [Z], [a] to [z]	0041 to 005A, 0061 to 007A	Enters a numeric character in hexadecimal ([A] to [F], [a] to [f]).	
Symbol keys	Character codes (ASCII)	—	
Enters text (such as hiragana or kanji characters).	Character codes (Unicode)	—	
→, ←, ↑, ↓	0080, 0081, 0082, 0083	Moves the cursor	
Home	0084	—	Kana-Kanji/Pinyin conversion
PgUp	0085	—	Selects the previous candidate.
PgDown	0086	—	Selects the next candidate.
End	0087	—	Confirms the entry. When a group of characters is converted, the next group of characters is selected.
Delete	0088	Deletes all the entered characters.	
Ctrl + ←, Ctrl + →	0090, 0091	Moves the cursor on the target object.	
Ctrl + ↑, Ctrl + ↓	FFFA, FFFB	Increments or decrements the value.	—

*1 The operation on the target object varies depending on the setting in the [Environmental Setting] window ([Key Windows]).
For details, refer to the following.
☞ Page 558 Setting key windows of the GOT ([Key Window])

7.7.4 Displaying scroll bars

1. Perform one of the following operations.

- Select [Display] → [Scroll bar] from the menu.
- Right-click the mouse and select [Scroll bar] from the menu.

A scroll bar appears.

Precautions

When resolutions of the GOT model to be simulated are lower than the window size, the scroll bar is not displayed.

Point

Scrolling is possible with the mouse wheel.

The vertical scroll is prioritized.

The cursor keys, PgDown key, and PgUp key on the keyboard cannot be used to scroll.

7.7.5 Displaying the screen in full screen mode

You can hide the title bar and status bar and perform monitoring at the resolution size set in the project data.

☞ Page 396 Executing the full screen display
☞ Page 396 Canceling the full screen display

Executing the full screen display

1. Perform one of the following operations.

- Press Alt + F9.
- Select the [Display] → [Full-screen display] from the menu.
- Right-click the mouse and select [Full-screen display] from the menu.

The confirmation dialog for switching the full screen display appears.

2. Click the [Yes] button.

The full screen display is executed.

Point

When you select [Debug/Check] → [Simulator] → [Setting] from the GT Designer3 menu, and select [Display in Full Screen Mode] under [Display] in the displayed settings dialog, GT Simulator3 will start in full-screen mode by default.

Canceling the full screen display

1. Perform one of the following operations.

- Press Alt + F9.
- Right-click the mouse and select [Full-screen display] from the menu.

A dialog appears to confirm the end of the full screen display.

2. Click the [Yes] button.

The full screen display is canceled.

Precautions

- To perform any operation other than [Exit] during the full screen display, cancel the full screen display.
- If full screen display is executed when the resolution of the personal computer display does not match that of the project data, the simulation screen (or monitor screen for the GOT offline monitor) will be locked to the upper-left corner and cannot be moved.

7.7.6 Using the device monitor

The device monitor function monitors the devices of the controller during simulation.
Internal devices that are not set on the GOT screen and any devices of the controller can be monitored.
Manage monitored devices using the free registration list function.
By registering an internal device in the free registration list, you can check the current value of the device.
You can also change the device value by rewriting it in the free registration list.
This enables you to efficiently check the operation of the project when the device value changes.
Multiple free registration lists can be created to suit your needs for each project, screen (base or window), or device to be monitored (such as X devices and GD devices).
The free registration list includes import and export functions, allowing you to use spreadsheet software or other tools to register and edit devices.

☞ Page 397 Specifications of the device monitor
☞ Page 398 Starting and ending the device monitor
☞ Page 398 Checking and changing the device value in the free registration list
☞ Page 398 Creating a free registration list
☞ Page 401 [Device Monitor] window

Specifications of the device monitor

■Starting the device monitor

- When connection is established between GT Simulator3 and a controller simulator or Mitsubishi Electric equipment, you can start the device monitor during simulation only.
- Only one device monitor can be started.

One device monitor from each of the GOT1000 series, GOT2000 series, and GOT3000 series can be started simultaneously.

■Devices that can be monitored

The device monitor function monitors GOT internal devices and controller devices.
For the devices that can be monitored with GT Simulator3, refer to the following.

☞ Page 359 Device range for monitoring

■Specifications of the free registration list

When you create free registration lists, they are retained after GT Simulator3 exits.
Up to 32 free registration lists can be created.
Up to 32 characters are available for a free registration list name.
The following characters cannot be used in a free registration list name.
\ / : ; * ? " < > | .
Up to 6 free registration windows can be open simultaneously.
Up to 256 devices are registrable in one free registration list.

■Precautions

- An increase in the number of monitored devices causes monitoring performance degradation in GT Simulator3.

■Restrictions

- Label/tag communication is not supported.
- Communication using the label of GT Designer3 (3000) is not supported.
- Communication is not supported when the CPU number and the module number are indirectly specified.

Starting and ending the device monitor

■Starting the device monitor

While GT Simulator3 is performing a simulation, perform one of the following operations to start the device monitor.

- Select [Tool] → [Start or Stop Device Monitor] from the GT Simulator3 menu.
- Select [Tool] → [Start or Stop Device Monitor] from the GT Simulator3 right-click menu.

■Ending the device monitor

Perform one of the following operations to end the device monitor.

- Select [File] → [Exit] from the device monitor menu.
- Click the [×] button on the title bar of the device monitor.
- Press Alt + F4 on the device monitor.
- Select [Tool] → [Start or Stop Device Monitor] from the GT Simulator3 menu.
- Select [Tool] → [Start or Stop Device Monitor] from the GT Simulator3 right-click menu.
- Exit GT Simulator3.

Checking and changing the device value in the free registration list

By registering a device in the free registration list and starting monitoring, you can check the current value of the device on the screen.

1. Creates a free registration list.

☞ Page 398 Creating a free registration list

2. If [Monitoring] is not displayed in the title bar of the [Device Monitor] window, perform one of the following operations.

- Select [Online] → [Start] from the menu.
- Click the [Start the communication] button on the toolbar of the device monitor.

Device monitoring begins and the device value is displayed in the [Current Value] field.

When you change the value in the [Current Value] field, the new value is immediately stored in the device.

Creating a free registration list

You can create a free registration list by either registering a device or importing an already-exported file containing existing free registration lists.

☞ Page 398 Creating a new list
☞ Page 399 Exporting a free registration list
☞ Page 399 Importing existing free registration lists
☞ Page 400 Free registration list format
☞ Page 400 Editing the free registration list
☞ Page 400 Deleting the free registration list

■Creating a new list

To create a new free registration list, follow the steps below.

1. Open the free registration window by either of the following methods.

- Select [Window] → [New Free Registration List] from the menu.
- Double-click [New] under [Free Reg] in the [Project] window.

2. Register a device in the free registration window.

☞ Page 403 Free registration window

Operation	Description
Changing the name of a free registration list	Select the free registration list to be renamed, and click or press F2 on the keyboard to enable editing.
Deleting a device	Select the device to be deleted and press Delete on the keyboard to delete the device.

■Exporting a free registration list

Export a free registration list in CSV or Unicode text format.

There are two export methods: exporting free registration lists individually or exporting all the free registration lists.

1. To export one free registration list, select the list to be exported in the [Project] window.

To export all lists, select [Free Reg] at the top of the tree.

2. Perform one of the following operations.

- Select [File] → [Export Free Registration List] from the menu.
- Click the [Ex] button in the [Project] window.
- Right-click the free registration list to be exported, and select [Export] from the menu.

The [Save As] dialog or the file format selection dialog appears.

3. Perform either of the following operations.

Dialog	Operation
[Save As]	Set [File Name] and [File Type] and click the [Save] button.
File format selection	Select the file format of the output file and click the [OK] button. When the [Browse For Folder] dialog appears, select the export destination folder and click the [OK] button.

The free registration lists are exported.

The exported free registration lists are editable with spreadsheet software or others.

For the free registration list format, refer to the following.

☞ Page 400 Free registration list format

Precautions

When using a character not included in ASCII and Shift JIS codes, use Unicode text format for the file format.

If CSV format is used, characters not included in ASCII and Shift JIS codes are not output correctly.

■Importing existing free registration lists

Import the file created with the existing free registration lists that have been exported.

Multiple free registration lists can be imported individually or collectively.

When importing multiple files, you can import CSV and Unicode text files together.

Files exported with GT Simulator (2000) can also be imported to GT Simulator (3000).

To import free registration lists, follow the steps below.

1. Export free registration lists.

☞ Page 399 Exporting a free registration list

2. Perform one of the following operations in the [Project] window.

Purpose	Operation
Creating one free registration list	Select [New].
Creating multiple free registration lists	Select [Free Reg] at the top of the tree.
Overwriting an existing free registration list	Select the free registration list to be overwritten.

3. Perform one of the following operations to open the [Open] dialog.

- Select [File] → [Import Free Registration List] from the menu.
- Click the [Im] button in the [Project] window.
- Right-click the selected list and select [Import] from the menu.

4. Select the file to be imported and click the [Open] button.

The free registration lists are imported.

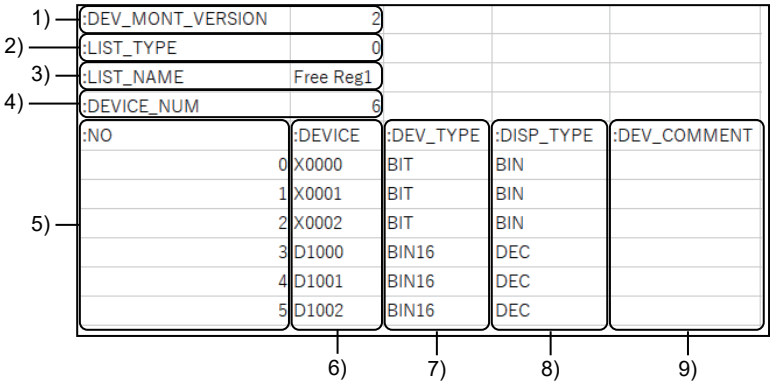
■Free registration list format

The following shows the layout of an exported free registration list.

For the precautions for using CSV files and Unicode text files, refer to the following.

☞ Page 3668 Precautions for using CSV file

☞ Page 3669 Precautions for using Unicode text file



Item		Description
1)	Version	Version of the free registration list.
2)	List type	Type of a list. • 0: Free registration list
3)	List name	Name of the free registration list. For the name specifications, refer to the following. ☞ Page 397 Specifications of the free registration list
4)	Number of devices	Number of the registered devices. Up to 256 devices are registrable in one free registration list.
5)	No.	Serial numbers of the registered devices.
6)	Device	Registered device.
7)	Data type	Data type of a device • BIT: [Bit] • BIN8: [Byte [Signed]] • BIN8_Unsigned: [Byte [Unsigned]/Bit String [8-bit]] • BIN16: [Word [Signed]] • BIN16_Unsigned: [Word [Unsigned]/Bit String [16-bit]] • BIN32: [Double Word [Signed]] • BIN32_Unsigned: [Double Word [Unsigned]/Bit String [32-bit]] • BIN64: [Quad Word [Signed]] • BIN64_Unsigned: [Quad Word [Unsigned]/Bit String[64-bit]]
8)	Display format	Display format of a device. • BIN: [Binary] • OCT: [Octal] • DEC: [Decimal] • HEX: [Hexadecimal]
9)	Comment	Comment set for a device. Up to 255 characters can be set for one comment. Tab characters and line feed codes cannot be entered.

■Editing the free registration list

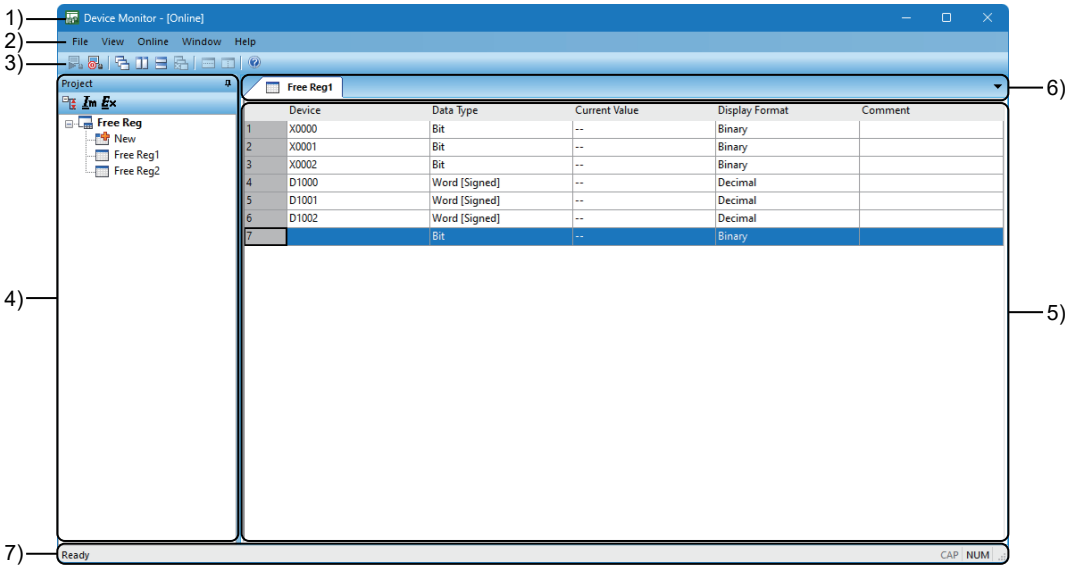
Double-click the free registration list to be edited under [Free Reg] in the [Project] window.

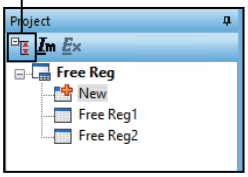
Edit the device list displayed in the free registration window as necessary.

■Deleting the free registration list

Select the free registration list to be deleted in the [Project] window, and press Delete on the keyboard or right-click the list and select [Delete] from the menu.

[Device Monitor] window



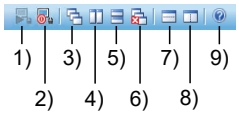
Item		Description
1)	Title bar	Displays the device monitor operation status. • [Monitoring] Communication with the controller is in progress. • [Stopped] Communication with the controller is stopped.
2)	Menu bar	Displays the operation menu. ☞ Page 402 Menu bar
3)	Toolbar	Displays operation buttons. ☞ Page 403 Toolbar
4)	[Project] window	Displays the free registration list in a tree view. Expand all button, collapse all button  • [New] Creates a free registration list. Clicking this button creates a new free registration tab in the work window. Up to 32 lists can be created. ☞ Page 403 Free registration window • Expand all button, collapse all button Expands or collapses all items in the tree. • [Im] button Imports the free registration list in CSV or Unicode text format. For the steps to import the free registration list, refer to the following. ☞ Page 399 Importing existing free registration lists • [Ex] button Exports the free registration list file in CSV or Unicode text format. For the steps to export the free registration list, refer to the following. ☞ Page 399 Exporting a free registration list
5)	Work window	An area in which the free registration window appears. ☞ Page 403 Free registration window Up to six lists can be opened simultaneously. If seven or more lists are opened, the first opened free registration list will close.

Item		Description
6)	Editor tab	Displays the tabs corresponding to the windows opened in the work window. To bring an open window to the foreground in the work window, select its tab. Pull-down menu button • Pull-down menu button Lists the open windows in the work window. To bring an open window to the foreground in the work window, select it from the pull-down menu.
7)	Status bar	Displays the description of a selected menu. The statuses of the CapsLock and NumLock keys on Windows are also displayed. Gray indicates the disabled state, while black indicates the enabled state.

■Menu bar

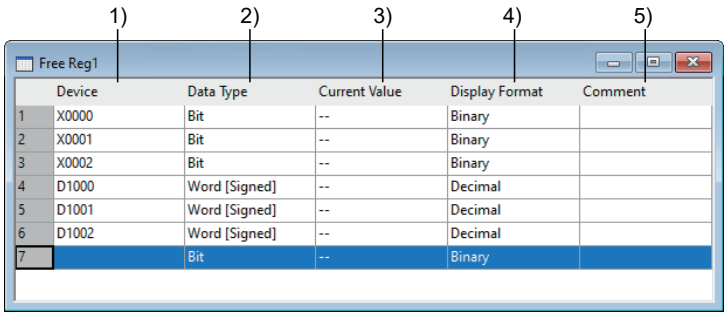
Menu		Description	Shortcut key
[File]	[Import Free Registration List]	Imports the free registration list in CSV or Unicode text format. For the steps to import the free registration list, refer to the following. ☞ Page 399 Importing existing free registration lists	Alt + I
	[Export Free Registration List]	Exports the free registration list file in CSV or Unicode text format. For the steps to export the free registration list, refer to the following. ☞ Page 399 Exporting a free registration list	Alt + E
	[Stop Device Monitor]	Ends the device monitor.	Alt + F4
[Display]	[Toolbar]	Displays or hides the toolbar.	—
	[Status Bar]	Displays or hides the status bar.	—
[Online]	[Start]	Starts the device monitor.	F3
	[Stop]	Stops the device monitor.	Alt + F3
[Window]	[New Free Registration List]	Creates a free registration list.	—
	[Cascade]	Displays open windows in a stack in the work window.	—
	[Arrange Sideways]	Tiles open windows side by side in the work window.	—
	[Arrange Lengthways]	Tiles open windows horizontally in the work window.	—
	[Close Inactive Windows]	Closes all open windows except the selected one in the work window.	—
	[New Horizontal Tab Group]	Splits the work window into panes horizontally. Puts the free registration window corresponding to a selected tab in a pane immediately underneath the current pane. Tabs are movable between the editor tabs of panes.	—
	[New Vertical Tab Group]	Splits the work window into panes vertically. Puts the free registration window corresponding to a selected tab in the immediately right pane. Tabs are movable between the editor tabs of panes.	—
[Help]	[GT Designer3 Help]	Displays GT Designer3 Help.	F1

■Toolbar



Item		Description
1)	[Start the communication] button	Starts the device monitor.
2)	[Stop the communication] button	Stops the device monitor.
3)	[Display all open windows in a stack (cascade)] button	Displays open windows in a stack in the work window.
4)	[Display all open windows in a horizontal direction] button	Tiles open windows side by side in the work window.
5)	[Display all open windows in a vertical direction] button	Tiles open windows horizontally in the work window.
6)	[Close all the inactive windows] button	Closes all open windows except the selected one in the work window.
7)	[Create a new horizontal tab group] button	Splits the work window into panes horizontally. Puts the free registration window corresponding to a selected tab in a pane immediately underneath the current pane. Tabs are movable between the editor tabs of panes.
8)	[Create a new vertical tab group] button	Splits the work window into panes vertically. Puts the free registration window corresponding to a selected tab in the immediately right pane. Tabs are movable between the editor tabs of panes.
9)	[Display GT Designer3 Help] button	Displays GT Designer3 Help.

■Free registration window



Item		Description
1)	[Device]	Set a device to be monitored. Up to 256 items (rows) can be registered per list. ☞ Page 834 How to set devices, labels, and tags
2)	[Data Type]	Select the data type of a device.
3)	[Current Value]	Displays the current value of a device. The set value is changeable. If a communication error occurs, [--] is displayed. The setting range of [Current Value] depends on the device.
4)	[Display Format]	Select the display format of a device.
5)	[Comment]	Set a comment for a device. Up to 255 characters can be set for one comment.

7.7.7 Opening resource data files

Open resource data files collected by the simulator and saved on the personal computer (such as alarm log files, recipe files, data log files, and operation log files, with extensions .csv, .txt, .bmp, and .jpg).

1. Perform one of the following operations to display the [Refer To Resource Data] dialog.

- Select [Tool] → [Resource Data] from the menu.
- Select [Tool] → [Resource Data] from the right-click menu.
- Press Ctrl + R.

2. Select the file to be referenced in the [Refer To Resource Data] dialog, and click the [Open] button.

The selected resource data is displayed.

7.7.8 Checking the causes and corrective actions for errors (GOT diagnostics)

GOT diagnostics is a function that obtains error information during simulation and displays the error details, causes, and corrective actions on the screen. The function enables efficient debugging during simulation.

Errors identified through GOT diagnostics

GOT diagnostics addresses the following errors.

Error monitored by GOT diagnostics	Description
System alarm	• GOT error • CPU error • Network error When GOT diagnosis is started, the most recent CPU error, GOT error, and network error are displayed respectively from the currently occurring alarms.
Script error	• Project script • Screen script • Object script Script parts are not covered by GOT diagnostics.

Displaying GOT error information

The following shows the procedure for executing GOT diagnostics and displaying GOT error information on the screen.

1. Click [Diagnostics] → [GOT Diagnostics] from the menu.

The GOT diagnostic window is displayed.

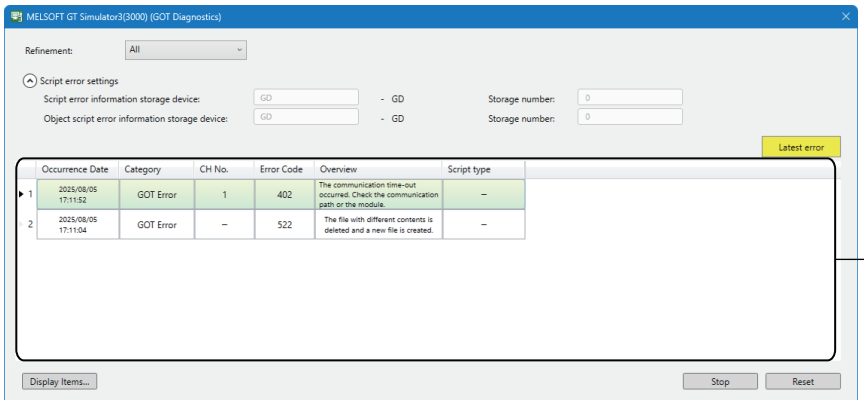
☞ Page 405 GOT diagnostics window

2. If necessary, use the [Refinement] field to narrow down the types of errors to be displayed on the screen.

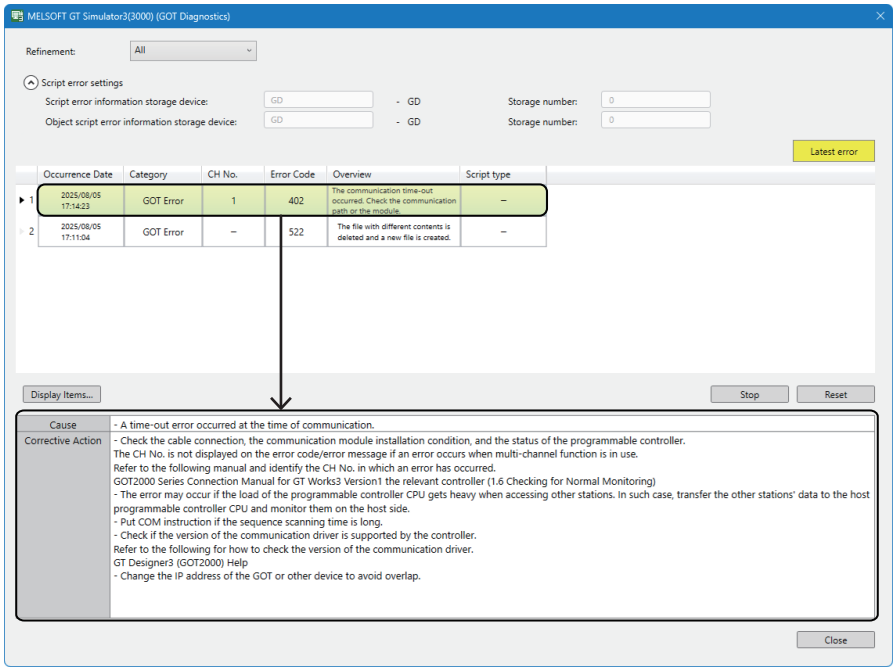
3. Click the [Start] button.

The occurring errors are displayed in a list.

The errors are displayed in order of occurrence date and time.



4. Click an error in the error list to display its causes and corrective actions.



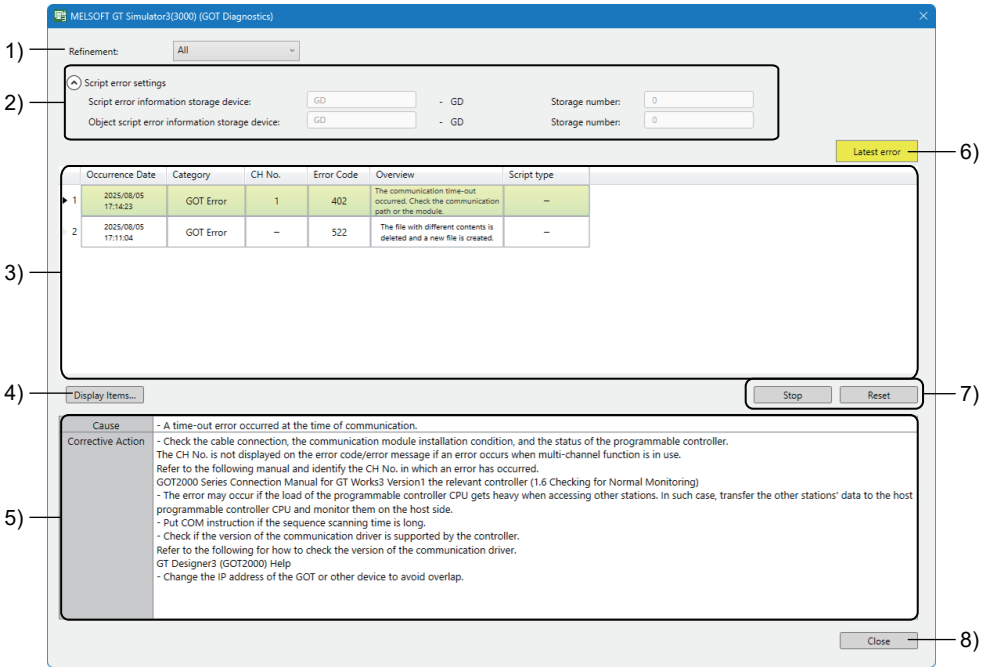
5. After the error is resolved, click the [Reset] button to clear the error details.

Errors resolved during monitoring will remain on the screen until they are reset.

Click the [Reset] button to obtain the latest error information and display it on the screen.

GOT diagnostics window

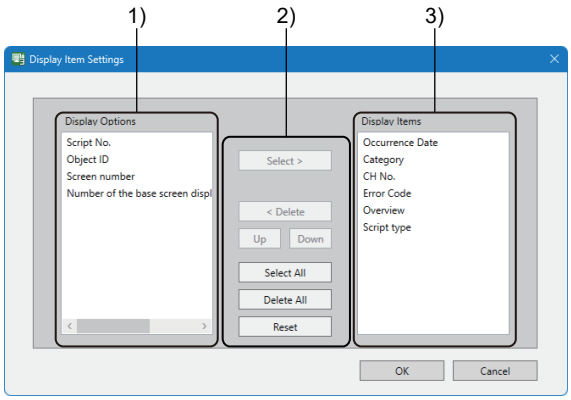
Select [Diagnostics] → [GOT Diagnostics] from the menu to display the window.



Item			Description
1)	[Refinement]		Select the category of errors to be displayed in the error list.
2)	[Script error settings]	[Script error information storage device]	Specify the device that stores script error information. Specify the number of script error information items to be stored in the [Storage number] field.
		[Object script error information storage device]	Specify the device that stores object script error information. Specify the number of object script error information items to be stored in the [Storage number] field.

Item		Description
3)	Error list	Lists the errors currently occurring on the connected GOT. Errors are displayed in reverse chronological order. If the number of errors exceeds the maximum number of displayed errors, earlier errors are not displayed. For the system alarm (GOT error), script error, and object script error, correct an error and click the [Reset] button to delete the error from the error list. For the precautions on the system alarm, refer to the following. ☞ Page 1543 Specifications of the system alarm display
4)	[Display Items]	Click to display the [Display Item Settings] and set the items to be displayed in the error list. ☞ Page 406 [Display Item Setting] dialog
5)	[Cause] [Corrective Action]	Displays the cause of the selected error and its solution in the error list.
6)	[Latest error]	Obtains the latest error information.
7)	[Start] button [Stop] button	Starts or stops obtaining error information.
	[Reset] button	Resets error data in the GOT, and updates the error list. Corrected system alarms (GOT errors) and script errors are deleted from the error list. Others remain in the list.
8)	[Close] button	Closes the window.

■[Display Item Setting] dialog



Item			Description
1)	[Display Options]		Options of the items displayed in the search result list Select an item and click the [Select] button to move the item to [Display Items].
2)	Operation buttons	[Select] button	Moves the item selected in [Display Options] to [Display Items].
		[Delete] button	Moves the item selected in [Display Items] to [Display Options].
		[Up] button [Down] button	Moves the item selected in [Display Items] up or down.
		[Select All] button	Moves all the items in [Display Options] to [Display Items].
		[Delete All] button	Moves all the items other than [Controller/Setting Name] in [Display Items] to [Display Options].
		[Reset] button	Restores the items in [Display Items] to the default ones.
3)	[Display Items]		Items to be displayed in the search result list If any item is selected and the [Delete] button is clicked, the selected item is moved to [Display Options]. The top-to-bottom order in [Display Items] corresponds to the left-to-right order in the search results list. Select an item and click the [Up] or [Down] button to move the item up or down.

7.8 Troubleshooting

GT37 SoftGOT3000

Error message	Cause	Solution
Exit MELSOFT GT Simulator3(3000) before you logoff or exit Windows.	Windows was logged off or exited before GT Simulator3 (3000).	Exit GT Simulator3 (3000), and then log off or exit Windows.
Cannot terminate Simulate. Close the simulate screen and retry.	• Dialogs, messages, or pint previews are displayed. Waiting for completion of internal process.	• Close all dialogs, messages, and print previews that are being displayed. • Retry stopping after a while.
MELSOFT GT Simulator3(3000) is not installed properly. Please do the following. • After restarting the personal computer, restart MELSOFT GT Simulator3(3000). • Uninstall MELSOFT GT Simulator3(3000), and then reinstall it.	• Configuring the execution environment for GT Simulator3 (3000) has failed. • GT Simulator3 (3000) is not installed properly.	• Restart the personal computer, and then restart GT Simulator3 (3000). • Uninstall GT Simulator3 (3000) and install it again.
GOT type of the project data is different from the one specified in MELSOFT GT Simulator3(3000). [Project data settings] GOT type: GT**-*	The GOT type set in the project differs from the GOT type set in GT Simulator3 (3000).	Match the GOT type set in the project and the GOT type set in GT Simulator3 (3000).
Reading has failed. Check the following and retry. • The project data size and data count • Available disk space • Access privileges to the project file • The project data is invalid or does not exist • The project password is invalid or not entered	-	• Reduce the project data size to 256 MB or less. • Increase free space on the hard disk. • Check the access privilege for a file. • Check the settings in GT Designer3 (GOT3000). • Use the project data that is not damaged. • Check that the project data exists. • In the password entry dialog, enter the correct password and click the [OK] button.
The GOT type (resolution) of the project data is different from the setting in MELSOFT GT Simulator3(3000). [Project data settings] GOT type: GT**-*(***x***) [MELSOFT GT Simulator3(3000) settings] Resolution: ****x**** If the resolution differs between the project data being monitored and the project data you are trying to open, please exit MELSOFT GT Simulator3 (3000) and reopen the project data.	The GOT type (resolution) set in the project differs from the setting in GT Simulator3 (3000).	Match the GOT type (resolution) set in the project and the resolution set in GT Simulator3 (3000).
Failed to delete resource data. • Close resource data if it is open. • Check the file access privileges.	• The file is in use. • Access to the file is disabled.	• Check if the file is opened by another application. • Check the access privilege for a file.
Cannot set up the operating environment. Insufficient disk space or memory may be the cause. Please do the following and retry. • Exit unnecessary applications. • Increase the free space of the hard disk. • Restart the personal computer.	Error code [0x1103] • The available space of the memory or hard disk is not sufficient. • An application was closed incorrectly. • Incorrect processing is activated. Error code [0x1502] Mutex creation failed.	Error code [0x1103] • Exit unnecessary applications. • Increase free space on the hard disk. • Restart the application. • After restarting the personal computer, restart the application. Error code [0x1502] After restarting the personal computer, restart the application.
Failed to set up an operating environment. Check the following and retry the operation. • Free disk space. • Access privileges to the environment file. • Validity of environment files (invalid files or files not found).	• Increase the available space in the device where the application runs. You do not have access privileges to the environment file. The environment file does not exist or is in an invalid state. The MAC address does not exist.	• Increase the available space in the device where the application runs. • Check the access privilege for a file. • Reinstall the application. • Check if the network adapter exists.

8 Transferring data to the GOT

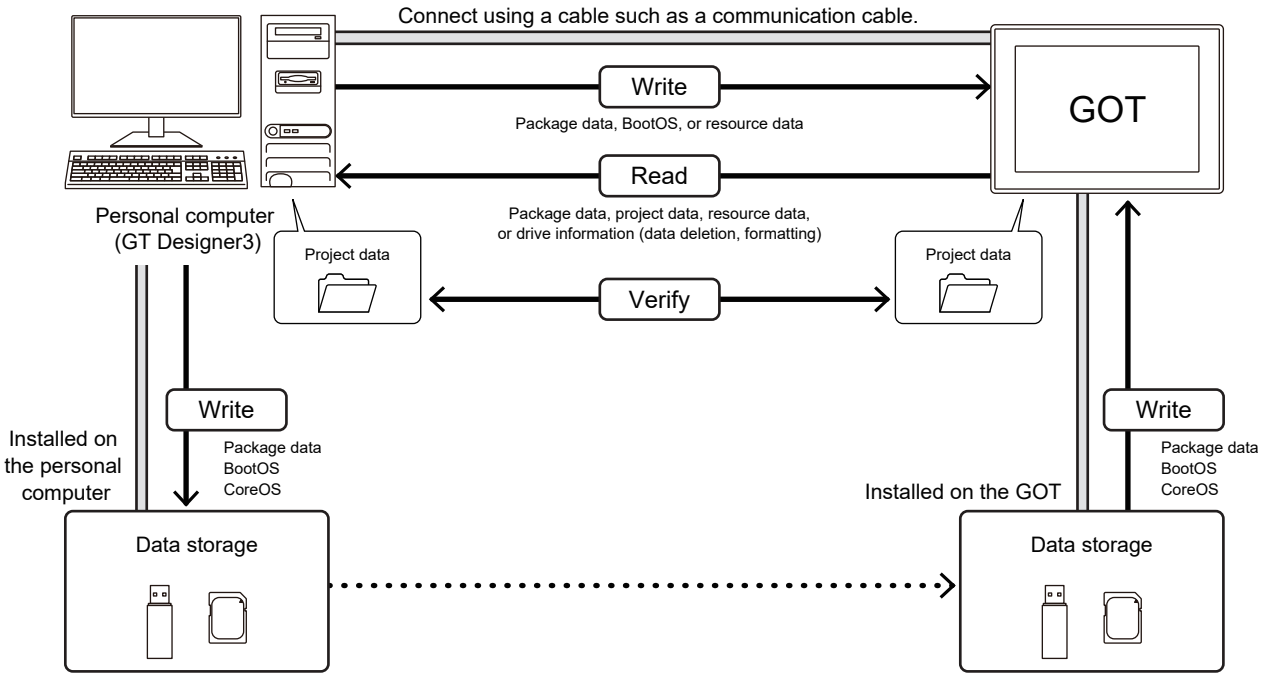
GT37 SoftGOT3000

☞ Page 409 Function overview
☞ Page 410 Specifications of data transfer function
☞ Page 414 Setting procedure for using the data transfer function
☞ Page 415 Transferred data and GOT storage destination
☞ Page 418 Route for the data transfer
☞ Page 420 Connecting a personal computer to the GOT
☞ Page 434 Configuring the settings for communication between the personal computer and the GOT
☞ Page 435 Setting the data to be transferred (application selection)
☞ Page 437 Writing data to the GOT
☞ Page 441 Reading the data from the GOT
☞ Page 443 Verifying with the project data in the GOT
☞ Page 445 Transferring data via a data storage
☞ Page 450 Setting dialogs related to data transfer
☞ Page 484 Troubleshooting

8.1 Function overview

GT37 SoftGOT3000

Package data, BootOS, CoreOS, and resource data can be written/installed to the GOT from a personal computer on which GT Designer3 is installed, and package data and resource data in the GOT can be read to the personal computer.
This function is referred to as the data transfer function.
The project data in the personal computer and the one in the GOT can be verified to check the differences.
In this chapter, "personal computer" means the one on which GT Designer3 is installed.



Data transfer mainly consists of the following functions.

Write

Connect the personal computer to the GOT and establish communication or use a data storage to write data from the personal computer to the GOT.
The data that can be transferred is different between the data transfer using communication and that using a data storage. For details, refer to the next section.
☞ Page 410 Types of the data that can be transferred
The batch writing function is also available for writing the same package data to multiple GOTs connected via Ethernet.
When transferring package data using a data storage, you can specify whether to write the package data stored in the data storage to the GOT or let the GOT use the package data stored in the data storage as is.

Read

Connect the personal computer to the GOT and establish communication to read the project data or resource data written to the GOT to the personal computer.
The read function contains functions such as acquiring the folder structure or file information in the GOT drive to delete the project data or resource data in the drive and formatting the data storage in the GOT.

Verification

Connect the personal computer to the GOT and establish communication to verify the project data being edited in GT Designer3 and the project data written to the GOT.
Differences can be checked for each screen and object.
The data is verified based on the data or the modified date.

8.2 Specifications of data transfer function

GT37 SoftGOT3000

This section explains the specifications of the data transfer function.

☞ Page 410 Types of the data that can be transferred
☞ Page 411 Operation related to the security mode
☞ Page 411 Encrypted communication
☞ Page 412 File protection
☞ Page 413 Precautions

8.2.1 Types of the data that can be transferred

GT37 SoftGOT3000

The following shows the data that can be transferred by the data transfer function.

○: Available, —: Not available

Data	Write	Read	Timing example for transferring data
BootOS	○	—	• When upgrading the version of the BootOS or CoreOS ☞ Page 3732 Functions that require upgrading the versions of BootOS and CoreOS
CoreOS	○	—	
Package data	○	○	• When using the GOT for the first time • When modifying or changing the project data (only differential writing is available) • When changing the system application used • When changing the method of communication with the PLC • When using special data such as intelligent module monitor data
Project data (independent)	—	○	• When saving the project written in the GOT to the personal computer
Resource data	○*1	○	• When modifying the recipe file or image file • When checking the control data (such as an alarm log file, logging file, and operation log file)
Drive information Use status of each drive in the GOT	—	○	• When deleting data from the GOT • When formatting the data storage in the GOT

*1 Files of 0 MB or more than 256 MB cannot be written to the GOT.
For the route for data transfer supported by each data, refer to the following.
☞ Page 419 Transferred data and supported routes for data transfer

8.2.2 Operation related to the security mode

The following shows the operation of the data transfer function related to the security mode.
For the security mode, refer to the following.
☞ Page 38 Security function

When performing data transfer operation for a GOT in security mode 2

When any of the following operations is performed for a project of the GOT in security mode 2, operator authentication is required. This displays the [Operator] dialog.
When the [Operator Authentication] dialog appears, enter the operator name and password to perform authentication.

Operation	Operation dialog
Writing data to the GOT	☞ Page 465 [GOT Write] tab ☞ Page 476 [Batch Write to multiple GOTs] dialog
Reading data from the GOT	☞ Page 472 [GOT Read] tab
Verifying with the project data in the GOT	☞ Page 475 [GOT Verification] tab
Acquiring the GOT information	☞ Page 465 [GOT Write] tab ☞ Page 472 [GOT Read] tab ☞ Page 475 [GOT Verification] tab ☞ Page 469 [GOT Information - Detail] dialog
Acquiring the drive information	☞ Page 470 [Select Resource Data] dialog ☞ Page 472 [GOT Read] tab ☞ Page 474 [Path Setting] dialog
Deleting the drive data, formatting the drive	☞ Page 472 [GOT Read] tab
Communication test	☞ Page 451 [Communication Configuration] dialog ☞ Page 476 [Batch Write to multiple GOTs] dialog

When the security mode of the GOT is changed to mode 1

When the following operation is performed, the security mode of the GOT is changed from mode 2 to mode 1.

- Write project data for which [Security Mode] is set to [Mode 1] in [Security setting] of [GOT Type Setting].

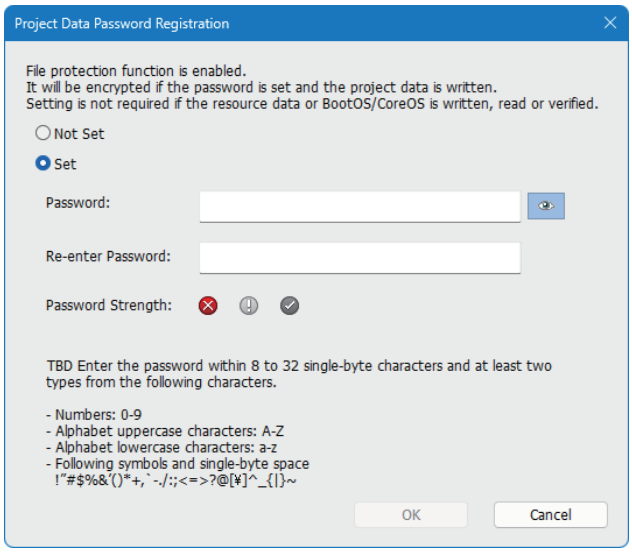
8.2.3 Encrypted communication

When the personal computer and GOT are directly connected by Ethernet, communication data can be encrypted when transferred.
To encrypt the communication, set [Encryption Communication Port No.] to open in the [GOT Ethernet Setting] window, and select [Perform encryption communication] in the [Communication Configuration] or [Batch Write to multiple GOTs] dialog.
☞ Page 717 [GOT Ethernet Common Setting]
☞ Page 451 [Communication Configuration] dialog
☞ Page 476 [Batch Write to multiple GOTs] dialog
☞ Page 3069 Encrypting communication data (Encrypted communication function)

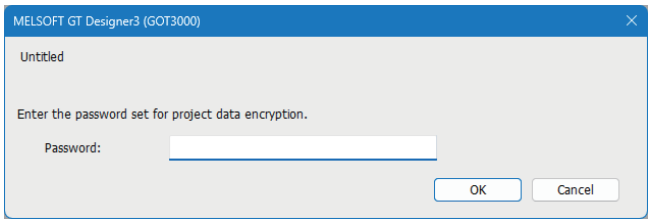
8.2.4 File protection

To enhance the confidentiality of project data, you can set a password for project data with the file protection function.
In the GOT, the project data is encrypted using the set password.
To enable file protection, configure the setting in [Information Protection Function] - [File Protection] in the [Environmental Setting] window.
☞ Page 3068 [File Protection]
When the file protection function is enabled, performing one of the following data transfer operations displays the [Project Data Password Registration] dialog, allowing you to register a password.

- Open the project data (GTY) and select [Communication] → [Write to GOT], [Read from GOT], [Verify GOT], [Batch Write to multiple GOTs], or [Write to Memory Card].
- Click the [OK] button in the [Communication Configuration] dialog when [Display the dialog of [Communication Configuration] the next time as well] is selected in the [Communication Configuration] dialog.



When the project data for which a password is set is read from the GOT or verified with the GOT, the following dialog appears and a password is requested.



Precautions

The following operations cannot be performed with GT Designer3 for project data projected by file protection and not started on the GOT.

- Drive information acquisition
- Package data writing (differential writing in synchronous mode)
- Package or project data reading
- Verification with the GOT

8.2.5 Precautions

Opening the port for communication with peripheral software products

When using the data transfer function, set [Peripheral S/W Communication Port No.] to open in the [GOT Ethernet Setting] window.

Transferring data while the FA transparent function is used

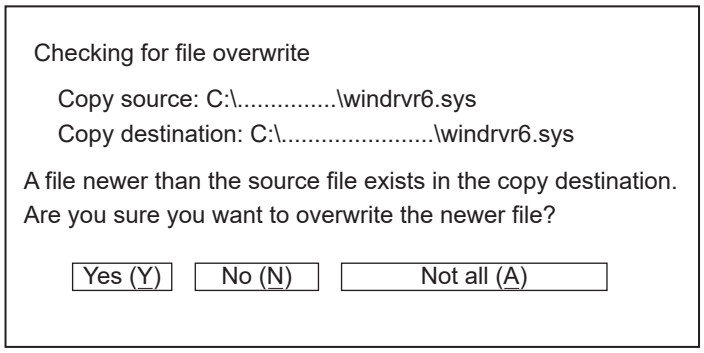
If another MELSOFT application is communicating with the connected GOT using the FA transparent function, data may not be transferred.
To transfer data, make sure that the FA transparent function is not in use.

Power saving function of the personal computer

To transfer data by connecting to the GOT, disable the power saving function of the personal computer and Windows.
For details on power saving function settings related to security mode, refer to the manual of the personal computer or Windows Help.

USB driver of other products

When the USB driver of other products is installed, the confirmation message for overwriting the USB driver file (windrvr6.sys) may appear.
If a new file already exists, click the [No] button and do not overwrite the file.
When the file is overwritten, the USB communication of GT Designer3 and the GOT may not be properly executed.



Communication error by the firewall

The setting of the communication port of the personal computer may cause a communication error, such as timeout error.
When the port for the Ethernet communication is blocked by the firewall, a communication error occurs.
Disable the firewall or set the port to be opened.
For details on checking or setting the communication port, refer to Windows Help.

Transferring data while firmware update is in progress

While firmware update of the communication unit mounted on the GOT is in progress, transferring data is not available.
To transfer data, make sure that firmware update is not executed.

PART 4

8.3 Setting procedure for using the data transfer function

To use the data transfer function, connect the GOT and personal computer and configure the connection setting in advance. The following shows the setting procedure for using the data transfer function.

Setting procedure	Reference
Checking the data storage destination of the GOT	☞ Page 415 Transferred data and GOT storage destination
Determining the route for data transfer between the personal computer and the GOT	☞ Page 418 Route for the data transfer
Connecting the personal computer and GOT	☞ Page 420 Connecting a personal computer to the GOT
Configuring communication setting between the personal computer and the GOT	☞ Page 434 Configuring the settings for communication between the personal computer and the GOT
Data transfer operation	Perform one of the following operations according to your purpose. ☞ Page 437 Writing data to the GOT ☞ Page 441 Reading the data from the GOT ☞ Page 443 Verifying with the project data in the GOT ☞ Page 445 Transferring data via a data storage

8.4 Transferred data and GOT storage destination

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When transferring data to the GOT from the personal computer, consider the size of the data to be transferred and the memory of the GOT.

This section describes the following.

☞ Page 415 Storage and expansion destination memories of transferred data
☞ Page 416 Checking method of data size
☞ Page 417 How to reduce the size of the package data

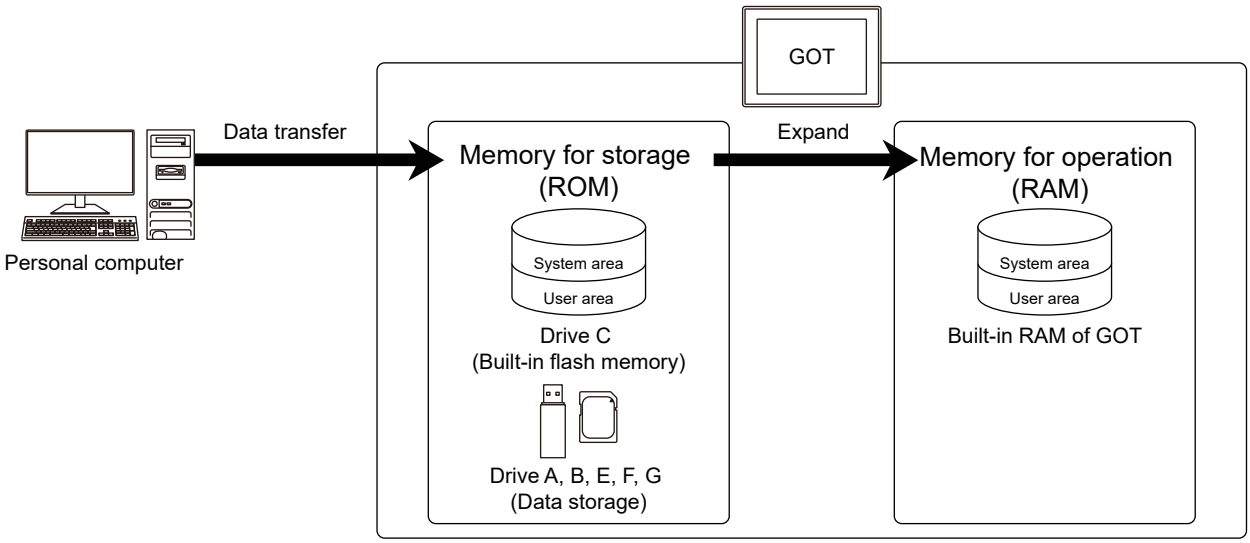
8.4.1 Storage and expansion destination memories of transferred data

The GOT has a storage memory (ROM) and operation memory (RAM).

The GOT stores the written data in the storage memory (ROM) first, and then expands it to the operation memory (RAM) when operating it.

The drive corresponding to the storage memory (ROM) is shown in the figure below.

The operation memory (RAM) is the built-in RAM of the GOT.



The storage destination and expansion destination differ depending on the type of the transferred data.

Some of the transferred data is stored in the storage memory (ROM) with compressed. When the data is expanded to the operation memory (RAM), the data size increases.

Transferred data type	Storage destination		Expansion destination	
	Storage memory (ROM)	Size	Operation memory (RAM)	Size
BootOS	System area of drive C (built-in flash memory) The size of data to be stored in the system area is unnecessary to be considered.		System area of built-in RAM The size of data to be stored in the system area is unnecessary to be considered.	
Package data	• User area on drive C (built-in flash memory)*1	256 MB	User area in built-in RAM*2	768 MB
Package data Resource data	• Drive A • Drive B • Drive E • Drive F • Drive G	Depends on the data storage.		

*1 Some standard system applications included in the package are stored in the system area.

*2 The following system application is expanded to the system area of the built-in RAM. Considering the data size is unnecessary.

Data type	Data stored in the system area of the built-in RAM
System application (standard function)	Standard system application
	UD system font, 7-segment font

For the available drives by GOT model, refer to the following.

☞ Page 81 Drive configuration and capacity of GT37

Precautions

- If the GOT is powered off while data is being written to the storage memory (ROM), the data may be corrupted and the GOT may become inoperable.
- The size of the package data must be less than the free space size of the storage memory (ROM) or the operation memory (RAM).

8.4.2 Checking method of data size

You can check the size of data such as package data and free space size of the storage destination drive in each dialog.

Check target	Dialog for checking
Screen Project data	[Data Size (Screen)] dialog [Data Size (Project)] dialog Display method: Select [Tools] → [Debug/Check] → [Data Size] from the menu. ☞ Page 349 Checking data size
Package data	[Write Option] dialog Display method: Click the [Write Option] button in the [GOT Write] tab in the [Communicate with GOT] dialog. ☞ Page 467 [Write Option] dialog
Storage designation drive	[GOT Write] tab in the [Communicate with GOT] dialog ☞ Page 465 [GOT Write] tab
	[GOT Information - Detail] dialog Display method: Click the [Detail] button in the [Communicate with GOT] dialog. ☞ Page 469 [GOT Information - Detail] dialog

8.4.3 How to reduce the size of the package data

Reduce the size of the package data by one of the following methods when the size of the package data exceeds the free space size of the storage memory (ROM) or the operation memory (RAM).

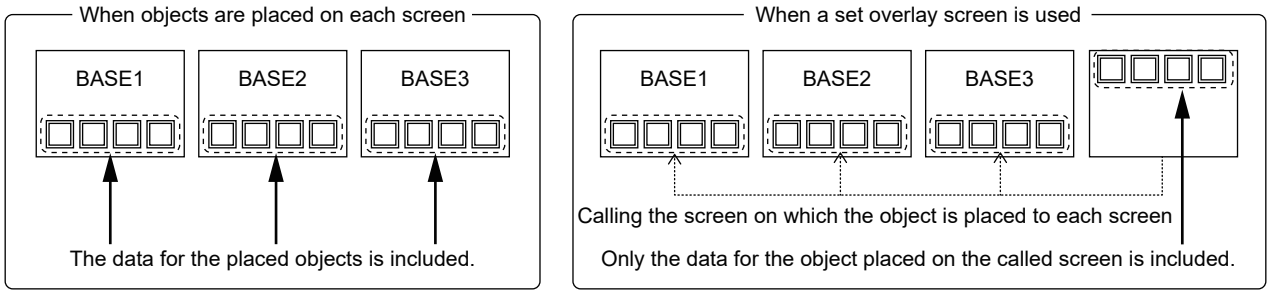
☞ Page 417 Deleting figures and objects in the project
☞ Page 417 Not writing unnecessary screens or settings
☞ Page 417 Not writing unnecessary system applications

Deleting figures and objects in the project

Reduce the number of figures and objects placed on screens in the project data.

When you placing the same object on multiple screens, reduce the capacity of the data by using the set overlay screen.

☞ Page 1865 Placing a screen on another screen



Not writing unnecessary screens or settings

When the package data is written to the GOT, the size can be reduced by selecting [Select] for [Write Mode] in the [Write Option] dialog and clearing checkboxes of unnecessary screens and settings.

☞ Page 467 [Write Option] dialog

Not writing unnecessary system applications

When the package data is written to the GOT, data size can be reduced by deselecting the checkboxes of unnecessary system applications (add-on functions) in the [Application Selection] dialog.

☞ Page 458 [Application Selection] dialog

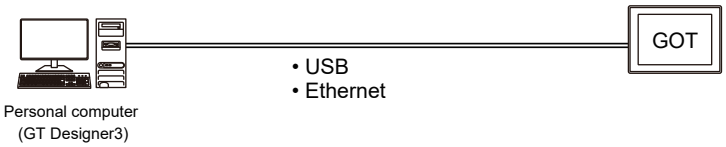
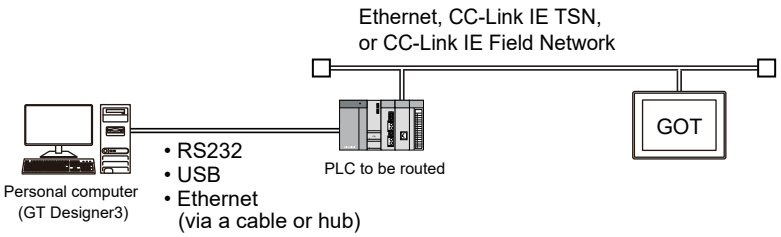
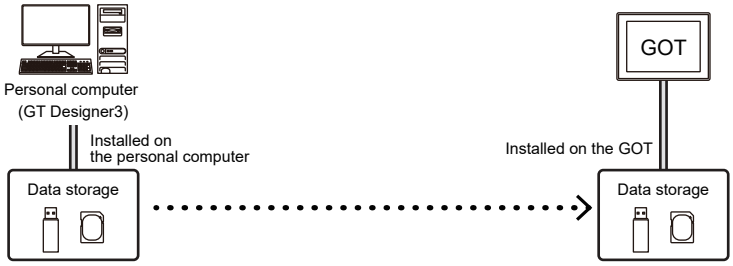
For system application (add-on function) data sizes, refer to the following.

☞ Page 459 System application (add-on function) list

8.5 Route for the data transfer

GT37 SoftGOT3000

The following table lists the routes for the data transfer.

Route for data transfer	Description	
Transferring data using communication	Connect the personal computer to the GOT, establish communication, and transfer the package data, BootOS, and resource data.	
	Connecting a personal computer and the GOT directly	Connect the personal computer to the GOT directly via USB or Ethernet to establish communication. ☞ Page 421 Connecting a personal computer and the GOT directly 
	Connecting to the GOT via a PLC	The personal computer communicates with the GOT via a PLC that is connected to the same Ethernet network, CC-Link IE TSN, or CC-Link IE Field Network as the GOT. ☞ Page 424 Connecting to the GOT via a PLC The communication available between the personal computer and the PLC is as follows.  The personal computer can communicate with the GOT over multiple networks through multiple PLCs as well. Connection can be established to the GOT on the eighth network from the personal computer at a maximum. For details, refer to the following. ☞ Page 425 Maximum network system and networks that can be routed
Transferring data using a data storage	The package data, BootOS, or CoreOS is written/stored to the data storage such as a USB memory and an SD card installed to the personal computer. ☞ Page 445 Transferring data via a data storage Then, install the data storage to the GOT to use.  Use the utility to read the data from the GOT using the data storage.	

8.5.1 Transferred data and supported routes for data transfer

Available routes for data transfer differ depending on the type of the transferred data.

○: Available, —: Not available

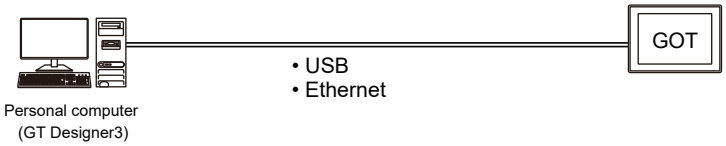
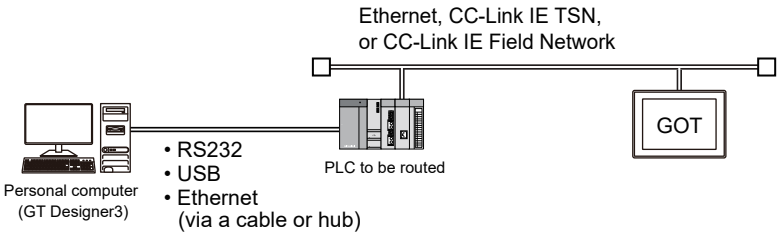
Data type	Route for data transfer using communication		Using data storage
	Direct connection to the GOT	Connection via a PLC	
CoreOS	—	—	○
BootOS	Connection using a USB cable only	—	○
Package data	○	○	○
Project data (independent)	○	○	—
Resource data	○	○	—
Drive information Use status of each drive in the GOT	○	○	—

PART 4

8.6 Connecting a personal computer to the GOT

GT37 SoftGOT3000

This section explains the connection method between the personal computer and the GOT when data is transferred using communication.

Supported route for data transfer	
Connecting a personal computer and the GOT directly	Connect the personal computer to the GOT directly via USB or Ethernet to establish communication.  ☞ Page 421 Connection using a USB cable ☞ Page 422 Connection using an Ethernet cable
Connection via a PLC	The personal computer communicates with the GOT via a PLC that is connected to the same Ethernet network, CC-Link IE TSN, or CC-Link IE Field Network as the GOT. When data is transferred by Ethernet, direct connection using an Ethernet cable and connection via a hub are available.  ☞ Page 431 Connection using an RS-232 cable ☞ Page 431 Connection using a USB cable ☞ Page 432 Direct connection using an Ethernet cable ☞ Page 433 Ethernet connection via a hub

For the route for data transfer supported by the transferred data, refer to the following.

☞ Page 419 Transferred data and supported routes for data transfer

When accessing a GOT in a remote area from the personal computer, you can perform the communication safely by using the VPN connection function.

☞ Page 671 Setting the VPN connection function of the GOT ([VPN Connection])

Precautions for the data transfer by Ethernet

■ Advance preparation for the data transfer

For the data transfer by Ethernet, configure the following settings to the GOT in advance to enable the communication by Ethernet.

- Writing of the system application (basic function and communication driver)
- Communication settings

For information on how to check the settings, refer to the following.

GOT3000 Series User's Manual (Utility & Maintenance Functions)

■Advance notification for the writing of the package data

When the package data is written by Ethernet, set a rule in advance, such as notifying the operator of the change of the package data.

When the package data is changed without a notice, the operation of the GOT may be affected.

■ Securing a recovering method

Changing the communication settings when the project data is written may disable the communication with GT Designer3.

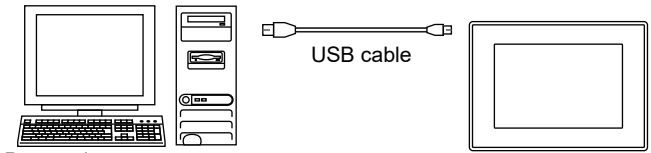
Save the data for recovering to the data storage or perform other methods, so that the GOT can recover.

8.6.1 Connecting a personal computer and the GOT directly

This section explains the data transfer by directly connecting the personal computer and the GOT with a cable.
The GOT can be connected to a personal computer directly using a USB cable or by Ethernet.
☞ Page 421 Connection using a USB cable
☞ Page 422 Connection using an Ethernet cable
To write package data to multiple GOTs in one go, connect a personal computer and the GOTs via Ethernet.

Connection using a USB cable

Connect the personal computer and the GOT directly using a USB cable.



The supported USB cables are as follows.

Cable type	Connector
USB cable	Personal computer⇔GOT USB Type-C⇔USB Type-C
	Personal computer⇔GOT USB Type-A⇔USB Type-C

Precautions

To transfer the data by connecting the personal computer and the GOT using a USB cable, do not set the resume function, suspending function, power saving function, or standby mode of the personal computer.
For details on resumption, suspension, power-saving, and standby settings, refer to the manual of the personal computer or Windows Help.
If the USB cable is removed or the GOT is reset or powered off/on, the communication may not be recovered from an error.
In this case, perform either of the following operations.

- Check if the personal computer recognizes a USB.

Check that [MITSUBISHI GOT3000 USB Controller] is displayed in [Universal Serial Bus Controllers] in Device Manager.

- Restart the GOT.

Remove the USB cable from the GOT and power off the GOT.
After the GOT is powered off, restart the GOT and connect a cable to communicate again.

Connection using an Ethernet cable

Connect the personal computer and the GOT using an Ethernet cable.

To connect by Ethernet, connect the personal computer and the GOT to the same network.

Data transfer to the second and subsequent GOTs connected through the first GOT is not supported.

When a single GOT and a single personal computer are directly connected using an Ethernet cable, they can be connected without setting the IP address.

This function is referred to as [Easy Connection].

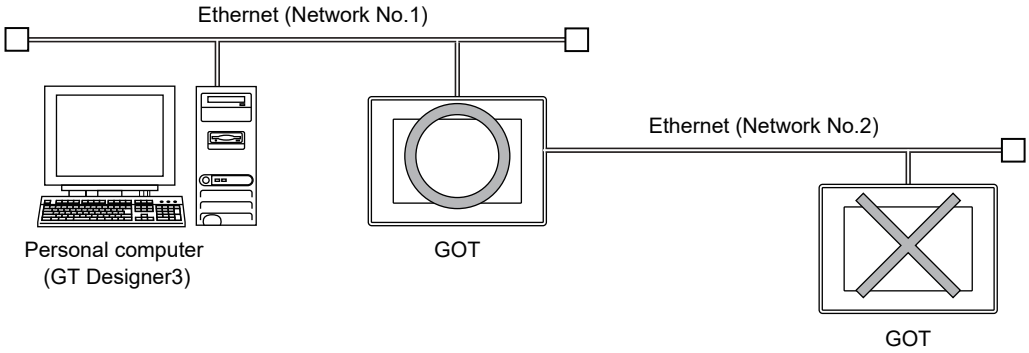
For details, refer to the following.

☞ Page 423 Easy connection

When accessing a GOT in a remote area from the personal computer, you can perform the communication safely by using the VPN connection function.

For the VPN connection function, refer to the following.

☞ Page 671 Setting the VPN connection function of the GOT ([VPN Connection])



The supported Ethernet cables are as follows.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

The following values are set for the Ethernet settings including the IP address and subnet mask of the GOT as default settings at shipment.

- Ethernet standard port 1: 192.168.3.18
- Subnet mask: 255.255.255.0

If the personal computer can access the network group set in the GOT by default, reading/writing data from/to the GOT with the factory settings is available by connecting the personal computer to the GOT.

If there are multiple GOTs whose factory settings remain unchanged, a connection to the GOTs is not available due to IP address duplication.

Set different IP addresses.

■Easy connection

[Easy Connection] is a function that allows connection without setting the IP address when a single GOT and a single personal computer are directly connected using an Ethernet cable.

It can be used only when the built-in Ethernet port 1 of the GOT is used.

Even if built-in Ethernet port 1 is disabled ([0.0.0.0] is specified for the IP address), the easy connection is available.

To prevent unauthorized connections by prohibiting the use of the easy connection, close the port used for the easy connection.

The port open/close settings can be configured in [GOT Ethernet Common Setting].

☞ Page 717 [GOT Ethernet Common Setting]

Precautions

- When one of the following connection routes is used, easy connection is not available.

◇Connection using a hub

◇Connection to LAN line

- The easy connection is not available for the GOT for which the IP filter is set.
- When the settings of the personal computer or GOT meet one of the following conditions, the easy connection may not be available.

◇In the network connection setting of the personal computer, two or more Ethernet ports are enabled.

In this case, review the settings of the personal computer so that only the Ethernet port to be used for the easy connection is enabled and the other Ethernet ports are disabled.

◇In the IP address setting of the GOT, all bits corresponding to the zeros in the subnet mask of the personal computer are on or off.

◇In the IP address setting of the GOT, all bits corresponding to the host address of each class in the IP address of the personal computer are on or off.

- The easy connection does not support encrypted communication.

Even when the setting is configured to perform encrypted communication, data is communicated in plain text with the easy connection.

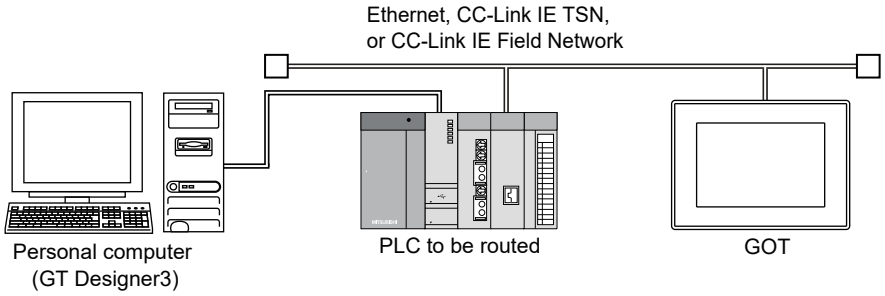
8.6.2 Connecting to the GOT via a PLC

The personal computer and the GOT are connected through a PLC that is connected to the same Ethernet network, CC-Link IE TSN, or CC-Link IE Field Network as the GOT.

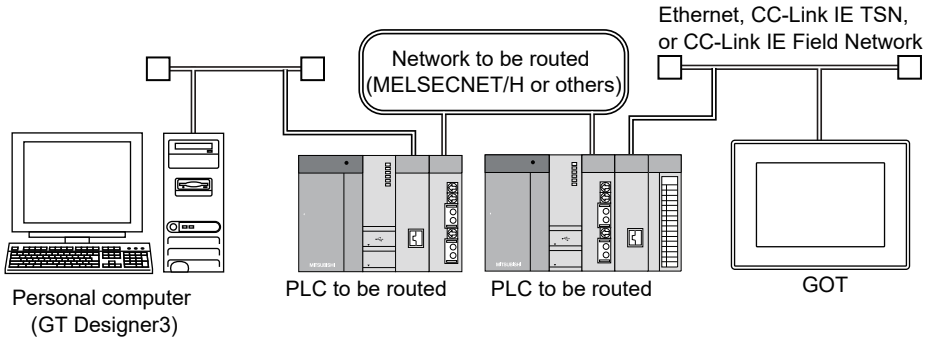
The personal computer can communicate with the GOT over multiple networks through multiple PLCs as well.

Communication with the GOT through a PLC requires routing parameter settings.

- Example of communication via a PLC



- Example of communication via the network



Precautions

■Transferring BootOS or CoreOS

BootOS and CoreOS cannot be transferred through data transfer via a PLC.

To install the BootOS to the GOT, connect the personal computer and the GOT using a USB cable or use the data storage.

To install CoreOS on the GOT, use a data storage.

☞ Page 421 Connection using a USB cable

☞ Page 448 Installing BootOS or CoreOS on the GOT

■Remote password of the PLC to be routed

When the remote password is set for the PLC to be routed, the setting must be canceled at the communication with the GOT.

When the dialog requiring you to enter the remote password appears, input the remote password of the PLC to be routed.

■Communication error when the PLC is not connected

If the GOT is not connected to a PLC with the connection setting to the PLC, the GOT fails to communicate with the PLC and retries the communication.

When the following operations are performed in GT Designer3 with this status, a communication error (error No. 8011000a) may occur.

- Writing package data
- Deleting the system application, the advanced application, the project data, and the resource data
- Drive format

For solutions, refer to the following.

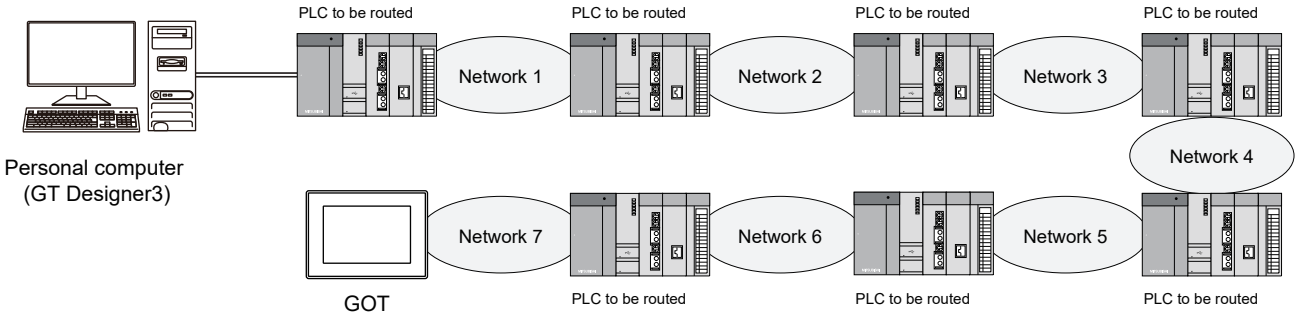
☞ Page 484 Troubleshooting

PLCs and networks to be routed

The following shows the maximum network system and connection types supported by PLCs to be routed when the personal computer and the GOT are connected via the PLCs.

■Maximum network system and networks that can be routed

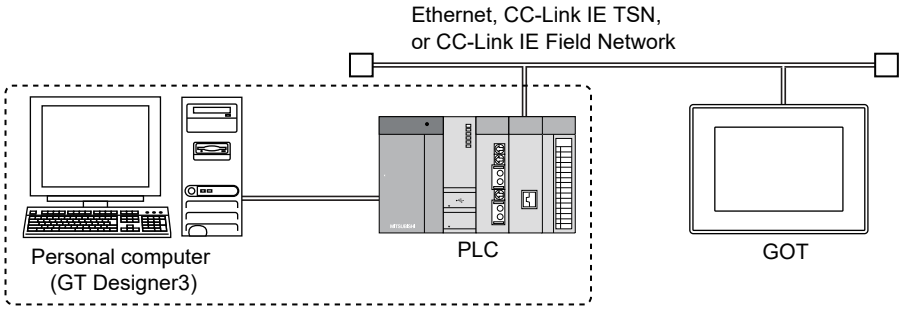
When the personal computer and the GOT are not directly connected but connected through PLCs, communication can be performed to the GOT on the eighth network (seven PLCs to be routed) from the personal computer at a maximum.



Route	Connection type
Personal computer - PLC	The following connection types are supported. • Connection using an RS-232 cable ☞ Page 431 Connection using an RS-232 cable • Connection using a USB cable ☞ Page 431 Connection using a USB cable • Ethernet connection ☞ Page 432 Direct connection using an Ethernet cable ☞ Page 433 Ethernet connection via a hub
	The supported connection types depend on the type of the PLC to be routed. For details, refer to the following. ☞ Page 426 Connection type between the personal computer and a PLC
Network 1 to 6	• MELSECNET/10 • MELSECNET/H • CC-Link IE TSN • CC-Link IE Controller Network • CC-Link IE Field Network • Ethernet
Network 7	• CC-Link IE TSN • CC-Link IE Field Network • Ethernet
	The supported networks depend on the type of the PLC to be routed. For details, refer to the following. ☞ Page 428 Connection type between a PLC and the GOT

■Connection type between the personal computer and a PLC

The following shows the applicable PLCs and the connection type between the personal computer and the PLC.



○: Available, —: Not available

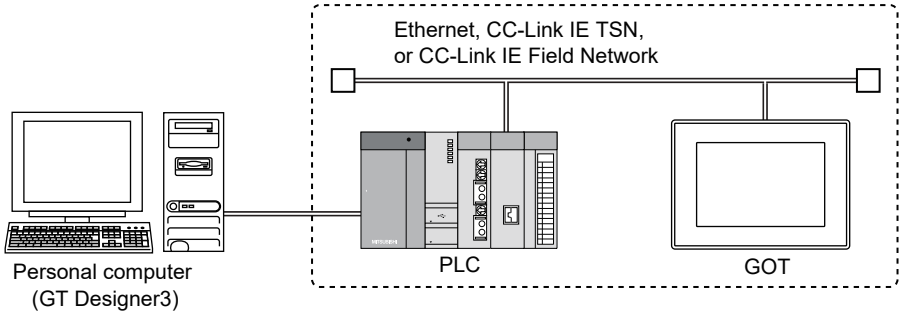
Applicable PLC		Connection type between the personal computer and a PLC		
		Connection using an RS-232 cable	Connection using a USB cable	Connection using an Ethernet cable
MELSEC iQ-R series	R00CPU R01CPU R02CPU R04CPU R08CPU R16CPU R32CPU R120CPU	—	○	○
	R08PCPU R16PCPU R32PCPU R120PCPU	—	○	○
	R08SFCPU R16SFCPU R32SFCPU R120SFCPU	—	○	○
	R04ENCPU R08ENCPU R16ENCPU R32ENCPU R120ENCPU	—	○	○*4
	R12CCPU-V	—	—	○*5
	R102WCPU-W	—	—	○*5
Motion CPU (MELSEC iQ-R series)	R16MTCPU R32MTCPU	—	○	○
MELSEC-Q series	Q00JCPU Q00CPU Q01CPU Q02CPU	○	—	○*1
	Q02HCPU Q06HCPU Q12HCPU Q25HCPU	○	○	○*1
	Q02PHCPU Q06PHCPU Q12PHCPU Q25PHCPU	○	○	○*1
	Q12PRHCPU (main base) Q25PRHCPU (main base) Q12PRHCPU (remote extension base) Q25PRHCPU (remote extension base) Q12PRHCPU (extension base) Q25PRHCPU (extension base)	○	○	—

Applicable PLC		Connection type between the personal computer and a PLC		
		Connection using an RS-232 cable	Connection using a USB cable	Connection using an Ethernet cable
MELSEC-Q series	Q00UJCPU Q00UCPU Q01UCPU Q02UCPU Q03UDCPU Q04UDHCPU Q06UDHCPU Q10UDHCPU Q13UDHCPU Q20UDHCPU Q26UDHCPU Q00UJCPU Q00UJCPU-S8 Q00UCPU Q01UCPU Q02UCPU Q03UDCPU Q04UDHCPU Q06UDHCPU Q10UDHCPU Q13UDHCPU Q20UDHCPU Q26UDHCPU	○	○	○*1
	Q03UDECPU Q04UDEHCPU Q06UDEHCPU Q10UDEHCPU Q13UDEHCPU Q20UDEHCPU Q26UDEHCPU Q50UDEHCPU Q100UDEHCPU	○*2	○	○
	Q03UDVCPU Q04UDVCPU Q06UDVCPU Q13UDVCPU Q26UDVCPU Q04UDPVCPU Q06UDPVCPU Q13UDPVCPU Q26UDPVCPU	○*2	○	○
	Q12DCCPU-V Q24DHCCPU-V Q24DHCCPU-LS Q24DHCCPU-VG Q26DHCCPU-LS	○*2	○	○*5
MELSEC-L series	L02CPU L06CPU L26CPU-BT L02CPU-P L06CPU-P L26CPU-P L26CPU-PBT	○*3	○	○
	L02SCPU-P	○	○	○*1
CC-Link IE Field Network head module	RJ72GF15-T2 LJ72GF15-T2	—	○	—

*1 Since the CPU has no Ethernet port, it cannot be connected with an Ethernet cable.
Use an Ethernet module and a hub to connect the CPU.
*2 Connect the CPU via a QCPU in the multiple CPU system.
*3 An adapter (L6ADP-R2 or L6ADP-R4) is required.
*4 Use port P1 and P2 of the network part. (The ports must be enabled for Ethernet connection.)
*5 Use the Ethernet module in the multiple CPU system.

■Connection type between a PLC and the GOT

The following shows the applicable PLCs and the connection type between the GOT and the PLC.



○: Available, —: Not available

Applicable PLC		Connection type between the GOT and a PLC			
		Ethernet connection		CC-Link IE TSN connection	CC-Link IE Field Network connection
		PLC side: Built-in Ethernet port	PLC side: Ethernet module		
MELSEC iQ-R series	R00CPU R01CPU R02CPU	○*6	○	○	○
	R04CPU R08CPU R16CPU R32CPU R120CPU	○*7	○	○	○
	R08PCPU R16PCPU R32PCPU R120PCPU	—	○	—	○
	R08SFCPU R16SFCPU R32SFCPU R120SFCPU	—	○	—	○
	R04ENCPU R08ENCPU R16ENCPU R32ENCPU R120ENCPU	○*1*7	○	○	○
	R12CCPU-V	—	○*2	—	○
	R102WCPU-W	—	○*2	—	○
Motion CPU (MELSEC iQ-R series)	R16MTCPU R32MTCPU	—	○	—	○

Applicable PLC		Connection type between the GOT and a PLC			
		Ethernet connection		CC-Link IE TSN connection	CC-Link IE Field Network connection
		PLC side: Built-in Ethernet port	PLC side: Ethernet module		
MELSEC-Q series	Q00JCPU Q00CPU Q01CPU Q02CPU	—	○	—	—
	Q02HCPU Q06HCPU Q12HCPU Q25HCPU	—	○	—	—
	Q02PHCPU Q06PHCPU Q12PHCPU Q25PHCPU	—	○	—	—
	Q12PRHCPU (main base) Q25PRHCPU (main base) Q12PRHCPU (remote extension base) Q25PRHCPU (remote extension base) Q12PRHCPU (extension base) Q25PRHCPU (extension base)	—	—	—	—
	Q00UJCPU Q00UCPU Q01UCPU Q02UCPU Q03UDCPU Q04UDHCPU Q06UDHCPU Q10UDHCPU Q13UDHCPU Q20UDHCPU Q26UDHCPU Q00UJCPU Q00UJCPU-S8 Q00UCPU Q01UCPU Q02UCPU Q03UDCPU Q04UDHCPU Q06UDHCPU Q10UDHCPU Q13UDHCPU Q20UDHCPU Q26UDHCPU	—	○	—	○
	Q03UDECPU Q04UDEHCPU Q06UDEHCPU Q10UDEHCPU Q13UDEHCPU Q20UDEHCPU Q26UDEHCPU Q50UDEHCPU Q100UDEHCPU	—	○	—	○
	Q03UDVCPU Q04UDVCPU Q06UDVCPU Q13UDVCPU Q26UDVCPU Q04UDPVCPU Q06UDPVCPU Q13UDPVCPU Q26UDPVCPU	○*3	○	—	○
	Q12DCCPU-V Q24DHCCPU-V Q24DHCCPU-LS Q24DHCCPU-VG Q26DHCCPU-LS	—	○	—	○*4

Applicable PLC		Connection type between the GOT and a PLC			
		Ethernet connection		CC-Link IE TSN connection	CC-Link IE Field Network connection
		PLC side: Built-in Ethernet port	PLC side: Ethernet module		
MELSEC-L series	L02CPU L06CPU L26CPU-BT L02CPU-P L06CPU-P L26CPU-P L26CPU-PBT L02SCPU-P	—	○	—	○*5
CC-Link IE Field Network remote head module	RJ72GF15-T2 LJ72GF15-T2	—	—	—	○
CC-Link IE Field Network Ethernet adapter module	NZ2GF-ETB	—	—	—	○

*1 Use port P1 and P2 of the network part. (The ports must be enabled for Ethernet connection.)

*2 Use the Ethernet module in the multiple CPU system.

*3 For the conditions and settings to establish connection through the Ethernet port built in the QnUD(P)VCPU, refer to the following.
☞ Page 432 Settings required for connection through the built-in Ethernet port of the QnUD(P)VCPU

*4 For Q12DCCPU-V (Basic mode), the serial number must start with 12042 or later.
For Q12DCCPU-V (Extended mode), the serial number must start with 15102 or later.

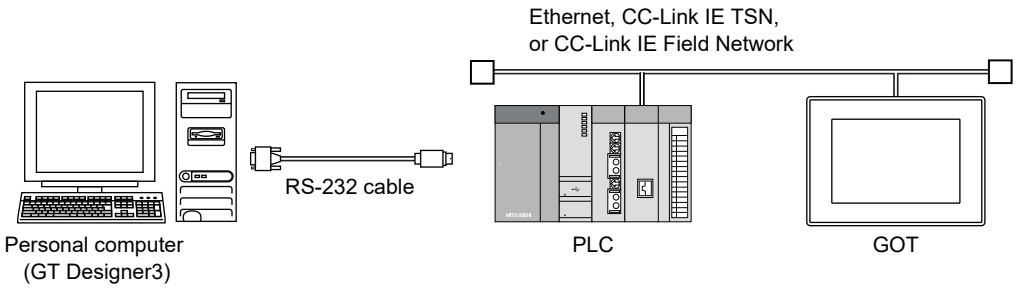
*5 Use a PLC CPU having a serial number starting with 13012 or later.
Use GT Works2 with version 1.50C or later.

*6 Use a PLC CPU with firmware version 08 or later.

*7 Use a PLC CPU with firmware version 40 or later.

Connection using an RS-232 cable

Connect the personal computer and a PLC with an RS-232 cable to communicate with the GOT via the PLC.



Use the following cable to connect a personal computer with a PLC.

PLC to be routed	Cable type	Cable model
MELSEC-Q series	RS-232 cable	GT01-C30R2-6P (3 m)
MELSEC-L series		

- For the PLCs connectable to the personal computer, refer to the following.

☞ Page 426 Connection type between the personal computer and a PLC

- For the connection type between a PLC and the GOT, refer to the following.

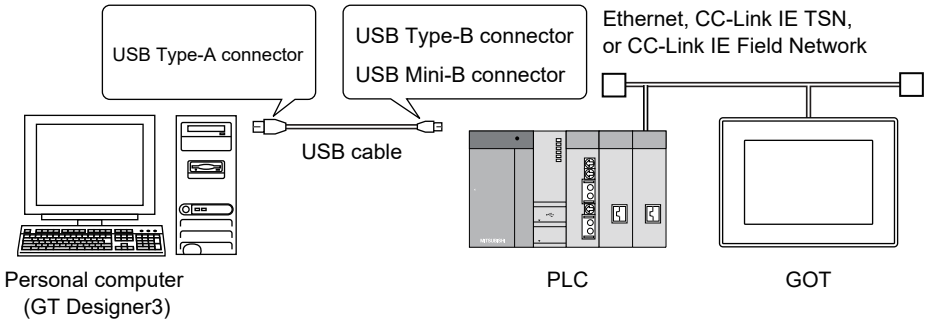
☞ Page 428 Connection type between a PLC and the GOT

- For the position of the RS-232 port of the PLC, refer to the following.

📖User's Manual of the PLC used

Connection using a USB cable

Connect the personal computer and a PLC with a USB cable to communicate with the GOT via the PLC.



Use the following cable to connect a personal computer with a PLC.

PLC to be routed		Cable type	Connector
MELSEC iQ-R series		USB cable	USB Type-A⇔USB Mini-B
MELSEC-Q series	High Performance model QCPU	USB cable	USB Type-A⇔USB Type-B
	Universal model QCPU	USB cable	USB Type-A⇔USB Mini-B
MELSEC-L series		USB cable	USB Type-A⇔USB Mini-B

- For the PLCs connectable to the personal computer, refer to the following.

☞ Page 426 Connection type between the personal computer and a PLC

- For the connection type between a PLC and the GOT, refer to the following.

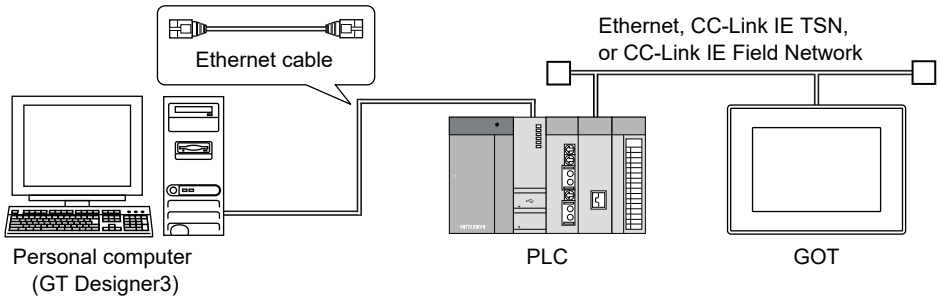
☞ Page 428 Connection type between a PLC and the GOT

- For the position of the USB port of the PLC, refer to the following.

📖User's Manual of the PLC used

Direct connection using an Ethernet cable

Connect the Ethernet port of the personal computer and the Ethernet port built in the PLC to be routed using an Ethernet cable.



Use the following cable to connect the personal computer and the PLC.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

- For the position of the Ethernet port of the PLC, refer to the following.

📖User's Manual of the PLC used

- For the PLCs connectable to the personal computer, refer to the following.

☞ Page 426 Connection type between the personal computer and a PLC

- For the connection type between a PLC and the GOT, refer to the following.

☞ Page 428 Connection type between a PLC and the GOT

- To establish connection through the Ethernet port built in the QnUD(P)VCPU, configure the MELSOFT connection extended setting.

☞ Page 432 Settings required for connection through the built-in Ethernet port of the QnUD(P)VCPU

- To establish connection through the Ethernet port built in the RCPU, enable communication based on the network number and station number.

☞ Page 432 Settings required for connection through the built-in Ethernet port of the RCPU

■Settings required for connection through the built-in Ethernet port of the QnUD(P)VCPU

Configure the settings on the PLC and GOT sides as shown below.

Required setting	Description	Requirements
PLC side setting	On GX Works2, configure the MELSOFT connection extended setting and write the parameter to the PLC. For the MELSOFT connection extended setting, refer to the following. 📖QnUCPU User's Manual (Communication via Built-in Ethernet Port)	Use the QnUD(P)VCPU and GX Works2 that satisfy the following requirements. • QnUD(P)VCPU: The serial number contains 17052 or later in the first 5 digits. • GX Works2: Version 1.535H or later
GOT side settings	In GT Designer3, register the QnUD(P)VCPU in [Connected Ethernet Controller Setting] and write the package data to the GOT. Set [Net No.], [Station], and [Port No.] as shown below. • [Net No.]: [Network No.] set in the MELSOFT connection extended setting on GX Works2 • [Station]: [Station No.] set in the MELSOFT connection extended setting on GX Works2 • [Port No.]: 5001 For [Connected Ethernet Controller Setting], refer to the following. ☞ Page 729 [Controller Setting]	-

■Settings required for connection through the built-in Ethernet port of the RCPU

Configure the settings on the PLC and GOT sides as shown below.

Required setting	Description	Requirements
PLC side setting	In GX Works3, set [Communications by Network No./Station No.] to [Enable], set the network number and station number, and then write the parameter to the PLC. For [Communications by Network No./Station No.], refer to the following. 📖MELSEC iQ-R Ethernet User's Manual (Application)	For the firmware version of the applicable RCPU, refer to the following. ☞ Page 425 PLCs and networks to be routed

Required setting	Description	Requirements
GOT side settings	In GT Designer3, register the RCPU in [Connected Ethernet Controller Setting] and write the package data to the GOT. Set [Net No.], [Station], and [Port No.] as shown below. • [Net No.]: [Network No.] set on GX Works3 • [Station No.]: [Station No.] set on GX Works3 • [Port No.]: 5001 For [Connected Ethernet Controller Setting], refer to the following. ☞ Page 729 [Controller Setting]	-

Ethernet connection via a hub

Use a hub to connect the personal computer and the PLC on the same Ethernet network, and communicate with the GOT via the PLC.

Connect the Ethernet cable for the PLC to the Ethernet port of the PLC or to the Ethernet interface module.

For the PLCs connectable to the personal computer, refer to the following.

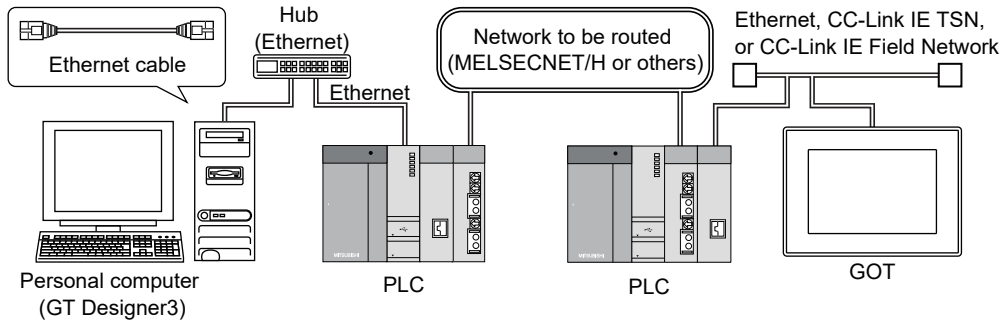
☞ Page 426 Connection type between the personal computer and a PLC

For the connection type between a PLC and the GOT, refer to the following.

☞ Page 428 Connection type between a PLC and the GOT

Ex.

Ethernet port of the PLC



The supported Ethernet cables are as follows.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

To establish connection through the Ethernet port built in the QnUD(P)VCPU, configure the MELSOFT connection extended setting.

☞ Page 432 Settings required for connection through the built-in Ethernet port of the QnUD(P)VCPU

To establish connection through the Ethernet port built in the RCPU, enable communication based on the network number and station number.

☞ Page 432 Settings required for connection through the built-in Ethernet port of the RCPU

Precautions

For transferring data to the GOT via an RCPU and RJ71EN71, the GOT is connectable to Ethernet ports (P1 and P2) of the RJ71EN71.

If you set the same network number for both Ethernet ports (P1 and P2) of the RJ71EN71, connect the GOT to Ethernet port P1.

An error occurs if all the following conditions are satisfied.

- Both Ethernet ports (P1 and P2) of the RJ71EN71 are in use.
- The same network number is set for both Ethernet ports (P1 and P2).
- The GOT (data transfer destination) is connected to Ethernet port P2 of the RJ71EN71.

8.7 Configuring the settings for communication between the personal computer and the GOT

After configuring connection between the personal computer and the GOT, configure communication between them.

1. Select [Common] → [Peripheral Setting] → [PC (Data Transfer)] from the menu to display the [PC (Data Transfer)] dialog.
2. Configure the settings in the [PC (Data Transfer)] dialog.

For the setting items, refer to the following.

☞ Page 450 [PC (Data Transfer)] dialog

3. Select [Communication] → [Communication Configuration] from the menu to display the [Communication Configuration] dialog.

The dialog can be displayed by clicking the [Communication Configuration] button in the [Communicate with GOT] dialog as well.

4. Configure the settings in the [Communication Configuration] dialog.

For the setting items, refer to the following.

☞ Page 451 [Communication Configuration] dialog

5. Click the [Test] button to check that the communication with the GOT can be normally performed.
6. Click the [OK] button.

The communication settings are saved.

Point

The [Communication Configuration] dialog appears when one of the following operations is performed.

- Select [Communication] → [Write to GOT] from the menu.
- Select [Communication] → [Read from GOT] from the menu.
- Select [Communication] → [Verify GOT] from the menu.

To display the [Communicate with GOT] dialog without displaying the [Communication Configuration] dialog, deselect [Display the dialog of [Communication Configuration] the next time as well] in the [Communication Configuration] dialog.

If this item is deselected, the [Communication Configuration] dialog and this item do not appear from the next time.

To display the [Communication Configuration] dialog again, select [Display the dialog of Communication Setting before displaying the dialog of Communicate with GOT/GOT Diagnostics] in the [Option] dialog.

8.8 Setting the data to be transferred (application selection)

GT37 SoftGOT3000

Before writing package data to the GOT, set the data to be included in the package data.
This function is referred to as [Application Selection].
The GOT automatically selects the system applications, communication drivers, and special data required for the project and incorporates them into the package data.
System applications, communication drivers, and special data for functions not set in the project are not incorporated into the package data automatically. Add the data manually if necessary.
Conversely, to reduce the size of the package data, you can set unnecessary functions to be excluded from the package data.
☞ Page 435 Specifications of the application setting
☞ Page 436 Setting applications used

PART 4

8.8.1 Specifications of the application setting

☞ Page 435 Writing data the user can select
☞ Page 435 Method to hold the data when the project is saved

Writing data the user can select

In [Application Selection], the following data can be set.
- System application (add-on function)
- Communication driver
- Special data

Method to hold the data when the project is saved

The information of the writing data which the user has selected manually is held in the project when the project is saved.
The method to hold the data depends on the saving format.

Saving format of project data	Method to hold transfer data	
	Manual selection status	System application
A single file format project (GTYS, G3)	Held	The data is saved to the package data with the project data. When the project is edited after the [Application Selection] dialog is closed and functions with a settable number limit are set exceeding the allowed limit, only the data for the number of settable functions is saved in the priority order of the automatic selection → manual selection. When the number of functions exceeds the limit only by the automatic selection, system applications up to the limit starting from the top in the tree are saved in the package data.
A single file format project (GTY)	Held	The data is not saved to the package data.

8.8.2 Setting applications used

Select the writing data by the following procedure.

1. Perform one of the following operations to display the [Application Selection] dialog.

- Select [Common] → [Application Selection] from the menu.
- Double-click [Application Selection] in the project tree.
- Click the [Application Selection] button in the [Write Option] dialog.

2. Switch the tab in the [Application Selection] dialog and select the data to be included in the package according to your purpose.

☞ Page 458 [Application Selection] dialog

3. Click the [OK] button.

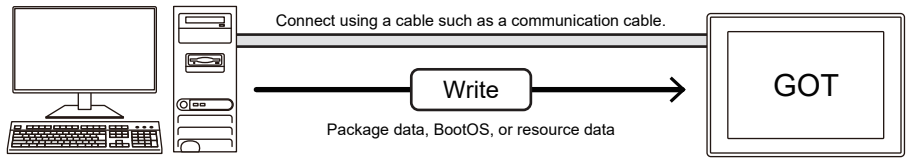
Settings of the applications used are saved in the project.

8.9 Writing data to the GOT

GT37 SoftGOT3000

The following shows the function for writing data to the GOT from the personal computer using communication.

☞ Page 437 Specifications of data writing
☞ Page 439 Writing data to a single GOT
☞ Page 440 Writing package data to multiple GOTs in a batch



Personal computer
(GT Designer3)

- For the settings and others required before writing data, refer to the following.

☞ Page 414 Setting procedure for using the data transfer function

- For the instruction on how to write data to the GOT using a data storage, refer to the following.

☞ Page 445 Transferring data via a data storage

To start up the package data from a data storage directly, use a data storage.

8.9.1 Specifications of data writing

The following shows the specifications of data writing to the GOT.

Individual writing and batch writing

There are two methods for writing data: one for writing to each GOT individually, and another for writing to multiple GOTs in a batch.

The following types of data can be written.

Writing method	Target data	Details
Individual writing	• BootOS • Package data • Resource data	The BootOS can be installed only when the personal computer and the GOT are directly connected by using a USB cable.
Batch writing	• Package data	GOTs directly connected via Ethernet are subject to batch writing. GOTs connected via a PLC do not support batch writing. Batch writing is not available for GOTs whose types differ from the one set in the project of the package data.

CoreOS can only be installed using a data storage.

☞ Page 445 Transferring data via a data storage

Package data write mode

The following two modes are available for writing package data to each GOT individually.

When writing package data to multiple GOTs in a batch, the mode is fixed to [Synchronized].

Mode	Description
Synchronized	When package data having the same package folder name or project ID as the package data in the GOT is written, only the different data is written. From the data in the GOT, system applications not used in the project data and project data are deleted. When package data having a different package folder name or project ID from the package data in the GOT is written, all the data in the GOT is deleted before the package data is written.
Select	Only the data selected in the package data tree in the [Write Option] dialog is written. When package data having a different package folder name or project ID from the package data in the GOT is written, all the data in the GOT is deleted before the package data is written.

Set the write mode in the [Write Option] dialog.

☞ Page 467 [Write Option] dialog

Operation related to the security mode

The following shows the operation of the data transfer function related to the security mode.

■When writing package data in security mode 2 to a GOT in security mode 1

When package data in security mode 2 is written to a GOT with project data in security mode 1 and without the operator management information file, the [Register New Operator] screen appears to prompt a new operator registration.

In this case, set an operator name and password and click the [OK] button.

The group of the registered operator is Administrators.

When the operator is registered, the security mode is changed to mode 2.

■When writing data to a GOT in security mode 2

When writing package data to a single GOT or performing batch writing to multiple GOTs, the behavior of operator authentication differs as follows when the security mode of the destination GOT is set to mode 2.

Writing method	Description
Writing to a single GOT	Operator authentication is performed when data is written. If operator authentication fails, a message is displayed and the writing process is canceled.
Batch writing to multiple GOTs	Authentication is performed using the operator authentication information set in the [Batch Write to multiple GOTs] dialog. Batch writing is available only for the GOTs for which operator authentication has been successful. If operator authentication fails, a write error occurs.

When the security mode of the destination GOT is mode 2, operator authentication works as follows.

- Operator authentication is performed when data is written.
- If operator authentication fails, a message is displayed and the writing process is canceled.

When installing BootOS or CoreOS, the operator to be authenticated must have the authority to install BootOS or CoreOS.

Encrypted communication

When the personal computer and GOT are directly connected by Ethernet, communication data can be encrypted when transferred.

To encrypt the communication, set [Encryption Communication Port No.] to open in the [GOT Ethernet Setting] window, and select [Perform encryption communication] in the [Communication Configuration] or [Batch Write to multiple GOTs] dialog.

☞ Page 717 [GOT Ethernet Common Setting]
☞ Page 451 [Communication Configuration] dialog
☞ Page 476 [Batch Write to multiple GOTs] dialog
☞ Page 3069 Encrypting communication data (Encrypted communication function)

File protection

To enhance the confidentiality of project data, you can set a password for project data with the file protection function.

To enable file protection, select [Information Protection Function] - [File Protection] tab in the [Environmental Setting] window, select [Use file protection function], and set a file protection password in the [Project Data Password Registration] dialog that appears when writing data.

☞ Page 3068 [File Protection]
☞ Page 451 [Communication Configuration] dialog

8.9.2 Writing data to a single GOT

This section explains how to write data to a single connected GOT using communication.
When installing the BootOS, connect to the GOT directly by USB connection.
For functions that require upgrading BootOS and CoreOS versions, refer to the following.
☞ Page 3732 Functions that require upgrading the versions of BootOS and CoreOS
For the writable data, refer to the following.
☞ Page 410 Types of the data that can be transferred
For project data where the file protection function is enabled but not started, differential writing of the package data cannot be performed.
Write data by the following procedure.

1. Perform either of the following operations.

Data to be written	Operation
Package data	Perform either of the following operations. • Open the project data (GTY) to be written and select [Communication] → [Write to GOT] from the menu. • In the [MELSOFT GT Designer3] dialog displayed when the package data (GTYS) is opened, click the [Write to GOT without opening] button.
BootOS Resource data	Select [Communication] → [Write to GOT] from the menu.

Depending on the setting, the displayed dialog differs as follows.

Displayed dialog	Next step
[Communication Configuration] dialog	Proceed to Step 2.
[Communicate with GOT] dialog	Proceed to Step 4.
[Project Data Password Registration] dialog	Displayed when the file protection function is enabled. Set a file protection password as necessary. Proceed to Step 4.

2. Configure settings in the [Communication Configuration] dialog.
For the setting items, refer to the following.
☞ Page 451 [Communication Configuration] dialog

3. Click the [OK] button in the [Communication Configuration] dialog.
When the file protection function is enabled, the [Project Data Password Registration] dialog appears. Set a file protection password as necessary.
The [Communicate with GOT] dialog appears.

4. Click the [GOT Write] tab in the [Communicate with GOT] dialog and configure settings.
For the setting items, refer to the following.
☞ Page 465 [GOT Write] tab

5. Check the size of the data to be transferred with [Data Size], and make sure that the destination drive has enough free space for storing the data.
For the storage destination of each data, refer to the following.
☞ Page 415 Transferred data and GOT storage destination

6. Click the [GOT Write] button.
If data transfer security has been set for the destination GOT, the dialog for entering the data transfer password appears.
Enter the data transfer password.
The data is written to the GOT.
For resource data, the [Resource Data Write Result] dialog appears after it is written.
☞ Page 471 [Resource Data Write Result] dialog

Precautions

• If the writing of the package data is canceled during the process, the data in the GOT may become corrupt.
In this case, write the package data again.

• A large number of folders or files in the data storage may decrease file access performance, resulting in a much longer communication time than usual or a communication timeout.

Reduce the number of folders or files in the data storage as necessary.

8.9.3 Writing package data to multiple GOTs in a batch

You can write the same package data to multiple GOTs connected via Ethernet in a batch.

Batch writing is not available for GOTs connected via a PLC.

When sharing projects between multiple GOTs, project data can be updated efficiently.

Perform the following operation to write package data to multiple GOTs in a batch.

1. Perform either of the following operations to display the [Batch Write to multiple GOTs] dialog.

• Open the project data (GTY) to be written and select [Communication] → [Batch Write to multiple GOTs] from the menu. In the [MELSOFT GT Designer3] dialog displayed when the package data (GTYS) is opened, click the [Batch Write to multiple GOTs without opening] button.

When the file protection function is enabled, the [Project Data Password Registration] dialog appears. Set a file protection password as necessary.

2. Configure each setting in the [Batch Write to multiple GOTs] dialog, and click the [OK] button.

For the setting items, refer to the following.

☞ Page 476 [Batch Write to multiple GOTs] dialog

3. Click the [GOT Write] button.

Package data writing starts and the [Communication Status] dialog appears.

The confirmation dialog before writing is not displayed.

When the writing is completed, the write result is displayed in the [Communication Status] dialog.

☞ Page 480 [Communication Status] dialog

Precautions

• When writing package data to multiple GOTs in a batch, the write mode is fixed to [Synchronize].

• Batch writing cannot be performed on GOTs that do not match the type set in the package data to be written.

• The following settings cannot be written to multiple GOTs in a batch.

If package data reflecting these setting changes is written to GOTs, differences will be detected during verification.

Data excluded from batch writing	Reference for details
Setting for [GOT ID] in the [GOT Setup] window	☞ Page 623 [GOT ID]
Settings in the [I/F Communication Setting] dialog	☞ Page 774 [I/F Communication Setting] dialog
Settings in the [GOT Ethernet Setting] window	☞ Page 713 Setting the GOT Ethernet interface ([GOT Ethernet Setting])
Individual identification information such as the GOT IP address and the GOT station number	☞ Page 251 Verification items for data check

• Since individual identification information and the settings of the connected device are not transferred, communication may fail if package data containing these setting changes is transferred.

• If the writing of the package data is canceled during the process, the data in the GOT may become corrupted.

In this case, write the package data again.

• The settings in the [Batch Write to multiple GOTs] dialog opened using the [Batch Write to multiple GOTs without opening] button are not retained.

• A large number of folders or files in the data storage may decrease file access performance, resulting in a much longer communication time than usual or a communication timeout.

Reduce the number of folders or files in the data storage as necessary.

• When the project data is encrypted by registering a project password, the following cases result in a write error.

◇The package data to be written is not encrypted, and the project data in the destination GOT is encrypted.

◇The package data to be written is encrypted, and the project data in the destination GOT is not encrypted.

◇Both the package data to be written and the project data in the destination GOT are encrypted, but the passwords used for encryption are different.

8.10 Reading the data from the GOT

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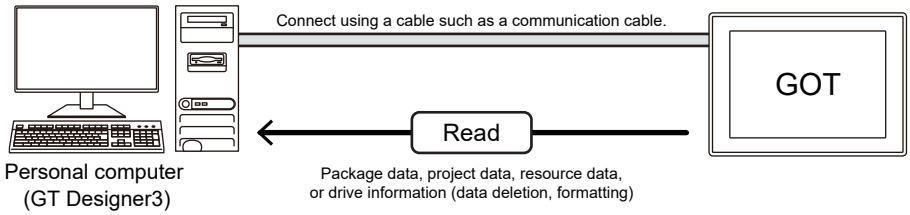
The following shows the function for reading data from the GOT to the personal computer using communication.
The read function contains functions such as acquiring the folder structure or file information in the GOT drive to delete the project data or resource data in the drive and formatting the data storage in the GOT.

☞ Page 441 Specifications of data reading
☞ Page 442 Reading the data from the GOT



- For the settings and others required before reading data, refer to the following.

☞ Page 414 Setting procedure for using the data transfer function

8.10.1 Specifications of data reading

The following shows the specifications of data reading from the GOT.

Reading data and reading methods

Depending on the data read from the GOT, the reading method differs, such as storing it in a folder in the personal computer and opening it in GT Designer3. The following table lists the available reading method for each data.

Reading data	Reading methods
Package data	Storing the data in a folder in the personal computer
Project data	Storing the data in a folder in the personal computer Reading the data to GT Designer3 to open
Resource data	Storing the data in a folder in the personal computer
Drive information	Displaying the drive information in the [GOT Read] dialog of GT Designer3 Data in a drive in the GOT can be deleted or formatted.

Operation related to the security mode

When the security mode of the read source GOT is mode 2, operator authentication is performed when data is read.

Encrypted communication

When the personal computer and GOT are directly connected by Ethernet, communication data can be encrypted when transferred.
To encrypt the communication, open [Encryption Communication Port No.] in the [GOT Ethernet Setting] window and select [Perform encryption communication] in the [Communication Configuration] dialog.

☞ Page 717 [GOT Ethernet Common Setting]
☞ Page 451 [Communication Configuration] dialog

8.10.2 Reading the data from the GOT

Project or package data where the file protection function is enabled but not started cannot be read.
Read data by the following procedure.

1. Select [Communication] → [Read from GOT] from the menu.

If the [Communication Configuration] dialog appears, proceed to Step 2.
If the [Communicate with GOT] dialog appears, perform the operation from Step 4.

2. Configure settings in the [Communication Configuration] dialog.

For the setting items, refer to the following.
☞ Page 451 [Communication Configuration] dialog

3. Click the [OK] button in the [Communication Configuration] dialog.

The [Communicate with GOT] dialog appears.

4. Click the [GOT Read] tab in the [Communicate with GOT] dialog and configure settings.

For the setting items, refer to the following.
☞ Page 472 [GOT Read] tab

5. To read package data, project data, or resource data, click the [GOT Read] button.

- When data transfer security is set for the connected GOT

The dialog for entering the data transfer password appears. Enter the data transfer password.

- When a file protection password is set for the project data to be read

The dialog for entering the password appears. Enter the file protection password.

- When project security is set for the project data to be read

The user authentication dialog appears. Enter the user name and password.
The data is read from the GOT.

Precautions

- If the GOT type of the GOT from which data is read is not supported and the system version of GT Designer3 is earlier than that of the project to be read from the GOT, the data cannot be read as project data to GT Designer3.

In such a case, read it after changing [Read Data] in the [GOT Read] tab to [Package Data].

- When the project data is saved to the personal computer directly at the reading from the GOT, the project data is not the target to search for the utilize data.

When the utilize data is used, open the project in GT Designer3 and save the project again after reading.

- A large number of folders or files in the data storage may decrease file access performance, resulting in a much longer communication time than usual or a communication timeout.

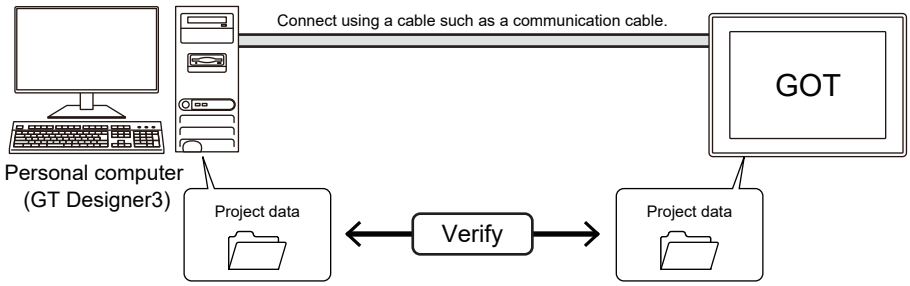
Reduce the number of folders or files in the data storage as necessary.

8.11 Verifying with the project data in the GOT

GT37 SoftGOT3000

You can verify the project data currently being edited in GT Designer3 with the project data written to the connected GOT to check the difference information.

☞ Page 443 Specification of verification
☞ Page 444 Verifying with the project data in the GOT



- For the settings and others required before verifying data, refer to the following.

☞ Page 414 Setting procedure for using the data transfer function

- For verification of the project data being edited in GT Designer3 and other project data saved in the personal computer, refer to the following.

☞ Page 245 Verifying a project

8.11.1 Specification of verification

The following shows the specifications of verification with the project data in the connected GOT.

Data verification method

Verify the data by either of the following methods.

Verification method	Description
Data check	The data is verified by setting.
Time stamp check	The data is verified by time stamps of files.

Operation related to the security mode

When the security mode of the connected GOT is mode 2, operator authentication is performed when data is verified.

Encrypted communication

When the personal computer and GOT are directly connected by Ethernet, communication data can be encrypted when transferred.

To encrypt the communication, open [Encryption Communication Port No.] in the [GOT Ethernet Setting] window and select [Perform encryption communication] in the [Communication Configuration] dialog.

☞ Page 717 [GOT Ethernet Common Setting]
☞ Page 451 [Communication Configuration] dialog

8.11.2 Verifying with the project data in the GOT

Project data where the file protection function is enabled but not started cannot be verified.

Verify with the project data in the GOT by the following procedure.

1. Open the project data in GT Designer3 and select [Communication] → [Verify GOT] from the menu.

If the [Communication Configuration] dialog appears, proceed to Step 2.

If the [Communicate with GOT] dialog appears, perform the operation from Step 4.

2. Configure settings in the [Communication Configuration] dialog.

For the setting items, refer to the following.

☞ Page 451 [Communication Configuration] dialog

3. Click the [OK] button in the [Communication Configuration] dialog.

The [Communicate with GOT] dialog appears.

4. Click the [GOT Verification] tab in the [Communicate with GOT] dialog and configure settings.

For the setting items, refer to the following.

☞ Page 475 [GOT Verification] tab

5. Click the [GOT Verification] button.

• When data transfer security is set for the connected GOT

The dialog for entering the data transfer password appears. Enter the data transfer password.

• When a file protection password is set for the project data to be verified

The dialog for entering the password appears. Enter the file protection password.

• When project security is set for the project data in the GOT to be verified

The user authentication dialog appears. Enter the user name and password.

Data is verified.

When the verification is completed, the verification results are shown in the [Verify Result] dialog.

☞ Page 261 [Verify Result] dialog

8.12 Transferring data via a data storage

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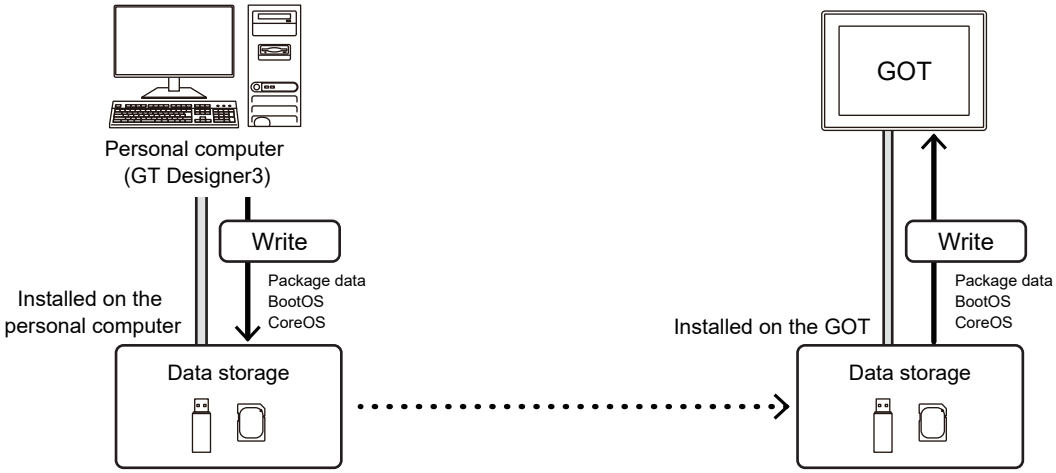
You can copy data such as package data, BootOS, and CoreOS to a data storage such as an SD card and USB memory from the personal computer once, and then write/install the data from the data storage to the GOT.

☞ Page 446 Transferring the package data to the GOT

☞ Page 448 Installing BootOS or CoreOS on the GOT

When configuring settings for writing package data to a data storage, you can specify whether to write the package data in the data storage to the GOT or let the GOT use the package data stored in the data storage as is.



For the available data storage, refer to the following Technical Bulletin.

List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

For functions that require upgrading BootOS and CoreOS versions, refer to the following.

☞ Page 3732 Functions that require upgrading the versions of BootOS and CoreOS

8.12.1 Transferring the package data to the GOT

Transfer the package data from the personal computer to the GOT using a data storage by either of the following methods.

Operation	Description
☞ Page 446 Writing a package data into the GOT	Use this method to start up the package data from the built-in flash memory of the GOT.
☞ Page 447 Starting up the package data from a data storage	Use this method to start up the package data directly from a data storage instead of the built-in flash memory of the GOT. Preparing multiple data storages in which different projects are written allows you to switch projects by replacing the data storage.

Before writing the package data, check the data size of the package data to be transferred and the available space of the destination drive.

For how to check the available space of the destination drive, refer to the following.

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

When the package data is transferred to the GOT via a data storage, it is verified against the package data already written to the GOT. Only the differing data is written.

The data in the GOT which is not related to the package is deleted.

Set the data to be included in the package data in advance as necessary.

☞ Page 435 Setting the data to be transferred (application selection)

Writing a package data into the GOT

The following shows the procedure for writing package data to the GOT using a data storage.

1. Install a data storage to the personal computer.

2. Start GT Designer3 and open the project data to be written.

3. Select [Communication] → [Write to Memory Card] from the menu.

When the file protection function is enabled, the [Project Data Password Registration] dialog appears. Set a file protection password as necessary.

The [Communicate with Memory Card] dialog appears.

☞ Page 482 [Communicate with Memory Card] dialog

4. Click the [Package Data Write] tab and configure settings.

At this time, set the following items without fail.

Setting item	Description
[Destination Memory Card]	Select the drive name of the data storage to which the package data is written.
[GOT Startup Method]	Select [Start after installing on the specific drive].
[Install Destination Drive]	Select the destination drive of the GOT to which the data is written.

5. Click the [Memory Card Write] button.

6. After the data is written to the data storage, remove the data storage from the personal computer.

7. Install the data storage that has been removed from the personal computer to the GOT.

For information on how to install each data storage, refer to the following.

📖GOT3000 Series User's Manual (Hardware)

8. While pressing the S.MODE switch, power on the GOT.

The package data is written to the GOT.

9. After the package data is written, touch the screen to restart the GOT.

Starting up the package data from a data storage

Start up the GOT from a data storage instead of the built-in flash memory of the GOT by the following procedure.

1. Install a data storage to the personal computer.
2. Start GT Designer3 and open the project data to be written.
3. Select [Communication] → [Write to Memory Card] from the menu.

When the file protection function is enabled, the [Project Data Password Registration] dialog appears. Set a file protection password as necessary.

The [Communicate with Memory Card] dialog appears.

☞ Page 482 [Communicate with Memory Card] dialog

4. Click the [Package Data Write] tab and configure settings.

At this time, set the following items.

Setting item	Description
[Destination Memory Card]	Select the drive name of the data storage to which the package data is written.
[GOT Startup Method]	Select [Directly from the memory card].

5. Click the [Memory Card Write] button.
6. After the data is written to the data storage, remove the data storage from the personal computer.
7. Install the data storage that has been removed from the personal computer to the GOT.

For information on how to install each data storage, refer to the following.

GOT3000 Series User's Manual (Hardware)

8. Power on the GOT.

8.12.2 Installing BootOS or CoreOS on the GOT

Use a data storage to install BootOS or CoreOS on the GOT.
For functions that require upgrading BootOS and CoreOS versions, refer to the following.
☞ Page 3732 Functions that require upgrading the versions of BootOS and CoreOS
When the security mode of the GOT is mode 2, authentication is performed by the operator authentication function. If the authentication succeeds and the operator has the authority to install BootOS and CoreOS, the data can be installed on the GOT.
Even when the security mode of the GOT is mode 2, operator authentication is not performed if CoreOS is installed with the setting to delete package data on drive C.
Before installing BootOS or CoreOS, check the data size of Boot OS or CoreOS and the available space of the data storage.

Installing BootOS to the GOT

The following shows the procedure for installing BootOS to the GOT.

1. Install the data storage to the personal computer, and start GT Designer3.
2. Select [Communication] → [Write to Memory Card] from the menu.

The [Communicate with Memory Card] dialog appears.
☞ Page 482 [Communicate with Memory Card] dialog

3. In the [BootOS/CoreOS Write] tab, select [BootOS] for [Write Data], and configure other settings as needed.
4. Click the [Memory Card Write] button.

The data is written to the data storage.

5. After the data is written to the data storage, remove the data storage from the personal computer.
6. Install the data storage that has been removed from the personal computer to the GOT.

For information on how to install each data storage, refer to the following.
GOT3000 Series User's Manual (Hardware)

7. While pressing the S.MODE switch, power on the GOT.

BootOS is installed on the GOT.

8. When the BootOS installation is complete, power off the GOT.
9. Remove the data storage from the GOT.
10. Power the GOT back on and install the required package data on the GOT.

If the installation process fails, the recovery function returns BootOS to the factory state.
If an error occurs at the recovery, contact the manufacturer for repair.

Installing CoreOS on the GOT

When CoreOS is installed, BootOS is also installed at the same time.
CoreOS can only be installed on the standard SD card (drive A of the GOT).
The following shows the procedure for installing CoreOS on the GOT.

1. Insert the SD card into the personal computer and start GT Designer3.
2. Select [Communication] → [Write to Memory Card] from the menu.

The [Communicate with Memory Card] dialog appears.
☞ Page 482 [Communicate with Memory Card] dialog

3. In the [BootOS/CoreOS Write] tab, select [CoreOS] for [Write Data], and configure other settings as needed.
4. Click the [Memory Card Write] button.

The data is installed on the SD card.

5. When the installation on the SD card is complete, remove the SD card from the personal computer.

6. Insert the SD card removed from the personal computer into the GOT.

For information on how to insert an SD card, refer to the following.

GOT3000 Series User's Manual (Hardware)

7. Power on the GOT.

A confirmation message for installing CoreOS appears.

8. To install CoreOS, touch the screen for two seconds or longer.

To abort the CoreOS installation, power off the GOT.

When the CoreOS installation is complete, a completion message appears.

9. Remove the SD card from the GOT.

10. Touch the screen to restart the GOT.

11. Install the required package data on the GOT.

If the installation processing fails, BootOS and CoreOS are reset to the factory defaults by the recovery function.

If an error occurs at the recovery, contact the manufacturer for repair.

8.13 Setting dialogs related to data transfer

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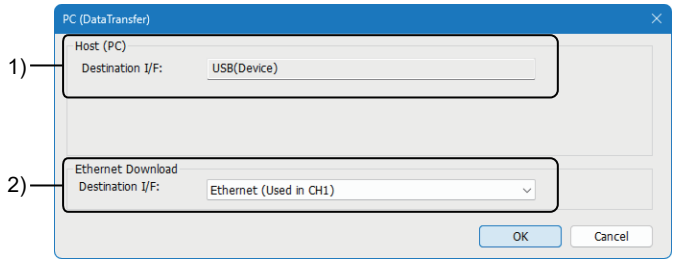
☞ Page 450 [PC (Data Transfer)] dialog
☞ Page 451 [Communication Configuration] dialog
☞ Page 458 [Application Selection] dialog
☞ Page 465 [Communicate with GOT] dialog
☞ Page 476 [Batch Write to multiple GOTs] dialog
☞ Page 482 [Communicate with Memory Card] dialog

8.13.1 [PC (Data Transfer)] dialog

Set the communication interface to be used for the data transfer between the personal computer and the GOT.

This dialog can be displayed by selecting [Common] → [Peripheral Setting] → [PC (Data Transfer)] from the menu.



Item			Description
1)	[Host (PC)]	[Destination I/F]	A connection destination interface for direct connection using a USB cable.
2)	[Ethernet Download]	[Destination I/F]	A connection destination interface for connection via Ethernet. Set the connection destination interface for Ethernet download. • [Ethernet] Connects to the Ethernet interface of the GOT. If it is already used for another setting, the channel that uses it is also displayed. • [Not connected] Does not use an Ethernet interface of the GOT.

8.13.2 [Communication Configuration] dialog

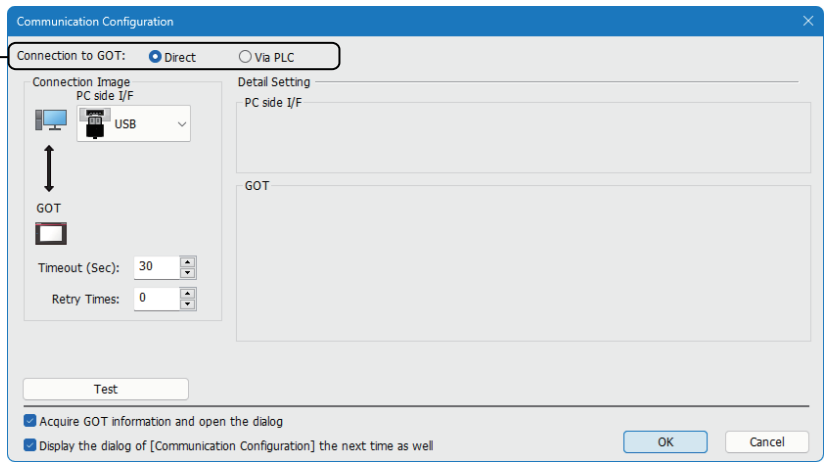
Configure the settings for communication between the personal computer and the GOT such as connection method and connection interface between the personal computer and the GOT.

This dialog can be displayed by selecting [Communication] → [Communication Configuration] from the menu.

The settings differ according to the connection method of the personal computer and the GOT.

Connection method	Setting
Connecting the personal computer to GOT directly	Select [Direct] for [Connection to GOT] in the [Communication Configuration] dialog. ☞ Page 452 Connecting to the GOT directly
Connecting the personal computer to the GOT via a PLC	Select [Via PLC] for [Connection to GOT] in the [Communication Configuration] dialog. ☞ Page 454 Connecting to the GOT via a PLC

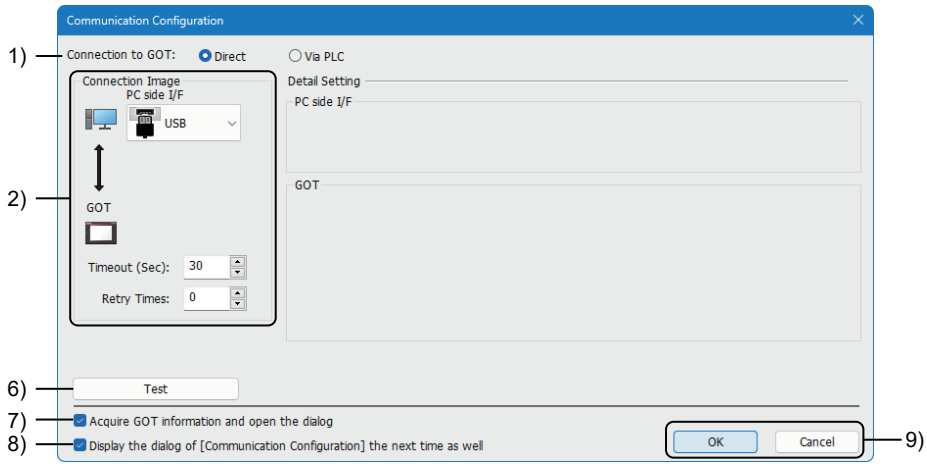
[Connection to GOT]



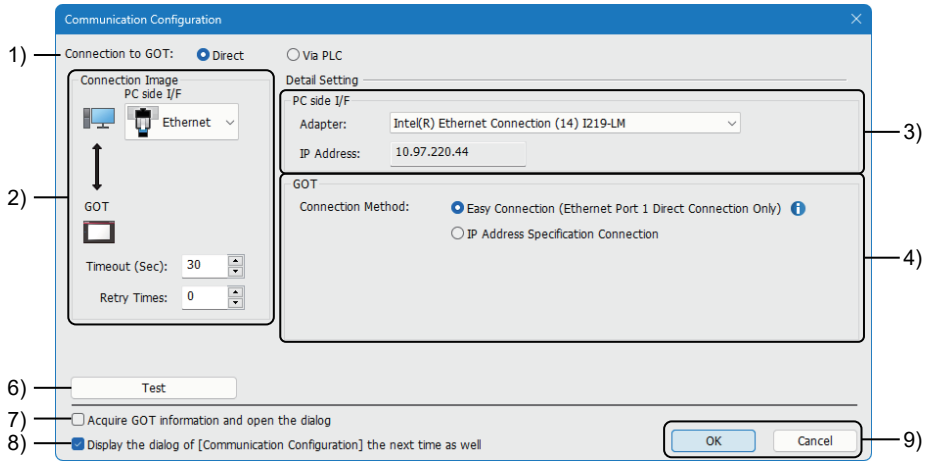
Connecting to the GOT directly

The following shows the setting windows for directly connecting the personal computer to the GOT via USB or Ethernet. The setting items differ depending on the selection for [PC side I/F] in [Connection Image] in the [Communication Configuration] dialog.

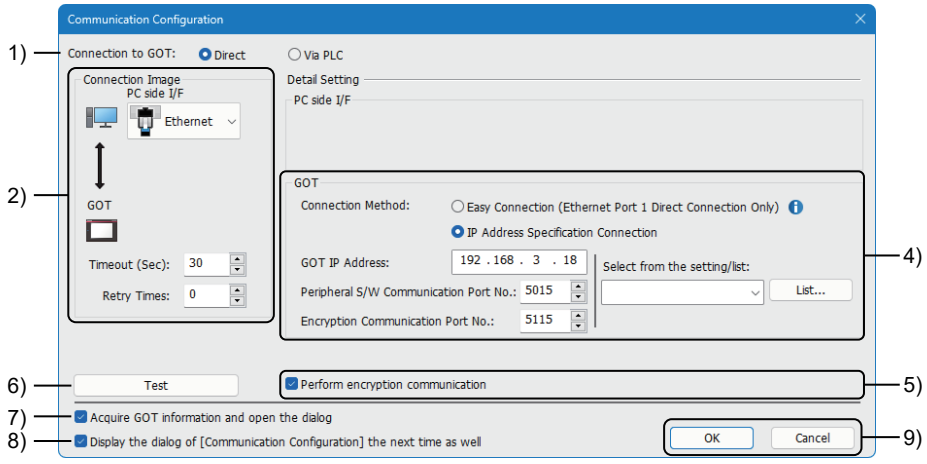
- When [USB] is selected



- When [Ethernet] is selected (easy connection to the GOT)



- When [Ethernet] is selected (specifying the GOT with the IP address)



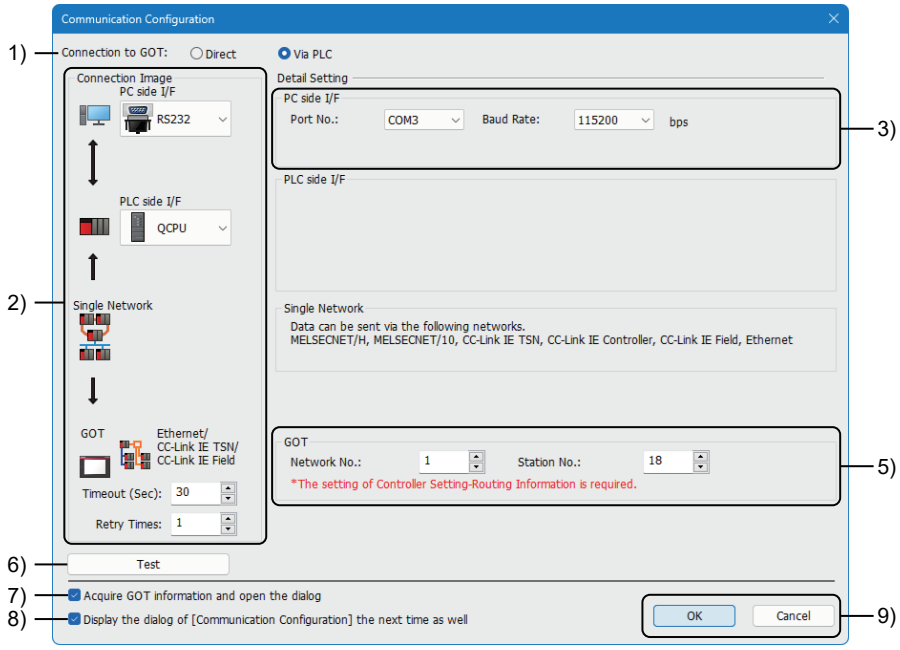
Item			Description
1)	[Connection to GOT]		Select the connection method of the personal computer and the GOT. When connecting to the GOT directly, select [Direct].
2)	[Connection Image]	-	Set the interface to be used for the connection between the personal computer and the GOT.
		[PC side I/F]	Select the type of the interface of the personal computer.
		[Timeout (Sec)]	Set the time period for the communication between the personal computer and the GOT to time out. The setting range is [1] to [9999] seconds. Setting a value of less than [30] seconds may result in a communication error. Set the value to [30] seconds or more.
		[Retry Times]	Set the number of retries to be performed when a communication error occurs. The setting range is [0] time to [5] times.
3)	[PC side I/F]	-	Set the adapter used in the personal computer and the IP address when [Ethernet] is selected for [PC side I/F] and [Easy Connection] is selected for [Connection Method] of [GOT].
		[Adapter]	Select the Ethernet adapter of the personal computer. If acquisition of the information has failed, [Not specified] is displayed. In this case, check the connection status with the Ethernet adapter.
		[IP Address]	The IP address assigned to the adapter selected in [Adapter] is displayed.
4)	[GOT]	[Connection Method]	Set this item when [Ethernet] is selected for [PC side I/F]. If you select [IP Address Specification Connection], set the following items. Set [GOT IP Address] and [Peripheral S/W Communication Port No.] manually, or select information from the registered GOT information.
		[GOT IP Address]	Set the IP address of the GOT. The setting range is [0].[0].[0].[0] to [255].[255].[255].[255].
		[Peripheral S/W Communication Port No.]	Set the port number used for the communication with GT Designer3. Enter the port number set in [Peripheral S/W Communication Port No.] in [GOT Ethernet Common Setting].
		[Encryption Communication Port No.]	Specify the port number used for the encrypted communication between GT Designer3 and the GOT. Enter the port number set in [Encryption Communication Port No.] in [GOT Ethernet Common Setting].
		[Select from setting/list]	Select the information of the connected GOT from the registered GOT information. [Project] in the list displays the GOT IP address of each tab in [GOT IP Address Setting] in the [GOT Ethernet Setting] window. [GOT Setting List] displays the GOT IP address set in the [GOT Setting List] dialog displayed by clicking the [View] button.
		[List] button	Opens the [GOT Setting List] dialog. Set GOT names and IP addresses to be options of [Select from the setting/list]. ☞ Page 624 [GOT Setting List] dialog
5)	[Perform encryption communication]		Set this item when [Ethernet] is selected for [PC side I/F] and [IP Address Specification Connection] is selected for [Connection Method]. Select it when GT Designer3 and GOT perform encrypted communication. If it is not selected, all data including security information is communicated in plain text.
6)	[Test] button		Executes a communication test between the personal computer and the GOT.
7)	[Acquire GOT information and open the dialog]		Select this item to display the [Communicate with GOT] dialog after acquiring the GOT identification information from the GOT. For details on the GOT identification information, refer to the following. ☞ Page 620 Setting the identification information to the GOT ([GOT ID])
8)	[Display the dialog of [Communication Configuration] the next time as well]		Select this item to display the [Communication Configuration] dialog before the [Communicate with GOT] dialog appears. If this item is deselected, the [Communication Configuration] dialog and this item do not appear from the next time. To display the [Communication Configuration] dialog again, select [Display the dialog of Communication Setting before displaying the dialog of Communicate with GOT/GOT Diagnostics] in the [Operation] tab of the [Option] dialog. ☞ Page 197 [Options] dialog ([Operation] tab)
9)	[OK] button		Applies the changed settings. The settings are not applied without clicking the [OK] button. The saved settings are held until next time they are changed.
	[Cancel] button		Discards the changed settings and closes the [Communication Configuration] dialog.

Connecting to the GOT via a PLC

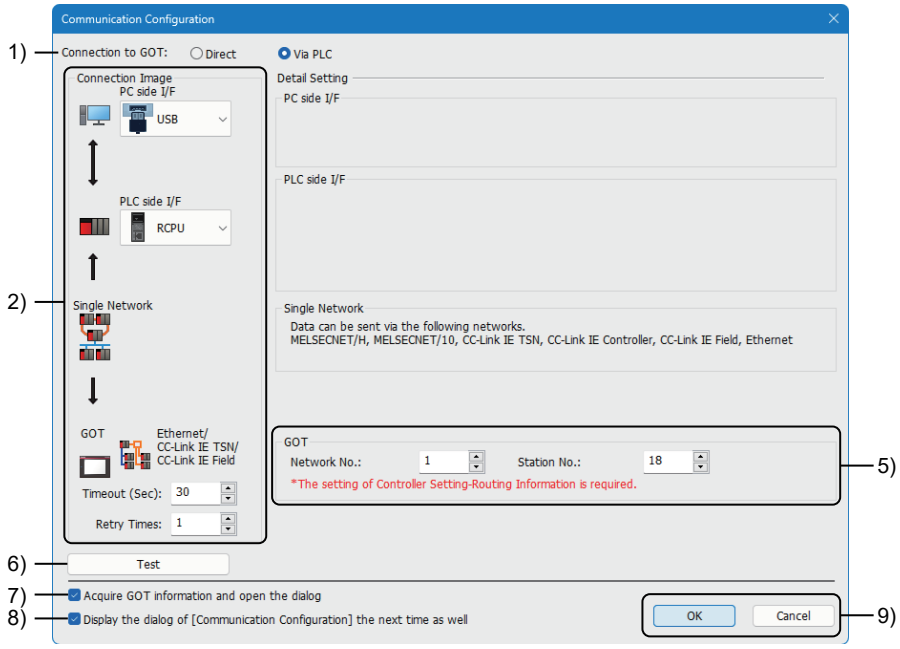
The following shows the setting windows for connecting the personal computer to the GOT via a PLC.
To configure the settings, the connection setting information of the PLC to be routed is required.
Check it in advance referring to the following manual.
GOT3000 Series User's Manual (Connection)

The setting items differ depending on the selection for [PC side I/F] in [Connection Image] in the [Communication Configuration] dialog.
In addition, the setting items differ depending on whether the connected PLC is a CPU module or an Ethernet interface module even if [Ethernet] is selected for [PC side I/F].

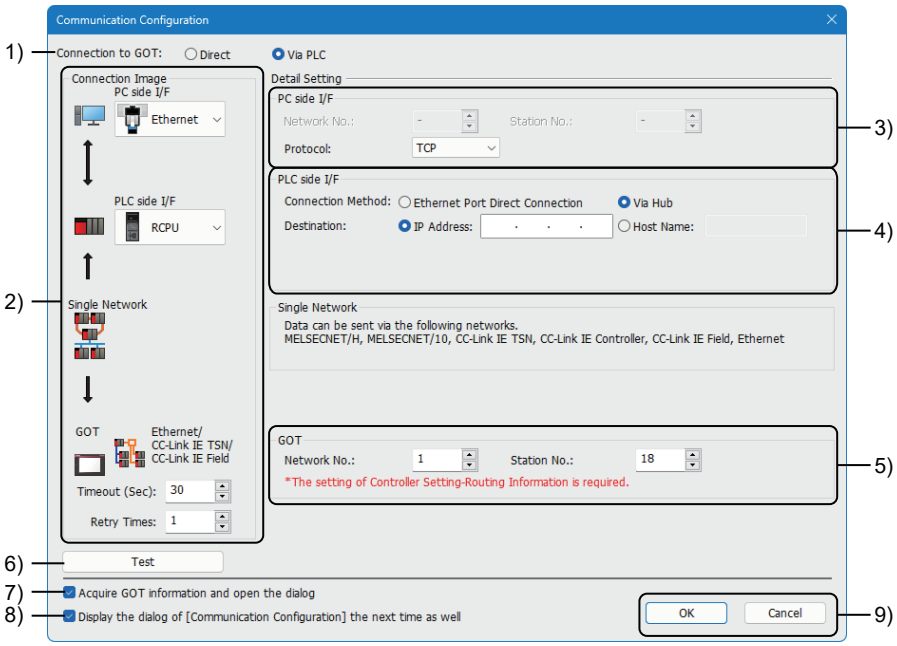
- When [RS232] is selected



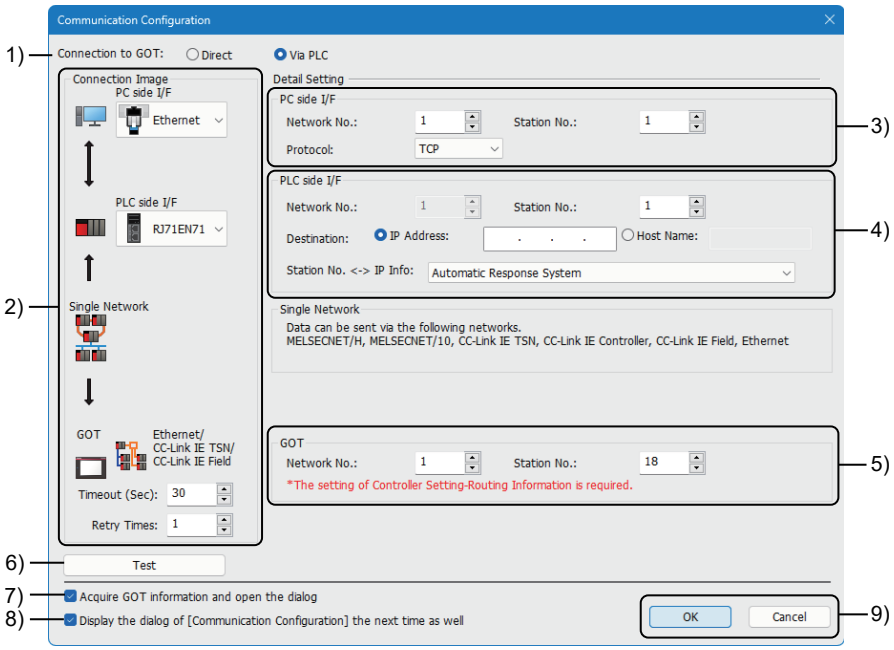
- When [USB] is selected



• When [Ethernet] is selected (CPU module connection)



• When [Ethernet] is selected (Ethernet interface module connection)



Item			Description
1)	[Connection to GOT]		Select the connection method of the personal computer and the GOT. Select [Via PLC] when the connection is established via a PLC.
2)	[Connection Image]	-	Set the interface to be used or the device to be routed for the connection of the personal computer and the GOT.
		[PC side I/F]	Select the type of the interface of the personal computer.
		[PLC side I/F]	Select the CPU module to be routed or the Ethernet interface module. [RCPU] is not selectable when [RS232] is selected for [PC side I/F]. To use port CPU P1 of the RnENCPU, select [RCPU]. To use port P1 of the RnENCPU, select [RJ71EN71]. Port P2 does not support the Ethernet connection.
		[Ethernet/CC-Link IE TSN/ CC-Link IE Field]	Network to be routed to the GOT.
		[Timeout (Sec)]	Set the timeout period for communication between the personal computer and the GOT. The setting range is [1] to [9999] seconds. Setting a value of less than [30] seconds may result in a communication error. Set the value to [30] seconds or more.
		[Retry Times]	Set the number of retries to be performed when a communication error occurs. The setting range is [0] time to [5] times.
3)	[PC side I/F]	[Port No.]	Set the communication port of the personal computer to perform the encrypted communication. The setting range depends on the personal computer to be used.
		[Baud Rate]	Set the transmission speed between the personal computer and the PLC when [RS232] is selected for [PC side I/F].
		[Network No.]	Set this item when [Ethernet] is selected for [PC side I/F] and [RJ71EN71], [QJ71E71], or [LJ71E71] is selected for [PLC side I/F]. Set the network number of the Ethernet network to which the personal computer is connected. The setting range is [1] to [239].
		[Station No.]	Set this item when [Ethernet] is selected for [PC side I/F] and [RJ71EN71], [QJ71E71], or [LJ71E71] is selected for [PLC side I/F]. Set the station number of the personal computer. To connect the personal computer with the Ethernet interface module, set the station number which does not overlap with other station numbers in the same network. The following shows the setting range. • When [PLC side I/F] is set to [RJ71EN71]: [1] to [120] • When [PLC side I/F] is set to [QJ71E71] or [LJ71E71]: [1] to [64]
		[Protocol]	Select the communication protocol to be used for the communication between the personal computer and the PLC when [Ethernet] is selected for [PC side I/F].

Item			Description
4)	[PLC side I/F]	-	Set the following items when [Ethernet] is selected for [PC side I/F].
		[Connection Method]	Set this item when [RCPU], [QCPU], or [LCPU] is selected for [PLC side I/F]. Select the connecting method of the personal computer and the PLC.
		[Network No.]	Displays the network number of the PC side I/F when [RJ71EN71], [QJ71E71], or [LJ71E71] is selected for [PLC side I/F].
		[Station No.]	Set the station number of the PLC when [RJ71EN71], [QJ71E71], or [LJ71E71] is selected for [PLC side I/F]. The following shows the setting range. • When [PLC side I/F] is set to [RJ71EN71]: [1] to [120] • When [PLC side I/F] is set to [QJ71E71] or [LJ71E71]: [1] to [64]
		[Destination]	Set the IP address or host name of the connected PLC when either of the following conditions is met. • When [RCPU], [QCPU], or [LCPU] is selected for [PLC side I/F] and [Via Hub] is selected for [Connection Method] • When [RJ71EN71], [QJ71E71], or [LJ71E71] is selected for [PLC side I/F] Set the following. • [IP Address] Specify the destination PLC by the IP address. After selecting, set the IP address of the destination PLC. The setting range is [0].[0].[0].[0] to [255].[255].[255].[255]. • [Host Name] Specify the host name by the destination PLC. Up to 64 characters can be set for the host name. A one-byte character is counted as one character, and a two-byte character is counted as two characters.
		[Station No.<->IP Info]	Set this item when [RJ71EN71], [QJ71E71], or [LJ71E71] is selected for [PLC side I/F]. When the PLC connected to the GOT communicates with a PLC of another station, select the method to acquire the network number the station number, and the IP address of the PLC of another station. Select the item according to the network parameter of the destination PLC.
5)	[GOT]	[Network No.]	Set the network number of the network to which the GOT is connected. The setting range is [1] to [239].
		[Station No.]	Set the GOT's station number. The setting range is [1] to [64].
6)	[Test] button		Executes a communication test between the personal computer and the GOT.
7)	[Acquire GOT information and open the dialog]		After the GOT identification information is acquired from the GOT, the [Communicate with GOT] dialog is opened. For details on the GOT identification information, refer to the following. ☞ Page 620 Setting the identification information to the GOT ([GOT ID])
8)	[Display the dialog of [Communication Configuration] the next time as well]		Displays the [Communication Configuration] dialog before displaying the [Communicate with GOT] dialog. If this item is deselected, the [Communication Configuration] dialog and this item do not appear from the next time. To display the [Communication Configuration] dialog again, select [Display the dialog of Communication Setting before displaying the dialog of Communicate with GOT/GOT Diagnostics] in the [Operation] tab of the [Option] dialog. ☞ Page 197 [Options] dialog ([Operation] tab)
9)	[OK] button		Applies the changed settings. The settings are not applied without clicking the [OK] button. The saved settings are held until next time they are changed.
	[Cancel] button		Discards the changed settings and closes the [Communication Configuration] dialog.

8.13.3 [Application Selection] dialog

This dialog is used to select system applications (add-on functions) and communication drivers to be included in the package data.

The dialog can be displayed by selecting [Common] → [Application Selection] from the menu.

When this dialog is opened for the first time, data required for the project data is automatically selected.

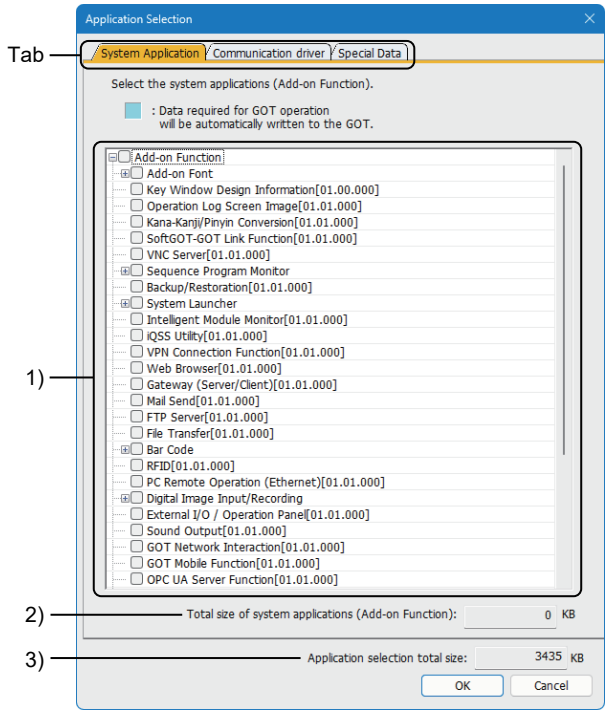
The [Application Settings] dialog provides three tabs, each corresponding to a different data type.

Switch the tabs according to your purpose.

Tab	Purpose
☞ Page 458 [System Application] tab	Select the system applications (add-on functions) to be included in the package data.
☞ Page 462 [Communication Driver] tab	Select the communication drivers to be included in the package data.
☞ Page 464 [Special Data] tab	Select the special data to be included in the package data.

[System Application] tab

Select the system applications (add-on functions) to be included in the package data.



Item		Description
1)	[Add-on Function] tree	Lists the system applications (add-on functions) that can be written to the GOT in a tree view. For list of functions and sizes of system applications, refer to the following. ☞ Page 459 System application (add-on function) list The application selected in the tree is written to the GOT regardless of whether to use or not use the function. The application required for the GOT operation is displayed in light-blue. The selection of the application displayed in light-blue cannot be canceled.
2)	[Total size of system applications (Add-on Function)]	Displays the total size of the system applications (add-on functions) selected in the tree.
3)	[Application selection total size]	Displays the total size of all data selected in the [System Application] tab, the [Communication driver] tab, and the [Special Data] tab.

■System application (add-on function) list

The following table lists the system applications (add-on functions).

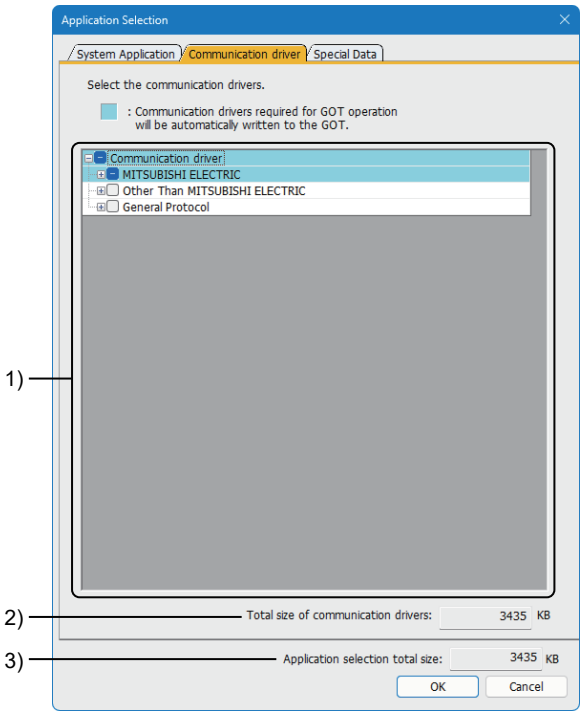
System application (add-on function)			Automatic selection condition	Occupied memory size (KB)	
				Built-in flash memory (ROM)	Built-in RAM of GOT
[Add-on Font]	[UD Add-on Font]	[Japanese (Gothic)]	Select language from [GOT Setup] - [Basic Setting] - [Display Setting/Language Setting] - [System Language]. For the add-on fonts to be used, refer to the following. ☞ Page 77 How to display characters on the GOT In the following settings, if the language differs from [Standard Language] in [Type Setting] - [Language and Font Setting], the corresponding add-on font for that language will be selected. • [User Alarm Observation] - [Device] - [Additional Setting] - [Mail Send Detail Setting] - [Section Title] • [Alarm Common Setting] - [Fixed language]	2867	3961
		[Japanese (Mincho)]		5802	8023
		[English (Gothic)]		724	1448
		[English (Mincho)]		1146	2233
		[Chinese (Simplified) (Gothic)]		2417	3357
		[Chinese (Simplified) (Mincho)]		2499	3762
		[Chinese (Traditional) (Gothic)]		1158	1635
		[Chinese (Traditional) (Mincho)]		1322	1821
		[Korean (Hangul) (Gothic)]		366	949
		[Korean (Hangul) (Mincho)]		396	913
[Key Window Design Information]			Any option other than [Classic] is selected for [Window Design] in [Screen Design] - [Custom].	2215	4810
Operation log screen image			[Display the screen image when using operation logs] is selected in [GOT Environmental Setting] - [Operation Log] - [Basic].	56	268
[Kana-Kanji/Pinyin Conversion]			When any of the following conditions are satisfied • [Kana-Kanji/Pinyin Conversion] is selected in the [Extended] tab in the [Text Input] dialog • [Use the option selection window] is selected in [GOT Environmental Setting] - [Kana-Kanji/Pinyin Conversion]. • [Use the option selection window] is selected in [Base Screen Property] - [Option Selection Window]. • [Use the option selection window] is selected in [Window Screen Property] - [Option Selection Window]. • [Use Kana-Kanji/Pinyin Conversion] is selected in [Peripheral Setting] - [Web Browser]. • When both of the following conditions are satisfied ◇[Standard Language] is selected in [GOT Type Setting] - [Language and Font Setting]. ◇[Use the search/bookmark function] is selected in [Document Display].	1083	2065
[SoftGOT-GOT Link Function]			[Update the SoftGOT-GOT link function setting] is selected in [GOT Setup] - [Add-on Setting] - [SoftGOT-GOT Link].	110	730
[VNC Server]			[Update the VNC server function setting] or [Use VNC Server] is selected in [GOT Setup] - [Add-on Setting] - [VNC Server].	684	19250
[Sequence Program Monitor]	[Sequence Program Monitor (iQ-R/iQ-L Ladder)]		[Use sequence program monitor in MELSEC iQ-R/MELSEC iQ-L series] is selected in [GOT Setup] - [Add-on Setting] - [Sequence Program Monitor], or [Sequence Program Monitor (iQ-R/iQ-L Ladder)] is selected in [Special Function Switch] - [Switch Action].	14962	48969
	[Sequence Program Monitor (iQ-F Ladder)]		[Use sequence program monitor in MELSEC iQ-F series] is selected in [GOT Setup] - [Add-on Setting] - [Sequence Program Monitor], or [Sequence Program Monitor (iQ-F Ladder)] is selected in [Special Function Switch] - [Switch Action].	19914	53073
	[Sequence Program Monitor (Q/L Ladder)]		[Use sequence program monitor in MELSEC-Q/MELSEC-L series] is selected in [GOT Setup] - [Add-on Setting] - [Sequence Program Monitor], or [Sequence Program Monitor (Q/L Ladder)] is selected in [Special Function Switch] - [Switch Action].	19914	53073

System application (add-on function)		Automatic selection condition	Occupied memory size (KB)	
			Built-in flash memory (ROM)	Built-in RAM of GOT
[Backup/Restoration]		[Update the backup/restoration save setting] is selected in [GOT Setup] - [Add-on Setting] - [Backup/Restoration], or [Backup/Restoration] is selected in [Special Function Switch] - [Switch Action].	865	4970
[System Launcher]	[System Launcher (Basic)]	When any of the following conditions are satisfied • [Update the setting of system launcher function] is selected in [GOT Setup] - [Add-on Setting] - [System Launcher]. • [System Launcher] is selected in [Special Function Switch] - [Switch Action]. • [R Motion Monitor] is selected in [Special Function Switch] - [Switch Action]. • [Intelligent Module Monitor] is selected.	2580	6764
[Intelligent Module Monitor]		[Use intelligent module monitor] is selected in [GOT Setup] - [Add-on Setting] - [System Launcher].	2935	9762
[iQSS Utility]		When any of the following conditions are satisfied • [Update the iQSS utility setting] is selected in [GOT Setup] - [Add-on Setting] - [iQSS Utility]. • [iQSS Utility] is selected in [Special Function Switch] - [Switch Action]. • One or more models are selected as write targets in [CSP+ for iQSS Data Write].	1622	3243
[VPN connection function]		[Update the VPN connection function] or [Use VPN] is selected in [VPN Connection] under [Add-on Setting] in the [GOT Setup] window.	1024	4096
[Web Browser]		[Web Browser] is selected for [Switch Action] of [Special Function Switch].	116409	394250
[Gateway (Server/Client)]		At least one configured row is found in [EG Device Layout] in [Controller Setting] - [Gateway Server], or it is present in the GOT list for server function in [Controller Setting] - [Gateway Client].	98	1954
[Mail Send]		[Use the function of Mail] is selected in [Controller Setting] - [Mailing].	712	2048
[FTP Server]		[Use the function of FTP Server] is selected in [Controller Setting] - [FTP Server].	98	1954
[File Transfer]		One or more settings exist in [Destination FTP Server Setting] or [File Transfer Setting] in [Controller Setting] - [File Transfer].	50	2500
[Bar Code]	[Bar Code (Serial)]	When either of the following conditions is satisfied • Any option other than [Not connected] is selected in [Peripheral Setting] - [Bar Code] - [Serial] - [Destination I/F]. • [Use Serial Bar Code] is selected in the window displayed by selecting [Peripheral Setting] - [Bar Code] - [Serial]. • [Bar Code] is selected for [Driver] in the [I/F Communication Setting] window.	48	120
	[Bar Code (USB)]	[Use USB Bar Code] is selected in the [USB] tab of the window displayed by selecting [Peripheral Setting] - [Bar Code].	15	30
[RFID]		[Use RFID] is selected in the window displayed by selecting [Peripheral Setting] - [RFID], or [RFID] is selected for [Driver] in the [I/F Communication Setting] window.	48	120
[PC Remote Operation (Ethernet)]		[Use PC Remote Operation (Ethernet)] is selected in [Peripheral Setting] - [PC Remote Operation], or [PC Remote Operation (Ethernet)] is selected in [Special Function Switch] - [Switch Action].	411	17662

System application (add-on function)		Automatic selection condition	Occupied memory size (KB)	
			Built-in flash memory (ROM)	Built-in RAM of GOT
[Digital Image Input/ Recording]	[Digital Image Input(For USB Input)]	[WEB Camera] is selected in [Peripheral Setting] - [Digital Image Input/Recording] - [Input Device], or [PC Image] is selected in [Peripheral Setting] - [Digital Image Input/ Recording], or [WEB Camera] is selected in [Peripheral Setting] - [Digital Image Input/Recording].	106	61677
	[Digital Image Input (Extended)]	[Network Camera] is selected in [Peripheral Setting] - [Digital Image Input/Recording] - [Input Device], or [Network Camera] is selected in [Peripheral Setting] - [Digital Image Input/ Recording].	388	29587
	[Digital Image Recording/Playback]	[Digital Image Recording] is selected in [Peripheral Setting] - [Digital Image Input/Recording] - [Operation Mode].	348	132143
[External I/O / Operation Panel]		Any option other than [Not connected] is selected in [Peripheral Setting] - [External I/O / Operation Panel] - [Destination I/F], or [Use Operation Panel] is selected in [Peripheral Setting] - [External I/O / Operation Panel], or [External I/O / Operation Panel] is selected in [I/F Communication Setting] - [Extend Unit] - [Driver].	80	100
[Sound Output]		At least one sound file has been created in [Sound File List].	20	64
[GOT Network Interaction]		[Use GOT network interaction function] is selected in [GOT Network Interaction].	140	280
[GOT Mobile Function]		[Use GOT Mobile function] is selected in [Basic Setting] in the [GOT Mobile Setting] window.	5140	14356
[OPC UA Server Function]		At least one tag is set in [OPC UA Tag Setting] in the [OPC UA Server Setting] window.	1931	83359
[Device Data Transfer]		At least one setting is configured in the [Device Data Transfer] window.	50	200
[Hard Copy PDF Output]		When either of the following conditions is satisfied • [File] is selected in [Hard Copy] - [Destination], and [Fixed] is selected in [Hard Copy] - [Style], and [PDF] is selected for the file type in [Hard Copy]. • [Device] is selected in [Hard Copy] - [Style] and [Output PDF file] is selected in [Hard Copy].	160	40960
[R Motion Monitor]		[R Motion Monitor] is selected in [Special Function Switch] - [Switch Action].	3565	12071
[CC-Link IE TSN/CC-Link IE Field Network diagnostics]		[CC-Link IE TSN/CC-Link IE Field Network diagnostics] is selected in [Special Function Switch] - [Switch Action].	2580	6964
[Recipe Display (Record List)]		The recipe display (record list) is placed on at least one screen.	10000	10000
[Document Display]	[Document Display (Document Converter)]	[Document Converter Output File] is selected for [Document Type] of [Document Display].	200	20000
	[Document Display (PDF)]	[File] is selected in [Hard Copy] - [Destination], and [Fixed] is selected in [Hard Copy] - [Style], and [PDF] is selected for the file type in [Hard Copy]. Alternatively, [Output PDF file] is selected in [Hard Copy].	5120	40960
	[PDF Search/Bookmark Function]	[PDF file] is selected in [Document Display] - [Document Type], and [Use the search/bookmark function] is selected in [Document Display].	5353	41865
[GOT Platform Library]		When any of the following system applications are on • [Sequence Program Monitor (iQ-R/iQ-L Ladder)] • [Sequence Program Monitor (iQ-F Ladder)] • [Sequence Program Monitor (Q/L Ladder)]	200	200
[GOT Function Expansion Library]		When any of the following system applications are on • [Sequence Program Monitor (iQ-R/iQ-L Ladder)] • [Sequence Program Monitor (iQ-F Ladder)] • [Sequence Program Monitor (Q/L Ladder)]	6724	29620
[GOT Function Expansion Library (Add / MELSEC iQ-R / MELSEC iQ-L)]		[Sequence Program Monitor (iQ-R/iQ-L Ladder)] is selected.	5145	4297
[GOT Function Expansion Library (Add / MELSEC iQ-F)]		[Sequence Program Monitor (iQ-F Ladder)] is selected.	5145	4297

[Communication Driver] tab

Select the communication drivers to be included in the package data.



Item		Description
1)	[Communication driver] tree	Lists the communication drivers which can be installed to the GOT. For the list of communication drivers and their sizes, refer to the following. ☞ Page 463 Communication driver list The communication driver required for the GOT operation is displayed in light-blue. The selection of the communication driver displayed in light-blue cannot be canceled. You can select up to four communication drivers to be added.
2)	[Total size of communication drivers]	Displays the total size of the communication drivers selected in the tree.
3)	[Application selection total size]	Displays the total size of all data selected in the [System Application] tab, the [Communication driver] tab, and the [Special Data] tab.

■Communication driver list

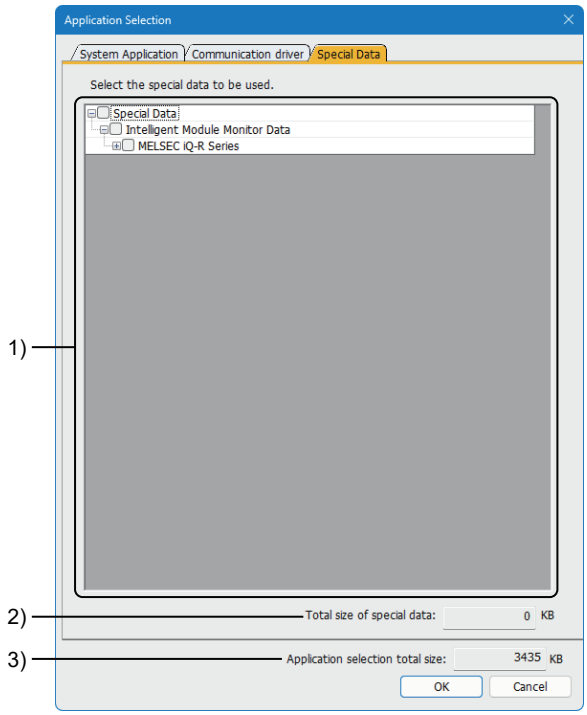
The following table lists the communication drivers.

According to the option selected for [Driver] in the [Controller Setting] window, the applicable communication driver is automatically selected.

Communication driver		Occupied memory size (KB)	
		Built-in flash memory (ROM)	Built-in RAM of GOT
[MITSUBISHI ELECTRIC]	[Bus(Q)]	2590	3275
	[MELSECNET/H]	2595	3695
	[CC-Link IE TSN]	2445	3245
	[CC-Link IE TSN (Built-in Ethernet)]	2385	2705
	[CC-Link IE Controller Network]	2610	3365
	[CC-Link IE Field Network]	2630	3610
	[CC-Link Ver.2(ID)]	2715	3275
	[Ethernet(MITSUBISHI ELECTRIC), Gateway]	3435	4850
	[Ethernet(FX), Gateway]	620	1350
	[Ethernet(MELSERVO), Gateway]	450	775
	[Ethernet(FREQROL(Batch monitor)), Gateway]	390	660
	[Serial (MELSEC)]	2800	3480
	[Serial (MELSERVO)]	760	850
	[MELSEC-FX]	597	1525
	[FREQROL 700/800, Sensorless Servo]	305	349
	[FREQROL(Batch Monitor Support)]	285	585
[Other Than MITSUBISHI ELECTRIC]	[Ethernet(OMRON), Gateway]	180	375
	[Ethernet(OMRON NJ/NX), Gateway]	215	571
	[Ethernet(KEYENCE), Gateway]	465	365
	[Ethernet(FUJI), Gateway]	245	220
	[Ethernet(YASKAWA),Gateway]	375	385
	[Ethernet(YASKAWA MP3000),Gateway]	34	37
	[Ethernet(YASKAWA High Speed Ethernet Server), Gateway]	175	305
	[Ethernet(YOKOGAWA), Gateway]	285	330
	[Ethernet(AB MicroLogix), Gateway]	295	260
	[Ethernet(AB), Gateway]	43	49
	[Ethernet(AB Tag), Gateway]	245	610
	[Ethernet(LS ELECTRIC XGK), Gateway]	240	365
	[Ethernet(SIEMENS OP), Gateway]	302	482
	[Azbil SDC/DMC]	410	316
	[OMRON Digital Temperature Controller]	345	415
[General Protocol]	[Ethernet(CC-Link IE Field Network Basic)]	212	327
	[Ethernet(SLMP), Gateway]	310	745
	[MODBUS/RTU Client]	277	417
	[MODBUS/TCP Client, Gateway]	227	427
	[MODBUS/RTU Server]	330	1000
	[MODBUS/TCP Server, Gateway]	255	960
	[OPC UA Client]	1410	27495
	[Serial (MICROCOMPUTER)]	160	431
	[Ethernet(Computer)]	285	455

[Special Data] tab

Select the special data to be included in the package data.



Item		Description
1)	[Special Data] tree	Displays the list of special data that can be written to the GOT. For the list of special data, refer to the following page.
2)	[Total size of special data]	The total size of the special data selected in the tree is displayed.
3)	[Application selection total size]	Displays the total size of all data selected in the [System Application] tab, the [Communication driver] tab, and the [Special Data] tab.

■Special data list

The following lists special data.

Special data		Occupied memory size (KB)	
		Built-in flash memory (ROM)	Built-in RAM of GOT
[Intelligent Module Monitor Data]	[MELSEC iQ-R Series]	2586	2586

8.13.4 [Communicate with GOT] dialog

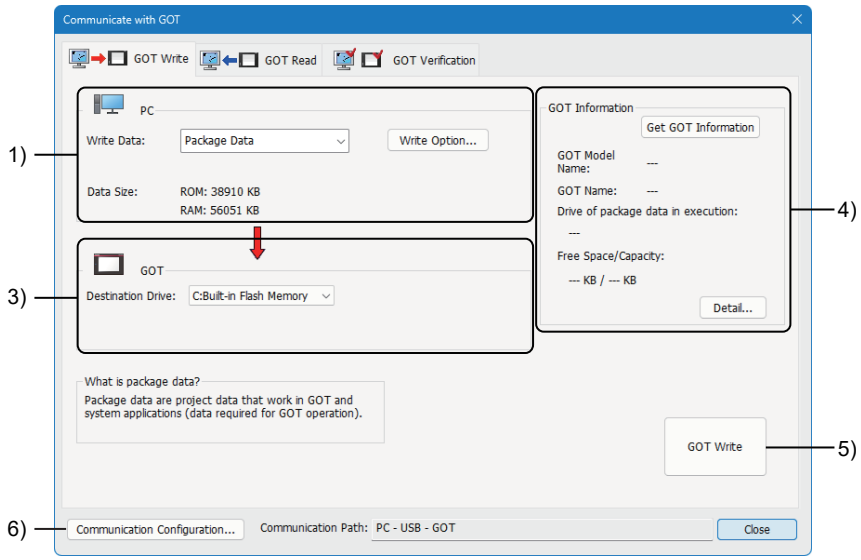
In this dialog, you can read/write data from/to the GOT and verify with the project data in the GOT.
The [Communicate with GOT] dialog has the following three tabs for each function.
Switch the tabs according to your purpose.

Tab	Purpose
☞ Page 465 [GOT Write] tab	Install the package data, BootOS, or resource data on the GOT from the personal computer.
☞ Page 472 [GOT Read] tab	Read the package data, project data, or resource data from the GOT. The drive information of the GOT is acquired and the data can be deleted or the drive can be formatted.
☞ Page 475 [GOT Verification] tab	Verify with the project data in the connected GOT.

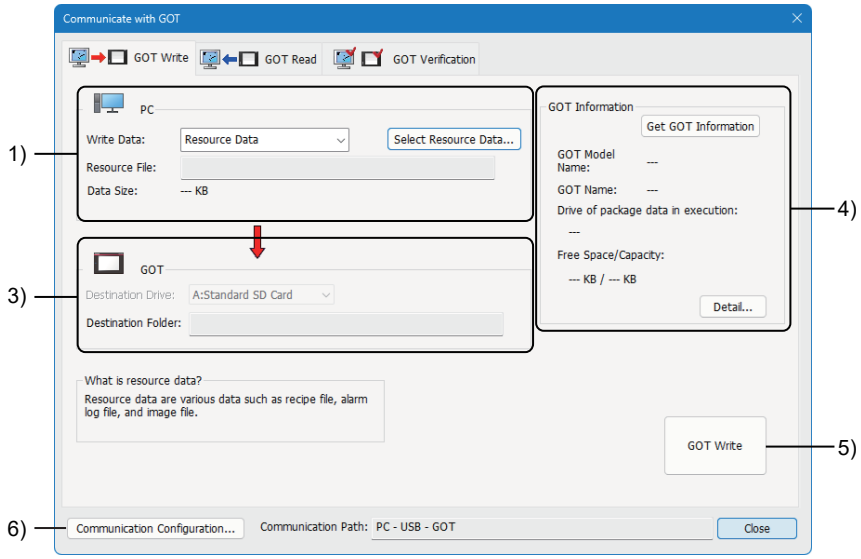
[GOT Write] tab

This is the setting screen for writing data from a personal computer to the GOT. The format varies according to the data to be written.

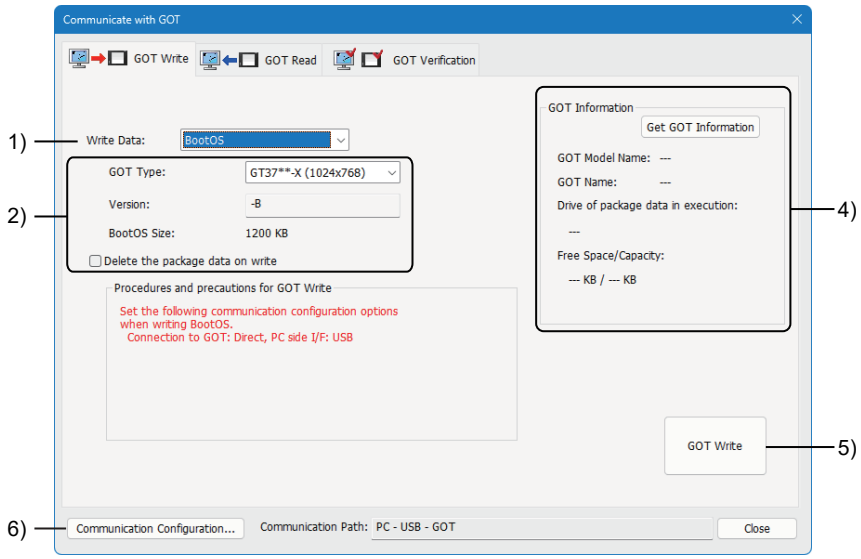
• For package data



• For resource data



• For BootOS

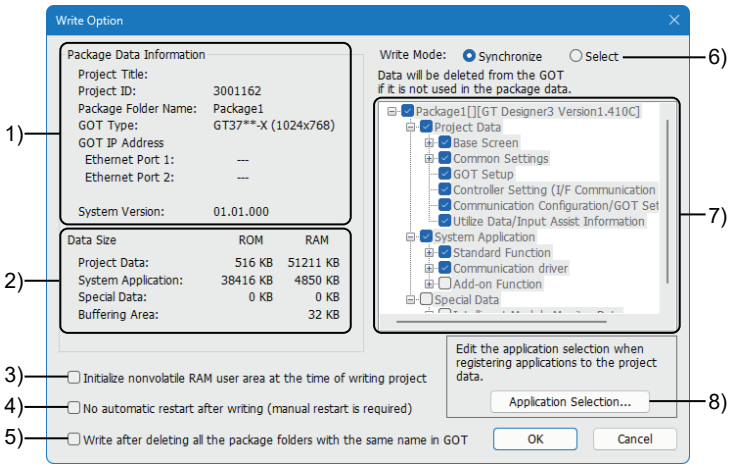


Item			Description
1)	[PC]	[Write Data]	Set the data to be written to the GOT.
		[Write Option] button	Only when [Package Data] is selected for [Write Data], check the package data information, select the data to be included in the package data, set whether to initialize the nonvolatile RAM user area of the GOT or not and whether to restart the GOT after the data is written, select the write mode, and configure the other settings in the [Write Option] dialog. ☞ Page 467 [Write Option] dialog
		[Select Resource Data] button	Only when [Resource Data] is selected for [Write Data], set the resource data to be written to the GOT and the write destination drive in the [Select Resource Data] dialog. ☞ Page 470 [Select Resource Data] dialog For the writable resource data, refer to the following. ☞ Page 410 Types of the data that can be transferred
		[Resource File]	Displays the resource file selected in the [Select Resource Data] dialog.
		[Data Size]	Displays the size of the data to be written to the GOT when [Package Data] or [Resource Data] is selected for [Write Data].
2)	[GOT Type]		Select the GOT type when [BootOS] is selected for [Write Data].
	[Version]		Displays the version of the BootOS to be installed to the GOT when [BootOS] is selected for [Write Data].
	[BootOS Size]		Displays the data size of BootOS to be installed on the GOT when [BootOS] is selected for [Write Data].
	[Delete the package data on write]		Configure this setting when [BootOS] is selected for [Write Data]. Select this item to delete the package data in the GOT when installing BootOS on the GOT.
3)	[GOT]	[Destination Drive]	For package data, select the write destination drive of the package data. For resource data, the write destination drive of the resource data selected in the [Select Resource Data] dialog is displayed.
		[Destination Folder]	Displays the write destination folder of the resource data selected in the [Select Resource Data] dialog.
4)	[GOT Information]	[Get GOT information] button	Acquires the following GOT information from the connected GOT and displays the information on the screen. • [GOT Model Name] Model name of the connected GOT [-] is displayed when the type of the GOT is not supported by GT Designer3. • [GOT Name] Name of the connected GOT • [Drive of package data in execution] Drive that stores the package data being used in the connected GOT • [Free Space/Capacity] Free space and capacity of the drive selected for [Destination Drive]
		[Detail] button	This button is displayed when [Package Data] or [Resource Data] is selected for [Write Data]. In the [GOT Information - Detail] dialog, you can check the size of the storage memory (ROM) and operation memory (RAM) for each drive of the GOT. ☞ Page 469 [GOT Information - Detail] dialog

Item		Description
5)	[GOT Write] button	Writes the data to the target GOT. For BootOS, this button becomes active only when the GOT is connected directly via USB. For resource data, the [Resource Data Write Result] dialog appears after the data is written.
6)	[Communication Configuration] button	Displays the [Communication Configuration] dialog. Configure the communication settings between the personal computer and the GOT. ☞ Page 451 [Communication Configuration] dialog

■[Write Option] dialog

In this dialog, you can check the package data information, set the write mode, select the data to be included in the package data, set whether to initialize the nonvolatile RAM user area of the GOT or not and whether to restart the GOT after the data is written, and configure the other settings.



Item			Description
1)	[Package Data Information]	[Project Title]	Title of the project
		[Project ID]	ID of the project
		[Package Folder Name]	Name of the folder that stores the package data
		[GOT Type]	GOT type of the project
		[GOT IP Address]	GOT IP address for the GOT Ethernet port If the Ethernet port is not supported by [GOT Type] or [Update GOT Ethernet Port setting] is not selected in the setting tab for the target port of [GOT IP Address Setting] in the [GOT Ethernet Setting] window, [---] is displayed.
		[System Version]	System application version in the package data
2)	[Data Size]	[Project Data]	Project data size (ROM and RAM)
		[System Application]	Size of the system applications included in the package data (ROM and RAM)
		[Special Data]	Size of the special data included in the package data
		[Buffering Area]	Size of the buffering area in the operation memory (RAM)
3)	[Initialize nonvolatile RAM user area at the time of writing project]		This item is not displayed in the [Write Option] dialog opened from the [Communicate with Memory Card] dialog. Select this item to initialize the nonvolatile RAM user area when the package data is written to the GOT.
4)	[No automatic restart after writing (manual restart is required)]		This item is not displayed in the [Write Option] dialog opened from the [Communicate with Memory Card] dialog. Select this item not to restart the GOT automatically after the package data is written to the GOT. When this item is selected, the GOT needs to be restarted manually after writing.
5)	[Write after deleting all the package folders with the same name in GOT]		This item is not displayed in the [Write Option] dialog opened from the [Communicate with Memory Card] dialog. Select this item to delete all data in the package folder with the same name (if it exists in the GOT) before writing the data.

Item		Description
6)	[Write Mode]	Select the write mode of the package data. For differences among the modes, refer to the following. ☞Page 437 Package data write mode The write mode is fixed to [Synchronize] in the following cases. • When the [Write Option] dialog is displayed from the [Communicate with Memory Card] dialog • When writing a package data (GTYS format file) to the GOT without opening it • When global labels or AB native tags are set in the common settings or object settings • When a label group is created • When a mobile screen is created • [Use GOT Mobile function] is selected in [Basic Setting] in the [GOT Mobile Setting] window. • When the project data is encrypted by entering a password in the [Project Data Password Registration] dialog
7)	Package data tree	The data included in the package data is displayed in the tree. When [Selection] is selected for [Write Mode], the data can be added or deleted.
8)	[Application Selection] button	This button is displayed only when [Synchronize] is selected for [Write Mode]. In the [Application Selection] dialog displayed by clicking the button, select the data to be included in the package data. The following shows the settable data. • System application (add-on function) • Communication driver • Special data For details, refer to the following. ☞Page 458 [Application Selection] dialog

Precautions

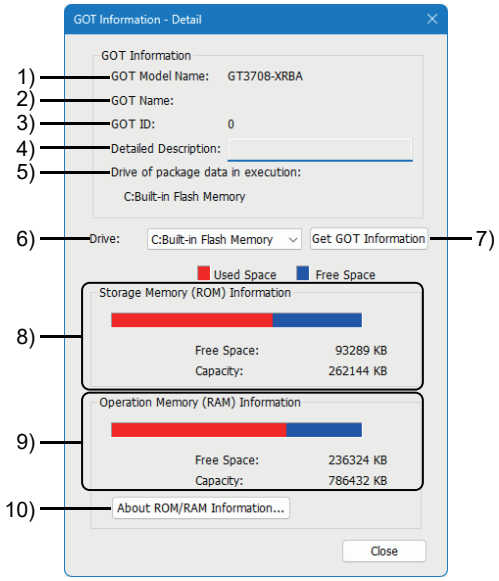
■Operation when [Utilize Data/Input Assist Information] is not selected

If a package whose [Utilize Data/Input Assist Information] is not selected in the package tree is read from the GOT, the following operation is performed.

- If the data has never been opened after being read, the project data is not eligible for the data utilization.
- The accumulated input assist information returns to the initial status.
- The first performance of the device list is decreased.

■[GOT Information - Detail] dialog

This dialog displays the detail information such as the model, drive information, and memory capacity of the connected GOT.

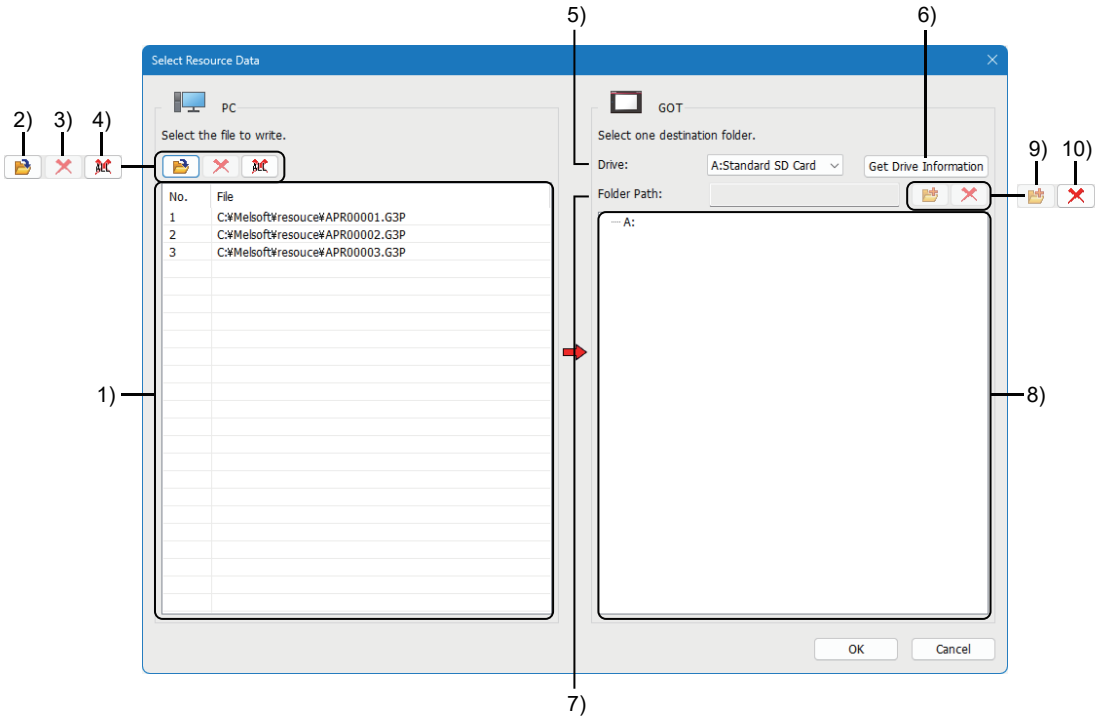


Item		Description
1)	[GOT Model Name]	Model name of the GOT
2)	[GOT Name]	Name to identify the GOT
3)	[GOT ID]	ID number to identify the GOT
4)	[Detailed Description]	Detailed description for the GOT
5)	[Drive of package data in execution]	Drive that stores the package data being used in the GOT
6)	[Drive]	Select the GOT drive whose detailed information is to be displayed.
7)	[Get GOT information] button	Acquires the GOT information from the GOT, including the GOT model and the free space of the specified drive, and displays it on the screen. When the GOT information is acquired from the GOT in security mode 2, operation authentication is performed. When [Perform encryption communication] is selected in the [Communication Configuration] dialog, the GOT information is acquired using encrypted communication.
8)	[Storage Memory (ROM) Information]	Free space and capacity of the GOT storage memory (ROM)
9)	[Operation Memory (RAM) Information]	Free space and capacity of the GOT operation memory (RAM)
10)	[About ROM/RAM Information] button	Displays explanations of ROM and RAM in the GOT.

■[Select Resource Data] dialog

In this dialog, set the resource data to be written to the GOT and the write destination drive.

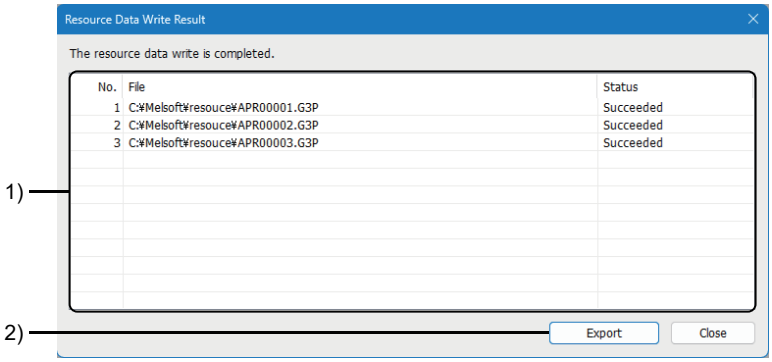
Multiple resource data files can be selected.



Item		Description
1)	Write target list	Set the resource data file to be written to the GOT. Multiple resource data files can be set.
2)	[Add File] button	Opens the [Open] dialog where you can select the resource data file to be written to the GOT. In the [Open] dialog, multiple files can be selected.
3)	[Delete] button	Deletes a selected resource data file from the write target list.
4)	[Delete All] button	Deletes all resource data files from the write target list.
5)	[Drive]	Select the destination drive to which the resource data is written. For the available drives by GOT model, refer to the following. ☞ Page 81 Drive configuration and capacity of the GOT
6)	[Get Drive Information] button	Acquires the information on the folders and resource data in the GOT and displays it in the drive information tree. If you click the [Get Drive Information] button after a new folder is created, the created folder is deleted.
7)	[Folder Path]	Path to the write destination folder for the resource data The path to the folder selected in the drive information tree is displayed.
8)	Drive information tree	Displays the structure of the folders and files in the drive selected in [Drive]. Items enclosed in [ ] are folders. Select the write destination folder.
9)	[New Folder] button	Adds a new folder under the drive or folder selected in the drive information tree. The new folder name is displayed in red. The new folder is created upon completion of resource data writing.
10)	[Delete] button	Deletes a newly-added folder that is selected in the drive information tree.

■[Resource Data Write Result] dialog

This dialog appears after resource data writing is performed. It displays the results of resource data writing.



Item			Description
1)	Write result list	-	Result of resource data writing
		[No.]	File number
		[File]	Resource data file
		[Status]	Displays whether the write result is [Succeeded] or [Failed].
2)	[Export] button		Displays the [Save As] dialog. Save the write result to a file.

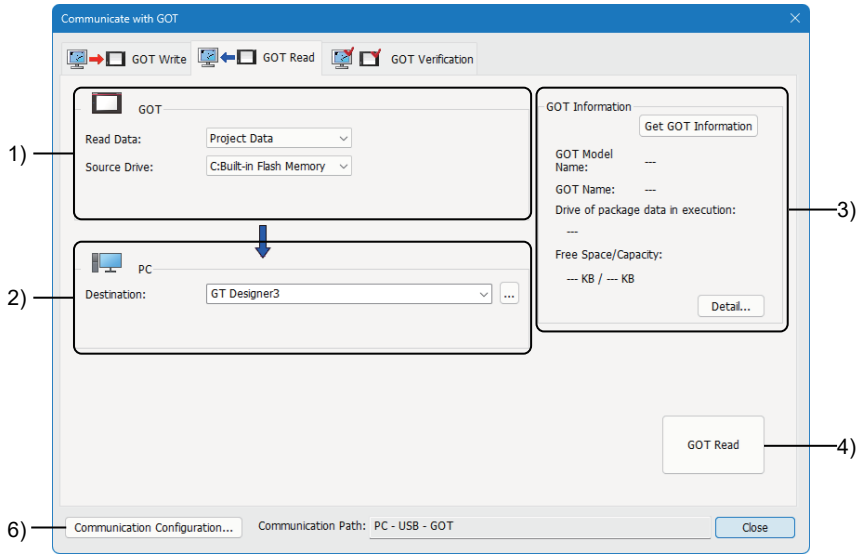
[GOT Read] tab

This is the setting screen for reading the project data, package data, and resource data from the connected GOT to the personal computer.

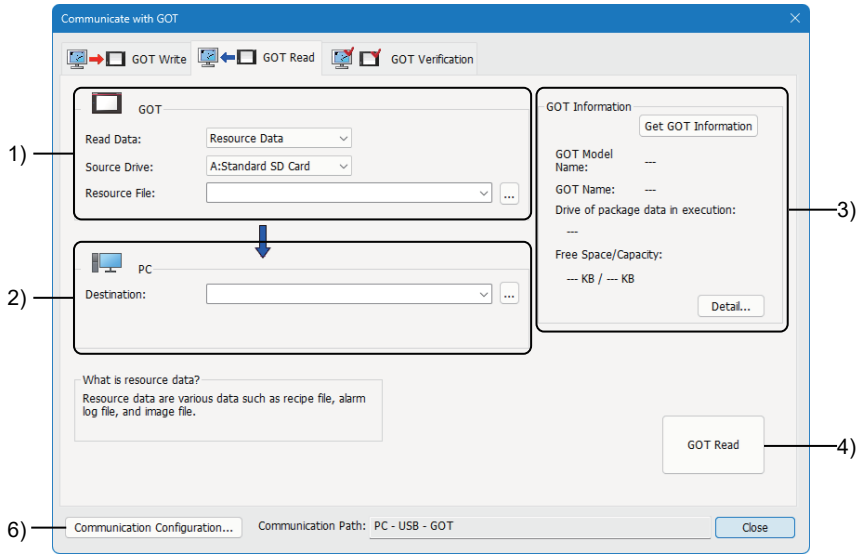
The drive information of the GOT can be read, and folders and data in the GOT can be deleted.

The setting items differ depending on the data to be read.

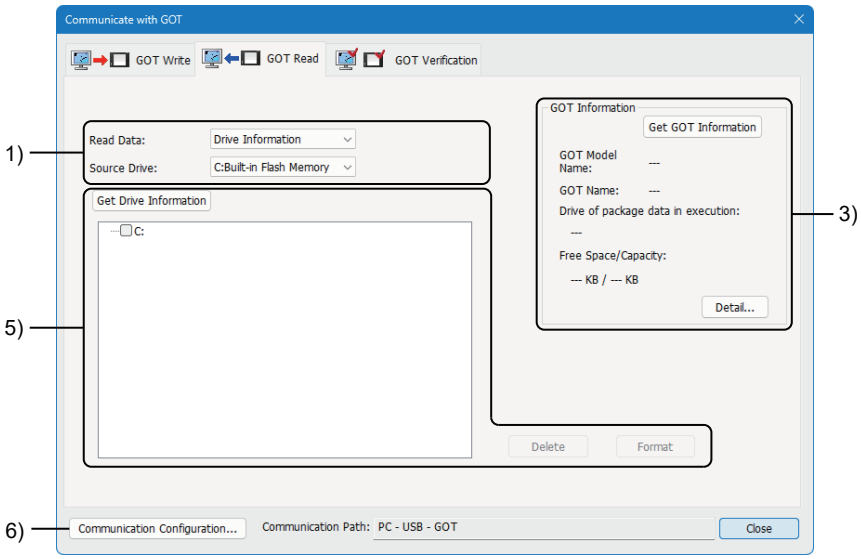
- For project data or package data



- For resource data



• For drive information

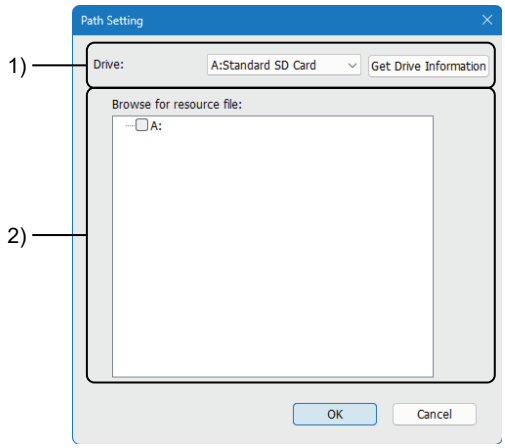


Item			Description
1)	[GOT]	[Read Data]	Set the type of the data to be read from the GOT.
		[Source Drive]	Select the source drive from which the data is read. For the available drives by GOT model, refer to the following. ☞ Page 81 Drive configuration and capacity of the GOT
		[Resource File]	Set the save path and file name of the resource data when [Resource Data] is selected for [Read Data]. Set them in the [Path Setting] dialog displayed by clicking the [...] button. ☞ Page 474 [Path Setting] dialog
2)	[PC]	[Destination]	Set the destination of the data read from the GOT.
			For package data or project data, specify whether to open the project data with GT Designer3 or save it as a file in the personal computer. • [GT Designer3] The read project is opened in GT Designer3. The project cannot be selected when the package data is read. • Saving as a file Click the [...] button to display the dialog to save data as a file with a name. In the displayed dialog, select the destination folder to save the read data, enter the file name, and save the data.
			For resource data, set the path for the destination of the resource data read from the GOT. Click the [...] button to display the [Browse For Folder] dialog. You can specify the destination folder to save the read resource data in the displayed dialog as well.
3)	[GOT Information]	[Get GOT information] button	Acquires the following GOT information from the connected GOT and displays the information on the screen. • [GOT Model Name] Model name of the connected GOT [-] is displayed when the type of the GOT is not supported by GT Designer3. • [GOT Name] Name of the connected GOT • [Drive of package data in execution] Drive that stores the package data being used in the connected GOT • [Free Space/Capacity] Free space and capacity of the drive selected for [Source Drive]
		[Detail] button	In the [GOT Information - Detail] dialog, you can check the size of the storage memory (ROM) and operation memory (RAM) for each drive of the GOT. ☞ Page 469 [GOT Information - Detail] dialog
4)	[GOT Read] button		Starts the data reading from the GOT.

Item		Description
5)	[Get Drive Information] button	This button is displayed when [Drive Information] is selected for [Read Data]. Acquires the drive information of the drive selected in [Source Drive] and displays it in the drive information tree.
	Drive information tree	This button is displayed when [Drive Information] is selected for [Read Data]. The file configuration of the read source drive is displayed in the tree. For an encrypted package that is not started, only the package name is displayed. • [Delete] button Collectively deletes the folders and files selected in the tree. Individually deleting the folder or file is not available. • [Format] button Formats the drive selected in [Source Drive]. Drive C cannot be formatted.
6)	[Communication Configuration] button	Displays the [Communication Configuration] dialog. Configure the communication settings between the personal computer and the GOT. ☞ Page 462 [Communication Driver] tab

■[Path Setting] dialog

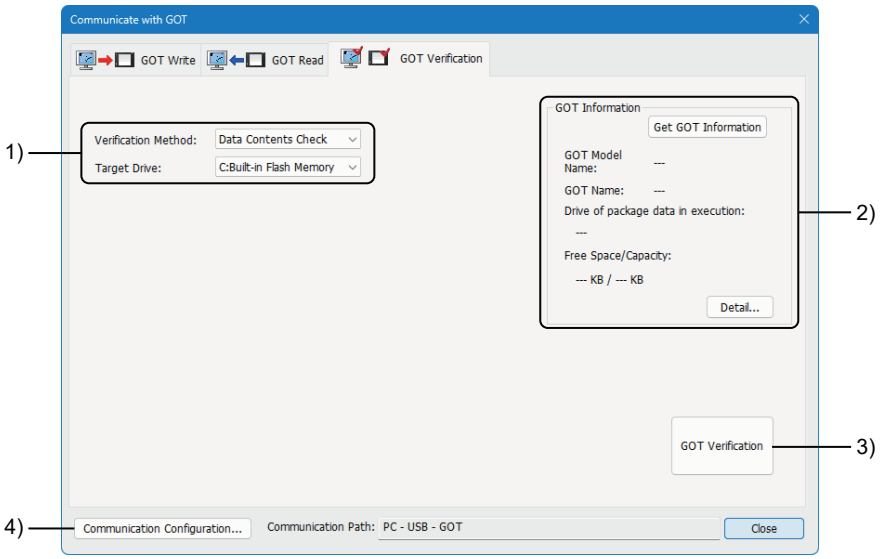
Set the source drive and resource file when [Resource Data] is selected for [Read Data].



Item		Description
1)	[Drive]	Select the read source drive.
	[Get Drive Information] button	Acquires the file information of the source drive and displays it in the tree under [Browse for resource file].
2)	[Browse for resource file]	The file configuration of the read source drive is displayed in the tree. Select the resource file to be read from the tree.

[GOT Verification] tab

This tab is for configuring settings to compare the project data currently being opened in GT Designer3 with the one written to the connected GOT.



Item			Description
1)	[Verification Method]		Select the method to verify the project. • [Data Contents Check] The verification is performed according to the description of the project. • [Time Stamp Check] The verification is performed according to the time stamp of the project data.
	[Target Drive]		Select the drive of the GOT which stores the project data to be verified. For the available drives by GOT model, refer to the following. ☞ Page 81 Drive configuration and capacity of the GOT
2)	[GOT Information]	[Get GOT information] button	Acquires the following GOT information from the connected GOT and displays the information on the screen. • [GOT Model Name] Model name of the connected GOT [-] is displayed when the type of the GOT is not supported by GT Designer3. • [GOT Name] Name of the connected GOT • [Drive of package data in execution] Drive that stores the package data being used in the connected GOT • [Free Space/Capacity] Free space and capacity of the drive selected for [Target Drive]
		[Detail] button	In the [GOT Information - Detail] dialog, you can check the size of the storage memory (ROM) and operation memory (RAM) for each drive of the GOT. ☞ Page 469 [GOT Information - Detail] dialog
3)	[GOT Verification] button		Starts the verification with the GOT. For how to check the verification results, refer to the following. ☞ Page 250 [Verify Result] window
4)	[Communication Configuration] button		Displays the [Communication Configuration] dialog. Configure the communication settings between the personal computer and the GOT. ☞ Page 451 [Communication Configuration] dialog

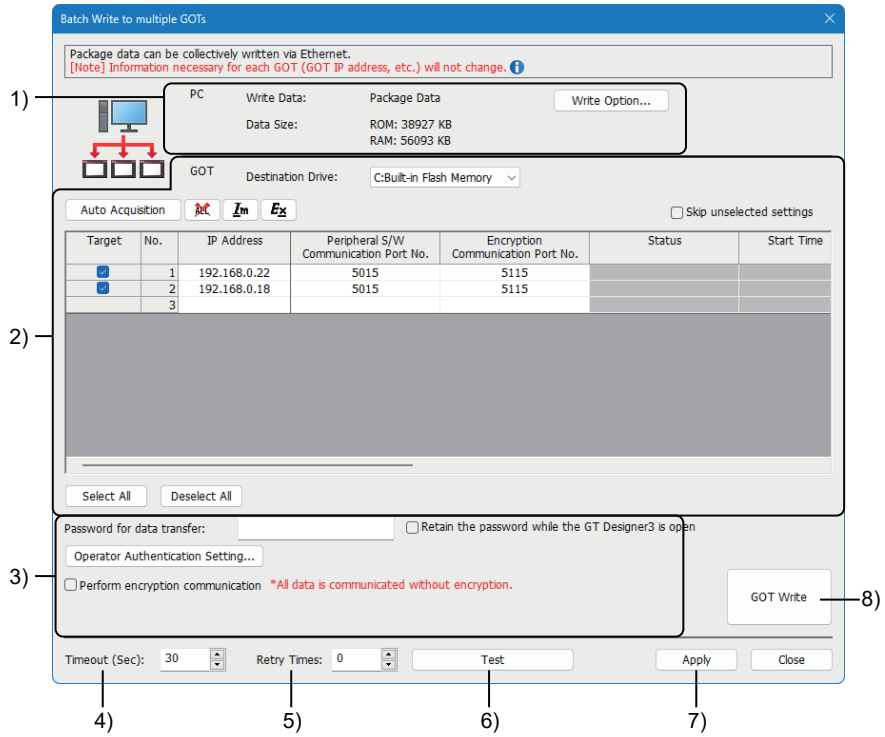
Precautions

If an error occurs during communication when the GOT is connected via a PLC and [RS232] is specified for [PC side I/F], increase the number of retries.

8.13.5 [Batch Write to multiple GOTs] dialog

Configure the settings to write the same package data to multiple GOTs in batch.

This dialog can be displayed by selecting [Communication] → [Batch Write to multiple GOTs] from the menu.



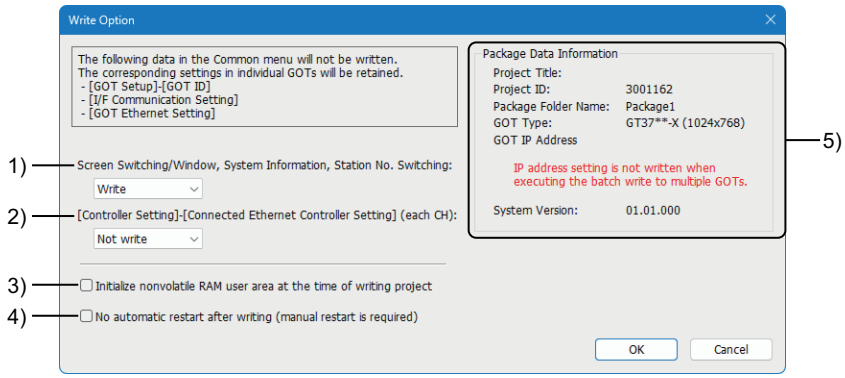
Item			Description
1)	[PC]	[Write Data]	Displays the type of the data to be written. It is fixed to [Package Data].
		[Data Size]	Data size of the package data.
		[Write Option] button	The [Write Option] dialog appears. Check the package data information, select the data to be included in the package data, set whether to initialize the nonvolatile RAM user area of the GOT and whether to restart the GOT after the data is written, and configure the other settings in the [Write Option] dialog. ☞ Page 467 [Write Option] dialog If you change the default settings for the following items in the [Write Options] dialog, an asterisk (*) is added to the button notation and the button text changes to pink. • [Screen Switching/Window, System Information, Station No. Switching] • [[Connected Ethernet Controller Setting] in the [Controller Setting] window (per channel)]

Item			Description
2)	[GOT]	[Destination Drive]	Select the drive where the package data will be written. For the available drives by GOT model, refer to the following. ☞ Page 81 Drive configuration and capacity of the GOT
	List of write destination GOTs	-	Set the write destination GOT by either of the following methods. • Click the [Auto Acquisition] button to acquire the information of the GOTs on the same network. • Enter the [IP Address] directly. Copying and pasting are available from the right-click menu in the write destination GOT list. You can also paste data edited in spreadsheet software or other applications. • Click the import button to import the file containing the GOT settings.
		[Auto Acquisition] button	Automatically acquires the GOT identification information, including the GOT IP address, and displays it on the screen. Any information entered before the button is pressed will be deleted. If the GOT type does not match the package data, [Unmatched GOT type] is displayed in the [Status] field.
		Delete All button	Deletes all rows.
		Import button	Imports the communication target setting, IP address, port number for communication with peripheral software, and port number for encrypted communication. The following file formats can be imported. • CSV file (.csv) • Unicode text file (*.txt) For information on importable file formats, refer to the following. ☞ Page 481 File format
		Export button	Exports the information displayed on the screen, including communication target setting, IP address, port number for communication with peripheral software, and other GOT information. The following file formats can be exported. • CSV file (.csv) • Unicode text file (*.txt)
		[Skip unselected settings]	Displays only the rows selected in the [Target] checkbox.
		[Target]	Select the write target GOT. This item is not settable for the GOT whose type is different from the one set in the project of the package data to be written.
		[No.]	Number for each GOT in the list. The number ranges from [1] to [256].
		[IP Address]	Set the IP address of the GOT. The setting range is [0].[0].[0].[0] to [255].[255].[255].[255].
		[Peripheral S/W Communication Port No.]	Set the port number used for the communication with GT Designer3. Enter the port number set in [Peripheral S/W Communication Port No.] in [GOT Ethernet Common Setting]. The setting range is [1024] to [65534].
		[Encryption Communication Port No.]	Specify the port number used for the encrypted communication between GT Designer3 and the GOT. Enter the port number set in [Encryption Communication Port No.] in [GOT Ethernet Common Setting].
		[Status]	Displays the communication result.
		[Start Time]	Displays the start date and time of a communication test or data write to the GOT.
		[End Time]	Displays the end date and time of a communication test or data write to the GOT.
		[GOT ID]	ID number to identify the GOT
		[GOT Name]	Name to identify the GOT
		[GOT Type]	Displays the GOT type.
		[I/F]	Displays the interface type for each GOT IP address.
		[Select All] button	Selects all [Target] checkboxes.
		[Deselect All] button	Deselects all [Target] checkboxes.

Item			Description
3)	Authentication information	[Password for data transfer]	If data transfer security is set for the destination GOT, enter the data transfer password. If the entered password differs from the one set in the destination GOT, data cannot be written to the GOT. In this case, enter the password which is set on the destination GOT and perform the writing again.
		[Retain the password while the GT Designer3 is open]	Retains the data transfer password while GT Designer3 is running. As a result, password entry is not required for the next data write. The following operations clear the retained password. • Exit GT Designer3. • Change the data transfer security password of the GOT and establish communication with the GOT.
		[Operator Authentication Setting]	If the security mode of the write target GOT is mode 2, enter the operator name and password for operator authentication. When writing package data in security mode 2 to a GOT in security mode 1, a new operator must be registered. For details, refer to the following. ☞ Page 438 When writing package data in security mode 2 to a GOT in security mode 1
		[Perform encryption communication]	Performs encrypted communication.
4)	[Timeout (Sec)]		Set the time period for the communication between the personal computer and the GOT to time out. The setting range is [1] to [9999] seconds. Setting a value of less than [30] seconds may result in a communication error. Set the value to [30] seconds or more.
5)	[Retry Times]		Set the number of retries to be performed when a communication error occurs. The setting range is [0] time to [5] times.
6)	[Test] button		Executes a communication test between the personal computer and the GOT.
7)	[Apply] button		Confirms the new settings, and saves them in the current project. This item is displayed only when this dialog has been brought up from the [Communication] menu. The following shows the settings to be saved. • [Destination Drive] • [Skip unselected settings] • [Target] • [No.] • [IP Address] • [Peripheral S/W Communication Port No.] • [Encryption Communication Port No.] • [GOT ID] • [GOT Name] • [GOT Type] • [I/F] • [Perform encryption communication] • [Timeout (Sec)] • [Retry Times]
8)	[GOT Write] button		Writes the data to the target GOT.

[Write Option] dialog (for writing data to multiple GOTs in one go)

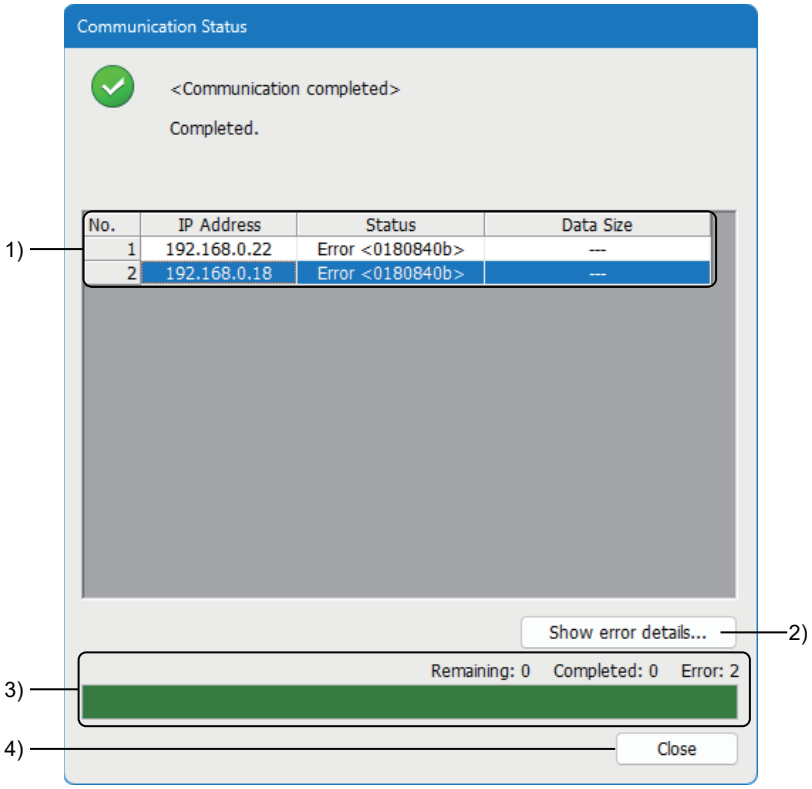
In this dialog, you can check the package data information, set whether to write common settings, set whether to initialize the GOT's nonvolatile RAM user area, and set the behavior or the GOT restart after writing.



Item			Description
1)	[Screen Switching/Window, System Information, Station No. Switching]		Set whether to write the following settings from the package data to the connected GOT. If [Not write] is selected, the settings of each connected GOT will be retained. • [Screen Switching/Windows] in the [Environmental Setting] window • [System Information] in the [Environmental Setting] window • [Station No. Switching] in the [Controller Setting] window If [Not write] is selected and the following conditions are satisfied, a write error occurs. • Global labels, labels (GT Designer3), OMRON NJ/NX tags, or AB native tags are set. • A label group is created. • The [Batch Write to Multiple GOTs] dialog is opened without opening the package data.
2)	[Connected Ethernet Controller Setting] in the [Controller Setting] window (per channel)		Set whether to write [Connected Ethernet Controller Setting] in the [Controller Setting] window to the connected GOT. If [Not write] is selected, the settings of each connected GOT will be retained.
3)	[Initialize nonvolatile RAM user area at the time of writing project]		Select this item to initialize the nonvolatile RAM user area when the package data is written to the GOT. If the GOT is started with BootOS, initialization does not occur even if installation is executed with this item selected.
4)	[No automatic restart after writing (manual restart is required)]		The GOT does not restart automatically after the package data is written to the GOT. When this item is selected, the GOT needs to be restarted manually after writing. If the GOT is started with BootOS, automatic restart occurs even if installation is executed with this item selected.
5)	[Package Data Information]	[Project Title]	Title of the project
		[Project ID]	ID number of the project
		[Package Folder Name]	Name of the folder that stores the package data
		[GOT Type]	GOT type of the project
		[System Version]	System application version in the package data

[Communication Status] dialog

This dialog displays the communication status or the results when a communication test or batch writing of package data is executed for multiple GOTs.



Item			Description
1)	Communication status list	-	Lists the IP addresses and communication status of target GOTs.
		[No.]	Displays the number for each GOT.
		[IP Address]	Displays the IP address of each GOT.
		[Status]	Displays the communication status or result.
		[Data Size]	Displays the transferred data size and/or the total data size. The data size is displayed according to [Status] as shown below. • Writing in progress: Transferred data size and total data size • [Completed]: Total data size • [Waiting]: - • [Error]: - For communication tests, the data size is not displayed.
2)	[Show error details] button		Displays the details of an error in the GOT selected in the communication status list.
3)	Progress bar		Shows the overall communication progress.
4)	[Cancel] button		Cancels communication with the GOTs being in the waiting status. The communication in progress cannot be canceled. The data in the GOTs in the completion status cannot be reset to the state before the data write.
	[Close] button		This item is displayed upon completion of communication. Closes the [Communication Status] dialog, and updates [Start Time], [End Time], and [Status] in the [Batch Write to multiple GOTs] dialog.

File format

The following shows the file format used for import and export.

Target	No.	IP Addres	Peripheral	Encryptior	Status	Start Time	End Time	GOT ID	GOT Nam	GOT Type	I/F
TRUE	1	192.168.0.	5015	5115	Error <0180840b>	5/8/2025 17:31	5/8/2025 17:32				
TRUE	2	192.168.0.	5015	5115	Error <0180840b>	5/8/2025 17:31	5/8/2025 17:33				

CSV files only support the languages supported by the OS.

For imports, some items are not imported but must still be included in the file.

○: Import target

—: Not import target

Import target	Item name	Item name in GT Designer3	Description	Double quotation marks ("") required for Unicode text files
○	Target	Communication target	Stores TRUE or FALSE (whether the item is a communication target).	—
—	No.	No.	Stores the GOT number (1 to 256).	—
○	IP Address	IP address	Stores the IP address of the GOT.	○
○	Peripheral S/W Communication Port No.	Port number for communication with peripheral software	Stores the port number of the GOT for communication with peripheral software.	○
○	Encryption Communication Port No.	Port number for encrypted communication	Stores the port number of the GOT for encrypted communication.	○
—	Status	Status	Stores the status (communication result).	—
—	Start Time	Start time	Stores the start date and time of a communication test or data write to the GOT.	○
—	End Time	End time	Stores the end date and time of a communication test or data write to the GOT.	○
—	GOT ID	GOT ID	Stores the GOT ID.	○
—	GOT Name	GOT name	Stores the GOT name.	○
—	GOT Type	GOT type	Stores the GOT type.	○
—	I/F	I/F	Stores the type of the connection interface.	—

8.13.6 [Communicate with Memory Card] dialog

In this dialog, set the information to be written to the data storage and the destination to write the data.

This dialog can be displayed by selecting [Communication] → [Write to Memory Card] from the menu.

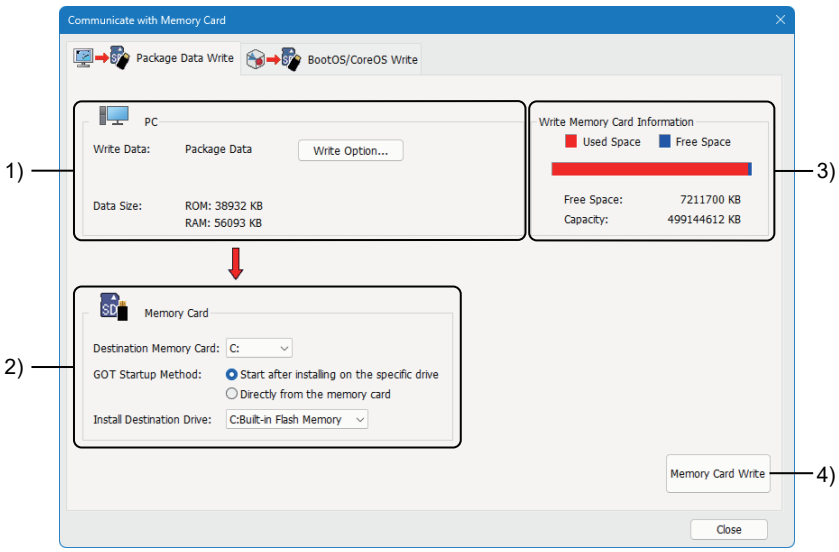
The [Communicate with Memory Card] dialog has the following two tabs for each function.

Switch the tabs according to your purpose.

Tab	Purpose
☞ Page 482 [Package Data Write] tab	Write package data to a data storage.
☞ Page 483 [BootOS/CoreOS Write] tab	Store BootOS or CoreOS + BootOS to a data storage.

[Package Data Write] tab

Write package data to a data storage.



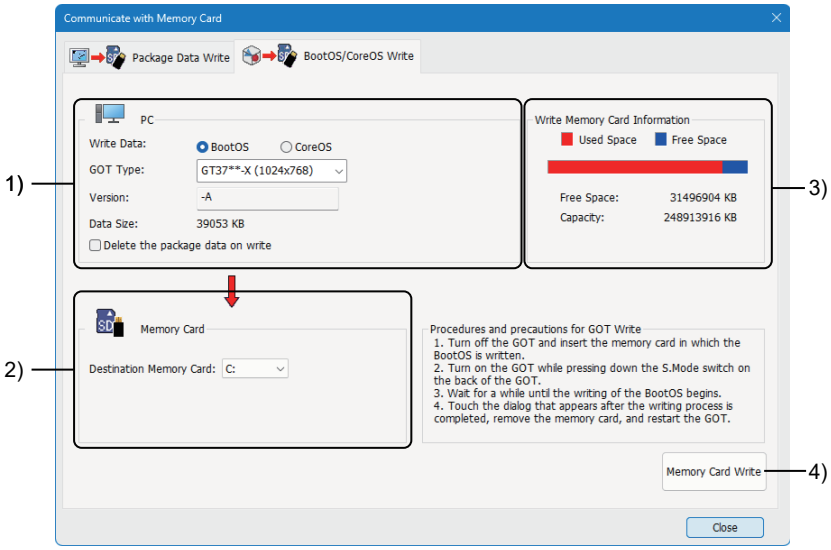
Item			Description
1)	[PC]	[Write Data]	Displays the type of the data to be written to the GOT. It is fixed to [Package Data].
		[Write Option] button	Check the package data information, select the data to be included in the package data, set the write mode, and others in the dialog displayed by clicking this button. ☞ Page 467 [Write Option] dialog
		[Data Size]	Displays the data size of the package data.
2)	[Memory Card]	[Destination Memory Card]	Select the drive of the destination data storage. The drive which is displayed in [Hard Disk Drive] or [Device with Removable Storage] of Windows can be used in [My Computer]. The available drives depend on the personal computer.
		[GOT Startup Method]	Select the startup operation of the GOT.
		[Install Destination Drive]	Select the destination drive of the GOT to which the package data is written when [Start after installing on the specific drive] is selected for [GOT Startup Method]. For the available drives by GOT model, refer to the following. ☞ Page 81 Drive configuration and capacity of the GOT
3)	[Write Memory Card Information]		Information of destination data storage capacity.
4)	[Memory Card Write] button		Writes the package data to the data storage.

[BootOS/CoreOS Write] tab

Install BootOS only, or both CoreOS and BootOS on the data storage.

For functions that require upgrading BootOS and CoreOS versions, refer to the following.

☞ Page 3732 Functions that require upgrading the versions of BootOS and CoreOS



Item			Description
1)	[PC]	[Write Data]	Select the type of the data to be stored. When [CoreOS] is selected, BootOS is also installed.
		[GOT Type]	Select the GOT type for BootOS or CoreOS.
		[Version]	Version of BootOS or CoreOS
		[Data Size]	Data size of BootOS or CoreOS
		[Delete the package data on write]	Select this item to delete the package data in the GOT when installing BootOS or CoreOS on the GOT. When this item is deselected, only BootOS or CoreOS is updated.
2)	[Memory Card]	[Destination Memory Card]	Select the drive of the destination data storage. The drive which is displayed in [Hard Disk Drive] or [Device with Removable Storage] of Windows can be used in [My Computer]. The available drive depends on the personal computer.
3)	[Write Memory Card Information]		Information of destination data storage capacity.
4)	[Memory Card Write] button		Stores BootOS or CoreOS to the data storage.

8.14 Troubleshooting

When an error occurs during the data transfer, check the following items.
If an error occurs after the following actions are taken or an error which is not described in the following list occurs, consult a service representative.
Errors whose error codes start with [801f] are returned from hardware (such as CPUs, network modules, and GOTs).
Refer to the manual of each device to take the corrective action.

Error code	Error message	Description	Solution
80100005	An error occurred. The file in the p.c. cannot be written.	Failed to write to the file in the personal computer.	Check that the drive to which the file is written can be written or has enough available space in the disk capacity.
80110003	An error occurred. Please check Port No.	The set port number is out of the range.	Check the port number.
80110004	An error occurred. Time out error	Communication time error	Check the communication cable and the power of the device.
80110006	An error occurred. The GOT is being accessed by another application.	The GOT is being accessed by another application.	Wait until another application ends.
80110007	An error occurred. Quality of communication signal error. Please check communication settings.	Error by the quality of the communication line	Decrease the baud rate and perform the communication.
80110008	An error occurred. Please check Baud rate.	The controller does not support the set baud rate.	Check the baud rate which the controller supports.
80110015	An error occurred. Please enter the correct remote password.	Remote password specification error.	Specify the correct remote password.
80112401	An error occurred. Unable to communicate with GOT via Ethernet. The possible causes are shown below. (1) Basic system application is not written in the GOT (2) The GOT is not turned on (3) Communication Settings are not properly set (4) GOT IP address is not properly set (5) Incorrect wiring	The GOT does not exist on the network.	Check the following. • The basic system application is written to the GOT. • The GOT is powered on. • The communication settings are set correctly. • [GOT IP Address] is set correctly in the [Communication Configuration] dialog. • The wiring is correct.
80112402	An error occurred. Unable to communicate with GOT via Ethernet. The possible causes are shown below. (1) The GOT is communicating with another computer (2) GOT IP address is not properly set (3) GOT Port No. is not properly set	Socket line open error (Failed to generate a socket.)	Check the following. • The GOT is not communicating with another computer. • The communication target is not the network device excluding the GOT. • [Peripheral S/W Communication Port No.] in the [Communication Configuration] dialog matches with the port number set to the GOT.
80112405	An error occurred. Please check if both GOT and PC are properly connected together via Ethernet cabling.	Network error	Check the GOT is connected to the network correctly.
80112406	An error occurred. Unable to communicate with GOT via Ethernet. The possible causes are shown below. (1) The GOT is communicating via USB/ RS232 (2) The GOT is not turned on	The connecting socket is disconnected forcibly.	Check the following. • The GOT is not communicating using the USB or RS-232. • The GOT is powered on.
801fa000	An error occurred. Routing parameter is insufficient in the GOT of the relay station. Please set routing parameter for the GOT.	The routing parameter set for the relay station (GOT) is incorrect.	Check the routing parameter setting of the relay station.
801fa080	An error occurred. Information is insufficient in the GOT of the relay station Ethernet setting. Please set the Ethernet setting of the GOT.	The Ethernet setting configured for the relay station (GOT) is incorrect.	Check the routing parameter and the IP address.

Error code	Error message	Description	Solution
801fa200	An error occurred. Communication driver is not booted in the GOT of the relay station. Please check the GOT setting.	The possible causes are as follows. • No communication driver is installed on the GOT. • The package data is corrupt. • The communication driver does not support the relay function.	Install the package data on the GOT again.
801fa303	An error occurred. GOT restricts the communication with Ethernet. Unable to communicate with GOT via Ethernet.	Communication via an Ethernet network is not allowed.	Clear the Ethernet Access Control (GS454).
801fa304	An error occurred. The basic system application to be written is not valid for the H/W version of the GOT. Please prepare the new drawing software.	The hardware versions of BootOS and GOT do not match.	Install BootOS from the appropriate version of GT Designer3.
801fa305	An error occurred. SD card cannot be accessed. The possible causes are shown below. • SD card cover of the GOT is open. • SD card access switch of the GOT is turned off.	The possible causes are as follows. • The SD card cover is open. • The SD card access switch is turned off.	Close the SD card cover of the GOT. Turn on the SD card access switch of the GOT.
801fa306	An error occurred. Project data, system application, and resource data cannot be written/deleted since the write-protect switch is activated. Please deactivate the write-protect switch.	The write protection switch of the data storage is on.	Cancel the write protection switch of the data storage.
801fa309	An error occurred. The package data/resource data cannot be written due to the shortage of free space on the drive.	The available space of the drive is not sufficient.	Acquire the free space by deleting unnecessary files or others. Or, reduce the size of the package data or resource data to be written.
801fa30b	An error occurred. Selected Drive cannot be accessed.	The specified drive does not exist.	Check the specified drive.
801fa30c 801fa30d	An error occurred. The following drive is not mounted. X: XXXXXXXXX Check the drive.	The data storage is not connected to the specified drive.	Check the data storage is connected correctly to the specified drive.
801fa311	An error occurred. The specified file cannot be found. Update the information. (Click on the "Get Drive Information" button.)	The specified file does not exist.	Check if the specified file name is correct.
801fa314 801fa315	An error occurred. The specified drive cannot be formatted.	The drive is used for the GOT direct startup and therefore cannot be formatted.	Select a drive that is not used for the GOT direct startup.
801fa31f	An error occurred. The password for data transfer is wrong.	An authentication error occurred due to an incorrect password.	Specify the correct password.
801fa32f	An error occurred. This function cannot be executed since the GOT does not support data write of the selected resource data. The possible causes are shown below. • The resource data that the destination GOT does not support is selected. • Version of the basic system application in the GOT does not support data write of the selected resource data.	The write destination GOT does not support the file format of the selected resource data. Or, the target GOT has an older version of the standard system application, and therefore the resource data file cannot be written.	Delete the unsupported resource data file from the write target list. Or, install the latest version of GT Designer3, and then write the package data to the GOT.
801fa330	An error occurred. Failed to access the file. Perform the following operations. • Reduce the number of files in the destination. • Check if the selected file in the GOT exists. • Check if the selected file in the GOT can be overwritten.	The number of files and folders has exceeded the storage limit for the root directory of the FAT16 formatted data storage on the write destination drive.	Reduce the number of the files and folders in the data storage on the write destination drive.
		The selected file is nonexistent or write-protected in the GOT.	Check the following. • The selected file exists. • The selected file is not write-protected.
801fa331	An error occurred. Communication error	This occurs when the GOT is unable to perform the GOT diagnostics (for example, when there is an IP address conflict).	—

Error code	Error message	Description	Solution
801fa332	An error occurred. Communication with the GOT is disconnected during monitoring. Check the state of the GOT and retry.	The GOT lost communication while monitoring (for example, if you changed the GOT setting in the utility).	Wait for a while and then start monitoring again.
801fa338	An error occurred. The password does not meet password requirements. Check the password.	A password strength error.	Specify a password that meets the requirements.
801fa33a	An error occurred. The operator name or password is invalid. Check the operator name or password.	The entered operator name or password does not exist in the GOT3000 operator information.	Specify a registered operator name and password.
801fa33b	An error occurred. The new password is the same as the previous one. Specify a different password.	The new password exists in the password history.	Specify a different password.
801fa33c	An error occurred. The new password is the same as the current one. Specify a different password.	The new password is the same as the current one.	Specify a different password.
801fa33d	An error occurred. The password of the authenticated operator needs to be changed for the following reasons: • Password expired • [Change password at next login] enabled Write from [Communication] -> [Write to GOT] or change the password in the GOT.	A password change is required for one of the following reasons. • The password has expired. • [Change password at next login] is enabled.	Change the password when writing to the GOT or during operator authentication on the GOT.
801fa33f	An error occurred. The operator has been set to a locked state due to exceed the specified number of consecutive failures. Please consult the administrator to unlock.	The number of the predetermined operator lock count has been exceeded.	Unlock the operator account in the utility.
801fa340	An error occurred. An invalid login operation was found sequentially. Run after a while.	An unauthorized login has been attempted.	Log in with the correct password after the login block time has elapsed.
801fa341	An error occurred. Incorrect login operation is detected sequentially for operator in a locked state. Please consult the administrator to unlock.	The number of predetermined operator lock count has been exceeded and an unauthorized login has been attempted.	Unlock the operator account in the utility.
801fa342	An error occurred. The operator is in a locked state. Please consult the administrator to unlock.	A locked operator attempted to log in.	Unlock the operator account in the utility.
801fa343	An error occurred. The operator is invalid. Please consult the administrator to unlock.	A disabled operator attempted to log in.	Edit the user information of the operator in the utility.
801fa344	An error occurred. Exceed the maximum number of operators that can log in simultaneously. Please wait for other operators to log out.	The number of simultaneous logins has been exceeded.	Log in after another operator logs out.
801fa345	An error occurred. Only Administrators or operators that in the user-defined groups with operational privileges can perform this function. Please use an administrator or an operator that in the user-defined group with operational privileges to log in.	The operator does not have operation rights.	Log in as an administrator or an operator in the user-defined group with operation rights.
801fa346	An error occurred. The operator has been logged out due to exceed the automatic logout time. Please log in again.	A timeout has occurred.	Retry the login.
801fa347	An error occurred. The operation was operated by an unauthenticated operator. Please log in.	A logged out operator attempted operation.	Log in.

Error code	Error message	Description	Solution
801fa348	An error occurred. An logged operator is editing. Run after a while.	An error occurred during editing.	—
801fa349	An error occurred. Operator authentication failed. Please contact the administrator.	An unknown error occurred during operator authentication.	—
801fa413	An error occurred. Failed to access the file. Perform the following operations. • Delete the files with their paths exceeding 78 characters from the target drive. • Delete the files with their sizes greater than or equal to 2GB. If the problem persists, restart the GOT.	An internal error of the file access library	—
801fc202 801fc205	An error occurred. Please confirm whether a remote password is set in the relay station. It is not possible to establish communication when a remote password is set in the relay station.	When the GOT accesses another station, the remote password authentication fails.	Do not set a remote password in the relay station and other stations, or exclude the GOT from the remote password authentication.
80110009	An error occurred. Communication error The possible causes are shown below. • The communication port settings are incorrect. • The cable is disconnected or broken. • The GOT is turned off. • The communication setting of each controller or routing parameter setting is incorrect. • Dialog window is displayed in the GOT. • Remote password is set for unsupported PLC/unit. • It is not connected with GOT3000. • The time set for "Timeout (Sec)" is short. • The connection configuration is incorrect.	Packet send error	Check the line is connected.
8011000a		Communication time error	Check the GOT operates normally and perform the communication again.
80112208		USB line error (Cable is disconnected halfway.)	Check the USB cable connected to the GOT.
80112403		Socket line close error	Perform the communication again.
80112501		Easysocket generate error	Check the following. • Easysocket is installed. • The GOT is in communication process of another connection type. • The GOT is connected correctly.
801fa302		The GOT is processing data and no interrupt is available.	After the GOT completes the current process, perform the operation again.
801fa307		The specified file is read-only.	Check the destination data storage.
801fa30f		The specified path does not exist.	Check the specified path is correct.
801fa310		The specified path is incorrect.	Check the input path. • The reserved word is not used. • A dot is not used at the top. • A dot is not used at the end. • The path and the file name are not too long.
a	An error occurred. The software installation file is damaged or incomplete. Please reinstall.	Failed to generate the object of EZSocket.	Reinstall GT Designer3.
c9	Memory Card error Failed to create the folder. Check if the destination memory card exists.	Folder creating error	Check the destination data storage.
ca	Memory Card error Failed to delete the folder.	Folder deleting error	Check either of the following operations. • The specified folder exists. • The specified folder is not read-only.
cc	Memory Card error Failed to copy the file. The capacity of the destination memory card is full. Reduce the capacity. *The specified drive may be write protected.	File copy error	Check the following. • Capacity of the data storage • Access privilege of the destination drive When the user account control is valid, set a destination drive other than drive C.
dc	Memory Card error Failed to delete the file.	File deleting error	Check either of the following operations. • The specified file exists. • The specified file is not read-only.

Error code	Error message	Description	Solution
132	An error occurred. The BootOS cannot be written if its version is older than the one of the BootOS written in the GOT. Version of the BootOS in the GOT: BB Version of the BootOS to be written: AA	A later version of BootOS is already installed on the GOT.	Install the BootOS version that is newer than the one installed on the GOT.
133	An error occurred. The GOT type is different or unsupported.	The GOT type acquired from the GOT and the one of the package data do not match. Or, the type of the GOT to communicate with is not supported.	Check the project and the GOT type of the destination GOT.
134	An error occurred. Package data is not written. Write the package data.	BootOS was started during the following process. • Installing BootOS • Writing the package data • Writing or acquiring the GOT identification information • Performing the processing other than writing or acquiring of the security	Write the package data again.
13a	An error occurred. Functions to be written and already written functions conflict with each other. Selected function: %s Written function: %s *Select "Synchronize" for Write Mode in the dialog of Write Option or delete the package data from the drive information in the [GOT Read] tab, and then write the package data.	Since the function which is written and the one which is already written are competing, the system application cannot be written.	Write the package data after performing either of the following operations. • Selecting [Synchronize] in [Write Mode] of [Write Option] • Deleting the package data in [Drive Information] of [GOT Read]
13d	An error occurred. There are more than 4 communication drivers that are already written in the GOT and those to be written. (Up to 4 communication drivers can be written in GOT.) Delete the already written communication drivers and write the items again. *Select "Synchronize" for Write Mode in the dialog of Write Option or delete the package data from the drive information in the [GOT Read] tab, and then write the package data.	Four communication drivers have already been installed on the GOT. Therefore, the communication driver cannot be installed.	Write the package data after performing either of the following operations. • Selecting [Synchronize] in [Write Mode] of [Write Option] • Deleting the package data in [Drive Information] of [GOT Read]
190	An error occurred. The package data in the memory card is directly started. The following operations cannot be performed. • Deleting the package data during direct startup • Formatting the startup drive • Writing another package data to the drive of package data in execution • Writing package data to the destination other than the drive of package data in execution *Take out the memory card from the GOT to perform these operations.	When the package data is started from a data storage directly, the following operations cannot be performed. • Deleting the package data during direct startup • Formatting the startup drive • Writing another package data to the startup drive • Writing package data to a drive other than the startup drive	Do not perform the following operations. • Deleting the package data during direct startup • Formatting the startup drive • Writing another package data to the startup drive • Writing package data to a drive other than the startup drive
191	An error occurred. Failed to create the file.	Failed to create a file when the resource data is read.	Check the destination file is not read only.
192	An error occurred. Failed to create the folder.	Failed to create a folder when the resource data is read.	Check the destination file is not read only.
193	An error occurred. The processing is not properly completed since the data may be broken.	The data is corrupted. Or, the data could not be converted for writing during batch writing to multiple GOTs.	Recovery may be possible if you retry after reinstalling GT Designer3. However, recovery is not possible if the data in the saved file is corrupted.
194	An error occurred. The processing is not properly completed since the file may be broken.	The data is corrupted.	Recovery may be possible if you retry after reinstalling GT Designer3. However, recovery is not possible if the data in the saved file is corrupted.

Error code	Error message	Description	Solution
195	An error occurred. The package data to be written is insufficient. Change the write mode to "Synchronize" and retry.	The basic system application is not included in the package data.	Add the basic system application and the project data in the package data.
196	An error occurred. The system major version of the package data in the GOT is different from the one of the package data to be written. The project data and special data will be deleted since they do not work properly if the major versions are different. Package data without project data and basic system application cannot be written.	This error occurs when the package data is written without selecting the project data in the [Write Option] dialog, the same package data exists in the GOT, and the system application of the different major version is written.	Write the package data after performing either of the following operations. • Selecting [Synchronize] in [Write Mode] of [Write Option] • Deleting the package data in [Drive Information] of [GOT Read]
197	An error occurred. Multiple package data are written in the drive. In the current software, data cannot be written to the drive where multiple package data exist. Please update the software version.	Multiple package data exist in the destination drive of the package data.	Write the package data from GT Designer3 of the latest version or write the package data to other drives.
198	An error occurred. There is no package data in the specified drive.	The package data does not exist in the specified drive.	Specify the drive in which the package data is stored.
199	An error occurred. The package data cannot be written with the write mode "Select" since project security is set for the project. Change the write mode to "Synchronize" and retry.	The package data with the project security is written to the GOT. Therefore, the data cannot be written by setting [Write Mode] to [Selection] in the [Write Option] dialog.	Write the data by setting [Write Mode] to [Synchronize] in the [Write Option] dialog.
19a	An error occurred. Unsupported GOT security is set. Please update the software version.	The GOT does not support the security setting to be written.	Install the latest version of GT Designer3, and then write the package data to the GOT.
19e	An error occurred. The write processing cannot be executed since the setting to restrict write from GT Designer3 of the older versions is in effect. Check the version of GT Designer3 in which the editing is executed.	The setting, which restricts writing data from earlier versions of GT Designer3, is enabled on the GOT. The GT Designer3 version is old.	Install the latest version of GT Designer3, and then perform the operation again.
1a2	An error occurred. This function cannot be executed since the GOT does not support GOT diagnostics function. The possible cause is shown below. • Version of the basic system application in the GOT does not support GOT diagnostics function.	An old version of GT Designer3 was used.	Install the latest version of GT Designer3, and then write the package data to the GOT.
1a3	An error occurred. There is unsupported error information in the GOT. Please update the software version.	The system alarm format has been changed.	Install the latest version of GT Designer3, and then perform the operation again.
1a6	An error occurred. FA transparent function is used in other MELSOFT applications for the GOT. Terminate the function and retry.	Another MELSOFT application is using the FA transparent function, and therefore the following processes cannot be executed. • Writing package data • Installing BootOS • Deleting package data • Formatting a drive • Starting monitoring of GOT diagnostics	Wait 30 seconds after the application ends the FA transparent function, and then execute the process again.
1a9	An error occurred. The resource file that does not exist is specified. Check the file to be written.	The selected resource data file is nonexistent.	Check that the file exists.
1b0	An error occurred. The resource file that cannot be read is specified. Check the file to be written.	Another software application is using the selected resource data file, and therefore the file cannot be opened.	Check that the file is not being used by the other software applications.

Error code	Error message	Description	Solution
1b1	An error occurred. Memory capacity in the PC is insufficient. Check the size of the resource file to be written.	The personal computer does not have enough memory, and therefore the selected resource data file cannot be opened.	Perform the following operations on the personal computer to free up the hard disk space and memory, and then write the resource data file. • Exit unnecessary applications. • Delete unnecessary files.
1b4	An error occurred. The following function to be written conflicts with the function that is already written in the GOT. Key Window Design Information *Select "Synchronize" for Write Mode in the dialog of Write Option or delete the package data from the drive information in the [GOT Read] tab, and then write the package data.	The system application cannot be written because the application conflicts with the existing one in the GOT.	Write the package data after performing either of the following operations. • Selecting [Synchronize] in [Write Mode] of [Write Option] • Deleting the package data in [Drive Information] of [GOT Read]
1b5	An error occurred. The package data cannot be written since the communication via Ethernet will be disabled if it is written in the following cases. Write the package data from [Communication] -> [Write to GOT]. • Package data does not exist on the destination • The package folder is different from the one of the package data on the destination drive • The project ID is different from the one of the package data on the destination drive • The major version of the system application is different from the one of the package data on the destination drive • Security key is set for the destination package data • Free space of the destination drive is insufficient	During batch writing to multiple GOTs, some necessary settings for the GOT (such as individual identification information and controller settings) are not transferred. In the following cases, writing is aborted because the post-write data is incomplete. • Package data does not exist on the destination • The package folder is different from the one of the package data on the destination drive • The project ID is different from the one of the package data on the destination drive • The major version of the system application is different from the one of the package data on the destination drive • Security key is set for the write target package data • Security key is set for the destination package data • Free space of the destination drive is insufficient	Install via memory card, or write the package data to the GOT using [Write to GOT] in the [Communication] menu.
1b6	An error occurred. The package data cannot be written since the data in the GOT contains the following settings. • Global label • Label (GT Designer3) • OMRON NJ/NX Tag • AB Native Tag *Change the setting of "Screen Switching/Window, System Information, Station No. Switching" to "Write" in the dialog of Write Option, and then write the package data.	If screen switching/window, system information, and station switching are not written, the writing process will be interrupted if the following settings are present in the GOT. • Global label • Label (GT Designer3) • OMRON NJ/NX Tag • AB Native Tag	Display [Write Option] in the [Batch Write to multiple GOTs] dialog, set [Write] for [Screen Switching/Window, System Information, Station No. Switching], and write the package data.
1bd	An error occurred. Functions to be written and already written functions conflict with each other. Either Kana-kanji conversion or Pinyin conversion can be written depending on the conversion method. *Select "Synchronize" for Write Mode in the dialog of Write Option or delete the package data from the drive information in the [GOT Read] tab, and then write the package data.	The system application cannot be written because it conflicts with an existing function that has already been written.	Select "Synchronize" for [Write Mode] in [Write Option], or delete the package data from [Drive Information] in [GOT Read], and then write the package data.
200	An error occurred. The data to be retrieved was created by a software version newer than the current one, or it was created with an unsupported GOT type. Read again after changing "Read Data" to "Package Data".	Appears in the following cases. • When project data whose major version of the GT Designer3 system is earlier than the major version of the GOT is read • When project data of an unsupported GOT type is read	Read the package data after performing either of the following operations. • Change [Read Data] to [Package Data]. • Install the latest GT Designer3.

Error code	Error message	Description	Solution
201	An error occurred. Unsupported functions have been set up in the package data of the GOT. Please update the software version.	Appears when write, read, or verification is executed to the GOT for which an unsupported function is set.	Install the latest version of GT Designer3, and then perform the operation again.
202	An error occurred. The package data information cannot be acquired. The possible causes are shown below. • There is an encrypted project data that is not activated. • The package data is broken.	Appears when a drive containing encrypted project data that has not been started is specified, and read or verification is executed.	Specify a drive that does not contain encrypted project data that has not been started, and execute read or verification.
203	An error occurred. The data cannot be written with the write mode "Select" since different package data has been written. *Select "Synchronize" for Write Mode in the dialog of Write Option or delete the package data from the drive information in the [GOT Read] tab, and then write the package data.	The data cannot be written with the write mode set to "Select" because different project data is already written to the GOT.	Write the package data after performing either of the following operations. • Selecting [Synchronize] in [Write Mode] of [Write Option] • Deleting the package data in [Drive Information] of [GOT Read]
205	An error occurred. An unsupported security mode has been set. Please update the software to the latest version.	An unsupported security mode has been set.	Install the latest version of GT Designer3 and retry.
206	An error occurred. Encryption communication cannot be performed. The possible causes are shown below. • The Encryption Communication Port No. settings are incorrect. • The Encryption Communication Port for GOT Ethernet Common Setting has been closed.	Encrypted communication cannot be performed.	Perform one of the following operations and retry. • Check the encrypted communication port number setting. • Check that the encrypted communication port in the GOT Ethernet common settings is open.
208	An error occurred. The package data cannot be written. Possible causes are shown below. • The package data that is different from the one to be written is written. • The encryption settings are different between the package data to be written and the package data written to the GOT.	—	Perform one of the following operations. • Write the same package data as the one already written. • Write the package data encrypted with the same encryption password as the one used for the package data already written. • Perform writing to each GOT, not batch writing to multiple GOTs.
20a	An error occurred. The security mode cannot be changed to Mode 2 since the operator name and password of the new operator to be registered are not set. Write the package data after entering the operator name and password from [Operator Authentication Setting].	The error has occurred because all of the following conditions are satisfied. • The security mode of the package data to be written is mode 2. • The security mode of the write destination GOT3000 is mode 1. • [Operator Name (Register New Operator)] and [Password (Register New Operator)] are left blank in the [Operator Authentication Setting] dialog.	Perform either of the following operations and retry writing. • Set the security mode of the package data to be written to mode 1. • Enter [Operator Name (Register New Operator)] and [Password (Register New Operator)] in the [Operator Authentication Setting] dialog.
	An error occurred. The security mode cannot be changed to mode 2 because the name and password of the new operator to be registered are not specified. Specify the operator name and password to write the package data.	The error has occurred because all of the following conditions are satisfied. • The security mode of the package data to be written is mode 2. • The security mode of the write destination GOT3000 is mode 1. • The operator name and password of the new operator to be registered have not been specified.	Perform either of the following operations and retry writing. • Set the security mode of the package data to be written to mode 1. • Specify the name and password of the new operator to be registered.

PART 5 Common settings

9 Changing the GOT type of the project

10 Setting the GOT basic operations ([GOT Environmental Setting])

11 Configuring the GT SoftGOT3000 settings ([SoftGOT Setting])

12 Configuring the utility settings ([GOT Setup])

13 Setting the GOT Ethernet interface ([GOT Ethernet Setting])

14 Configuring the communication method between the GOT and the controller ([Controller Setting])

15 Setting the interaction function for equipment on Ethernet ([GOT Network Interaction])

16 Checking the interface settings of the GOT ([I/F Communication Setting])

17 Comment setting ([Comment])

18 Registering parts ([Parts])

9 Changing the GOT type of the project

☞ Page 493 Specifications of the GOT type change
☞ Page 502 Operating the monitor screen of the GOT using gestures (gesture function)
☞ Page 510 Expanding the base screen size
☞ Page 519 [Type Setting] dialog
☞ Page 528 [Output] window

9.1 Specifications of the GOT type change

GT37 SoftGOT3000

The available functions depend on the GOT model.
Thus, set the GOT type of the project according to the GOT model.
If you change the GOT type in the [Type Setting] dialog, some settings may be deleted or changed, or the shape and shape frame settings may be changed.

☞ Page 493 Settings to be held when the GOT type is changed
☞ Page 493 Settings to be deleted when the GOT type is changed
☞ Page 494 Settings to be changed when the GOT type is changed
☞ Page 495 Settings that cannot be restored after the GOT type change
☞ Page 495 Changing the GOT type while GT Simulator3 is running
☞ Page 495 Resizing the screens, figures, and objects

9.1.1 Settings to be held when the GOT type is changed

The setting of the changed GOT that is available in the newly set GOT is held after the GOT type change.

Screen size

When the GOT type is changed to one with the same screen resolution, the screens are not resized.
The figures and objects on the screens are also not resized.

Channel No. setting

When the GOT type after the change has the same channel No. and interface as those of the GOT type before the change, the channel No. is assigned to the same interface before the change.

Library

The user-created library is not changed.
The parts and templates in the library can be used in the newly set GOT.
However, the library data containing figures or objects incompatible with the new GOT is not displayed on the library image list.

9.1.2 Settings to be deleted when the GOT type is changed

Functions, settings, or screens that the newly set GOT does not have are deleted.

9.1.3 Settings to be changed when the GOT type is changed

If the originally-selected GOT does not support some settings of the newly-selected GOT, the default values are applied according to the other related settings of the newly-selected GOT.
For some of the unsupported settings, the default values may not be applied depending on the combination of the originally-selected GOT and the newly-selected GOT.

Screen size

Screen type	Description
Original-size base screen	When the GOT type is changed to one with a different screen resolution, the base screens are resized to the screen size of the newly-selected GOT. Select whether to reposition and resize the figures and objects on the screens. For information on how the screen data is converted, refer to the following. ☞ Page 495 Resizing the screens, figures, and objects
Expanded base screen	Select whether to resize the screens. For information on how the screen data is converted, refer to the following. ☞ Page 495 Resizing the screens, figures, and objects
Window screen	

Channel No. setting

When the newly set GOT does not have the channel No. that the changed GOT has, the default value is set in the channel No.
When a channel No. with the default value is already used in another interface, the channel No. is set to 0.
When the newly set GOT does not have the communication driver set for the channels of the changed GOT, the default communication driver is set.

Device settings

The incompatible device range with the newly set GOT is shown as [??] in GT Designer3.
In this case, set the device again.
The devices with device types (BCD, real number) that the newly set GOT does not support are deleted.

Project security

When the project security is set, the following user cannot change the GOT type.

- Users who are restricted to edit the project by the project security
- Users who are restricted to display or edit a screen

☞ Page 2972 Protecting a project by registering users (Project security)

Image data (BMP)

Item	Description
Changing 16-tone monochrome to 256 or 65536 colors	When the GOT type is changed, the number of bits per pixel of 16-tone monochrome image data cannot be held. The image data is converted to the image data with either 8 bits or 16 bits. Thus, the data size of the image data is increased.
Restriction due to the arrangement method	When using image data of BMP files (256 colors), use the same method to display all the image data. The color of the image data of BMP files (256 colors) may be changed depending on the arrangement method at the GOT type change. • Importing the BMP file by selecting [Figure] → [Import Image Data] from the menu The image data is displayed in 8-bit color. • Copying the BMP file to the clipboard and pasting it on the screen The image data is displayed in 16-bit color.

Startup logo setting

When the screen size of the newly set GOT does not correspond to that of the changed GOT, the size of the startup logo may be changed.
When the screen size has been changed, set the startup logo again.

Public folder of the GOT Mobile function

If you change the setting of [Package Folder Name] in the [Type Setting] dialog, the path to the public folder of the GOT Mobile function is automatically changed accordingly.

With the change of the package folder name, if the path to a file in the public folder contains more than 78 characters, the file becomes inaccessible.

For details on the public folder in the GOT Mobile function, refer to the following.

☞ Page 2760 Public folder

Specifying key codes

Key codes with functions that are not supported by the GOT after conversion may become unusable after conversion.

9.1.4 Settings that cannot be restored after the GOT type change

The settings that have been changed through the GOT type change cannot be restored.

The operation history of [Undo] is deleted at the GOT type change.

Saving the project before the GOT type change is recommended.

9.1.5 Changing the GOT type while GT Simulator3 is running

If the GOT type or standard language is changed, the running GT Simulator3 will exit.

9.1.6 Resizing the screens, figures, and objects

In the [Type Setting] dialog, change the GOT type to one with a different screen resolution and click the [OK] button to display the dialog prompting you to specify the method of changing the figures and objects on the screens.

How the screen data is converted depends on the types of the base screens before the GOT type change and the method of changing the figures and objects on the screens.

For more details, refer to the following.

☞ Page 497 How the original-size base screen data is converted

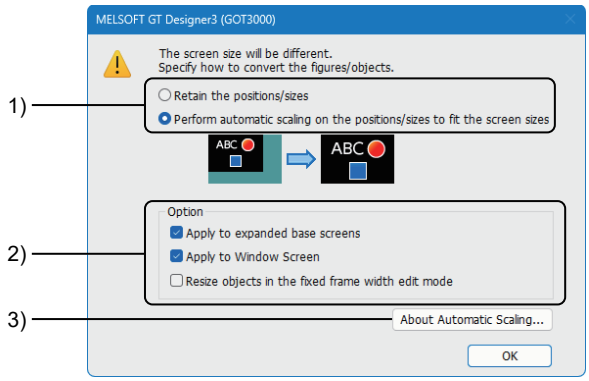
☞ Page 498 How the expanded base screen data is converted (when enabling the base screen size expansion for the newly-selected GOT)

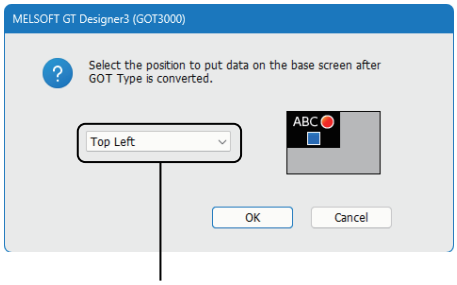
☞ Page 499 How the expanded base screen data is converted (when disabling the base screen size expansion for the newly-selected GOT)

☞ Page 500 How the window screen data is converted

☞ Page 501 How the figures and objects are changed

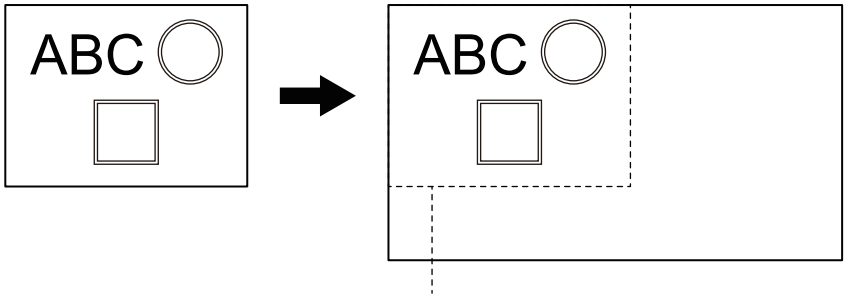
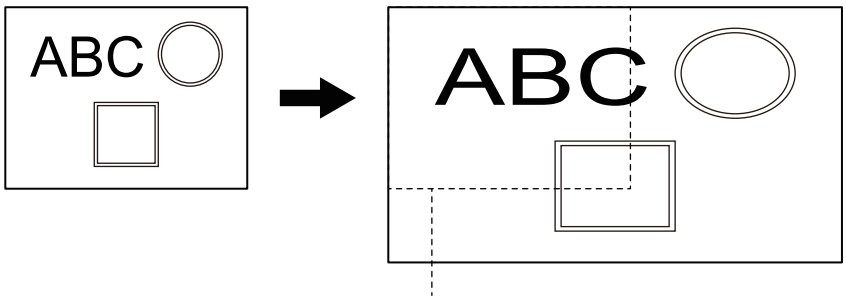
☞ Page 501 GOT2000 project data



Item			Description
1)	Method of changing the figures and objects		Select whether to reposition and resize the figures and objects according to the screen size of the newly-selected GOT. The following shows selectable items. • [Retain the positions/sizes] Resizes the screens, and does not reposition and resize the figures and objects on the screens. If the screen size of the newly-selected GOT is smaller than the screen size of the originally-selected GOT, some of the figures and objects may enter the temporary area. In this case, move such figures and objects to the screen display area. If the screen size of the newly-selected GOT is larger than the screen size of the originally-selected GOT, click the [OK] button to display the following dialog. Select where to place the figures and objects on the base screens after the GOT type change.  Position of the figures and objects • [Perform automatic scaling on the positions/sizes to fit the screen sizes] Automatically repositions and rescales the figures and objects according to the new screen size. The rescaling specifications vary depending on the figure or object. ☞ How the figures and objects are changed The setting of [Resize objects in the fixed frame width edit mode] determines whether to fix the object shape frame widths after the GOT type change.
2)	[Option]	—	This item appears when [Perform automatic scaling on the positions/sizes to fit the screen sizes] is selected as the method of changing the figures and objects.
		[Apply to expanded base screens]	This item is displayed when the base screen size expansion is available for both the originally-selected GOT and newly-selected GOT. Resizes the figures and objects on the expanded base screens. Resizes the expanded base screens. For information on how the expanded base screen data is converted, refer to the following. ☞ Page 498 How the expanded base screen data is converted (when enabling the base screen size expansion for the newly-selected GOT) ☞ Page 499 How the expanded base screen data is converted (when disabling the base screen size expansion for the newly-selected GOT)
		[Apply to Window Screen]	Resizes the figures and objects on the window screens. Resizes the window screens. For information on how the window screen data is converted, refer to the following. ☞ Page 500 How the window screen data is converted
		[Resize objects in the fixed frame width edit mode]	Resizes the applicable objects with their shape frame widths fixed. The objects must satisfy the frame width fixing conditions. For the frame width fixing conditions, refer to the following. ☞ Page 1027 Switching between fixing or not fixing the frame width of an object shape The shape frame widths are fixed after the GOT type change.
3)	[About Automatic Scaling] button		This item appears when [Perform automatic scaling on the positions/sizes to fit the screen sizes] is selected as the method of changing the figures and objects. Displays precautions for the automatic scaling.

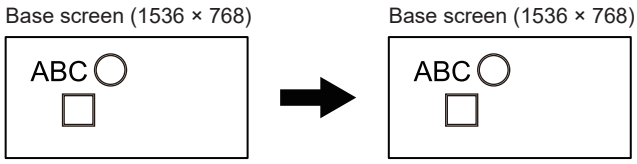
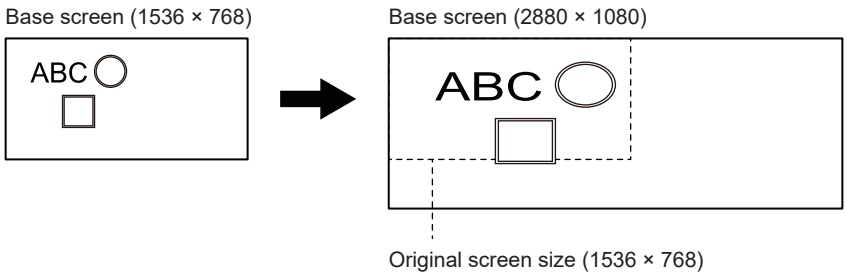
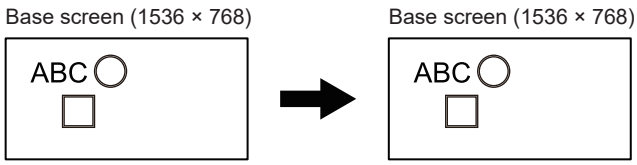
How the original-size base screen data is converted

The original-size base screen data is converted as shown below.

Method of changing the figures and objects	Conversion specifications
[Retain the positions/sizes]	The base screens are resized to the screen size of the newly-selected GOT. The figures and objects on the screens are not repositioned and resized. Example) Changing the GOT type with a resolution of 1024 × 768 to the GOT type with a resolution of 1920 × 1080 Base screen (1024 × 768) Base screen (1920 × 1080)  Original screen size (1024 × 768)
[Perform automatic scaling on the positions/ sizes to fit the screen sizes]	The base screens are resized to the screen size of the newly-selected GOT. The figures and objects on the screens are repositioned and resized in proportion to the screen resolution of the originally-selected GOT. Example) Changing the GOT type with a resolution of 1024 × 768 to the GOT type with a resolution of 1920 × 1080 Base screen (1024 × 768) Base screen (1920 × 1080)  Original screen size (1024 × 768)

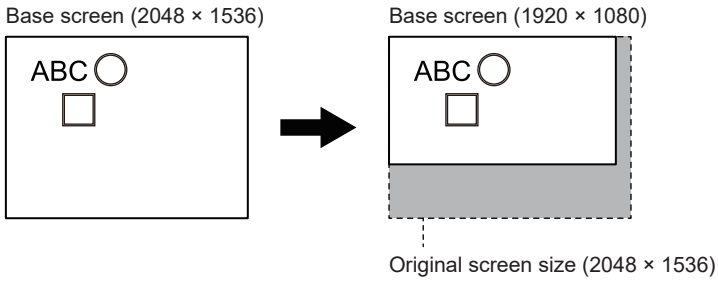
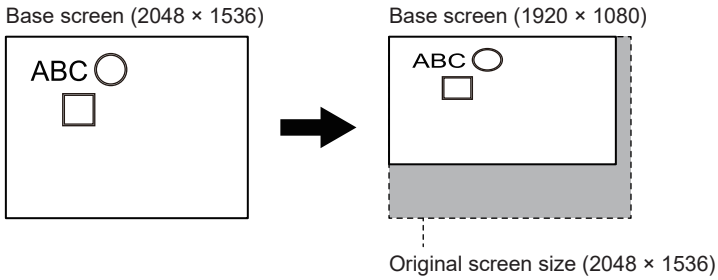
How the expanded base screen data is converted (when enabling the base screen size expansion for the newly-selected GOT)

If you enable the base screen size expansion for the newly-selected GOT, the expanded base screen data will be converted as shown below.

Method of changing the figures and objects	[Apply to expanded base screens]	Conversion specifications
[Retain the positions/ sizes]	—	The screens are not resized, and the figures and objects on the screens are not repositioned and resized. Example) Changing the GOT type with a resolution of 1024 × 768 to the GOT type with a resolution of 1920 × 1080  Note that only the screens are resized under the following condition. • The vertical or horizontal size of the screens is smaller than the vertical or horizontal screen size of the newly-selected GOT. The screens are resized to the screen size of the newly-selected GOT.
[Perform automatic scaling on the positions/ sizes to fit the screen sizes]	Selected	The base screens are resized and the figures and objects on the screens are repositioned and resized in proportion to the screen resolution of the originally-selected GOT. The base screen expanded to an integral multiple of the original size is resized proportionally. Example) Changing the GOT type with a resolution of 1024 × 768 to the GOT type with a resolution of 1920 × 1080  Note that the specifications vary under the following conditions. • Even after the screens are resized in proportion to the screen resolution of the originally-selected GOT, the vertical or horizontal size of the screens is smaller than the vertical or horizontal screen size of the newly-selected GOT. The screens are resized to the screen size of the newly-selected GOT. The figures and objects on the screens are repositioned and resized based on the ratio of the base screen sizes before and after the GOT type change. • Even after the screens are resized in proportion to the screen resolution of the originally-selected GOT, the vertical or horizontal size of the screens exceeds 3000 dots. The screens are not resized, and the figures and objects on the screens are not repositioned and resized.
	Deselected	The screens are not resized, and the figures and objects on the screens are not repositioned and resized. Example) Changing the GOT type with a resolution of 1024 × 768 to the GOT type with a resolution of 1920 × 1080  Note that the screens are resized and the figures and objects on the screens are repositioned and resized under the following condition. • The vertical or horizontal size of the screens is smaller than the vertical or horizontal screen size of the newly-selected GOT. The screens are resized to the screen size of the newly-selected GOT. The figures and objects on the screens are repositioned and resized based on the ratio of the base screen sizes before and after the GOT type change.

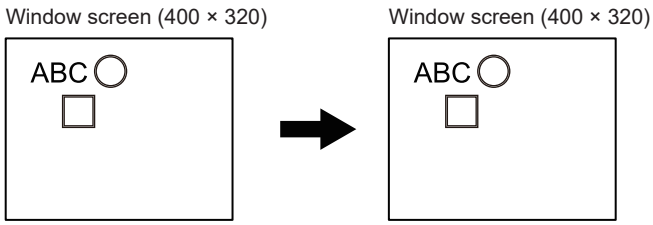
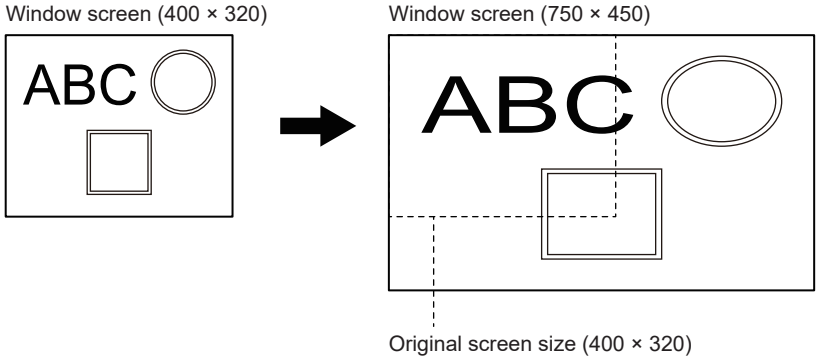
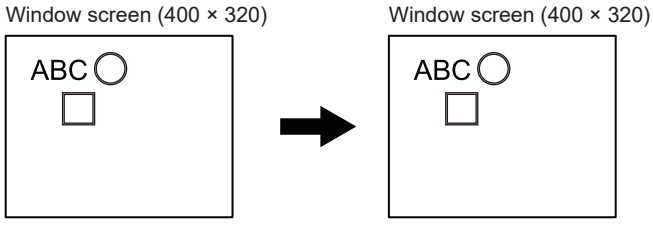
How the expanded base screen data is converted (when disabling the base screen size expansion for the newly-selected GOT)

If you disable the base screen size expansion for the newly-selected GOT, the expanded base screen data will be converted as shown below.

Method of changing the figures and objects	Conversion specifications
[Retain the positions/sizes]	The base screens are resized to the screen size of the newly-selected GOT. The figures and objects on the screens are not repositioned and resized. Example) Changing the GOT type with a resolution of 1024 × 768 to the GOT type with a resolution of 1920 × 1080 
[Perform automatic scaling on the positions/ sizes to fit the screen sizes]	The base screens are resized to the screen size of the newly-selected GOT. The figures and objects on the screens are repositioned and resized based on the ratio of the base screen sizes before and after the GOT type change. Example) Changing the GOT type with a resolution of 1024 × 768 to the GOT type with a resolution of 1920 × 1080 

How the window screen data is converted

The window screen data is converted as shown below.

Method of changing the figures and objects	[Apply to Window Screen]	Conversion specifications
[Retain the positions/ sizes]	—	The screens are not resized, and the figures and objects on the screens are not repositioned and resized. Example) Changing the GOT type with a resolution of 1024 × 768 to the GOT type with a resolution of 1920 × 1080  Note that only the screens are resized under the following condition. • The vertical or horizontal size of the screens is larger than the vertical or horizontal screen size of the newly-selected GOT. The screens are resized to the screen size of the newly-selected GOT.
[Perform automatic scaling on the positions/ sizes to fit the screen sizes]	Selected	The window screens are resized and the figures and objects on the screens are repositioned and resized in proportion to the screen resolution of the originally-selected GOT. Example) Changing the GOT type with a resolution of 1024 × 768 to the GOT type with a resolution of 1920 × 1080 
	Deselected	The screens are not resized, and the figures and objects on the screens are not repositioned and resized. Example) Changing the GOT type with a resolution of 1024 × 768 to the GOT type with a resolution of 1920 × 1080  Note that the screens are resized and the figures and objects on the screens are repositioned and resized under the following condition. • The vertical or horizontal size of the screens is larger than the vertical or horizontal screen size of the newly-selected GOT. The screens are resized to the screen size of the newly-selected GOT. The figures and objects on the screens are repositioned and resized based on the ratio of the base screen sizes before and after the GOT type change.

How the figures and objects are changed

The figures and objects are repositioned and resized based on the ratio of the base screen sizes before and after the GOT type change.

How the figures and objects are changed depends on them.

○: Changed, ×: Not changed

Function	Specifications	
	Size	Other than size
Figure	○	The setting of [Font Size] for the text and logo text is changed.
Touch switch	○	The setting of [Font Size] is also changed. When [Adjust Font Size] is enabled, [Minimum Font Size] is also changed.
Lamp	○	The setting of [Font Size] is also changed. When [Adjust Font Size] of the bit lamp or word lamp is enabled, [Minimum Font Size] is also changed.
Numerical display Numerical input	○	The setting of [Font Size] is changed according to the object size.
Text display Text input	○	The setting of [Font Size] is changed according to the object size.
Date display Time display	○	The setting of [Font Size] is changed according to the object size.
Comment display	○	The setting of [Font Size] is also changed.
Parts display	○	When [Move Way] is set to any other than [Line], the object size is not changed.
Frame animation	○	—
Historical data list display	○	The setting of [Font Size] is also changed.
Alarm display	○	The setting of [Font Size] is also changed.
Recipe display (record list)	○	The setting of [Font Size] and the scroll bar width are changed.
Graph	○	The setting of [Font Size] is not changed.
Graphical meter	○	The setting of [Font Size] on the [Text] tab is also changed. When [Adjust Font Size] is enabled, [Minimum Font Size] is also changed. The setting of [Font Size] on the [Scale] tab is not changed.
Meter	○	The setting of [Font Size] for the panel meter is also changed. The setting of [Font Size] for the scale is not changed.
Slider	○	The setting of [Font Size] is not changed.
Document display	○	—
Digital image display object	○	—
Script parts	×	—
Window position	×	—
Key window object	○	The setting of [Font Size] is changed according to the object size.
Hyperlink	×	—

■When [Lock aspect ratio] is selected

The font size of figures and objects with [Lock aspect ratio] selected in their setting dialogs is changed while maintaining the aspect ratio.

GOT2000 project data

When GOT2000 project data is opened, the data can be converted to GOT3000 project data.

Precautions

When converting GOT2000 project data to GOT3000 project data, a coordinate position error may occur for figures and objects.

If you convert GOT2000 project data to GOT3000 project data, check if any of the following applied to parts movement settings.

- [Center] is set for [Alignment].
- [Position] or [Point] is selected for [Move Way].
- [Line] or [Circle] is set for [Move Way], and the start point is placed at a coordinate smaller than half of the part size.

9.2 Operating the monitor screen of the GOT using gestures (gesture function)

GT37 SoftGOT3000

☞ Page 502 Zooming and scrolling the monitor screen of the GOT (screen gesture function)
☞ Page 507 Operating objects with gestures (object gesture function)
☞ Page 509 How to set the gesture function

Use gestures such as pinch-in and pinch-out to operate the monitor screen of the GOT.

The following functions are available to operate the monitor screen using gestures.

Function	Description
Screen gesture function	Available for GT37-W. Zoom and scroll the screen while the user-created screen on the GOT is displayed. ☞ Page 502 Zooming and scrolling the monitor screen of the GOT (screen gesture function)
Object gesture function	Use gestures such as flicks to scroll, zoom in on, or zoom out of an object. ☞ Page 507 Operating objects with gestures (object gesture function)

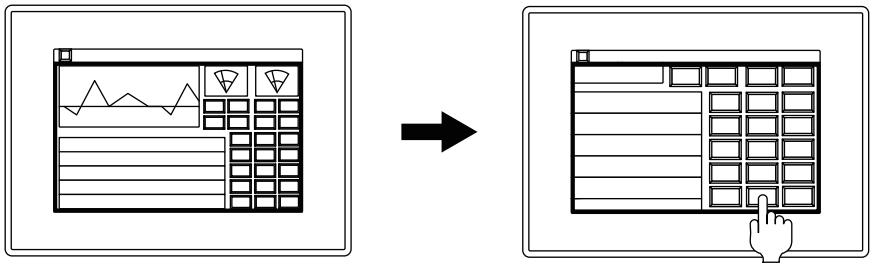
9.2.1 Zooming and scrolling the monitor screen of the GOT (screen gesture function)

☞ Page 503 Specification of the screen gesture function
☞ Page 505 How to use the screen gesture function (setting with GT Designer3)
☞ Page 506 How to use the screen gesture function (operating with the GOT)

Available for GT37-W.

Zoom and scroll the screen while the user-created screen on the GOT is displayed.

Even on a screen with many objects, zooming the screen can prevent incorrect operations.



Zoom and scroll the screen after switching to screen gesture mode.

Operations on objects are disabled except in certain areas of the screen during screen gesture mode.

Specification of the screen gesture function

☞ Page 503 Screen gesture mode
☞ Page 503 Screens applicable to screen gesture mode
☞ Page 504 Screen display during screen gesture mode
☞ Page 504 Effect on other functions during screen gesture mode

■Screen gesture mode

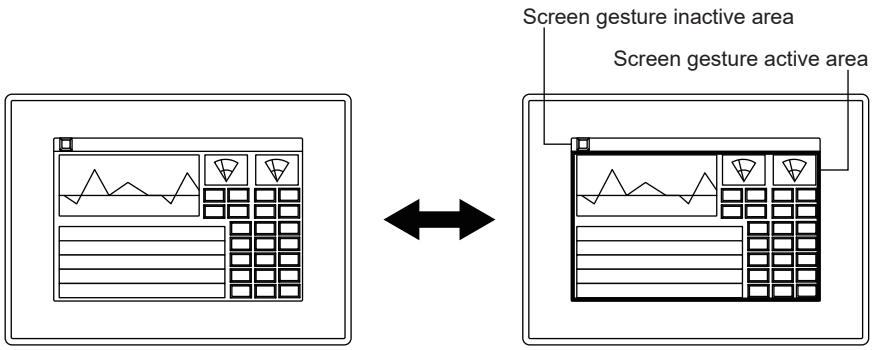
Screen gesture mode allows you to zoom and scroll the monitor screen of the GOT.

Use a mode-switching switch to change the mode.

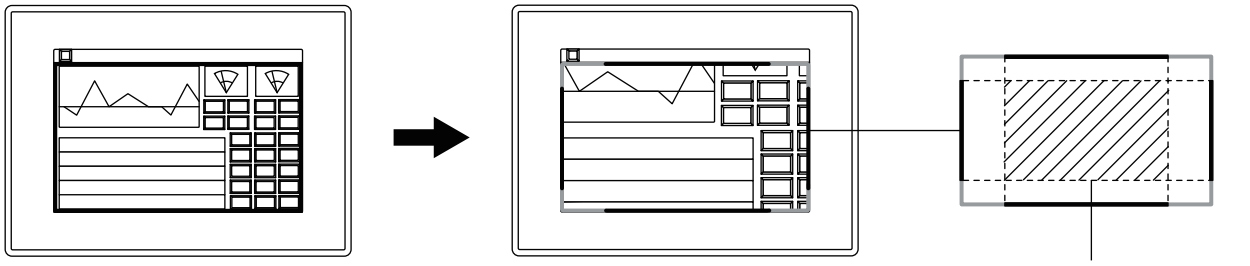
☞ Page 505 Arranging the switch for switching to screen gesture mode

Zooming and scrolling can be performed only in the screen gesture active area.

Switching to screen gesture mode displays the frame indicating the screen gesture active area.



The frame colors indicate which section of the enlarged screen is displayed.



Function	Description
Screen gesture active area	This area allows zooming and scrolling. Operations on objects in the screen gesture active area are disabled. The status of zooming and scrolling during screen gesture mode is kept even after the mode is canceled. The status of zooming or scrolling is reset when the screen is switched.
Screen gesture inactive area	The area in which operating objects is enabled even during screen gesture mode. Zooming and scrolling the screen are not available in this area. The height of the area is 32 dots from the top edge of the screen by default. The height and position of the area are user-changeable. To operate an object during screen gesture mode, place the object in the screen gesture inactive area. For information on how to set the screen gesture inactive area, refer to the following. ☞ Page 314 [Basic] tab

■Screens applicable to screen gesture mode

The following shows the applicable screens to screen gesture mode.

- Base screen
- Superimpose window (only when it is displayed on the base screen)
- Called screen (only when displayed on the base screen)

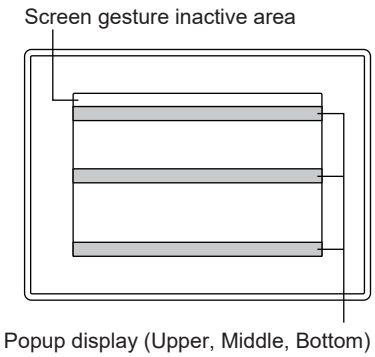
When a mode-switching switch placed on an overlap window or key window is touched, the mode switches to screen gesture mode for the currently displayed base screen.

The availability of the screen gesture function is set for each project.

■Screen display during screen gesture mode

Screen	Description
Base screen	Switching to screen gesture mode displays the frame indicating the screen gesture active area. If the value of the screen switching device changes during operations such as pinch-in or flick, the screen is switched after the finger is released from the screen of the GOT. Screen switching cancels screen gesture mode and resets the status of zooming or scrolling.
Superimpose window Called screen	The superimpose window and the called screen are applied as part of the base screen of the destination display. When the base screen on the destination display is zoomed or scrolled, the status of zooming or scrolling is applied to the superimpose window and the called screen. Even though the superimpose window is switched, the status of zooming or scrolling is kept.
Overlap window	Switching to screen gesture mode hides the overlap window. Canceling screen gesture mode redisplays the screen at the original position. The status of zooming or scrolling is not applied to the overlap window. The status of zooming or scrolling is also not applied to the display position specification device of the overlap window.
Key window	Switching to screen gesture mode hides the key window. Canceling screen gesture mode does not redisplay the key window.

■Effect on other functions during screen gesture mode

Function	Effect	
Numerical input Text input	Numerical inputs and text inputs placed in the screen gesture inactive area do not allow input during screen gesture mode. If the mode is switched to screen gesture mode during input, the content being input is canceled.	
Digital image display object	The input image is not displayed during screen gesture mode. When screen gesture mode is canceled, the input image is displayed at the size adjusted by the zoom in and zoom out operations. If the digital image display object overlaps the screen gesture inactive area, the input image is not displayed.	
Functions that display popups	Popup displays that appear during the alarm popup display, VNC server, or other functions also appear during screen gesture mode. The display position can also be switched by touching the left edge of the popup display. The display position is corrected to avoid overlapping the screen gesture inactive area. Example) Screen gesture inactive area set on the top edge of the screen  	
Hard copy	When a hard copy is performed with the GOT screen zoomed or scrolled, the zoomed or scrolled screen image is output.	
VNC server function	While a VNC client (such as a personal computer) is communicating with a VNC server (GOT), when the client obtains authorization of the VNC server function, screen gesture mode is canceled and the zoomed or scrolled screen is reset. While the VNC client has the authorization, the GOT is not switched to screen gesture mode.	
Digital image input function	The image input from the external device is not displayed during screen gesture mode. To display the image, cancel screen gesture mode. Zooming and scrolling are not applied.	
Operation log	The operation log includes switching to and cancelling screen gesture mode. The operation log does not include the operations during screen gesture mode.	
GOT internal device to notify the touch status of the GOT	The following shows the action of the GOT internal device to notify the touch status of the GOT while the screen gesture function is used.	
	Touch Status External Notification (X-coordinate) (GS654) Touch Status External Notification (Y-coordinate) (GS655)	Inoperable during screen gesture mode. Cancel the screen gesture mode and touch the screen gesture active area of the zoomed or scrolled screen to notify the coordinates applied to the screen.
	Touch Status External Notification (Touch Status) (GS656)	Inoperable during screen gesture mode.
Screen save	Screen gesture mode is retained even if the GOT transitions to the screen saver state during screen gesture mode.	
Mouse operation	Pinch-in and pinch-out zooming cannot be performed with the mouse.	

How to use the screen gesture function (setting with GT Designer3)

For information on the setting to enable the screen gesture function, refer to the following.

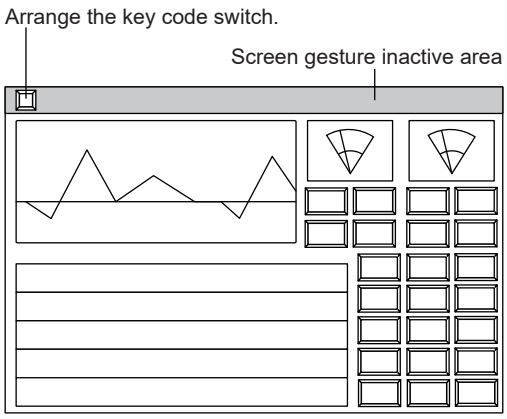
☞ Page 509 How to set the gesture function

■Arranging the switch for switching to screen gesture mode

Point

During screen gesture mode, the objects in the screen gesture active area are inoperative.
If a switch for enabling/disabling screen gesture mode is placed in the screen gesture active area, you cannot disable screen gesture mode with the switch.
Place the switch in the screen gesture inactive area.

1. Select [Object] → [Switch] → [Key Code Switch] from the menu to place the key code switch in the screen gesture inactive area of the screen where the screen gesture function is used.



The position and size of the screen gesture inactive area are settable in the [Screen Gesture Inactive Area] of the [Base Screen Property] dialog ([Basic] tab).
To display the frame of the screen gesture inactive area on the screen editor, select [Display the screen gesture inactive area].

☞ Page 314 [Basic] tab

2. Double-click the placed key code switch to display the setting dialog.

☞ Page 1251 [Key Code Switch] dialog

3. Configure the following settings in the [Key Code] tab and click the [OK] button to complete the settings.

- Select [Screen Gesture] for [Key Code Type].
- Select [Screen gesture mode switching] for [Code Setting].

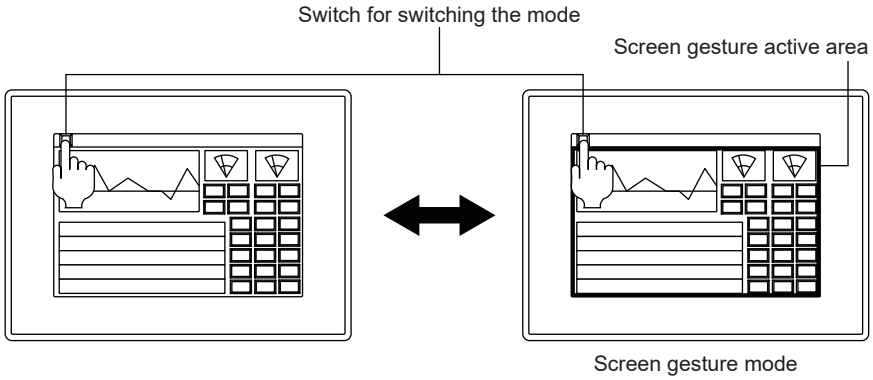
How to use the screen gesture function (operating with the GOT)

☞ Page 506 Switching to screen gesture mode
☞ Page 506 Canceling screen gesture mode
☞ Page 506 Zooming the GOT screen
☞ Page 506 Scrolling the screen of the GOT

■Switching to screen gesture mode

Touch the mode-switching key code switch to switch to screen gesture mode.

Switching to screen gesture mode displays the frame indicating the screen gesture active area.



For information on how to set the mode-switching key code switch, refer to the following.

☞ Page 505 Arranging the switch for switching to screen gesture mode

■Canceling screen gesture mode

Touch the mode-switching key code switch during screen gesture mode to cancel screen gesture mode.

Screen gesture mode is also canceled in the following cases.

- Displaying the utility
- Switching the screen (the value of the screen switching device is changed.)
- Displaying the system dialog

■Zooming the GOT screen

Pinch the screen in or out to enlarge or reduce the screen.

Zooming out is available only for the enlarged screen.

Operation	Description
Zoom out (pinch-in)	Touch two points on the GOT screen to define the center of the area to be zoomed out. Slide your fingers inward toward the center of two points to zoom out the screen from that center. The screen cannot be zoomed out smaller than the original size. Display update of the object is canceled during the operation.
Zoom in (pinch-out)	Touch two points on the GOT screen to define the center of the area to be zoomed in. Slide your fingers outward from the center of two points to zoom in the screen from that center. The screen can be zoomed in up to four times the size of the original screen. Zooming in may cause the screen to become blurry. Display update of the object is canceled during the operation.
Return to the full scale display	Touch the key code switch having the following settings to return the GOT screen to the actual size (100%) and to cancel screen gesture mode. • Select [Screen Gesture] for [Key Code Type]. • [Full scale display (100%)] is selected in [Code Setting].

When the base screen size extension is enabled, the screen gesture function cannot be used to zoom in or out.

■Scrolling the screen of the GOT

Flick or slide the GOT screen to scroll.

Operation	Description
Flick	Flick the screen to scroll the screen.
Slide	Move your finger while touching the screen to scroll.

9.2.2 Operating objects with gestures (object gesture function)

☞ Page 507 Objects operated by using gestures
☞ Page 507 How to use the object gesture function (setting with GT Designer3)
☞ Page 507 How to use the object gesture function (operation with the GOT)
☞ Page 508 Relevant settings

Use gestures such as flicks to scroll, zoom in on, or zoom out of an object.

Objects operated by using gestures

The following shows the objects operable with the object gesture function.

- Historical data list display
- Alarm display (user)
- Alarm display (system)
- Simple alarm display
- Historical trend graph
- Document display
- Digital image display object

Enabling the object gesture function does not affect the touch operation of the applicable objects.

The single touch operation setting of each object determines the operation when the object is touched, such as displaying the cursor.

How to use the object gesture function (setting with GT Designer3)

For information on the setting to enable the object gesture function, refer to the following.

☞ Page 509 How to set the gesture function

■Setting to operate the digital image display object with gestures

To operate the digital image display object with gestures, configure the following setting in the [Digital Image Display] dialog.

Item		Setting
[Digital Image Setting] tab	[Touch Mode]	Select [Gesture Operation]. ☞ Page 1859 [Digital Image Setting] tab

How to use the object gesture function (operation with the GOT)

☞ Page 507 Operating the historical data list display, alarm display (user), alarm display (system), or simple alarm display
☞ Page 508 Operating the historical trend graph
☞ Page 508 Operating the document display
☞ Page 508 Operating the digital image display object

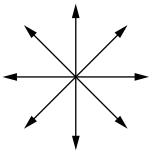
■Operating the historical data list display, alarm display (user), alarm display (system), or simple alarm display

Function	Operation
Scroll	Flick or slide the object up or down to scroll the displayed contents vertically. With a flick operation, the contents scroll half a page. With a slide operation, the contents scroll according to the amount slid. When an alarm display (user) or alarm display (system) is slid, the contents may scroll less than the amount the object is slid.

■Operating the historical trend graph

Function	Operation	
Scroll	Flick or slide the object to scroll the displayed contents. With a flick operation, the contents scroll half a page. With a slide operation, the contents scroll according to the amount slid. The direction of the flick or slide operation depends on the setting of [Direction] for the historical trend graph.	
	When [Direction] is [Right] or [Left]	Flick or slide the object left or right to scroll the displayed contents horizontally.
	When [Direction] is [Up] or [Down]	Flick or slide the object up or down to scroll the displayed contents vertically.
Zooming in and out time axis	Pinch in or out the object to zoom out or in the time axis. The details of pinch-out and pinch-in operations are settable in [Magnification for scaling operation] in the [Historical Trend Graph] dialog ([Extended] tab). ☞ Page 1721 [Extended] tab The magnification factor for a pinch-in or pinch-out operation is selectable from among 2-fold, 4-fold, and 8-fold. You can enlarge the time axis until the graph displays two points. The scope of reducing the time axis varies with the setting of [Shrink the graph to be less than its full scale]. When [Shrink the graph to be less than its full scale] is selected, the time axis can be reduced to a magnification of 1/128. When [Shrink the graph to be less than its full scale] is deselected, the time axis can be reduced to the original magnification.	

■Operating the document display

Function	Operation	
Scroll	Flick or slide your finger on the document display to scroll the document. The document display can be scrolled in eight directions as follows. 	
Next page Previous page	Flick the display with the edge of the document displayed to change the page.	
	When displaying the upper end of the document	Flick the page downward to change to the previous page. (Previous page)
	When displaying the bottom end of the document	Flick the page upward to change to the next page. (Next page)
	When displaying the left end of the document	Flick the page rightward to change to the previous page. (Previous page)
	When displaying the right end of the document	Flick the page leftward to change to the next page. (Next page)
Zooming in and out	Pinch in or out to increase or decrease the document size. The display magnification can be adjusted freely in the range of 25% to 400%, using the large image's original size as the reference.	

■Operating the digital image display object

Function	Operation
Scrolling the displayed image	To scroll the displayed image, slide your finger across the digital image display object.
Zooming in and out the displayed image	To zoom in or out the displayed image to an intended size (25% to 400%), pinch in or out on the digital image display object.

Relevant settings

Configure the relevant settings other than the specific settings for the object gesture function as required.

The following shows the functions that are available by configuring the relevant settings.

■GOT internal device

☞ Page 3581 GOT special register (GS)

Function	Setting item
Disabling the object gesture function	GS1794.b0
Disabling the single touch operation of the object	GS1794.b1

9.2.3 How to set the gesture function

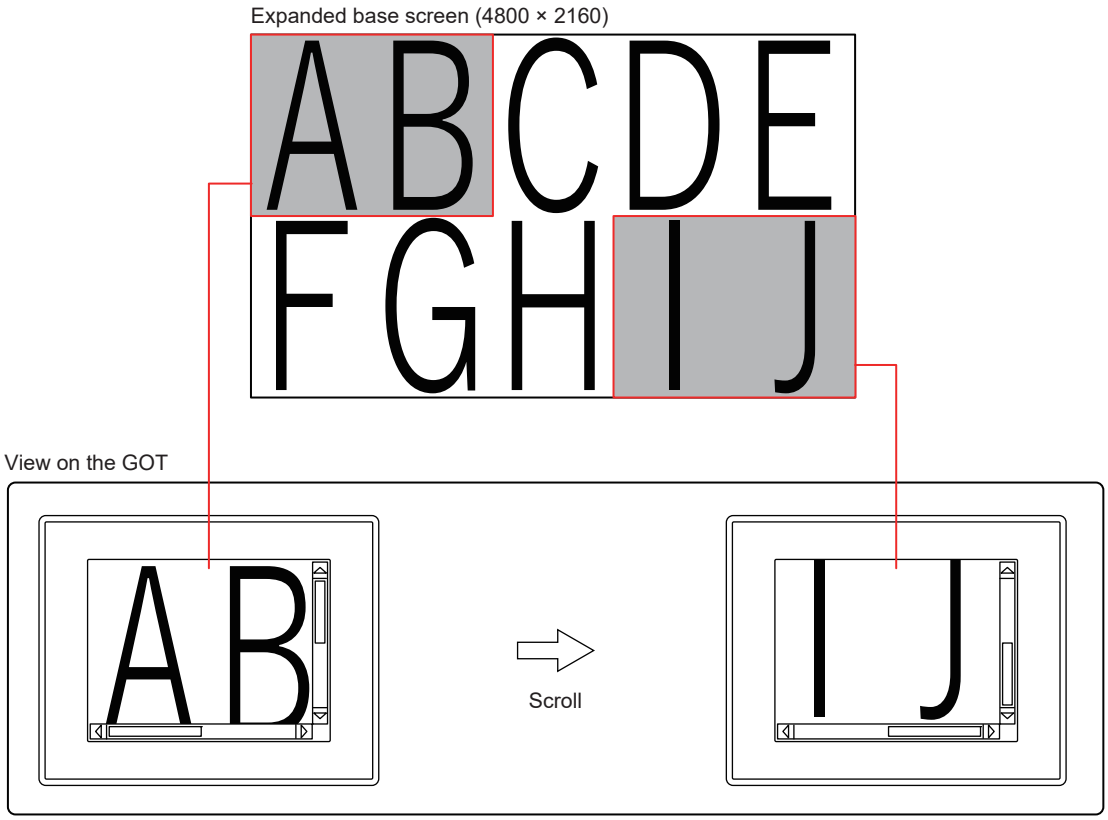
To enable the gesture function, select [Use gesture function] in the [Type Setting] dialog ([Basic Settings]).
This item is selected by default.
☞ Page 519 [Basic Setting]

9.3 Expanding the base screen size

GT37 SoftGOT3000

Create a base screen that is larger than the GOT screen.
You can scroll the screen by using swipe gestures or the scroll bars.

Ex.
Displaying an expanded base screen (4800 × 2160) on the GOT with a resolution of 1920 × 1080



☞ Page 511 Settings of the base screen size expansion
☞ Page 511 Screen editors for editing the expanded base screens
☞ Page 513 Operation of the GOT displaying an expanded base screen
☞ Page 516 Scrolling the expanded base screens
☞ Page 518 Settings relevant to the base screen size expansion

9.3.1 Settings of the base screen size expansion

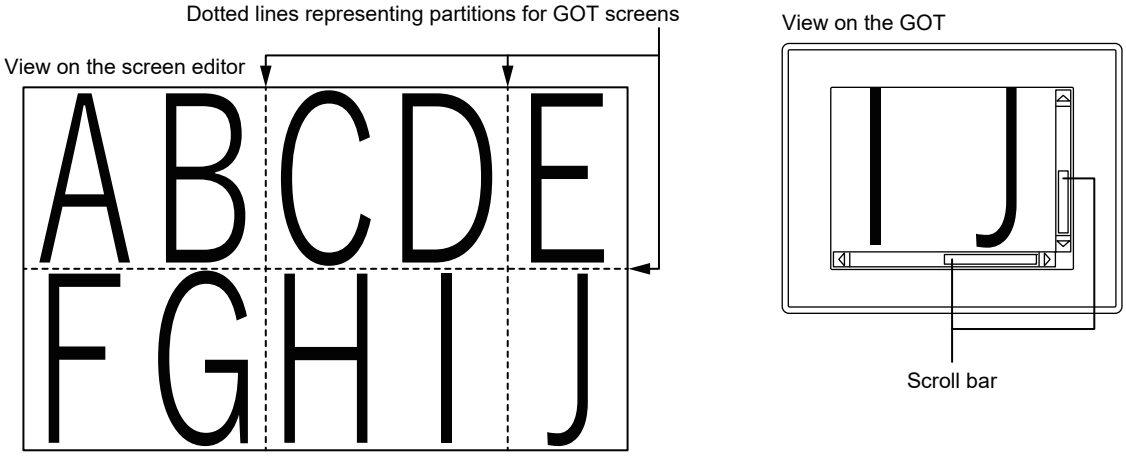
To enable the base screen size expansion, select [Expand base screen sizes] in [Basic Setting] in the [Type Setting] dialog.
☞ Page 519 [Basic Setting]
To change the size of each base screen, open the [Base Screen Property] dialog ([Basic] tab).
☞ Page 314 [Basic] tab
To change the size of multiple base screens at once, select base screens in the [Screen] window and display the [Base Screen Property] dialog.
☞ Page 122 [Screen] window

9.3.2 Screen editors for editing the expanded base screens

When you edit an expanded base screen, the following lines appear on the screen editor.
The lines are invisible on the GOT.

Line type	Description
Solid line	Appears when either the vertical or horizontal size of the base screen is larger than the vertical or horizontal size of the GOT screen. Represents the areas of the scroll bars to appear on the GOT. Appears 40 dots from the right or bottom edge of the screen display area. Place figures and objects so that they do not overlap the scroll bar areas.
Broken line	Represents a partition for one GOT screen. Represents partitions for multiple GOT screens. The lines are usable as guidelines to specify the size of a base screen to an integral multiple of the GOT screen size.

Ex.
Displaying an expanded base screen (2560 × 1536) on the GOT with a resolution of 1024 × 768
The scroll bar areas are not displayed because the base screen is vertically and horizontally expanded.

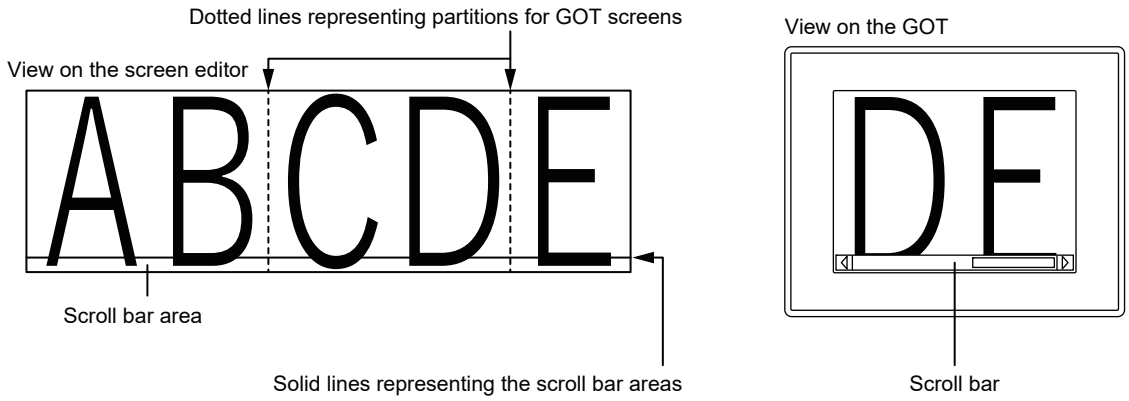


Ex.

Displaying an expanded base screen (2560 × 768) on the GOT with a resolution of 1024 × 768

A solid line representing the scroll bar area is displayed in the lower part of the base screen because the screen is horizontally expanded.

A scroll bar appears in the scroll bar area when the base screen is displayed on the GOT.



Whether to display the lines and the color of the lines are selectable.

☞ Page 300 Displaying the scroll bar areas for editing the expanded base screens

☞ Page 201 Customizing the display

The scroll bars are viewable in the screen preview.

☞ Page 336 Displaying a preview

The design of the scroll bars depends on the screen design selected.

☞ Page 310 [Screen Design] dialog

In the following cases, no scroll bar is displayed on the GOT, and no lines representing the scroll bar areas and partitions for GOT screens are displayed on the screen editors.

- The base screen is smaller than the GOT screen.
- The scroll bars are set to be hidden.

9.3.3 Operation of the GOT displaying an expanded base screen

Refreshing the display of the objects while the screen is being scrolled

The display of the objects are refreshed while the screen is being scrolled.

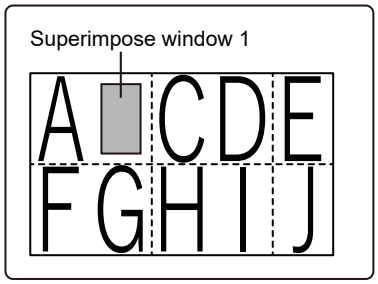
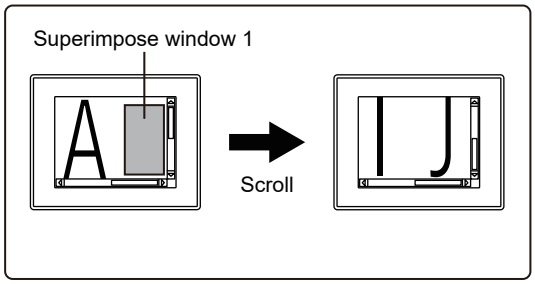
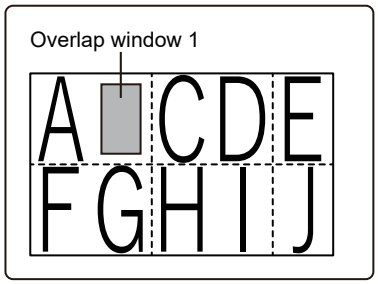
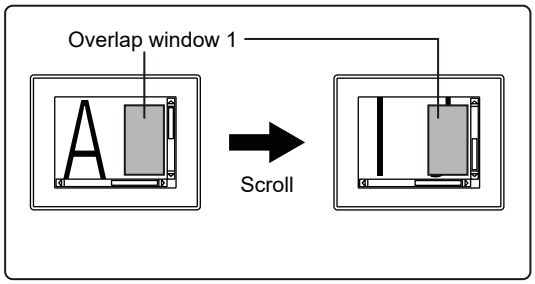
Operating an object while the screen is being scrolled

While scrolling the screen, you cannot operate the objects on the screen.

You also cannot scroll the screen while operating any of the objects.

Movements of the windows while the screen is being scrolled

The following shows how the windows move while the screen is being scrolled.

Window type	Operation
Superimpose window	The window as well as the figures and objects on the screen move along the screen while the screen is being scrolled. Example) When displaying superimpose window 1 View on the screen editor  View on the GOT 
Other windows	The window keeps its current position on the GOT screen while the screen is being scrolled. Example) When displaying overlap window 1 View on the screen editor  View on the GOT 

Specifying the display positions of the overlap windows and key windows

When [Display windows beyond the screen area] is selected in the [Environmental Setting] window ([Screen Switching/Window]), specify the display positions of the overlap windows and key windows so that the windows will be displayed within the GOT screen.

☞ Page 542 [Screen Switching/Window]

The overlap windows and key windows outside the GOT screen cannot be displayed on the GOT even the GOT screen is scrolled.

The following shows how to specify the display positions of the overlap windows and key windows.

Window type	Method
Overlap window	Place a window position object on the screen. ☞ Page 1883 Specifying the display position of a window screen
	Specify the overlap window display position with a display position specification device. Select [Display Position] in [Screen Switching/Window] of the [Environmental Setting] window to enable the display position specification device setting. ☞ Page 542 [Screen Switching/Window]
Key window	Place a window position object on the screen. ☞ Page 1883 Specifying the display position of a window screen
	Configure either of the following settings to display a key window near an object. • In the [Environmental Setting] window ([Key Window]), [Key Window Position Correction] is set to [Around the object] on the [Advanced Setting] tab. ☞ Page 572 [Advanced Setting] tab • In the [Base Screen Property] dialog, [Key Window Position Correction] is set to [Around the object] on the [Key Window Advanced Setting] tab. ☞ Page 319 [Key Window Advanced Setting] tab
	Specify the display position of a key window with the key window display switch. ☞ Page 1249 [Key Input] tab

Switching the current screen to an expanded base screen

When the current screen switches to an expanded base screen, the upper-left corner of the expanded base screen appears on the GOT.

To specify any other area of the base screen to appear on the GOT, use GS635.b0, GS636, and GS637.

☞ Page 3581 GOT special register (GS)

The position of the area displayed before screen switching is retained.

The position will be cleared if the following events occur.

- The GOT is turned off.
- The GOT is restarted by writing project data to the GOT.

Size of images displayable on the expanded base screens

The size of images displayable on the GOT screen depends on the image file format.

Image file format	Displayable size on the GOT screen
BMP*1 JPEG PNG	Up to the size of the GOT screen
BMP*2	Up to 6000 dots × 6000 dots

*1 For using a BMP file stored in the data storage as a part

*2 For pasting an image on a screen editor or parts editor in GT Designer3

Precautions

If the GOT displays the following images (including parts, frame animations, and logo texts), screen refresh may be delayed.

- Images (JPEG, PNG, SVG, APNG, or GIF) that are larger than the size of the GOT screen
- Two or more images (JPEG, PNG, SVG, APNG, or GIF) that are almost the same size as the GOT screen
- Large images (JPEG, PNG, SVG, APNG, or GIF) that are displayed on the parts display objects

Setting a shape for an object

When an object filled with a pattern is placed on an expanded base screen, the start point of the pattern may be different from the start point of the pattern of the object placed on an unexpanded base screen.
Note that the screen tends to flicker while scrolled.

Calling the expanded base screens using the set overlay screen function

When you use the set overlay screen function, you can call the expanded base screens.
The screen size settings of the calling base screen are applied to the expanded base screens called.
You can scroll the called screens within the calling base screen.

Object scripts

Object scripts run even when the objects that correspond to the scripts are hidden from view on the GOT.
The free figure drawing function draws figures even in the hidden area of the expanded base screens.

Functions that use popup displays

When a popup display overlaps the scroll bar at the bottom edge of the GOT screen, switch the position of the popup display by touching the popup display.
The following shows the functions that use popup displays.

- SoftGOT-GOT link function
- GOT network interaction function
- Alarm popup display
- VNC server function

In the [Alarm Popup Display] dialog, if you set [Display Position Switching] to [None] on the [Basic] tab, you cannot switch the position of the popup display.
It is recommended to select [Switch] for [Display Position Switching].
☞ Page 2119 [Basic] tab

Screenshots captured by using the hard copy function

The hard copy function captures only the area of the expanded base screen currently displayed on the GOT.
The scroll bars and navigation window are captured in screenshots.

Screen image display for the operation log information

If you select the log event that a user has operated any object on the expanded base screen, the image window for the event will not display the image of the entire base screen.
The window displays the image of the area which is centered around the object. The area fits with the GOT screen.

9.3.4 Scrolling the expanded base screens

To scroll the expanded base screens on the GOT, perform the following operations.

- Swiping the GOT screen
- Using the scroll bars
- Using the navigation window

Swiping the GOT screen

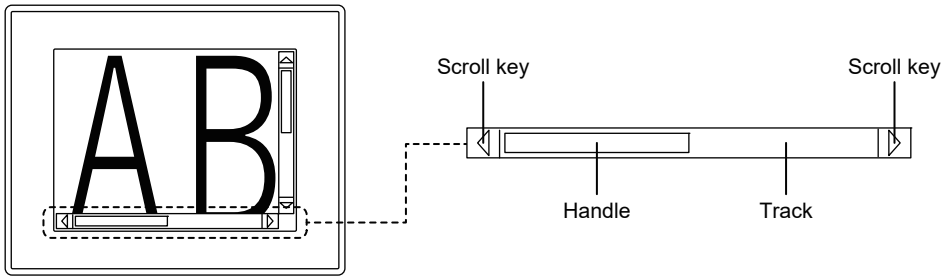
Swipe somewhere on the GOT screen where no object is displayed to scroll the base screen.

To avoid an unintended object operation by swiping on the GOT screen, turn on GS635.b1 to disable swiping to scroll the screen.

Using the scroll bars

Touch the scroll keys or drag the handle to scroll the screen.

The scroll bars are displayed at the right and bottom edges of the GOT screen.



Item	Description
Handle	Drag the handle to scroll the screen.
Track	Touch somewhere on the track to scroll the screen one page.
Scroll key	Touch the scroll key to scroll the screen one dot.

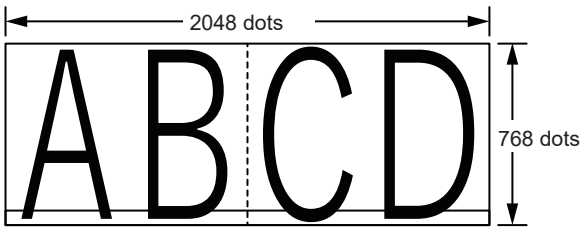
Each scroll bar is displayed when the vertical or horizontal size of the base screen is larger than the vertical or horizontal size of the GOT screen.

Ex.

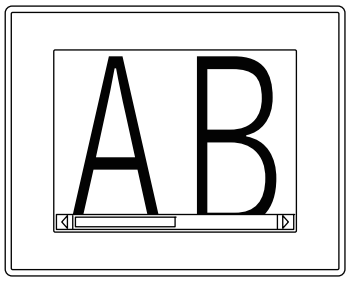
Displaying an expanded base screen (2048 × 768) on the GOT with a resolution of 1024 × 768

A scroll bar is displayed only at the bottom edge of the GOT screen.

View on the screen editor



View on the GOT



Whether to display the scroll bars is selectable.

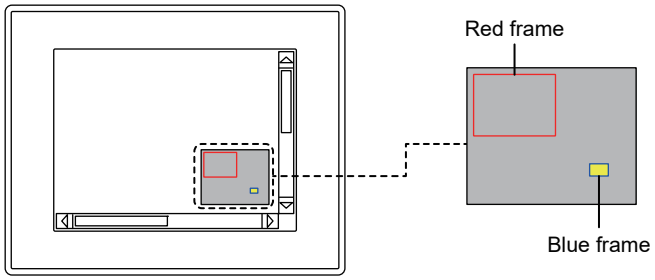
☞ Page 524 [Display Setting] dialog (Base screen size expansion)

Using the navigation window

The navigation window shows your current location within the base screen.

The window is semi-transparent and one-ninth the size of the GOT screen.

Touch or swipe anywhere in the window to bring that point to the center of the GOT screen.



The following items appear in the window.

Item	Description
Red frame	Indicates the area of the base screen currently displayed on the GOT.
Blue frame (The area enclosed in the frame blinks in yellow.)	Indicates the position of the object where the cursor is located. The frame appears when the cursor moves to any object that is hidden from view.

■Display timing and position of the navigation window

You can specify the display timing and position of the navigation window.

☞ Page 524 [Display Setting] dialog (Base screen size expansion)

When the cursor moves to any object that is hidden from view, the navigation window appears for two seconds, regardless of the display timing setting.

■Placing objects and the navigation window

Objects behind the navigation window are displayed but inoperable.

When placing an object to be operated on a base screen, make one of the following settings.

- Position the object so that it will not be overlapped by the navigation window.
- Select [While swiping/touching the screen] or [Not display] for [Display Timing].

For setting the timing to display the navigation window, refer to the following.

☞ Page 524 [Display Setting] dialog (Base screen size expansion)

■Displaying the navigation window and the comment window

The navigation window cannot be displayed simultaneously with the comment window for the following functions.

- Alarm display (user)
- Simple alarm display

If the navigation window is set to always be displayed, the comment window will not appear.

■Displayed navigation window while a switch is being touched

Although [While swiping/touching the screen] is set for the display timing of the navigation window, the window remains displayed while a switch is being touched.

During the time, the displayed objects are not refreshed.

9.3.5 Settings relevant to the base screen size expansion

Set the relevant settings other than the specific settings for the base screen size expansion as required.
The following shows the functions that are available by configuring the relevant settings.

GOT internal device

☞ Page 3581 GOT special register (GS)

Function	Setting item
Specifying the upper-left coordinates of the area of the expanded base screen to be displayed on the GOT	GS635.b0 GS636 GS637
Disabling swiping to scroll the screen	GS635.b1
Notifying the upper-left coordinates of the area of the expanded base screen currently displayed on the GOT	GS696 GS697

9.4 [Type Setting] dialog

GT37 SoftGOT3000

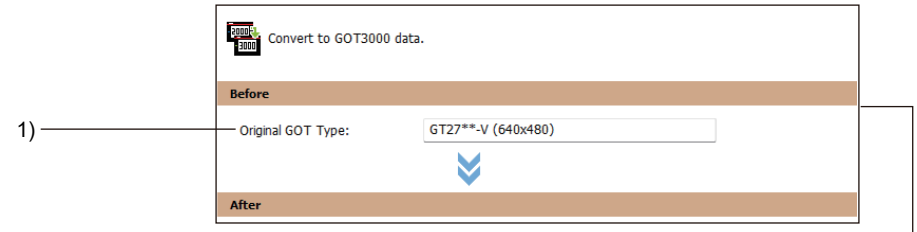
In the [Type Setting] dialog, set the model of the GOT to be used and the standard font.

Select [Common] → [GOT Type Setting] from the menu to display this dialog.

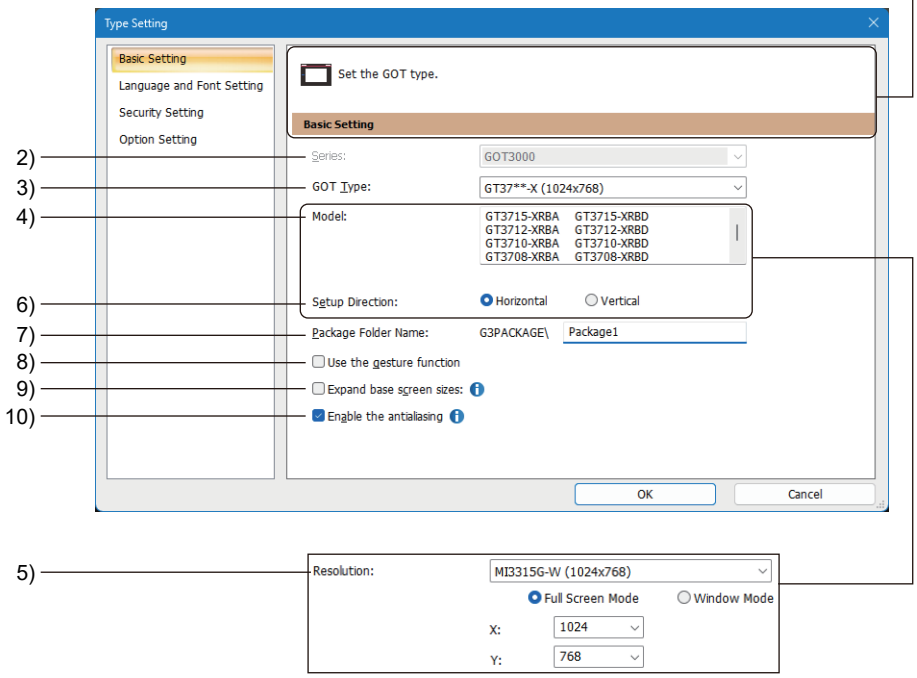
☞ Page 519 [Basic Setting]
☞ Page 525 [Language and Font Setting]
☞ Page 526 [Security Setting]
☞ Page 527 [Option Setting]

9.4.1 [Basic Setting]

GT37 SoftGOT3000



When GOT2000 data is converted to GOT3000 data



For GT SoftGOT3000

Item		Description	
1)	[Original GOT Type]	Displays the GOT type before the type is changed. This item is displayed only when a GOT2000 project is converted to a GOT3000 project.	
2)	[Series]	The setting depends on when to display the [Type Setting] dialog.	
		When creating a new project	Select the GOT series. When [GOT2000] is selected, GT Designer3 (GOT2000) will start. When [GOT1000] is selected, GT Designer3 (GOT1000) will start.
		When editing a project	The setting is fixed to [GOT3000].
3)	[GOT Type]	Set the GOT type. When this item has been changed, the confirmation dialog for the change appears. ☞ Page 495 Resizing the screens, figures, and objects	

PART 5

Item		Description
4)	[Model]	Displays the models applicable to the GOT type selected for [Type].
5)	[Resolution]	Select the screen resolution of GT SoftGOT3000. When selecting [MI3315G-W (1024x768) or [MI3321G-W (1920x1080)], select [Full Screen Mode] or [Window Mode]. To customize the resolution, set a value for [X] and [Y]. The maximum size is [1920] × [1200] or [1200] × [1920]. When [X] or [Y] is set, [Resolution] is set to [Custom].
6)	[Setup Direction]	Set the installation orientation of the GOT. Some operations of the GOT differ according to the GOT installation orientation. ☞ Page 521 Operation of the GOT when installed vertically
7)	[Package Folder Name]	Set the name of the folder that stores the package data. Use up to 32 alphanumeric characters and symbols for the folder name. For the character strings available and unavailable for folder names, refer to the following. ☞ Page 84 Restrictions for folder names and file names used in GOT This item is required for project creation. Always set this item.
8)	[Use the gesture function]	Only available to GT37. Enables the gesture function to operate the GOT. ☞ Page 502 Operating the monitor screen of the GOT using gestures (gesture function)
9)	[Expand base screen sizes]	Only available to GT37. Enables you to set a larger base screen by setting higher resolution than the original GOT resolution. For details on the base screen size expansion, refer to the following. ☞ Page 510 Expanding the base screen size Click the [Display Setting] button to display the [Display Setting] dialog. Configure the settings for displaying the scroll bars and navigation window on the GOT. ☞ Page 524 [Display Setting] dialog (Base screen size expansion) When this item is enabled, the paint cannot be placed on the screen and on-screen parts. ☞ Page 1173 Filling the framed area of the figure
10)	[Enable the antialiasing]	Enables antialiasing (processing to smooth out jagged edges of figures and graph lines). ☞ Page 522 Effect of the setting for [Enable the antialiasing]
		Enabling antialiasing allows for faster draw processing and enhances visual quality compared to when it is disabled. It is recommended to enable this setting.

Operation of the GOT when installed vertically

When [Vertical] is selected, the screen is rotated 90 degrees counterclockwise and treated as a vertically long screen.
The origin is at the top left, with the horizontal axis as the X axis, and the vertical axis as the Y axis.
When you install the GOT vertically, the GOT operates as follows.

Item	Operation at GOT vertical installation
Utility	The contents appear according to the vertical installation.
Monitor screen, data screen, or other screens called up from the utility	The contents appear according to the vertical installation.
User-created screen	The screen created according to the vertical installation is displayed. The key window and dialog window on the user-created screen are also displayed according to the vertical installation.
Startup logo	The startup logo appears according to the vertical installation.
Utility call key	The key is positioned according to the vertical installation. When the key is set to the upper left corner, the key is positioned on the upper left corner according to the vertical installation.
VNC server function	The contents appear on the VNC client according to the vertical installation.
Digital image input function	The video window does not rotate and appears horizontally. For the video window, the width and height of the display size and clip area are specified according to the horizontal installation. The video window display position is specified with the coordinates of the window upper left corner. The origin (0, 0) is on the GOT upper left corner according to the vertical installation.
Video output function	The contents appear on the external display according to the vertical installation. If you set vertical installation for the GOT and create a screen, use the display vertically.
Popup window	The popup window appears according to the vertical installation. However, the popup window does not support the scrolling display. When text extends off the screen, you cannot check the portions of text lying offscreen.
Hard copy	Capturing images is performed according to the vertical installation.
USB mouse	The mouse pointer is displayed according to the vertical installation.
Touch Status External Notification (X-coordinate) (GS654) Touch Status External Notification (Y-coordinate) (GS655)	The coordinates are notified by using the upper left corner as the origin (0, 0) according to the vertical installation.

Effect of the setting for [Enable the antialiasing]

The following shows the items affected by the setting for [Enable the antialiasing].

The following shows the items affected by the setting for [Enable the antialiasing].

■Screen

Item		Setting for [Enable the antialiasing]	
		Selected	Deselected
Base screen	[Front Layer Transparent Color] of the [Base Screen Property] dialog ([Basic] tab) ☞ Page 314 [Basic] tab	Not settable	Settable
Window screen	[Front Layer Transparent Color] of the [Window Screen Property] dialog ([Basic] tab) ☞ Page 323 [Basic] tab	Not settable	Settable

■Figure

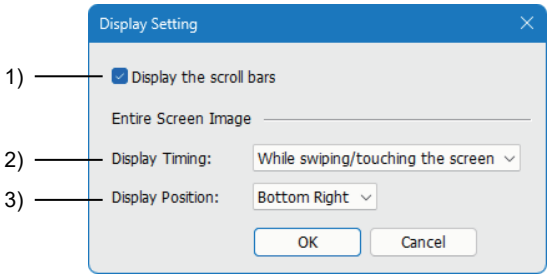
Item	Setting for [Enable the antialiasing]	
	Selected	Deselected
Text (when the UD font is set)	Antialiasing is applied when the figure is displayed on the GOT. Antialiasing is not applied when the figure is displayed on the screen editor of GT Designer3.	
Logo text (when the UD font is set)		
Line	Antialiasing is applied when the figure is displayed on the GOT. Antialiasing is not applied when the figure is displayed on the screen editor of GT Designer3.	Antialiasing is not applied.
Freeform line		
Rectangle		
Polygon		
Circle	Antialiasing is applied when the figure is displayed on the GOT. Antialiasing is not applied when the figure is displayed on the screen editor of GT Designer3.	Antialiasing is not applied. In GT SoftGOT3000 and GT Simulator3, line display disturbances may occur.
Arc		
Sector		
Scale	Antialiasing is applied when the figure is displayed on the GOT. Antialiasing is not applied when the figure is displayed on the screen editor of GT Designer3.	Antialiasing is not applied.
Piping		
Paint ☞ Page 1173 Filling the framed area of the figure	Unusable The paint already placed on the screen is deleted.	Usable

■Object

Item		Setting for [Enable the antialiasing]	
		Selected	Deselected
Common among objects	Character string of the UD font	Antialiasing is applied when the figure is displayed on the GOT. Antialiasing is not applied when the figure is displayed on the screen editor of GT Designer3.	
	Basic shapes displayed on the object	Antialiasing is applied when the figure is displayed on the GOT. Antialiasing is not applied when the figure is displayed on the screen editor of GT Designer3.	Antialiasing is not applied.
Touch switch	[Reverse Switch Area] on the [Style] tab ☞ Page 1257 [Style] tab	Not settable	Settable
Numerical display Numerical input	[Display Mode] on the [Extended] tab ☞ Page 1323 [Extended] tab ☞ Page 1335 [Extended] tab	[Display Mode] is not displayed, and the operation when selecting [Transparent] is applied.	Settable
Bit comment display Word comment display	[Display Mode] on the [Extended] tab ☞ Page 1395 [Extended] tab ☞ Page 1407 [Extended] tab	[Display Mode] is not displayed, and the operation when selecting [Transparent] is applied.	Settable
Bit parts display Word parts display	[Display Mode] on the [Device/Style] tab ☞ Page 1436 [Device/Style] tab ☞ Page 1449 [Device/Style] tab	[Display Mode] is not displayed. The following operations are performed depending on the setting for [Specify the moving animation] on the [Animation] tab. • Deselected: Operation when [Replace] is selected • Selected: Operation when [Move] is selected	Settable
	[Rotate the object itself] on the [Animation] tab (when [Circle] is selected for [Move Way]) ☞ Page 1442 [Animation] tab ☞ Page 1455 [Animation] tab	Settable	Not settable
Fixed parts display	[Display Mode] on the [Style] tab ☞ Page 1465 [Style] tab	[Display Mode] is not displayed. The following operations are performed depending on the setting for [Specify the moving animation] on the [Animation] tab. • Deselected: Operation when [Replace] is selected • Selected: Operation when [Move] is selected	Settable
	[Rotate the object itself] on the [Animation] tab (when [Circle] is selected for [Move Way]) ☞ Page 1469 [Animation] tab	Settable	Not settable
Line graph	Graph line	Antialiasing is applied when the figure is displayed on the GOT. Antialiasing is not applied when the figure is displayed on the screen editor of GT Designer3.	Antialiasing is not applied.
Trend graph	Graph line (excluding straight lines)		
Pie graph	Contour Boundary line		
Scatter graph	Graph line		
Historical trend graph	Graph line (excluding straight lines)		
Panel meter	Needle (excluding when [Needle Shape] is [Straight Line]) Meter frame Meter panel Core		
Object script	Figure drawn with a free figure drawing function (other than the d_line, d_textout, and d_commentout functions)		

[Display Setting] dialog (Base screen size expansion)

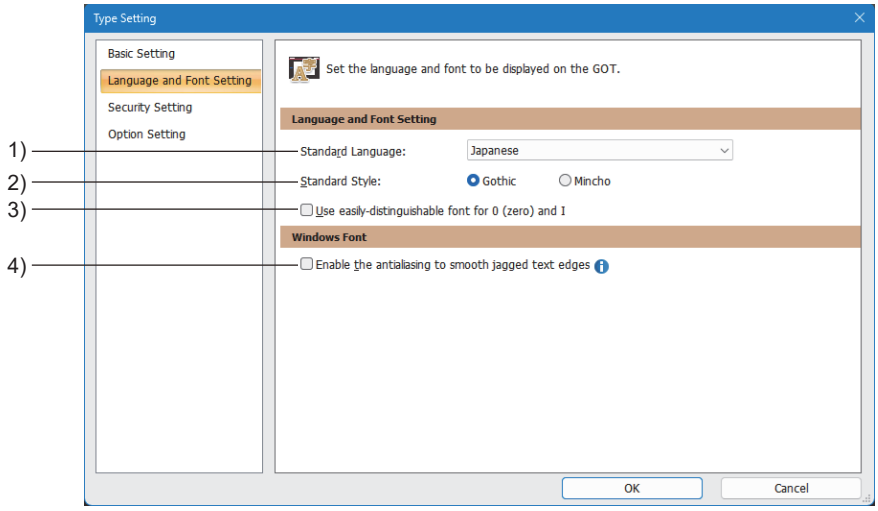
GT37 SoftGOT3000



Item		Description	
1)	[Display the scroll bars]	Displays the scroll bars on the expanded base screens. Deselecting this item hides the scroll bars and the following items on the screen editors. • Solid lines representing the scroll bar areas • Dotted lines representing partitions for GOT screens	
2)	[Display Timing]	Select the timing for displaying the navigation window. The navigation window shows your current location within the base screen. The window is semi-transparent and one-ninth the size of the GOT screen. For details on the window, refer to the following. ☞ Page 510 Expanding the base screen size	
		[Always]	Always displays the navigation window.
		[While swiping/touching the screen]	Displays the navigation window when you touch somewhere on the screen where no object is displayed or the scroll bars. The window will be hidden one second after you release your finger from the GOT screen.
		[Not display]	Does not display the navigation window.
3)	[Display Position]	Set this item when [Display Timing] is set to [Always] or [While swiping/touching the screen]. Select the display position of the navigation window.	

9.4.2 [Language and Font Setting]

GT37 SoftGOT3000



Item		Description
1)	[Standard Language]	Select the language used in the whole project. The fonts to be written to the GOT differ depending on the combination of the settings for [Standard Language] and [Standard Style]. ☞ Page 77 How to display characters on the GOT
2)	[Standard Style]	Select a typeface for the font used in the whole project. The fonts to be written to the GOT differ depending on the combination of the settings for [Standard Language] and [Standard Style]. ☞ Page 77 How to display characters on the GOT
3)	[Use easily-distinguishable font for 0 (zero) and I]	Use a font having the slashed zero and the crossbar I. ☞ Page 74 Font type
4)	[Enable the antialiasing to smooth jagged text edges]	Enable anti-aliasing (smoothing jagged edges) for Windows font.

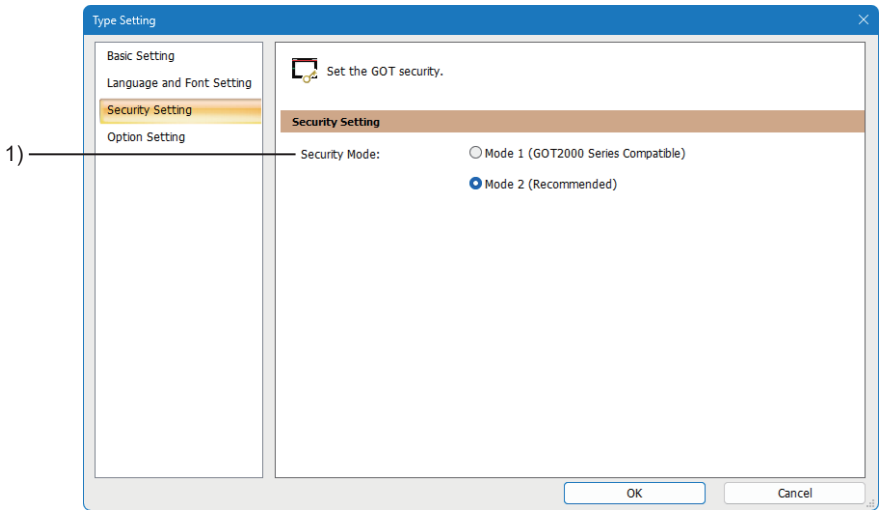
Precautions

If the [Enable the antialiasing to smooth jagged text edges] setting is enabled, the top edge of the text may be truncated on some Windows fonts.

9.4.3 [Security Setting]

GT37 SoftGOT3000

Set the security mode.

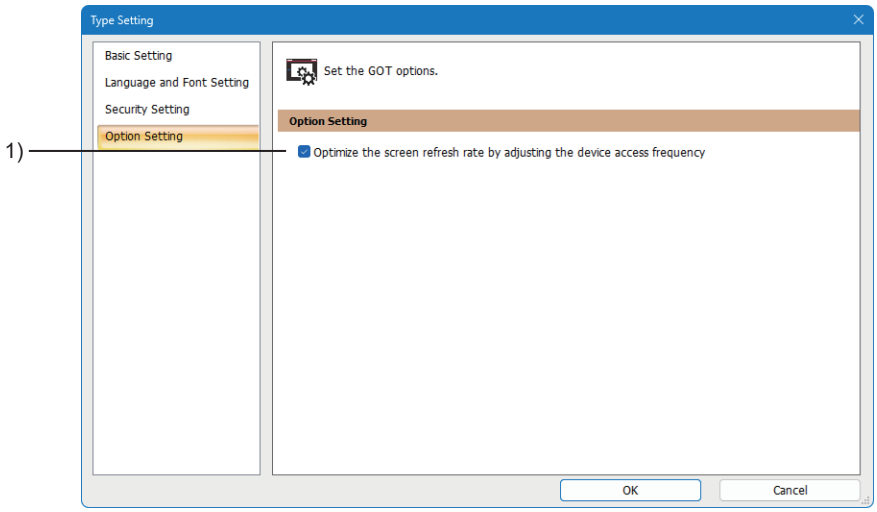


Item		Description
1)	[Security Mode]	Select the security mode. Use in mode 2 is recommended. (Default) If you use the GOT2000 series-compatible security function, select mode 1. For information on the differences between security modes, refer to the following. ☞ Page 39 Security mode

9.4.4 [Option Setting]

Configure the setting related to optimizing the screen update frequency.

GT37 SoftGOT3000



Item		Description
1)	[Optimize the screen refresh rate by adjusting the device access frequency]	Controls the priority of communication processing and optimizes screen refresh frequency based on the access frequency of each monitored device. Deselecting this item disables the function.

9.5 [Output] window

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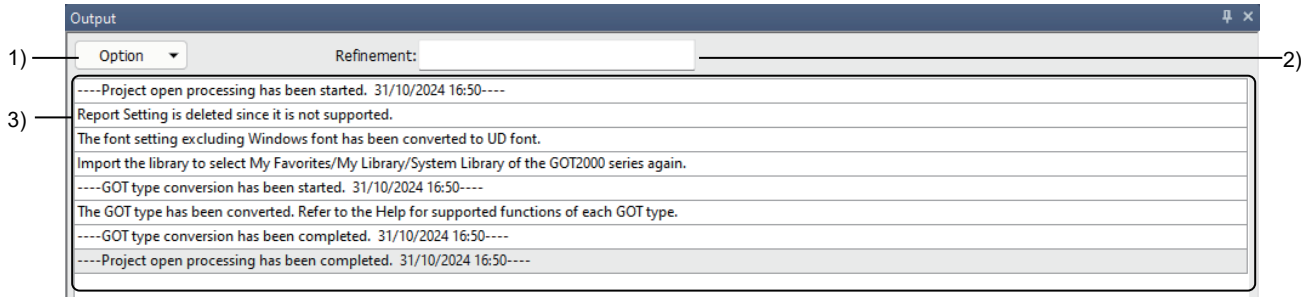
This window displays operation histories that significantly affect the project in a list.

This window appears at the GOT type change.

To display this window manually, select [View] → [Docking Window] → [Output] from the menu.



Item			Description
1)	[Option] button	—	Displays the option operations for the history list.
		Export	Exports the history list as a CSV file or Unicode text file. After clicking the item, specify the storage folder, file name, and file type.
2)	[Refinement]		Use this field to refine the messages displayed on the history list by keywords.
3)	History list		Displays the history of operations that significantly affect the project, such as the GOT type change or import of other projects, in a list.

10 Setting the GOT basic operations ([GOT Environmental Setting])

GT37 SoftGOT3000

☞ Page 530 Setting for switching screens to be displayed on the GOT ([Screen Switching/Window])
☞ Page 546 Setting for switching the language displayed on the GOT ([Language Switching])
☞ Page 552 Setting dialog windows of the GOT ([Dialog Window])
☞ Page 558 Setting key windows of the GOT ([Key Window])
☞ Page 576 Setting a device which controls the GOT operations or notifies the GOT status ([System Information])
☞ Page 598 Restricting GOT operations and data transfers ([Security])
☞ Page 599 Protecting files and communication data ([Information Protection Function])
☞ Page 600 Configuring the settings for creating the GOT operation history ([Operation Log])
☞ Page 601 Configuring the settings for retaining GOT internal device data at power failure ([Internal Device Retention])
☞ Page 604 Configuring the settings for converting a text into kanji or Simplified Chinese characters in the GOT ([Kana-Kanji/Pinyin Conversion])

10.1 Setting for switching screens to be displayed on the GOT ([Screen Switching/Window])

GT37 SoftGOT3000

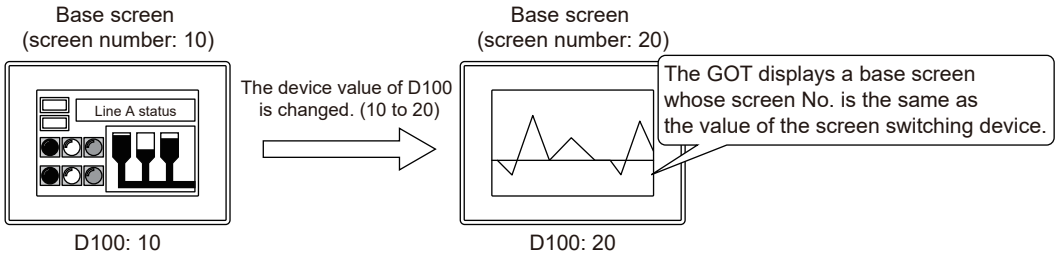
☞ Page 531 Specifications of the screen switching
☞ Page 534 How to use the screen switching
☞ Page 541 Moving an overlap window
☞ Page 542 [Screen Switching/Window]

The GOT displays or switches the screens with screen switching devices.

The screens to be displayed on the GOT are switched by changing a value (screen number) of the screen switching device.

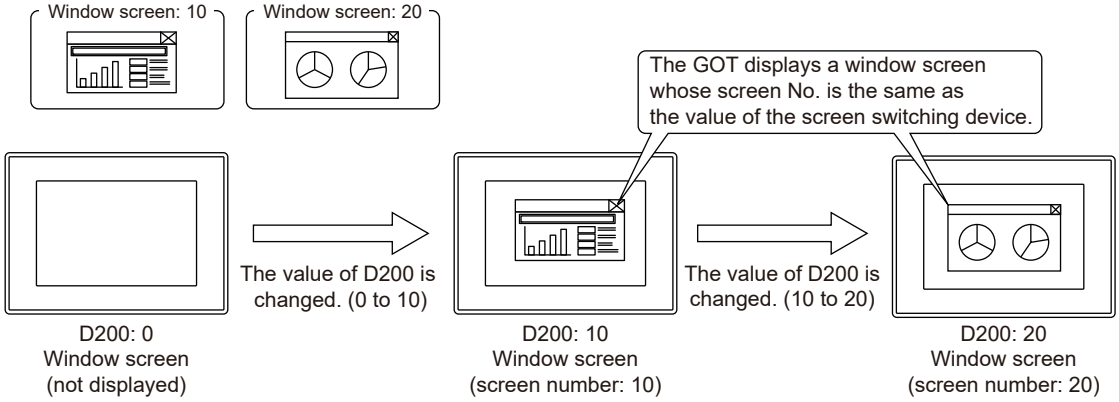
Ex.

Setting D100 for the screen switching device of a base screen



Ex.

Setting D200 for the screen switching device of the overlap window 1



Precautions

Use the device which is set for the screen switching device carefully.

A careless writing to the device may cause unexpected screen switching.

10.1.1 Specifications of the screen switching

GT37 SoftGOT3000

☞ Page 531 Target screens of the screen switching device
☞ Page 531 Screen switching of base screens
☞ Page 533 Screen switching of overlap windows and superimpose windows
☞ Page 533 Screen switching of dialog windows

Target screens of the screen switching device

Set a screen switching device for each of the following screens.

- Base screen
- Overlap windows 1 to 5
- Superimpose windows 1 and 2
- Dialog window
- Mobile screen

For switching mobile screens, refer to the following.

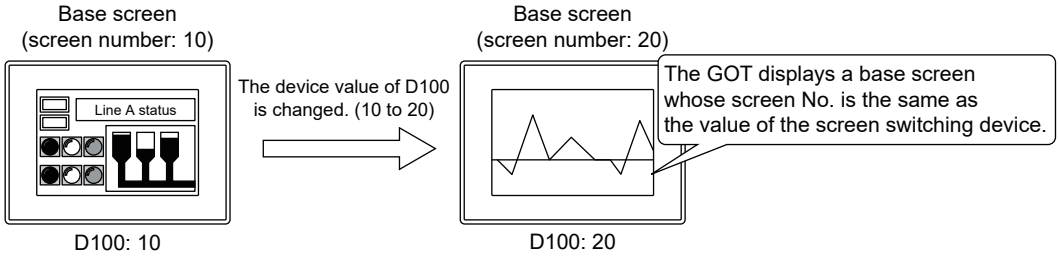
☞ Page 2736 Monitoring a controller from tablets or other devices (GOT Mobile function)

Screen switching of base screens

The GOT displays a base screen whose screen number is the same as the value of the screen switching device.

Ex.

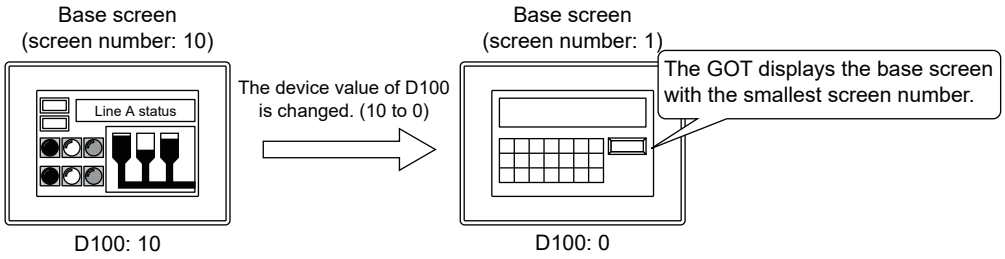
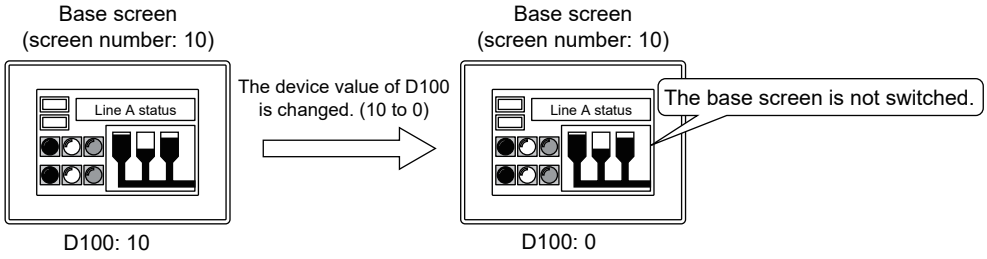
Storing 20 in the screen switching device (D100) while displaying the base screen with the screen No. 10



■When 0 is stored in a screen switching device

When the screen switching device stores 0, the response differs depending on the setting of [Retain the displayed screen when the base screen No. changes to 0 (GT10 series compatible function)] in the [Environmental Setting] window.

☞ Page 542 [Screen Switching/Window]

Setting	Operation when 0 is stored in a screen switching device
Deselected	The GOT displays the base screen with the smallest screen number. Example) Storing 0 in the screen switching device (D100) when the smallest screen No. is 1 
Selected	The base screen is not switched. Example) Storing 0 in the screen switching device (D100) while the GOT displays the base screen with the screen No.10 

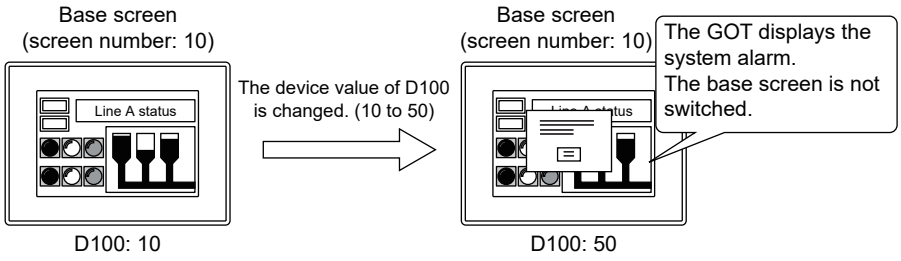
■If a nonexistent screen number is stored in the screen switching device

If a nonexistent screen number is stored in the screen switching device, system alarm 310 is displayed.

In that case, the screen is not switched.

Ex.

Storing screen No. 50 of a nonexistent base screen in the screen switching device (D100)

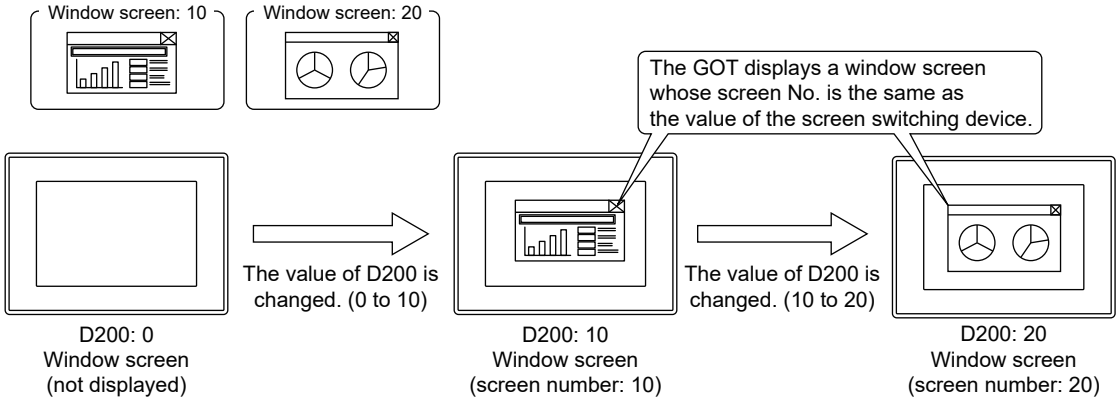


Screen switching of overlap windows and superimpose windows

The GOT displays the window screen whose screen number is the same as the value of the screen switching device as an overlap window or a superimpose window.

Ex.

Setting D100 for the screen switching device of an overlap window



■Closing screens

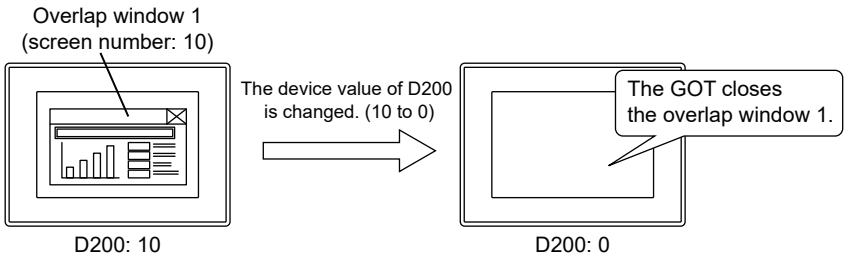
When the screen switching device stores the value set to [Screen No. of the window screen to be hidden] in [Environment Setting] dialog, the GOT closes the target overlap window or superimpose window.

☞ Page 542 [Screen Switching/Window]

Ex.

Storing 0 in the screen switching device (D200) while displaying the overlap window 1

- [Screen No. of the window screen to be hidden]: 0



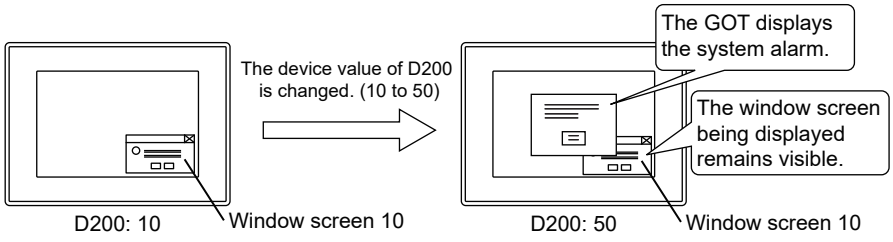
■If a nonexistent screen number is stored in the screen switching device

If a nonexistent screen number is stored in the screen switching device, system alarm 310 is displayed.

In that case, the screen is not switched and the window which has been displayed remains displayed.

Ex.

Storing screen No. 50 of a nonexistent window screen in the screen switching device (D200)



Screen switching of dialog windows

For details on dialog windows, refer to the following.

☞ Page 552 Setting dialog windows of the GOT ([Dialog Window])

10.1.2 How to use the screen switching

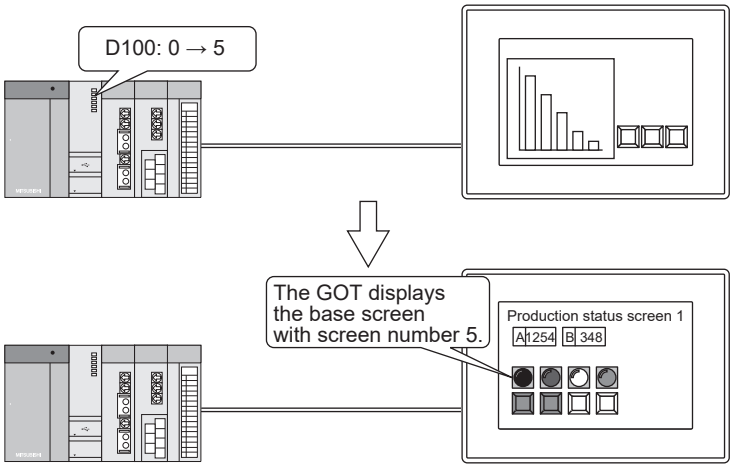
GT37 SoftGOT3000

☞ Page 534 Switching screens with the screen switching device
☞ Page 534 Switching screens with touch switches (Go To Screen switch)
☞ Page 535 Selecting a screen switching device
☞ Page 535 Display position of an overlap window or a superimpose window
☞ Page 536 Using an overlap window as the system window
☞ Page 537 Displaying an overlap window off-screen
☞ Page 538 Specifying the stacking order of overlap windows
☞ Page 539 Disabling the touch operation on the screens that are behind an overlap window
☞ Page 540 Changing the action of the system window when the base screen is switched

Switching screens with the screen switching device

When a screen number is stored in the screen switching device, the corresponding screen is displayed on the GOT.

Ex.
Storing 5 in the screen switching device (D100)



Set the screen switching device in the [Screen Switching/Window] dialog.

☞ Page 542 [Screen Switching/Window]

Switching screens with touch switches (Go To Screen switch)

The screen is switched to another screen when you touch the Go To Screen switch placed on the screen.

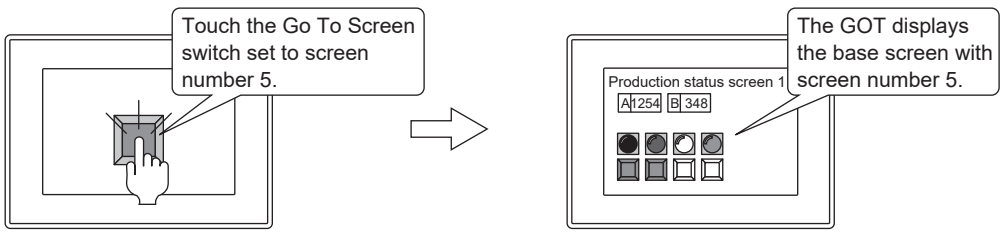
The destination screen depends on the setting of the touch switch.

For information on how to set the Go To Screen switch, refer to the following.

☞ Page 1220 [Go To Screen Switch] dialog

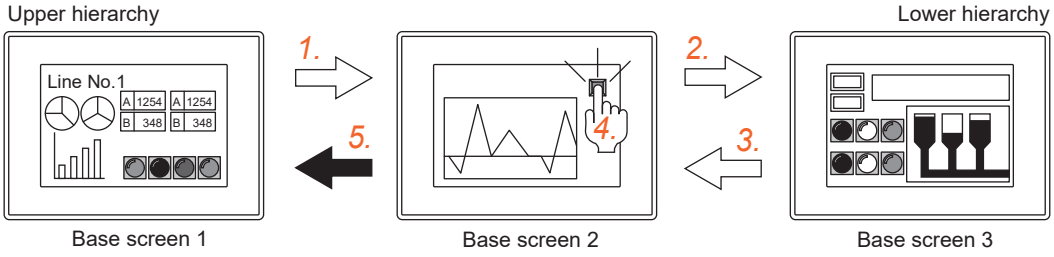
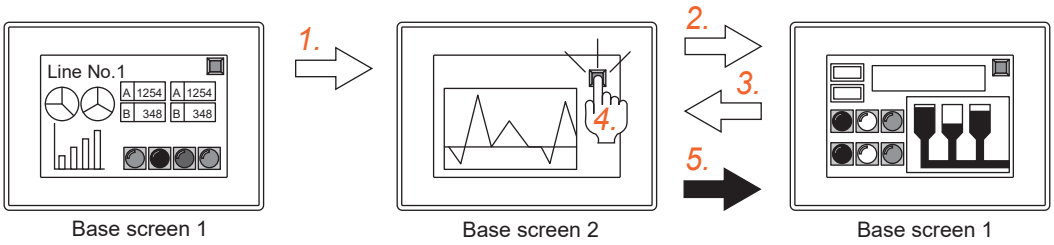
■Switching screens by specifying a screen number

The screen can be switched to the base screen or the window screen which is set for the touch switch.



■Switching screens according to the hierarchy or history of the screens

The screens can be switched according to the operation (hierarchy mode, historical mode) which is set for the touch switch.

Setting	Operation
Hierarchy mode	This mode is for returning to a screen in the upper hierarchy according to the screen hierarchy based on the relation between a source screen and a destination screen. 
Historical mode	This mode is for returning to the previously displayed screen according to the history of the screen switching. 

Selecting a screen switching device

To select a device used as the screen switching device, refer to the following depending on the method of screen switching.

Device	Description
GOT internal device	Recommended for performing the screen switching by touch switches. To control the screen switching by a controller, you need to use scripts or the device data transfer.
Controller device	Recommended for controlling the screen switching by a controller. You can also switch the screens with touch switches.

Display position of an overlap window or a superimpose window

You can specify the display position of an overlap window or a superimpose window by setting [Window Position] on a base screen.

For information on how to set [Window Position], refer to the following.

☞ Page 1883 Specifying the display position of a window screen

On the base screen having no [Window Position] setting, the display position of a window screen is as follows.

- A window screen initially appears in the center of the GOT screen.
- When a window screen was displayed previously, the window screen appears at the previously displayed position.

When you switch a base screen on which a window screen is being displayed, note the following: even if you configure different [Window Position] settings on the destination base screen, the window screen remains in the same position after the base screen switching.

Using an overlap window as the system window

Window screens used for system applications, including Web browser windows, are called system windows.
Displaying such a system window requires the following overlap window as a resource.

- Overlap window for which no screen switching device is set
- Overlap window for which [Use also as a system window] is set

Settings to be assigned to system window resources are configurable in the [Environmental Setting] window ([Screen Switching/Window]).

☞ Page 542 [Screen Switching/Window]

When the system window is not used, you can also display a window screen as usual with an overlap window assigned to a resource.
If the system window is called while a window screen is displayed with the overlap window, the GOT closes that window screen and opens that system window.
After the system window is closed, the window screen whose screen No. is the same as the value of the screen switching device is displayed again.

Precautions

The number of system windows that can be started cannot exceed that of overlap windows that can be used as resources. Set as many such overlap windows as the number of system windows to be used.

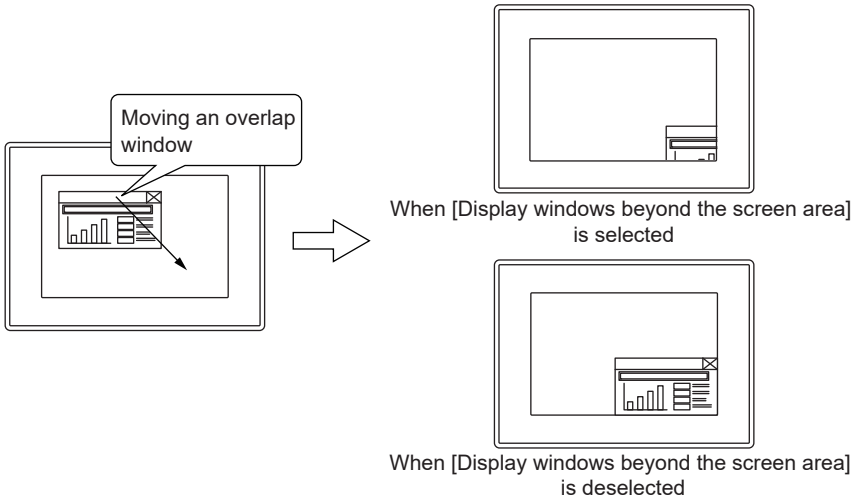
Displaying an overlap window off-screen

To display an overlap window off the GOT screen, select [Display windows beyond the screen area] in the [Screen Switching/Window] dialog.

Note that dialog windows cannot be displayed off the GOT screen.

The overlap window can be displayed off the right side or the bottom of the screen.

☞ Page 542 [Screen Switching/Window]



This setting also allows the following windows to be displayed off the GOT screen.

- Key window
- Comment window
- Screen image display in the utility (operation log information)
- Web browser window

Specifying the stacking order of overlap windows

To specify the stacking order of overlap windows, set [Specify the display order] in the detail setting for each overlap window.

The detail setting for the overlap window is configurable in the [Environmental Setting] window ([Screen Switching/Window]).

☞ Page 542 [Screen Switching/Window]

The stacking order number for an overlap window is settable ranging from 1 (the most front face) to 5 (the most rear face).

The same stacking order number is settable for multiple overlap windows.

When an overlap window is used as a system window, the user-specified stacking order number is invalid.

When you specify the stacking order number for some overlap windows, all overlap windows are classified into groups below.

- User-specified stacking order group (Overlap windows having a user-specified stacking order number)
- Non-user-specified stacking order group (Overlap windows having no user-specified stacking order number)
- Group of overlap windows used as system windows

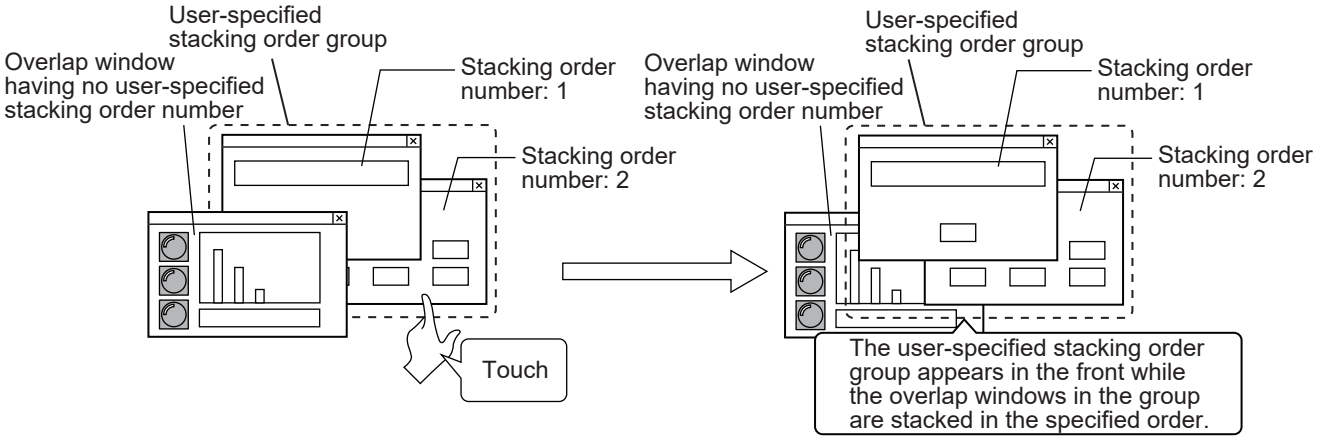
Within the user-specified stacking order group, the overlap windows always appear in the specified stacking order.

Within the other groups, the stacking order of the overlap windows varies with the user operation or GOT behavior.

The following shows examples where the overlap windows in the multiple groups are displayed.

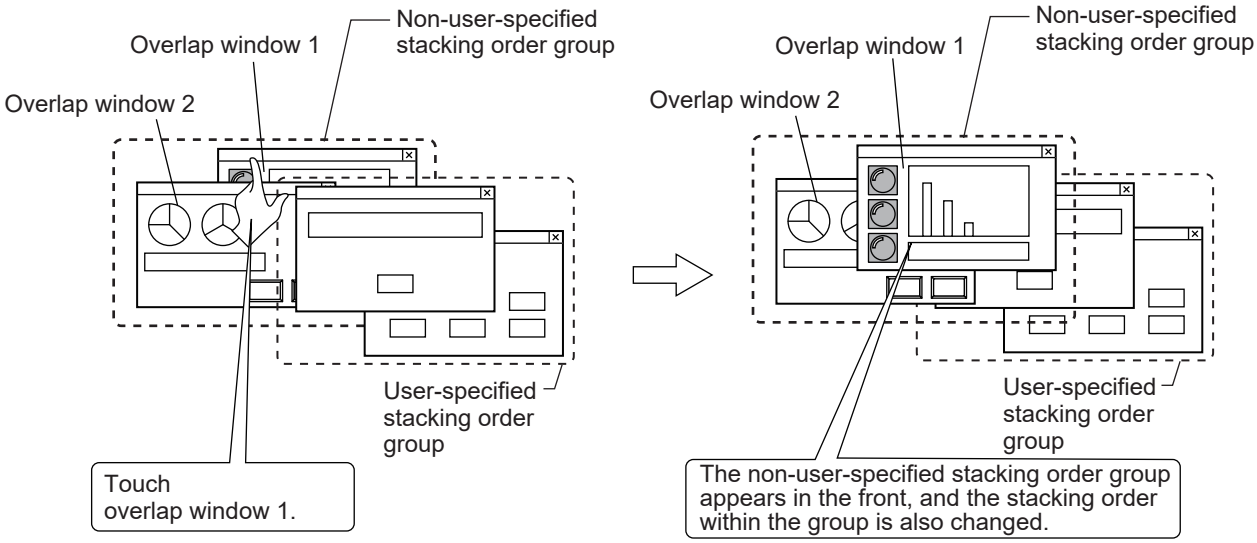
Ex.

When touching an overlap window having a user-specified stacking order number



Ex.

When touching an overlap window having no user-specified stacking order number



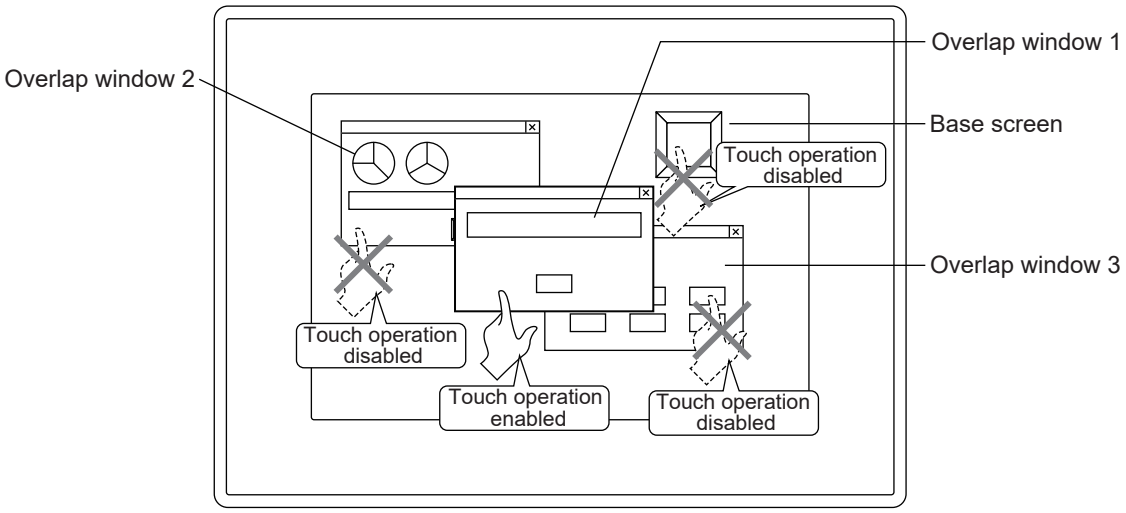
Disabling the touch operation on the screens that are behind an overlap window

To disable the touch operation on the screens that are behind an overlap window, select [Disable the touch operation of a screen on the back] in the detail setting for the overlap window. The overlap window appears in the front, regardless of the stacking order number setting.

While this overlap window is being displayed, the touch operation is disabled in the area outside the window.

Ex.

When disabling the touch operation on the screens that are behind the overlap window 1



The detail setting for the overlap window is configurable in the [Environmental Setting] window ([Screen Switching/Window]).

☞ Page 542 [Screen Switching/Window]

A bit device is usable to enable or disable the touch operation.

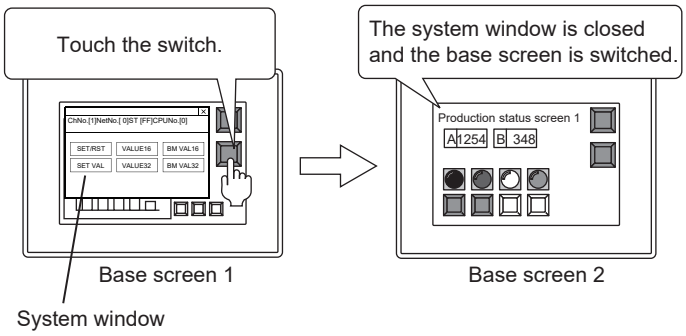
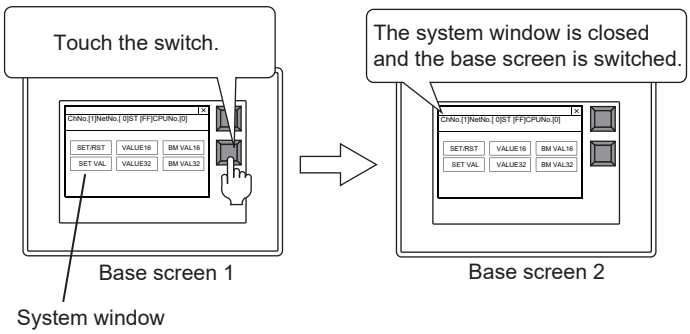
When this bit device control is enabled, the touch operation of screens behind this screen is disabled only while the relevant bit device is on.

Changing the action of the system window when the base screen is switched

Use GS522.b7 to set the action of the system window displayed when the base screen is switched.

For system windows, refer to the following.

☞ Page 536 Using an overlap window as the system window

Item	Operation
When GS522.b7 is on	The displayed system window is closed when the base screen is switched. 
When GS522.b7 is off	The displayed system window is not closed when the base screen is switched. 

10.1.3 Moving an overlap window

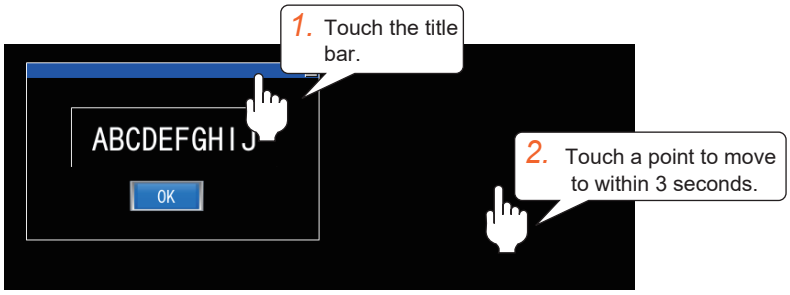
GT37 SoftGOT3000

The following shows how to move an overlap window which is displayed on the GOT.

Moving the window with touch operations

Touch the title bar of an overlap window, and then touch the position to move the window to within three seconds.

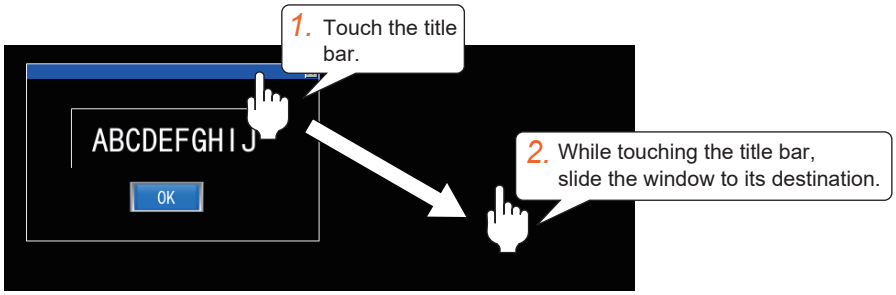
To enable this operation, the setting for displaying title bars must be configured.



Moving the window with a slide operation

While touching the title bar of an overlap window, slide the window to its destination.

To enable this operation, the setting for displaying title bars must be configured.



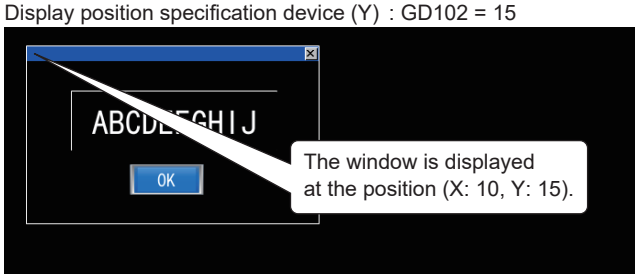
Moving the window with devices

Set the coordinates of a position to move the window for the display position specification device (X and Y).

To enable this operation, the setting of the display position specification device must be configured.

☞ Page 542 [Screen Switching/Window]

Screen switching device : GD100 = 1
Display position specification device (X) : GD101 = 10
Display position specification device (Y) : GD102 = 15



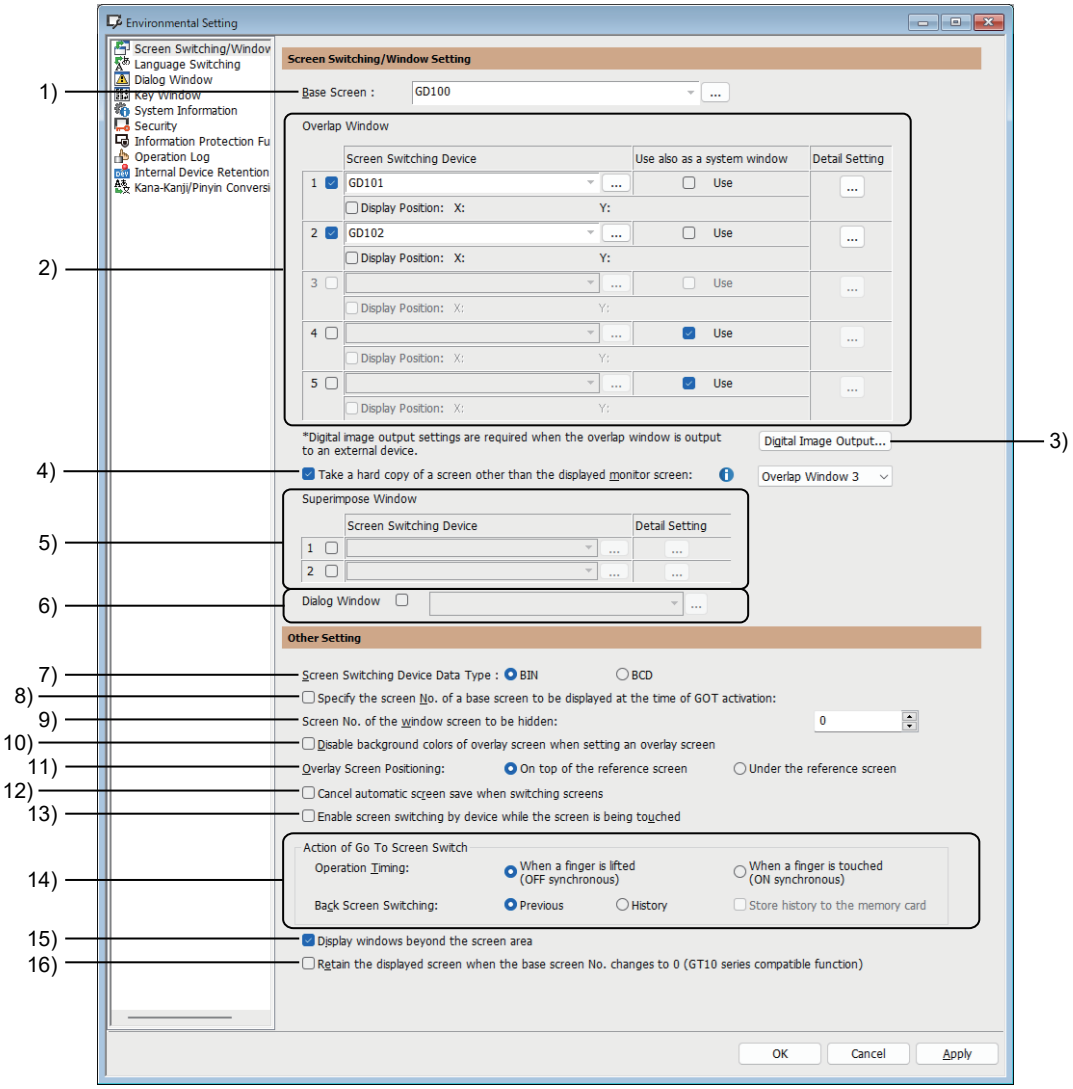
PART 5

10.1.4 [Screen Switching/Window]

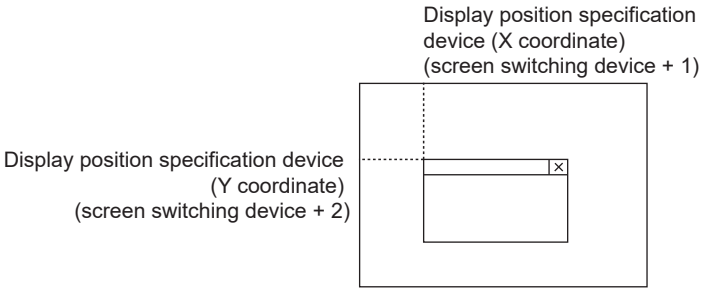
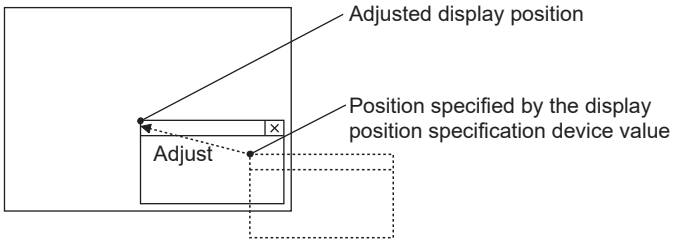
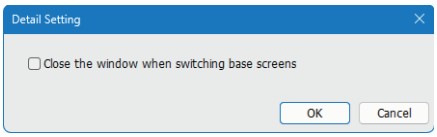
GT37 SoftGOT3000

Set the screen switching and the display method of window screens.

Select [Common] → [GOT Environmental Setting] → [Screen Switching/Windows] from the menu to display this dialog.

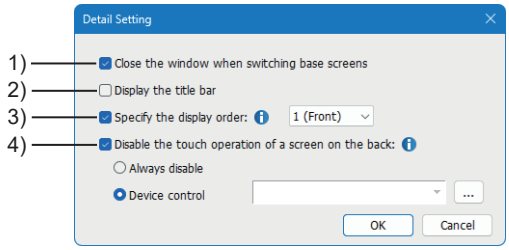


Item		Description
1)	Screen switching device for a base screen	Set a screen switching device (word device) for a base screen. The bit device cannot be specified as the word device. ☞ Page 834 How to set devices, labels, and tags

Item			Description
2)	Settings for overlap window	—	Set whether to use overlap windows 1 to 5, the screen switching devices, and the display method of those windows. The overlap window which you selected becomes available. You cannot set the overlap window selected for [Take a hard copy of a screen other than the displayed monitor screen].
		[Screen Switching Device]	Set screen switching devices (word device) for overlap windows 1 to 5. The bit device cannot be specified as the word device. ☞ Page 834 How to set devices, labels, and tags
		[Display Position]	Specify the display positions of overlap windows 1 to 5 with devices. A display position specification device is automatically assigned to each overlap window when you select this item. The device numbers of the display position specification devices for the X and Y coordinates are specified as follows: The horizontal coordinate (X coordinate) is the screen switching device + 1, and the vertical coordinate (Y coordinate) is the screen switching device + 2. Specify the display positions of overlap windows 1 to 5 as follows.  If a value which cannot be displayed on the GOT is stored to the display position specification device, the display position is adjusted automatically. The adjusted display position is not reflected to the device value. 
		[Use also as a system window]	Allows to use an overlap window as the system window. ☞ Page 536 Using an overlap window as the system window
		[Detail Setting]	Displays the [Detail Setting] dialog. ☞ Page 545 [Detail Setting] dialog (overlap window)
3)	[Digital Image Output] button		The [GOT Setup] window ([Digital Image Output]) appears. Set the window to be output to an external device. ☞ Page 647 [Digital Image Output]
4)	[Take a hard copy of a screen other than the displayed monitor screen]		Set the overlap window to be used for the hard copy function processing. Overlap windows 1 to 5 whose use is deselected are settable. When selected, the window cannot be used to specify the display position or as a system window. For details on the hard copy function, refer to the following. ☞ Page 2554 Capturing the operating screen of the GOT ([Hard Copy])
5)	Setting of superimpose window	—	Set whether to use superimpose windows 1 and 2 and the screen switching device. The superimpose window which you selected becomes available.
		[Screen Switching Device]	Set screen switching devices (word device) for superimpose windows 1 and 2. The bit device cannot be specified as the word device. ☞ Page 834 How to set devices, labels, and tags
		[Detail Setting]	Displays the [Detail Setting] dialog.  If you select the checkbox, the superimpose window is closed when the base screen is switched.

Item			Description
6)	[Dialog Window]		When you select the checkbox, the dialog window becomes available. Set a screen switching device (word device) for the dialog window. The bit device cannot be specified as the word device. ☞ Page 834 How to set devices, labels, and tags
7)	[Screen Switching Device Data Type]		Set the data type of the screen switching device.
8)	[Specify the screen No. of a base screen to be displayed at the time of GOT activation]		Set a screen number of the base screen to be displayed on the GOT at startup.
9)	[Screen No. of the window screen to be hidden]		Set a screen number for closing a displayed overlap window or superimpose window.
10)	[Disable background colors of overlay screen when setting an overlay screen]		Disables the background color of the called screen.
11)	[Overlay Screen Positioning]		Set whether to place the called screen above or below the base screen.
12)	[Cancel automatic screen save when switching screens]		Cancels the screen saver state in the following cases. • Switching the base screen • Displaying, hiding, or switching an overlap window • Displaying, hiding, or switching a superimpose window • Displaying or hiding a dialog window • Displaying or hiding a video window • Displaying or hiding a popup display
13)	[Enable screen switching by device while the screen is being touched]		Enables screen switching by using the screen switching devices while the screen is being touched.
14)	[Action of Go To Screen Switch]	[Operation Timing]	Set the timing to operate the Go To Screen switch. Select [When a finger is lifted (OFF synchronous)] to switch screens at the timing when you release your finger from the switch. Select [When a finger is touched (ON synchronous)] to switch screens when you touch the switch.
		[Back Screen Switching]	Set the operation when [Back (Previous/History)] is selected for [Next Screen] in the setting of the Go To Screen switch. Select [Previous] to perform the screen switching in hierarchy mode. Select [History] to perform the screen switching in historical mode. ☞ Page 535 Switching screens according to the hierarchy or history of the screens
		[Store history to the memory card]	Stores the history of the screen switching in a data storage. This item can be selected if [History] is selected for [Back Screen Switching].
15)	[Display windows beyond the screen area]		Enables overlap windows and key windows to be displayed off the GOT screen. ☞ Page 537 Displaying an overlap window off-screen ☞ Page 566 Displaying a key window off-screen
			You can move an overlap window off the GOT screen by specifying coordinates off the GOT screen with the display position specification device. The overlap window that was moved outside the GOT screen cannot be moved by the touch operation. To move the window back into view, specify the window coordinates within the screen area with display position specification devices.
16)	[Retain the displayed screen when the base screen No. changes to 0 (GT10 series compatible function)]		When the screen switching device stores 0, the currently displayed base screen is not switched. However, if the base screen with the screen No. 0 exists, the current screen is switched to the base screen with the screen No. 0. If this item is not selected, the GOT switches to the base screen with the smallest screen number. ☞ Page 531 Screen switching of base screens

[Detail Setting] dialog (overlap window)



Item		Description
1)	[Close the window when switching base screens]	Closes the overlap window when the base screen is switched.
2)	[Display the title bar]	Displays a title bar on the overlap window.
3)	[Specify the display order]	Select a stacking order number for the overlap window. For details on the stacking order, refer to the following. ☞ Page 538 Specifying the stacking order of overlap windows
4)	[Disable the touch operation of a screen on the back]	Displays the overlap window in the front regardless of the setting of [Specify the display order], and disables the touch operation on the screens behind the overlap window. Select this item, and then select a condition for disabling the touch operation. • [Always disable]: Always disables the touch operation. • [Device control]: Uses a specified bit device to enable or disable the touch operation. For details, refer to the following. ☞ Page 539 Disabling the touch operation on the screens that are behind an overlap window

Precautions

To configure the following settings, make sure to arrange the Go To Screen switch for closing the window screen, in the overlap window.

- Select [Disable the touch operation of a screen on the back]
- Do not select [Display the title bar]

If the touch operation of the screen behind the overlap window with no title bar is disabled, you cannot close the overlap window.

☞ Page 1220 [Go To Screen Switch] dialog

10.2 Setting for switching the language displayed on the GOT ([Language Switching])

GT37 SoftGOT3000

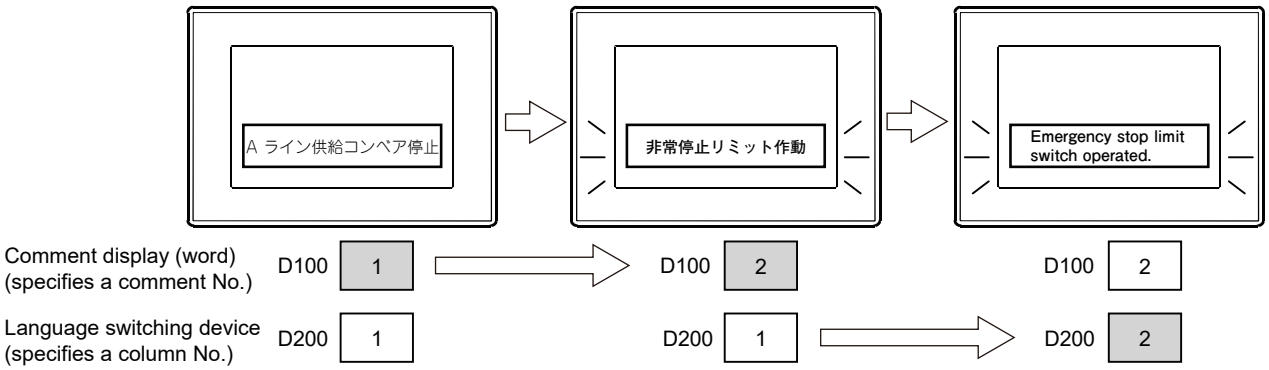
☞ Page 547 Specifications of the language switching
☞ Page 549 How to use the language switching
☞ Page 551 [Language Switching]

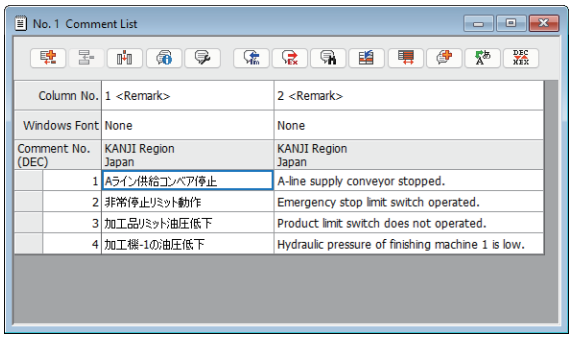
The GOT switches comments displayed on the object according to a value (column number of the comment group) in the language switching device.

If messages of Japanese, English, Chinese, and other languages are registered in each column of the comment group, the language of the comment displayed can be switched.

For information on how to register comments, refer to the following.

☞ Page 780 How to use comment

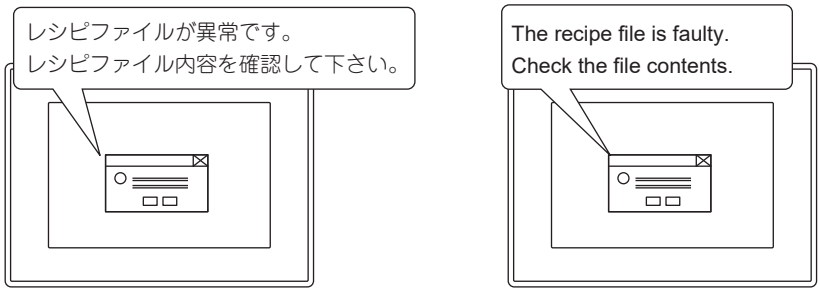




On the other hand, the system language used in the utility screen and others is switched by the system language switching device.

The system language can be switched to the language compatible with the language ID according to the value stored to the system language switching device (language ID).

System language switching device: GD100
Language ID = 1: Japanese, 2: English



GD100 = 1 GD100 = 2

10.2.1 Specifications of the language switching

GT37 SoftGOT3000

☞ Page 547 Language switching device
☞ Page 547 System language switching device
☞ Page 548 Area setting
☞ Page 548 Effect of language switching or system language switching on objects

Language switching device

The language switching device is used to switch the comment column of the comment group.
A language switching device can be set per project.
Store the column number of the comment group to the language switching device to switch the comment column to be displayed.
For comment settings, refer to the following.
☞ Page 776 Comment setting ([Comment])
For the setting of the language switching device, refer to the following.
☞ Page 551 [Language Switching]

System language switching device

The system language switching device is used to switch the system language used for the utility, system alarm, and others.
A system language switching device can be set per project.
A language ID is assigned to each language.
Store the language ID to the system language switching device to switch the system language.
language IDs are assigned as shown below.

Language ID	Compatible language
1	Japanese
2	English
3	Chinese (Simplified)
4	Chinese (Traditional)
5	Korean

When a value other than the one above is stored to the system language switching device, the system language set in the utility is set.
For the setting of system language switching, refer to the following.
☞ Page 551 [Language Switching]

Precautions

When the system language is switched while a dialog window is displayed, the system language is switched after the dialog window is closed and the screen returns to the user-created screen.

Area setting

The formats of a sorting order of the date, decimal marker, and others which differ depending on areas can be switched associating with language switching.

This setting is applied to all the objects on the user screen.

However, this setting is not applied to the system screens, such as the utility screen and the system application screen.

■Date

Select [yy/mm/dd], [mm/dd/yy], or [dd/mm/yy] for a sorting order of the date.

■Decimal marker

Select [, (comma)] or [. (period)] for a decimal marker.

Effect of language switching or system language switching on objects

Language switching or system language switching switches screens.

Therefore, the operations of the following objects are affected at language switching.

Target	Effect
Parts display	When [Locus] is selected for [Display Mode], the locus is deleted.
Scatter graph	When settings such as memory storage are not configured, the previously collected data of the occurrence time or others is deleted. To store the previously collected data at language switching, set each object to store the memory. ☞ Page 1687 [Extended] tab
Historical data list display Alarm display (user) Alarm display (system) Simple alarm display	When the display is scrolled, the display returns to the top after language switching.
Object during input	When data is being input to objects, the cursor is deleted and the input is canceled.
Display trigger of objects	When the display trigger condition of objects is not satisfied before language switching, the description displayed on objects is deleted.

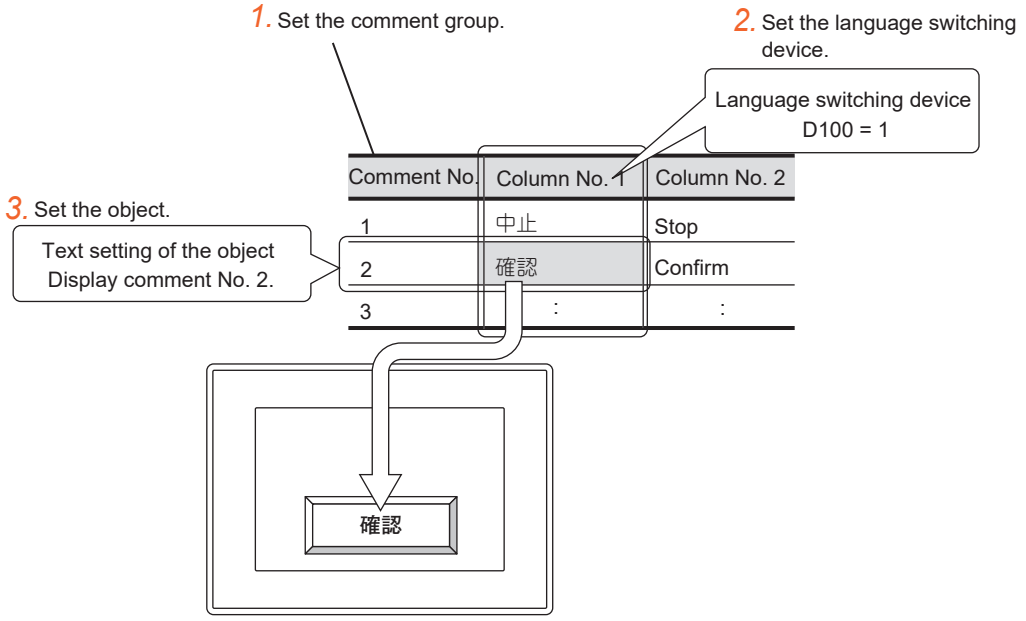
10.2.2 How to use the language switching

GT37 SoftGOT3000

Switching the language of the comment to be displayed on the object (switching the comment column)

Switch the comment column to switch the language of the comment to be displayed on the object.
Store the column No. to the language switching device to switch the comment column.

■Setting procedure



1. Set the comment group.

Set multiple comment columns in the comment group.

☞ Page 780 How to use comment

2. Set the language switching device.

☞ Page 551 [Language Switching]

3. Configure the setting of each object on the screen for displaying character strings set as a comment text.

☞ Page 1191 Placing a touch switch
☞ Page 1276 Placing a lamp
☞ Page 1386 Placing a comment display
☞ Page 1495 Placing a historical data list display
☞ Page 1519 Placing a simple alarm display
☞ Page 2132 Viewing alarm events (Alarm display)

■Operation on the GOT

Store the value of the column No. to the language switching device by a touch switch or a numerical input.
Storing the value switches the language of the comment to be displayed on the object.
When the value of the language switching device is out of the range (0, 31 or larger) or a nonexistent column No. is specified, a comment is not displayed.
However, when [Alternative Display (when the language switching device value is out of the range (other than 1-30) or comment column No. does not exist)] is set, the column No. set previously is displayed.

Switching the system language on the user-created screen

The system language is used on the screen other than the user-created screen, such as the utility screen and system alarm.
To change the system language on the user-created screen, use the system language switching device.
Store the value of the language ID to the system language switching device to switch the system language.
You can also change the system language on the utility screen of the GOT.
For information on how to change the system language on the utility screen, refer to the following.
📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

■Setting procedure

1. Enable language switching to set the system language switching device.
☞ Page 551 [Language Switching]

2. Place an object such as a numerical input or a word switch for storing the language ID to the system language device.

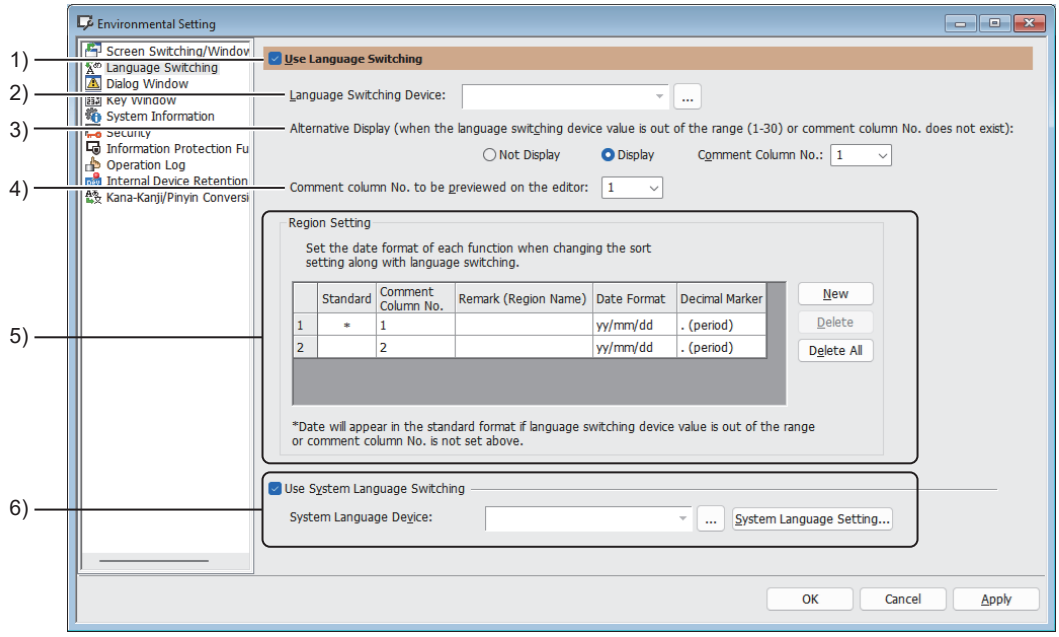
■Operation on the GOT

Input the value of the language ID to the language switching device by a touch switch or a numerical input.
Inputting the value switches the system language to the language which is compatible with the language ID.
For the specifications of the language ID, refer to the following.
☞ Page 547 System language switching device
The system language can be switched by the system language switching device only on the user-created screen.
The system language cannot be switched by the system language switching device while the system window, utility screen, add-on function screen, or other screens are displayed.
Switch the system language by the device after closing all the screens above.

10.2.3 [Language Switching]

GT37 SoftGOT3000

In [Language Switching], the language switching device and the system language switching device are set.
Select [Common] → [GOT Environmental Setting] → [Language Switching] from the menu to display this window.



Item			Description
1)	[Use Language Switching]		Select this item to enable language switching.
2)	[Language Switching Device]		Set the language switching device (word device). The bit device cannot be specified as the word device. Data type is signed 16-bit binary.
3)	[Alternative Display (when the language switching device value is out of the range (1-30) or comment column No. does not exist)]		When the comment column No. which matches with the value of the language switching device does not exist in the comment group, select whether to display a comment. If you select [Display], set the comment column number to be displayed to [Comment Column No.]. The setting range is [1] to [30]. If you set a nonexistent comment column No., a comment is not displayed.
4)	[Comment column No. to be previewed on the editor]		Set the comment column No. to be used for a preview display on the screen editor.
5)	[Region Setting]	—	Set the formats of a sorting order of the date, decimal marker, and others which differ depending on areas.
		[Standard]	The row with [*] is the default value of the area setting.
		[Comment Column No.]	Set the comment column No. which the area setting is applied to. The setting range is [1] to [30].
		[Remark (Region Name)]	Set the remarks such as the area setting name. Up to 32 characters can be set.
		[Date Format]	Select a sorting order of the date.
		[Decimal Marker]	Select a symbol to be used as a decimal marker.
		[New] button	Adds a new area setting.
		[Delete] button	Deletes a selected area setting.
		[Delete All] button	Deletes all the area settings.
6)	[Use System Language Switching]	—	Select this item to enable system language switching. Set the system language switching device.
		[System Language Device]	Set the system language switching device (word device). The bit device cannot be specified as the word device. Data type is signed 16-bit binary.
		[System Language Setting] button	Displays the settings of the language ID to be used for system language switching. The system language setting can be displayed only when [Language Setting] is set in the GOT setup. ☞ Page 618 [Display Setting/Language Setting]

10.3 Setting dialog windows of the GOT ([Dialog Window])

GT37 SoftGOT3000

☞ Page 553 Specifications of dialog windows
☞ Page 555 How to use dialog windows
☞ Page 557 [Dialog Window]

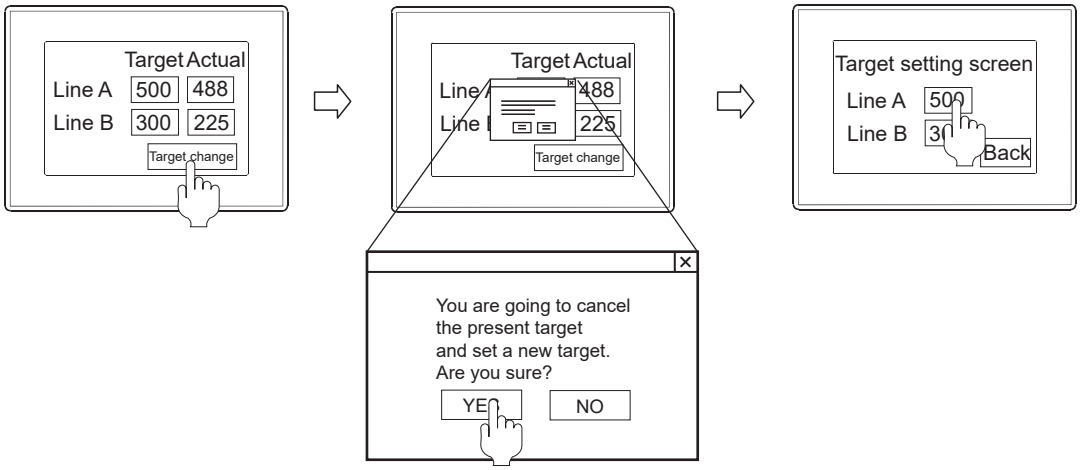
You can create and replace system messages displayed on the GOT using the created dialog windows.

Ex.

Displaying a created dialog window as a new message

By creating a dialog window for an error or warning as a system, the GOT can display the dialog window as a system message.

You can set a window that does not display the next screen without an answer to the message or a window that is for confirmation for the information.



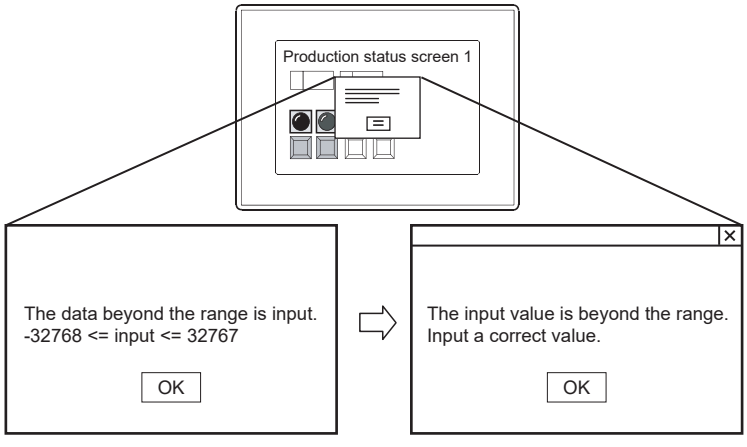
A dialog window such as one guiding a user to confirm the operation can be displayed.

Ex.

Displaying a created dialog window instead of the system message of the GOT

You can replace the system message displayed by the GOT with the created dialog window.

The GOT can display more specific and system-matched messages.



System message displayed on the GOT

Changed to the dialog window created by a user

10.3.1 Specifications of dialog windows

GT37 SoftGOT3000

☞ Page 553 Available screen size and number of screens
☞ Page 553 Available figures and objects
☞ Page 553 Superimposition of objects
☞ Page 553 Layer setting
☞ Page 553 Functions that do not operate
☞ Page 553 Screen switching while a dialog window is displayed
☞ Page 554 Communication with GT Designer3 while a dialog window is displayed
☞ Page 554 Priority between the displayed dialog window and a newly generated system message
☞ Page 554 Dialog window replacement setting on superimpose windows or called screens

Available screen size and number of screens

For the specifications of dialog windows as window screens, refer to the following.

☞ Page 58 Screen types and specifications

Available figures and objects

You can place all the figures and objects placeable on the window screen.

Some restrictions are placed on the use of the following objects.

Object	Restriction
Numerical input Text input	The input operation is not available.
Recipe display (record list)	Not displayed.
Key window object	The key window object is displayed only on the dialog window that appears, replacing any of the following system messages. • [Input data error, too many integer places] • [Input data error, too many decimal places] • [Input data error, number too large/small] • [Input data error, out of range] For the system message replacement display, refer to the following. ☞ Page 555 Displaying a created dialog window instead of the system message of the GOT

Superimposition of objects

The superimposition of objects is not available.

Layer setting

The front layer and the back layer are combined on the GOT.

The set object stacking order may be invalid.

Functions that do not operate

The following functions do not operate in the dialog window.

- Screen script
- Trigger action

Screen switching while a dialog window is displayed

The screen is not switched while a dialog window is displayed.

If you have attempted to switch the screen, the screen switching is valid after the dialog window is closed.

Communication with GT Designer3 while a dialog window is displayed

While a dialog window is displayed, communication between the GOT and GT Designer3 may not be established.
If communication between the GOT and GT Designer3 is not established, close the dialog window.

Priority between the displayed dialog window and a newly generated system message

A system message and a dialog window cannot be displayed together.
If you have attempted to display a dialog window together with a system message, the system message has the priority.

■When a user-created system message is generated while a dialog window is displayed

The displayed dialog window remains.
The newly generated system message is not displayed.

■When a system message of the GOT is generated

The displayed dialog window is closed, and 0 is stored in the screen switching device for the dialog window.
Then, the newly generated system message is displayed.
If a button is arranged on the displayed dialog window, the following processing is executed before the window is closed.

- For the dialog window with only a [OK] button, the processing is the same as when the [OK] button is pressed.
- For the dialog window with a cancel button, the processing is the same as when the [Cancel] button is pressed.

Dialog window replacement setting on superimpose windows or called screens

On the screen displayed as a superimpose window or called screen of the set overlay screen, screen-based dialog window replacement setting is invalid.
The dialog window replacement setting of the displayed base screen is valid.

10.3.2 How to use dialog windows

GT37 SoftGOT3000

☞ Page 555 Displaying a created dialog window as a new message
☞ Page 555 Displaying a created dialog window instead of the system message of the GOT
☞ Page 556 Setting procedure

To use a dialog window, set a screen switching device for the dialog window.

For information on how to set the screen switching devices, refer to the following.

☞ Page 542 [Screen Switching/Window]

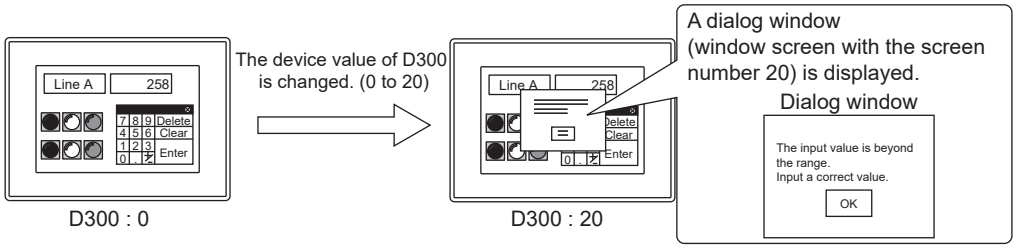
Displaying a created dialog window as a new message

Storing the screen number of the created dialog window to the screen switching device enables the display of the dialog window.

Storing 0 to the screen switching device closes the displayed dialog window.

Ex.

Storing the screen number 20 of the window screen to the screen switching device (D300) for the dialog window



Displaying a created dialog window instead of the system message of the GOT

A created dialog window can be displayed instead of the system message of the GOT.

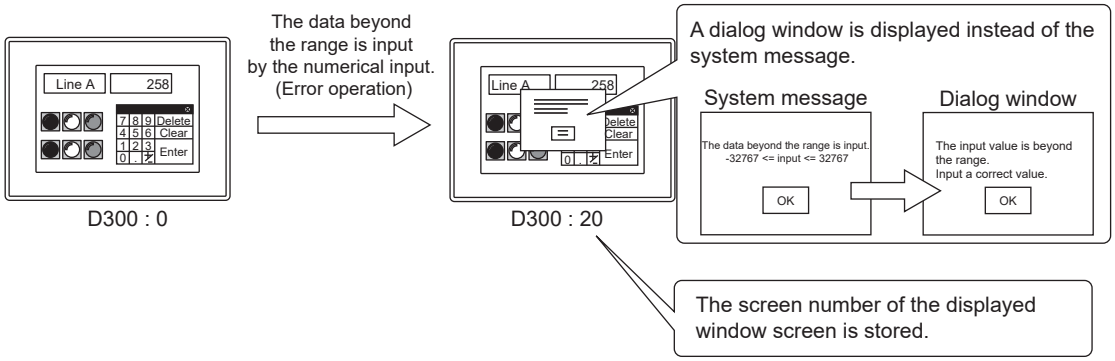
This is called the system message replacement display.

Storing 0 to the screen switching device closes the displayed dialog window.

Ex.

Displaying the window screen with the screen number 20 instead of the system message at an error operation

(Screen switching device (dialog window): D300)



The following table lists the system messages available for the replacement display.

System message to be replaced	Setting item of the [Environmental Setting] window	Unit of setting
[Communication error. Refer to System Alarm in Utility Menu.]	[Communication Circuit Check Demand]	By project
[Input data error, too many integer places.]*1	[Input Digits Overflow (Integer Part)]	By project By screen
[Input data error, too many decimal places.]*1	[Input Digits Overflow (Decimal Part)]	By project By screen

System message to be replaced	Setting item of the [Environmental Setting] window	Unit of setting
[Interlock not set.]	[Input Condition Failure]	By project By screen
[Input data error, number too large/small.]	[Input Digits Overflow]	By project By screen
[Input data error, out of range.]	[Out of Input Range]	By project By screen
[Do you want to change?]	[Input Confirmation]	By project By screen
[Barcode/RFID data is invalid.]	[Invalid Bar Code/RFID Data]	By project By screen

*1 Available only when the data type of the monitor device is real number.

Configure the setting for replacing a system message in the [Environmental Setting] window.

☞ Page 557 [Dialog Window]

Setting procedure

1. Set a screen switching device.

☞ Page 542 [Screen Switching/Window]

2. Create a window screen to be displayed as a dialog window.

For the creation procedure, refer to the following.

☞ Page 263 Creating a screen

3. Configure the setting of the dialog window in the [Environmental Setting] window when replacing a system message with the window.

For the setting procedure, refer to the following.

☞ Page 557 [Dialog Window]

Precautions

Configure the setting for closing the dialog window.

If the dialog window is not closed, monitor screens or utility screens cannot be displayed.

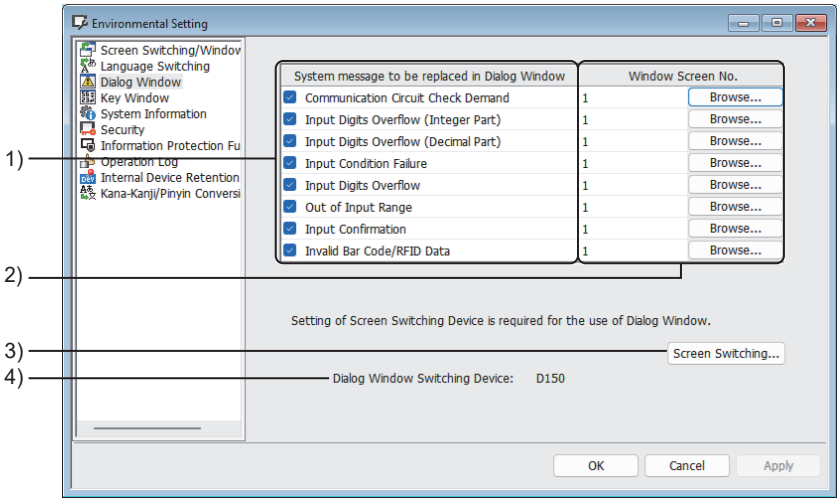
The setting includes: arranging a touch switch for closing the window, script that writes 0 to the screen switching device, and a sequence program.

10.3.3 [Dialog Window]

GT37 SoftGOT3000

In [Dialog Window], set the display method of the dialog window.

Select [Common] → [GOT Environmental Setting] → [Dialog Window] from the menu to display this window.



Item		Description
1)	[System message to be replaced in Dialog Window]	Select a system message to be replaced by the dialog window. Replaces the selected system message with the window screen set in [Window Screen No.]. For the system messages of each item, refer to the following. ☞ Page 555 Displaying a created dialog window instead of the system message of the GOT
2)	[Window Screen No.]	Set a screen number of the window screen to be displayed instead of the system message. The setting range is [0] to [32767]. When [0] is set, either system message or dialog window is not displayed.
3)	[Screen Switching] button	Displays the setting screen for the screen switching devices. ☞ Page 542 [Screen Switching/Window]
4)	[Dialog Window Switching Device]	Displays the currently set screen switching device for a dialog window.

10.4 Setting key windows of the GOT ([Key Window])

GT37 SoftGOT3000

☞ Page 558 Specifications of the standard key window
☞ Page 563 Specifications of the user-created key window
☞ Page 564 Common specifications of the standard key window and user-created key window
☞ Page 565 How to use key windows
☞ Page 570 [Key Window]
☞ Page 575 Relevant settings

The key window is a window for inputting numerical values and characters which are used for objects including numerical input and text input.

The key window has two types: GOT default key window (standard key window) and key window created by the user (user-created key window).

10.4.1 Specifications of the standard key window

GT37 SoftGOT3000

The standard key window is a GOT default window for inputting numerical values and characters.

The standard key window automatically appears according to the input area format (hexadecimal, decimal, octal, binary, or text).

☞ Page 559 Key window for numerical values
☞ Page 560 Key window for inputting characters (Alphabet or kana mode)

The design of the standard key window varies depending on the design selected in the [Screen Design] dialog.

☞ Page 310 [Screen Design] dialog

Point

The standard key window size can be selected from [Standard] and [Large].

The setting can be configured using the utility or [Common].

☞ Page 618 [Display Setting/Language Setting]

For the GOT with XGA resolution, [Standard] is selected by default.

When using the standard key window with GT3708-X, it is recommended to change the standard key window size to [Large] to ensure operability.

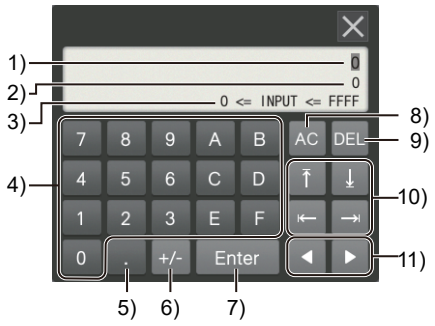
GOT3000 Series User's Manual (Utility & Maintenance Functions)

Key window for numerical values

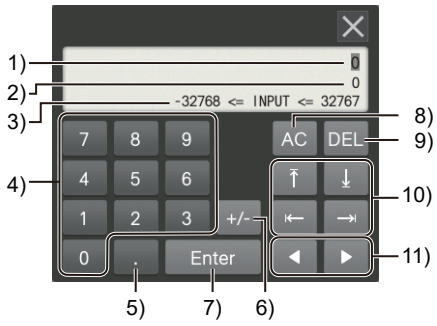
Item	Description
Hexadecimal	The key window for inputting hexadecimal values is displayed.
Decimal	The key window for inputting decimal values is displayed.
Octal	While GS450.b7 is on, the key window for inputting octal values is displayed. While GS450.b7 is off, the key window for inputting hexadecimal values is displayed. After the key window is displayed, turning on or off GS450.b7 does not change the key window type.
Binary	While GS450.b6 is on, the key window for inputting binary values is displayed. While GS450.b6 is off, the key window for inputting hexadecimal values is displayed. After the key window is displayed, turning on or off GS450.b6 does not change the key window type.

Ex.

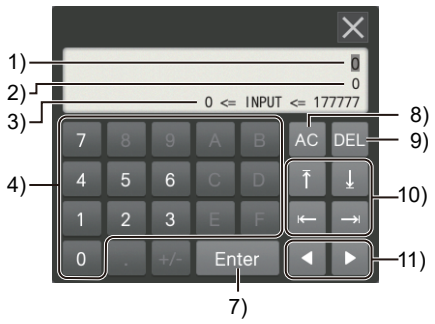
When the design is set to [Basic-Black]



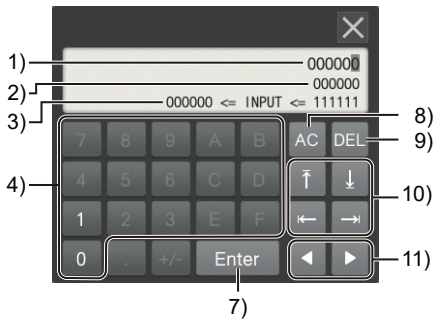
Key window for inputting hexadecimal values



Key window for inputting decimal values



Key window for inputting octal values



Key window for inputting binary values

Item		Description
1)	Input value display	Displays the input value.
2)	Current value display	Displays the current value of the device.
3)	Input range display	Displays the valid input range. The displayed input range depends on the number of displayed digits which is set for the numerical input. The following shows the meaning of displayed symbols. • [INPUT]: Value to be input • [<]: The left side value is smaller than the right side value. • [<=]: The left side value is equal to or smaller than the right side value. • [==]: The left side value is equal to the right side value. • [!=]: The left side value is not equal to the right side value.
4)	Numeric keys	Input numerical values.
5)	[.] key	Inputs a decimal point.
6)	[+/-] key	Switches the input value between + and -.
7)	[Enter] key (confirm key)	Writes the input value to the device.
8)	[AC] key	Deletes the input value.
9)	[DEL] key	Deletes the least significant digit in the character string.
10)	Cursor keys (screen)	Move the input cursor in the screen.
11)	Cursor keys (object)	Move the cursor in the currently input object.

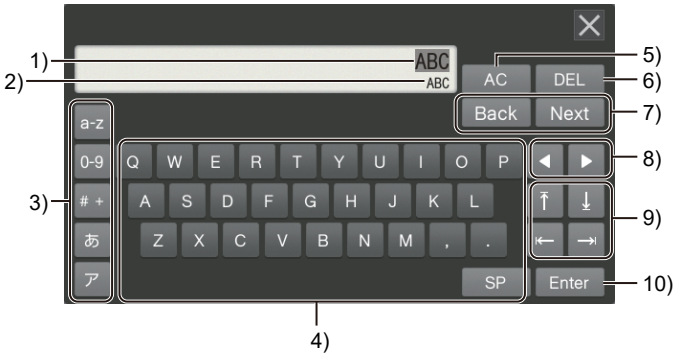
Key window for inputting characters (Alphabet or kana mode)

To switch the character type used in the key window, use the sequential or direct character type switching keys.

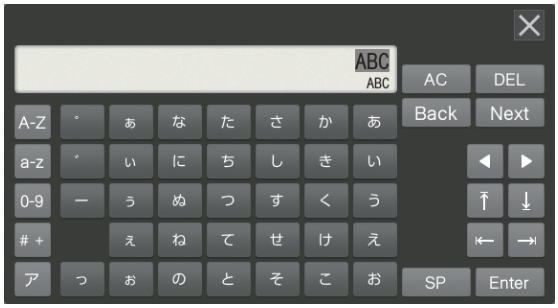
In the input area of an object, characters are displayed in a character code specified in the setting dialog of the object.

Ex.

When the design is set to [Basic-Black]

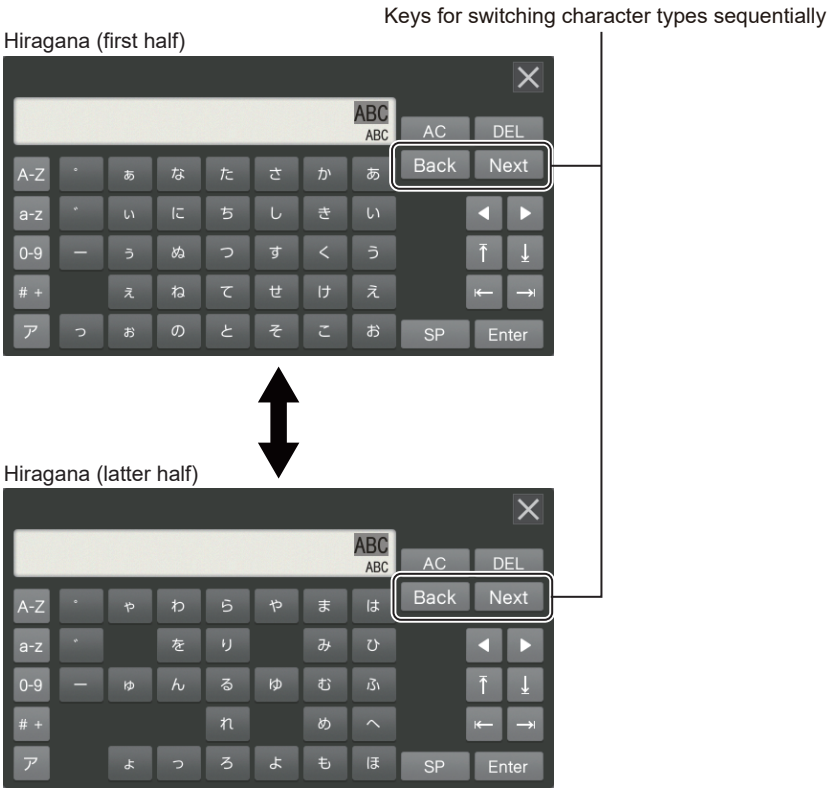


Key window in alphabet mode



Key window in kana mode

Item		Description
1)	Input value display	Displays the input value.
2)	Current value display	Displays the current value of the device.
3)	Keys for switching character types directly	Switch the character types of the key window directly. The keys for switching to hiragana or katakana appear only when the system language is Japanese. A-Z — Displays the keyboard for uppercase letters. a-z — Displays the keyboard for lowercase letters. 0-9 — Displays the keyboard for numeric characters. # + — Displays the keyboard for symbols. あ — Displays the keyboard for hiragana. ア — Displays the keyboard for katakana.
4)	Character keys	Use the keys to input characters to objects. The displayed keys depend on the character types of the key window.
5)	[AC] key	Deletes the input character string.
6)	[DEL] key	Deletes a character to the right of the cursor.

Item		Description
7)	Keys for switching character types sequentially	Switch the character types of the key window sequentially. Since all hiragana characters or katakana characters are too many to be displayed on one key window, the characters are separately listed in two windows (first half and latter half). Use the keys for switching character types sequentially to switch the display between the first half and latter half. 
8)	Cursor keys (object)	Move the cursor in the currently input object.
9)	Cursor keys (screen)	Move the input cursor in the screen.
10)	[Enter] key (confirm key)	Writes the input characters to the device.

Key window for text (key window that supports Kana-Kanji/Pinyin conversion)

The key window can be used when all the following conditions are satisfied.

- [Kana-Kanji/Pinyin Conversion] is selected in the [Text Input] dialog.
- The system language and Character Code Control are set.

☞ Page 605 Conditions that enable Kana-Kanji conversion

☞ Page 605 Conditions that enable Pinyin conversion

- Switch to Key Window capable of Kana-Kanji Conversion (GS467.b1) is turned on.

☞ Page 3645 Monitor Common Control 2 (GS467)

Kana-Kanji conversion and Pinyin conversion cannot be used simultaneously.

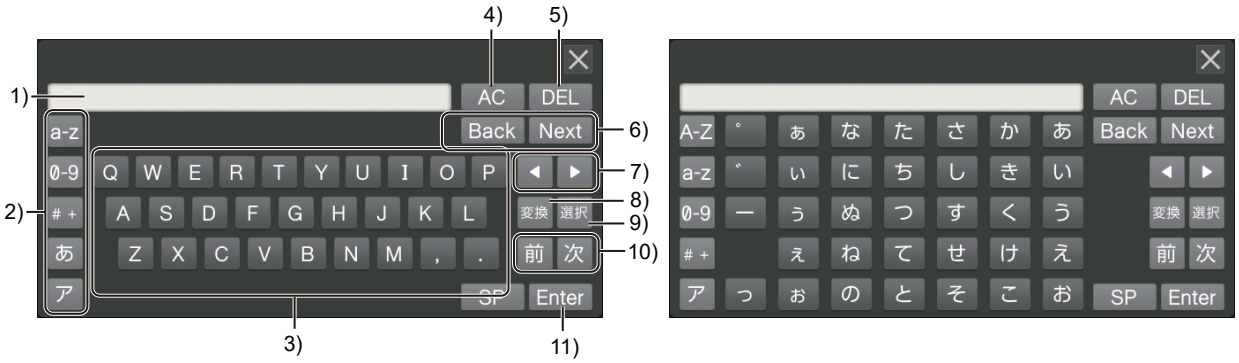
Set a conversion method in the [Kana-Kanji/Pinyin Conversion] window in the [Environmental Setting] dialog.

☞ Page 610 [Kana-Kanji/Pinyin Conversion]

You can switch the character types of the key window using keys for switching character types sequentially or keys for switching character types directly.

Ex.

When the design is set to [Basic-Black]



Key window in alphabet mode

Key window in kana mode

Item		Description
1)	Input value display	Displays the input value.
2)	Keys for switching character types directly	Switch the character types of the key window directly.
3)	Character keys	Use the keys to input characters to objects. The displayed keys depend on the character types of the key window.
4)	[AC] key	Deletes the input character string.
5)	[DEL] key	Deletes a character to the right of the cursor.
6)	Keys for switching character types sequentially	Switch the character types of the key window sequentially. Since all hiragana characters or katakana characters are too many to be displayed on one key window, the characters are separately listed in two windows (first half and latter half). Use the keys for switching character types sequentially to switch the display between the first half and latter half.
7)	Cursor keys	The behavior differs depending on the status of the character string. • The character string is not converted. The keys move the cursor. • The character string is converted. The keys change the range of the phrases to be converted.
8)	Convert key	Converts the input character string. If you touch this key during the conversion, the conversion is undone.
9)	Select key	Confirms the entry. When you convert multiple phrases, confirm each group.
10)	Previous key or Next key	Converts each phrase during input. If you touch this key during the conversion, another option will be displayed.
11)	[Enter] key (confirm key)	Writes the input characters to the device.

10.4.2 Specifications of the user-created key window

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The user-created key window is a window for inputting numerical values and characters which is created by the user.
Assign the window screen created by the user as a key window.
The key window automatically appears according to the display type of the input area (hexadecimal, decimal, octal, binary, or character string).

☞ Page 563 Available screen size and number of screens
☞ Page 563 Key window types
☞ Page 563 Available figures and objects
☞ Page 563 Superimposition of objects and layer setting
☞ Page 563 Functions that do not operate

Available screen size and number of screens

For the specifications of the user-created key window, refer to the following.

☞ Page 63 Specifications of overlap windows and key windows

Key window types

The available key window types are the key window for decimal numbers, key window for hexadecimal numbers, and key window for character strings.

Point

For the numerical input when the display type is binary or octal, the key window for hexadecimal numbers is displayed.
If the hexadecimal key window is displayed while GS450.b6 is on, only binary values can be input.
If the hexadecimal key window is displayed while GS450.b7 is on, only octal values can be input.

☞ Page 3640 Monitor Common Control (GS450)

Available figures and objects

You can place all the figures and objects placeable on the window screen.
Some restrictions are placed on the use of the following objects.

Object	Restriction
Numerical input Text input	The input operation is not available.
Special function switch	Inoperable when [Key Windows] is selected for [Switch Action].

For the key window objects used to display the value being entered or others in the key window, refer to the following.

☞ Page 1887 Placing an object to display the input information

Superimposition of objects and layer setting

The superimposition of objects is available on the key window.
The layer setting is also available.

Functions that do not operate

The following functions do not operate in the key window.

- Screen script
- Trigger action

10.4.3 Common specifications of the standard key window and user-created key window

GT37 SoftGOT3000

Display position of the key window

The key window is displayed on the bottom right of the input object by default.

For information on how to set [Window Position], refer to the following.

☞ Page 1883 Specifying the display position of a window screen

Key window action

You can set the following key window actions for each project or screen.

- Actions of the cursor and key window when the operating condition is satisfied, the operating condition is not satisfied, and the screen is switched
- Display method of the cursor input area
- Display method and clear method of the key window

For information on how to configure the setting for each project, refer to the following.

☞ Page 572 [Advanced Setting] tab

For information on how to configure the setting for each screen, refer to the following.

Screen type	Reference
Base screen	☞ Page 319 [Key Window Advanced Setting] tab
Window screen	☞ Page 329 [Key Window Advanced Setting] tab

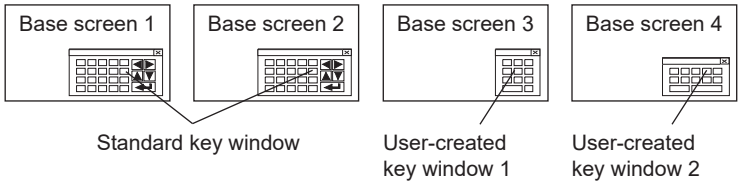
10.4.4 How to use key windows

GT37 SoftGOT3000

☞ Page 565 How to display key windows
☞ Page 566 How to operate key windows
☞ Page 566 Displaying a key window off-screen
☞ Page 567 How to move key windows
☞ Page 568 How to create a user-created key window

How to display key windows

The key window appears when you touch an object such as numerical input and text input, which requires data input.
The key window type is automatically determined according to the input area display format.
☞ Page 558 Specifications of the standard key window
☞ Page 563 Specifications of the user-created key window
You can change the type of the key window to be displayed for each project or screen.
Create multiple key windows and set an appropriate key window for each screen.



For the settings of the key window displayed for each project, refer to the following.
☞ Page 570 [Key Window]
For the settings of the key window displayed for each screen, refer to the following.
☞ Page 313 Changing screen property

Precautions

To input a value using key windows, a cursor must be displayed at the input target object.
When a key window is displayed, if the cursor is not displayed at the input target object, the following do not appear in the displayed key window.

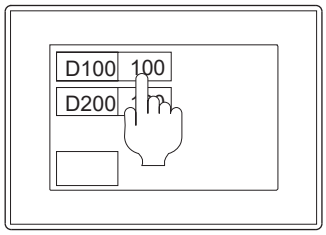
- Values that have been input
- Input range
- Previous value

In addition, even if the operating condition which has been satisfied changes while a key window is displayed, the key window being displayed is not switched to another key window.
Even if the operating conditions for all the input objects become unsatisfied, the key window remains displayed.

How to operate key windows

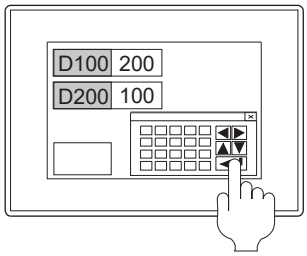
The following shows the basic operations.

1. Touch an object to which data is to be input.

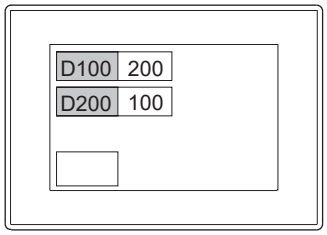


2. When the key window appears, input a numerical value or character string.

Then, touch the [Enter] button to write the numerical value or character string to the device.



3. The input data is applied to the object and the key window closes.

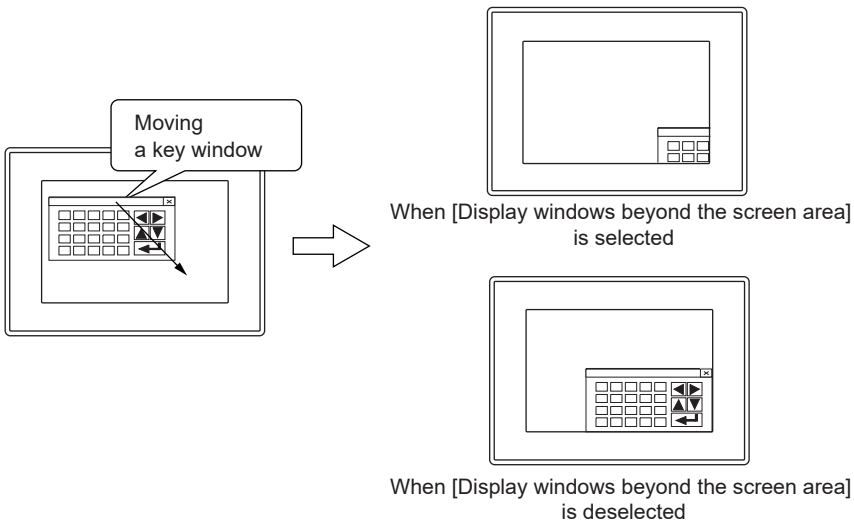


Displaying a key window off-screen

To display a key window off the GOT screen, select [Display windows beyond the screen area] in the [Screen Switching/Window] dialog.

The key window can be displayed off the right side or the bottom of the screen.

☞ Page 542 [Screen Switching/Window]



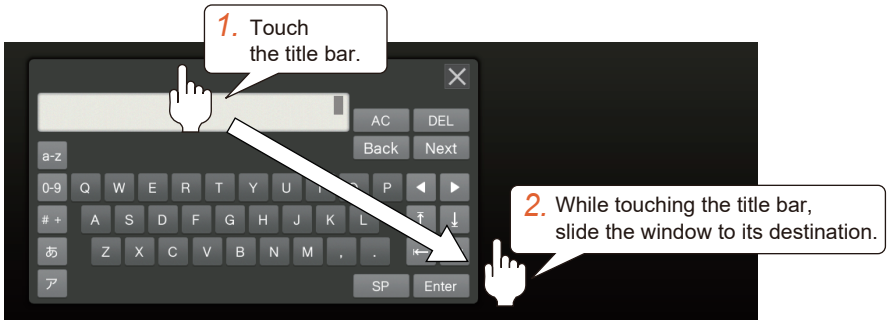
How to move key windows

■Moving the window with touch operations

Touch the title bar of a key window, and then touch the position to move the window to within three seconds.

■Moving the window with a slide operation

While touching the title bar of a key window, slide the window to its destination.



PART 5

How to create a user-created key window

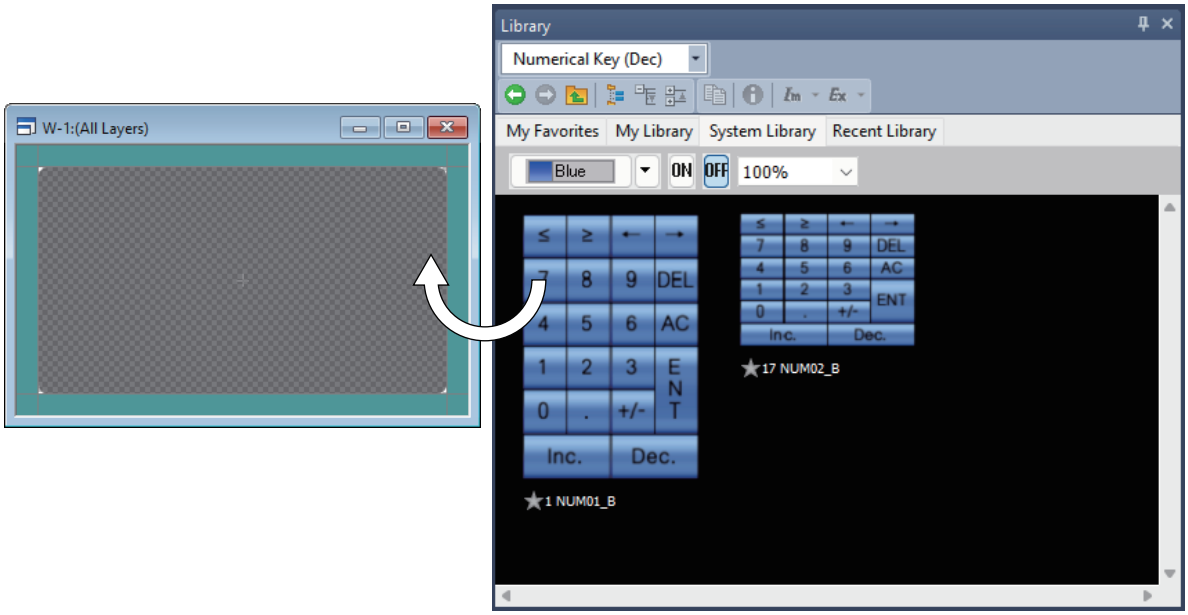
■Outline procedure of creation

1. Select [Screen] → [New] → [Window Screen] from the menu to create a window screen.

☞ Page 265 Creating a window screen

2. According to the application of the key window, place key code switches to which key codes are set, key window objects, and other objects and figures.

You can create a key window easily by using the buttons for numerical input and text input which are registered in the library.



Various types of touch switches are registered in the library.

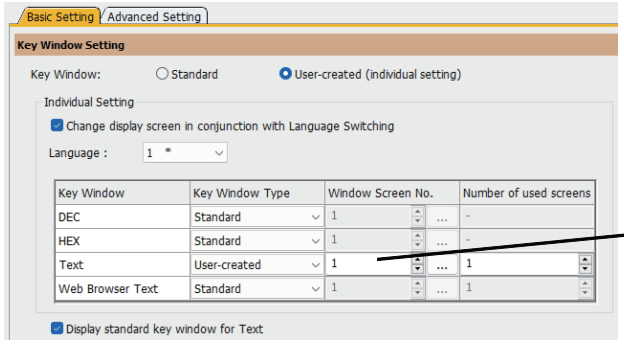
For information on how to use the library, refer to the following.

☞ Page 1067 How to use the library

3. Configure the setting to use the created window screen as a key window.

As appropriate, set also how to display the key window and the action of the cursor.

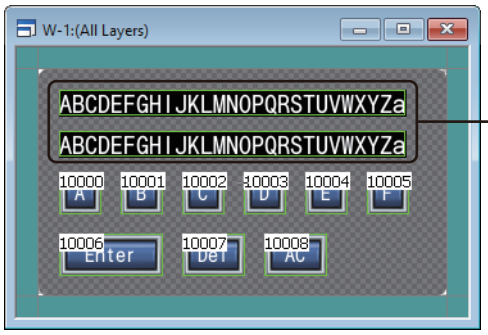
☞ Page 570 [Key Window]



Select a window screen used as a key window.

4. To display the input value and input range, configure the settings such as the display format and display position.

☞ Page 1887 Placing an object to display the input information



Configure the settings such as the display position and the number of displayed digits for the input value.

5. Check the display image on GT Designer3.

☞ Page 336 Displaying a preview

■Buzzer setting

You can set whether to sound the buzzer when moving the window on GT Designer3 or in the GOT utility.

For the setting in GT Designer3, refer to the following.

☞ Page 626 Setting targets in [Operation Setting/Utility Call Key]

For the setting on the GOT utility, refer to the following.

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10.4.5 [Key Window]

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In [Key Window], set how to display the key window for each project.

Select [Common] → [GOT Environmental Setting] → [Key Window] from the menu to display this window.

☞ Page 570 [Basic] tab

☞ Page 572 [Advanced Setting] tab

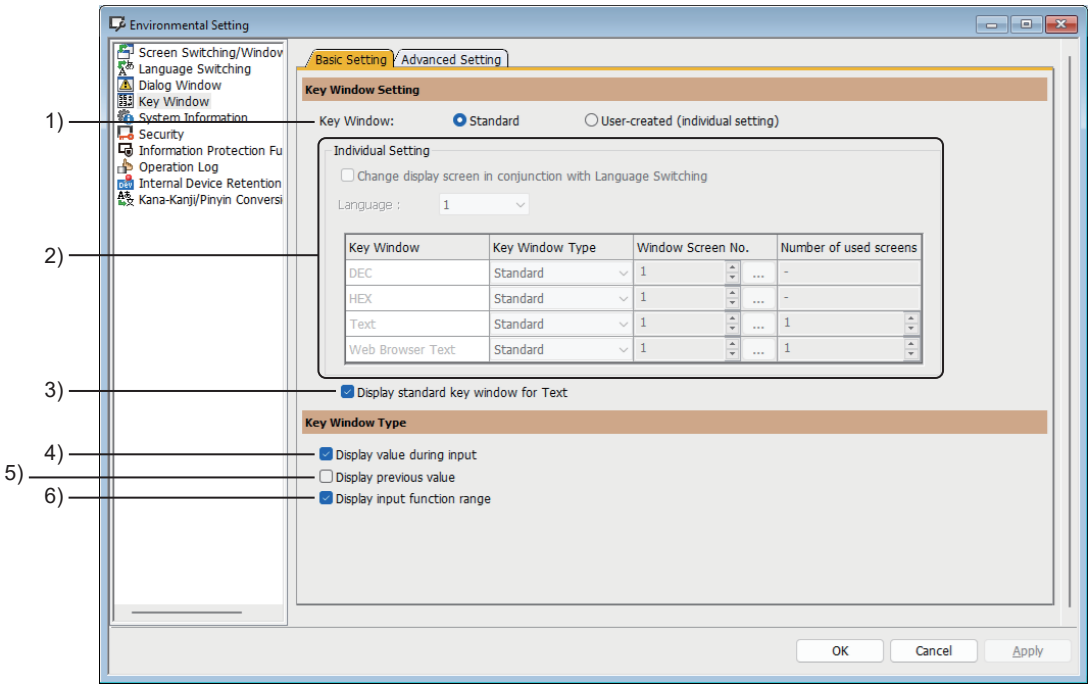
For information on how to display the key window for each screen, refer to the following.

☞ Page 313 Base screen properties

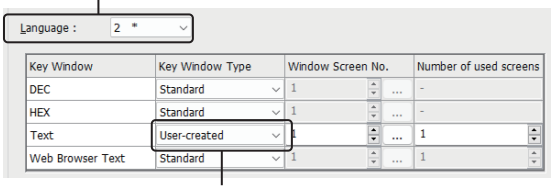
☞ Page 323 Window screen properties

[Basic] tab

GT37 SoftGOT3000



Item		Description
1)	[Key Window]	Select the type of a key window to be used. If you select [User-created (individual setting)], set a key window to be used for each input target (decimal, hexadecimal, character string, and Web browser character string) in [Individual Setting].

Item			Description
2)	[Individual Setting]	—	Set the key window to be used for each input target. This item is enabled when [User-created (individual setting)] is selected in [Key Window Setting].
		[Change display screen in conjunction with Language Switching]	Enable the settings for switching the key windows to be displayed in conjunction with the value (1 to 30) of the language switching device. For the language switching device, refer to the following. ☞ Page 546 Setting for switching the language displayed on the GOT ([Language Switching]) For each of the values (1 to 30) of [Language], set a key window to be used. Select a value in [Language], and set a key window to be used for each input target (decimal, hexadecimal, character string, and Web browser character string). If you change the default value, [*] is added to the selected value. For each value of the language switching device, you can set a key window to be used. If you select [User-created] in [Key Window Type], [*] is added to the value of the selected range. Example) If you select [2] in [Language] and change the key window type from the default [*] is added to the value.  The default setting has been changed.
		[Key Window]	The use of each key window [Web Browser Text] is not displayed in GT SoftGOT3000.
		[Key Window Type]	Select the type of key windows according to their uses. If you select [User-created], select the window screen to be used as a user-created key window in [Window Screen No.].
		[Window Screen No.]	Set the number of the window screen to be displayed as a user-created key window. The setting range is [1] to [32767]. Click the [...] button to display the [Screen Image List] dialog. You can check the image on the screen when selecting a window screen. ☞ Page 3683 [Image List] dialog (screen)
		[Number of used screens]	This item is settable for [Text] and [Web Browser Text] only. Set the number of key windows used for text input. With the window screen set in [Window Screen No.] as the first on the list, window screens are used for the set number as key windows. To switch key windows, arrange key code switches to which the following operations are set. • [Switch window screens for ASCII (to the next)] • [Switch window screens for ASCII (to the previous)] • [Switch window screens for ASCII (screen no. specification)] ☞ Page 1251 [Key Code Switch] dialog
3)	[Display standard key window for Text]		Set whether to display or hide the standard key window for character string. Clear this checkbox if the standard key window for character string is not necessary because character strings are input from the key code switch on the screen.
4)	[Display value during input]		Displays the value being input in the key window. To display the value in the user-created key window, arrange the input value area setting on the window screen. ☞ Page 1887 Placing an object to display the input information
5)	[Display previous value]		Displays the previous value in the key window. To display the previous value in the user-created key window, arrange the previous value area setting on the window screen. ☞ Page 1887 Placing an object to display the input information
6)	[Display input function range]		Displays the valid input range in the key window. To display the valid input range in the user-created key window, arrange the input range area setting on the window screen. ☞ Page 1887 Placing an object to display the input information

[Advanced Setting] tab

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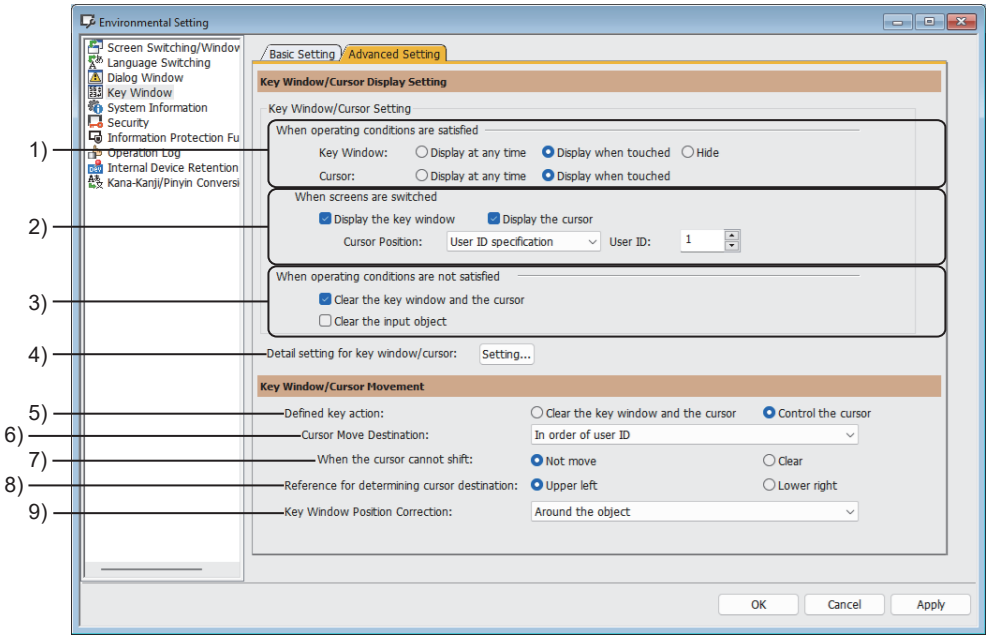
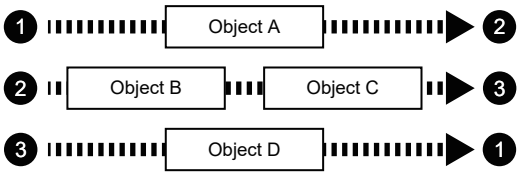
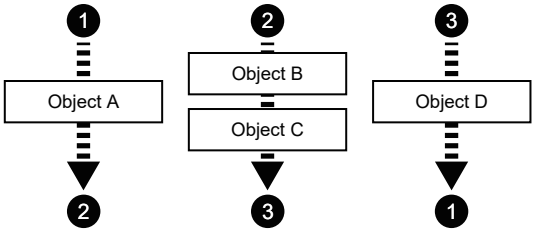
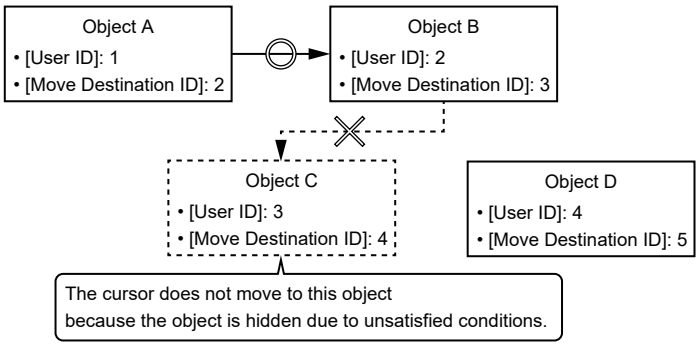
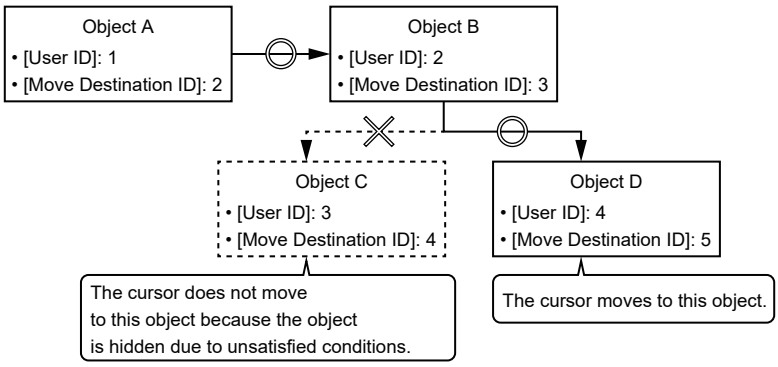


Item			Description
1)	[When operating conditions are satisfied]	—	Configure the display settings of the key window and cursor for when the operating conditions of the objects for input are satisfied.
		[Key Window]	Configure the display settings of the key window for when the operating conditions of the objects for input are satisfied.
		[Cursor]	Configure the display settings of the cursor for when the operating conditions of the object for input are satisfied.
2)	[When screens are switched]	—	Configure the display settings of the key window and cursor to switch screens for when the operating conditions of the object for input are satisfied.
		[Display the key window]	Displays a key window when the screen is switched.
		[Display the cursor]	Displays a cursor when the screen is switched. Set the position to display the cursor in [Cursor Position].
		[Cursor Position]	Select the position to display the cursor when the screen is switched.
		[User ID]	Sets the user ID of the object on which the cursor is displayed. The setting range is [1] to [65535].
3)	[When operating conditions are not satisfied]	—	Configure the display settings of the key window and cursor for when the operating conditions of the objects for input are not satisfied.
		[Clear the key window and the cursor]	Deletes the key window and cursor when the operating conditions of the objects for input are not satisfied.
		[Clear the input object]	Deletes the key window, the cursor, and the objects for input when the operating conditions of the objects for input are not satisfied.
4)	[Detail setting for key window/cursor]		Click the [Setting] button to display the [Display Detail Setting] dialog. ☞ Page 574 [Display Detail Setting] dialog
5)	[Defined key action]		Select the action of the key window and cursor when the enter key is touched.

Item			Description
6)	[Cursor Move Destination]	—	Select a position to move the cursor. The following shows selectable items.
		[Same operation as the right arrow key]	Moves the cursor using the specified coordinate point of the active object as a reference. Specify the reference coordinates with [Reference for determining cursor destination]. The cursor moves as shown below. 
		[Same operation as the down arrow key]	Moves the cursor using the specified coordinate point of the active object as a reference. Specify the reference coordinates with [Reference for determining cursor destination]. The cursor moves as shown below. 
		[In order of user ID]	Moves the cursor to the object that has the same user ID number as the move destination ID number of the active object. If the destination object is hidden due to unsatisfied conditions, the cursor does not move. To control the cursor movement, set [User ID] and [Move Destination ID] of the relevant objects. 
		[Subsequently valid user ID]	Moves the cursor to the object that has the same user ID number as the move destination ID number of the active object. If the destination object is hidden due to unsatisfied conditions, the cursor moves to the object specified with [Move Destination ID] of the hidden destination object. To control the cursor movement, set [User ID] and [Move Destination ID] of the relevant objects. 
		[Not move]	Does not move the cursor even after the entry is confirmed.
7)	[When the cursor cannot shift]		This item is displayed when [Cursor Move Destination] is set to [In order of user ID] or [Subsequently valid user ID]. Select how the cursor moves when no destination object exists.
8)	[Reference for determining cursor destination]		Select the standard to determine a position to move the cursor.

Item		Description
9)	[Key Window Position Correction]	Select an action of the key window when it overlaps the input target object. When [To the four corners of the screen] is selected, the key window is displayed in one of the four corners so that it will not overlap the input target object. If the key window inevitably overlaps the input target object, it is displayed in the lower right of the screen.

■[Display Detail Setting] dialog

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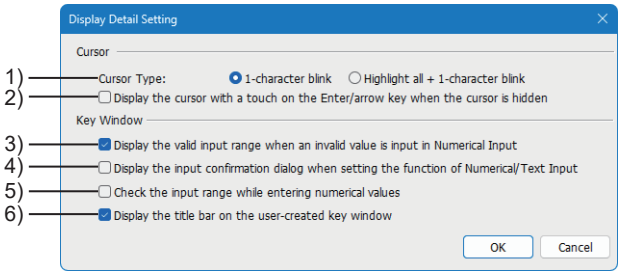

Item		Description
1)	[Cursor Type]	Select the action of the cursor to be displayed on the input area.
2)	[Display the cursor with a touch on the Enter/arrow key when the cursor is hidden]	Displays the cursor when the enter key or an arrow key is touched while the cursor is hidden.
3)	[Display the valid input range when an invalid value is input in Numerical Input]	Displays the dialog indicating the valid input range when an invalid value is input in numerical input.
4)	[Display the input confirmation dialog when setting the function of Numerical/Text Input]	Displays the confirmation dialog when numerical values or text are input.
5)	[Check the input range while entering numerical values]	This item is enabled only when an input range is set. The error message is displayed when a value out of the setting range is being entered. ☞ Page 1334 [Input case] tab
6)	[Display the title bar on the user-created key window]	Displays the title bar of a user-created key window. If the checkbox is cleared, you cannot close the key window with the [×] button because the button is hidden. Configure one of the following settings to close the key window. • Place a key code switch for which [key Code Type] is set to [Numerical/Text Input] and [Action] is set to [Cancel]. • Select [Clear the key window and the cursor] for [Defined key action] in the [Environmental Setting] window ([Advanced Setting] tab).

10.4.6 Relevant settings

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Set the relevant settings other than the specific settings for the key window as required.

The following shows the functions that are available by configuring the relevant settings.

☞ Page 575 GOT environmental settings (System information)

☞ Page 575 GOT internal devices

GOT environmental settings (System information)

Select [Common] → [GOT Environmental Setting] → [System Information] from the menu to display the [Environmental Setting] window.

☞ Page 576 Setting a device which controls the GOT operations or notifies the GOT status ([System Information])

Function	Setting item
Disabling touch operations and inputs from external devices (System signal 1-1.b9)	[System Signal 1-1]
Notifying whether a key code is entered from an input object (touch switch, numerical input, or text input) (System signal 2-1.b3)	[System Signal 2-1]
Notifying that the input is determined (System signal 2-1.b4)	[System Signal 2-1]
Notifying that a key window is displayed (System signal 2-1.b11)	[System Signal 2-1]
Notifying the user ID of the numerical input to which an input is confirmed	[Numeric Value Input Number]
Notifying the key code which is set for the touched key	[Key Code Input]
Notifying the value before the change (32 bits)	[Previous Numeric Value Input(32bit)]
Notifying the fixed input value (32 bits)	[Current Numeric Value Input(32bit)]

GOT internal devices

☞ Page 3581 GOT special register (GS)

Function	Setting item
Displaying the dialog for confirming the input contents when an input is fixed for numerical input and text input	GS450.b0
Displaying the dialog for notifying that an input value is outside the range when the value is input for numerical input	GS450.b1
Forcibly closing a key window when the input condition (the trigger condition or security level for the object) is not satisfied during numerical value or text input	GS450.b5
Displaying the binary key window when the display format of the numerical input is binary	GS450.b6
Displaying the octal key window when the display format of the numerical input is octal	GS450.b7

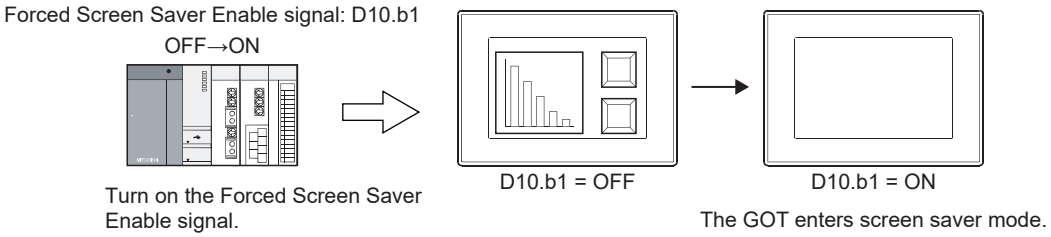
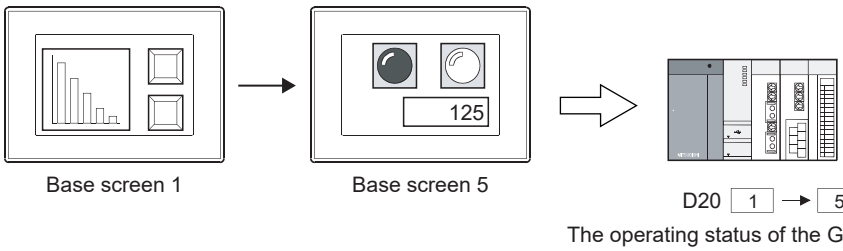
10.5 Setting a device which controls the GOT operations or notifies the GOT status ([System Information])

GT37 SoftGOT3000

☞ Page 577 Specifications of the system information (read device)
☞ Page 580 Specifications of the system information (write device)
☞ Page 589 How to use the system information
☞ Page 594 [System Information]
☞ Page 597 Relevant settings

By setting devices that store the system information, you can control the GOT operations (closing a screen, disabling key input) from a controller and notify the GOT status to a controller.

The two types of devices that store system information are shown below.

Type	Description
Read device	This device controls the GOT operations by writing values from a controller to the read device for controlling the GOT operations. The read device is monitored at the monitoring cycle of the GOT. The read device value needs to be held for the interval of GOT monitoring cycle or longer. Example) Turning the GOT to screen saver mode forcibly by a controller • System signal 1-1: D10 
Write device	By writing a value to the write device for notifying the GOT status, the GOT notifies the GOT status itself to a controller. The write device is updated when the GOT operation status has changed. Example) Notifying the base screen number currently displayed on the GOT to a controller • On-screen base screen number: D20 

Precautions

■Writing data to the system information device (write device)

Do not write data to a device set as a write device for the system information.

Depending on the operation on the GOT and the GOT internal status, the value of a write device may be overwritten with data retained in the GOT.

10.5.1 Specifications of the system information (read device)

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The system information is stored in devices assigned to each system information.

☞ Page 577 System signal 1-1
☞ Page 579 System signal 1-2
☞ Page 579 External I/O function, output information

System signal 1-1

This signal controls the GOT from a controller.

The following shows the control details of each bit.

Bit	Signal name	Description	Model
b0	Automatic Screen Saver Disable signal	Turning on this signal disables the screen saver function.	GT37 SoftGOT3000
b1	Forced Screen Saver Enable signal	Turning on this signal forcibly turns the GOT into screen saver mode. Turning off this signal displays the screen again.	
b2	Forced Screen Saver Touch-Cancel signal	Turning on this signal cancels the screen saver when the screen is touched even during forced screen saving. The operation condition of the Forced Screen Saver Enable signal (System signal 1-1.b1) varies according to on or off of this signal. • ON: Operates at the rising. • OFF: Operates during on.	
b3	Key Code Read Complete signal	Turning on this signal notifies that the reading of input key code has completed to the GOT. Turning on this signal turns off the Key Input signal (System signal 2-1.b3). ☞ Page 581 System signal 2-1	
b4	Numeric Value Input Read Complete signal	Turning on this signal notifies the GOT that reading the input value of a numerical input object has completed. Turning on this signal turns off the Numeric Value Input signal (System signal 2-1.b4), and 0 is stored in the numerical value input number. For details, refer to the following. ☞ Page 590 Checking the confirmation timing of numerical input To use this signal for text input, configure either of the following settings. • Selecting [Output object ID of Text Input to the system information device] in the [Environmental Setting] window ([System Information]) ☞ Page 594 [System Information] • Turning on GS450.b2 ☞ Page 3640 Monitor Common Control (GS450)	
b5	Barcode Input Disable signal (CH8)	Turning on this signal disables the barcode function for channel No. 8.	GT37 SoftGOT3000
b6	External Device I/O Complete signal (CH8)	Turning on this signal notifies the GOT that reading data from the device, which the barcode or the RFID input data is stored in, is completed. Turning on this signal turns off the External Device Input signal (CH8) (System signal 2-1.b6). ☞ Page 581 System signal 2-1	GT37 SoftGOT3000
b7	—	Use prohibited	—
b8	Buzzer Three-shot Output signal	Turning on this signal sounds the buzzer three times. Set the buzzer length in the utility. The buzzer is sounded even when [Buzzer] is set to [None] in the [GOT Setup] window ([Operation Setting/Utility Call Key]). ☞ Page 618 [Display Setting/Language Setting]	GT37 SoftGOT3000
b9	Disable Touch Operation signal	Turning on this signal disables touch operations and inputs from external devices.	
b10 to b12	—	Use prohibited	—

Bit	Signal name	Description	Model
b13	GOT Error Reset signal	Turning on this signal processes the followings. • Storing 0 to the GOT error code (Write device) ☞ Page 585 GOT error code • Turning off the GOT Error Detection signal (System signal 2-1.b13) ☞ Page 581 System signal 2-1 • Clearing system alarm messages	GT37 SoftGOT3000
b14	Buzzer Output signal	While turning on this signal, the buzzer is sounded. The buzzer is sounded even when [Buzzer] is set to [None] in the [GOT Setup] window ([Operation Setting/Utility Call Key]).	
b15	Buzzer One-shot Output signal	Turning on this signal sounds the buzzer once. Set the buzzer length in the utility. The buzzer is sounded even when [Buzzer] is set to [None] in the [GOT Setup] window ([Operation Setting/Utility Call Key]).	

■Screen control of the screen in the screen saver mode

The following shows the priority of the screen save status control.

Priority	System information and function	System information condition	Screen saving status
High ↕ Low	Forced Screen Saver Touch-Cancel signal (System signal 1-1.b2)	ON	Screen saver disabled
	Forced Screen Saver Enable signal (System signal 1-1.b1)	ON	Screen saver enabled
	Automatic Screen Saver Disable signal (System signal 1-1.b0)	ON	Screen saver disabled
	Screen saver function by the utility setting	—	Screen saver enabled
	Displaying user-created screens or the utility screen	—	Screen saver disabled

■Relationship between the screen saver function and the Disable Touch Operation signal

The following shows the relationship between the screen saver function and the Disable Touch Operation signal.

Forced Screen Saver Touch-Cancel signal (System signal 1-1.b2)	Forced Screen Saver Enable signal (System signal 1-1.b1)	Disable Touch Operation signal (System signal 1-1.b9)	Screen saver function by the utility setting	Screen status
ON	ON	ON	ON, OFF	The GOT enters screen saver mode. Touching the screen cancels the screen saver mode. The screen does not respond to a touch operation even after the screen saver mode has been canceled.
		OFF		The GOT enters screen saver mode. Touching the screen cancels the screen saver mode. The screen responds to a touch operation after the screen saver mode has been canceled.
OFF		ON, OFF		The GOT enters screen saver mode. Touching the screen does not cancel the screen saver mode.
	OFF	ON		The GOT does not enter screen saver mode. The screen does not respond to a touch operation.
		OFF	ON	The GOT enters screen saver mode. Touching the screen cancels the screen saver mode. The screen responds to a touch operation after the screen saver mode has been canceled.
			OFF	The GOT does not enter screen saver mode. The screen responds to a touch operation.

System signal 1-2

This signal controls the GOT from a controller.

The following shows the control details of each bit.

Bit	Signal name	Description	Model
b0	File Access Error Reset signal	Turning on this signal resets all the File Access Error signals (System signals 2-2.b7 to b9 and extended drive information.b2, b5, and b8) in the drive A, B, E, F, and G. While this signal is on, the File Access Error Reset signal does not turn on. ☞ Page 583 System signal 2-2 ☞ Page 585 Extended drive information	GT37 SoftGOT3000
b1	RFID Request signal (CH8)	By turning on this signal, the GOT requests to read the data with channel No. 8.	
b2	Barcode Input Disable signal (CH5)	Turning on this signal disables the barcode function for channel No. 5.	
b3	External Device I/O Complete signal (CH5)	Turning on this signal turns off the External Device Input signal (CH5) (System signal 2-3.b0). ☞ Page 584 System signal 2-3	
b4	RFID Request signal (CH5)	By turning on this signal, the GOT requests to read the data with channel No. 5.	GT37 SoftGOT3000
b5	Barcode Input Disable signal (CH6)	Turning on this signal disables the barcode function for channel No. 6.	
b6	External Device I/O Complete signal (CH6)	Turning on this signal turns off the External Device Input signal (CH6) (System signal 2-3.b1). ☞ Page 584 System signal 2-3	
b7	RFID Request signal (CH6)	By turning on this signal, the GOT requests to read the data with channel No. 6.	
b8	Barcode Input Disable signal (CH7)	Turning on this signal disables the barcode function for channel No. 7.	
b9	External Device I/O Complete signal (CH7)	Turning on this signal turns off the External Device Input signal (CH7) (System signal 2-3.b2). ☞ Page 584 System signal 2-3	
b10	RFID Request signal (CH7)	By turning on this signal, the GOT requests to read the data with channel No. 7.	
b11	Enable Serial RFID Control During External Authentication signal	When this bit is turned on, the operator authentication data read by an RFID controller (serial connection) can be saved into devices.	GT37 SoftGOT3000
b12 to b15	—	Use prohibited	—

External I/O function, output information

Use the external I/O function for the external output.

The following shows the control details of each bit.

Bit	Signal name	Description	Model
b0 to b15	Output signal Y0 to YF	Write the information for outputting to the external device, such as a lamp or relay. These signals are enabled only when an external I/O unit (extension unit) is used.	GT37 SoftGOT3000

10.5.2 Specifications of the system information (write device)

GT37 SoftGOT3000

The system information is stored in devices assigned to each system information.

☞ Page 581 System signal 2-1
☞ Page 583 System signal 2-2
☞ Page 584 System signal 2-3
☞ Page 584 Numeric value input number
☞ Page 585 Previous numeric value input (32 bits)
☞ Page 585 Current numeric value input (32 bits)
☞ Page 585 GOT error code
☞ Page 585 GOT error code 2
☞ Page 585 Extended drive information
☞ Page 585 Drive Empty Capacity Information
☞ Page 586 On-screen base screen number
☞ Page 586 On-screen window 1 to 5 screen number
☞ Page 586 Current cursor display object ID
☞ Page 586 Previous cursor display object ID
☞ Page 587 Current cursor display user ID
☞ Page 587 Previous cursor display user ID
☞ Page 587 Key code input
☞ Page 587 External I/O function, input information 1
☞ Page 588 External I/O function, input information 2
☞ Page 588 Previous numeric value input (64 bits)
☞ Page 588 Current numeric value input (64 bits)

System signal 2-1

This signal notifies various notifications from the GOT to a controller or the user.

The following shows the notification details of each bit.

Bit	Signal name	Description	Model
b0	Screen Saving signal	Turns on while the GOT is in screen saver mode.	GT37 SoftGOT3000
b1	GOT Ready signal	Shows the GOT status when the GOT is powered on. • ON: Normal • OFF: Abnormal If this signal does not turn on by resetting the GOT, the hardware error may occur in the GOT. Consult your local Mitsubishi service center or representative.	
b2	—	Use prohibited	—
b3	Key Input signal	Shows whether a key code is entered from an input object (touch switch, numerical input, or text input). • ON: The key is input. • OFF: The key is not input. This signal turns off when the Key Code Read Complete signal (System signal 1-1.b3) turns on. ☞ Page 577 System signal 1-1	GT37 SoftGOT3000
b4	Numeric Value Input signal	Turns on when a value is input to the numerical input and the value is confirmed. Turning on the Numeric Value Input Read Complete signal (System signal 1-1.b4) turns off this signal. ☞ Page 577 System signal 1-1 This signal does not function when a value is input to the numerical input for which a user ID is not set. To use this signal for text input, configure either of the following settings. • Selecting [Output object ID of Text Input to the system information device] in the [Environmental Setting] window ([System Information]) ☞ Page 594 [System Information] • Turning on GS450.b2 ☞ Page 3640 Monitor Common Control (GS450)	
b5	Human Sensor Detection signal	Available for GT3712-X and GT3715-X. Turns on when the human sensor detects human motion. This signal turns on for approx. 60 seconds after GOT startup due to the sensor's characteristic.	GT37 SoftGOT3000
b6	External Device Input signal (CH8)	Available when channel No. 8 is used for the barcode function. Turns on when the data read by the barcode reader is stored in the specified device.	GT37 SoftGOT3000
		Available when channel No. 8 is used for the RFID function. Turns on when the data read by the RFID reader/writer is stored in the specified device when the dedicated protocol is used. Turns on when the data transfer to the RFID controller is completed when the nonprocedural protocol is used. Turns off when the External Device I/O Complete signal (CH8) (System signal 1-1.b6) turns on.	GT37 SoftGOT3000
b7	Hard Copy Output signal	Turns on during output by the hard copy function.	GT37 SoftGOT3000
b8 to b9	—	Use prohibited	—
b10	Recipe Processing signal	Turns on during recipe process (Write/Read operation).	GT37 SoftGOT3000
b11	Key Window Output signal	Turns on while the key window is displayed.	
b12	Hardcopy Sub-signal	Enabled when [Delete the file with the smallest number and create another file when the capacity of the destination is exceeded] is selected in the [Hard Copy] dialog. ☞ Page 2559 [Hard Copy] dialog Turns on when the number of screen data files (file number) stored in a data storage by using the hard copy function is 9900 to 9999.	GT37 SoftGOT3000

Bit	Signal name	Description	Model
b13	GOT Error Detection signal	Turns on when an error occurs in the GOT. When this signal is turned on, check the GOT error code and eliminate the cause. After eliminating the cause, turn on the GOT Error Reset signal (System signal 1-1.b13). ☞ Page 577 System signal 1-1 ☞ Page 585 GOT error code ☞ Page 585 GOT error code 2	GT37 SoftGOT3000
b14	Numeric Value Error Detection signal	Turns on when a value exceeding the input range is stored in the write destination device of the numerical input. (This signal is checked when screens are switched.) When no input range formula is preset to the numerical input, detection is not performed.	
b15	—	Use prohibited	—

System signal 2-2

This signal notifies various notifications from the GOT to a controller or the user.

The following shows the notification details of each bit.

Bit	Signal name	Description	Model
b0	Drive A File Accessing signal	Turns on while a file in the drive A is open or while a folder or file is operated.	GT37 SoftGOT3000
b1	Drive B File Accessing signal	Turns on while a file in drive B is open or a folder or file in drive B is manipulated.	
b2	Drive C File Accessing signal	Turns on while a file in drive C is open or a folder or file in drive C is manipulated.	
b3	—	Use prohibited	—
b4	Drive A Full signal	Turns on when the free space of drive A is less than 1 kilobyte.	GT37 SoftGOT3000
b5	Drive B Full signal	Turns on when the free space of drive B is less than 1 kilobyte.	
b6	—	Use prohibited	—
b7	Drive A File Access Error signal	Turns on when an error occurs while a file in drive A is being accessed.	GT37 SoftGOT3000
b8	Drive B File Access Error signal	Turns on when an error occurs while a file in drive B is being accessed.	
b9 to b10	—	Use prohibited	—
b11	Cursor Displaying signal	Turns on during displaying the numerical input or text input cursor.	GT37 SoftGOT3000
b12	Built-in Battery Voltage Drop signal	Turns on when a voltage drop of the GOT built-in battery is detected. If a power failure occurs after this bit turns on, the clock data is held within the data retention period. Replace the battery immediately.	GT37 SoftGOT3000
b13	—	Use prohibited	—
b14	Liquid Crystal Backlight Brightness Decrease/Failure Detection signal	Turns on when a decrease in brightness or a failure of the liquid crystal backlight is detected.	GT37 SoftGOT3000
b15	—	Use prohibited	—

System signal 2-3

This signal notifies various notifications from the GOT to a controller or the user.

The following shows the notification details of each bit.

Bit	Signal name	Description	Model
b0	External Device Input signal (CH5)	Available when channel No. 5 is used for the barcode function. Turns on when the data read by the barcode reader is stored in the specified device.	GT37 SoftGOT3000
		Available when channel No. 5 is used for the RFID function. Turns on when the data read by the RFID reader/writer is stored in the specified device when the dedicated protocol is used. Turns on when the data transfer to the RFID controller is completed when the nonprocedural protocol is used. Turns off when the External Device I/O Complete signal (CH6) (System signal 1-2.b3) turns on. ☞ Page 579 System signal 1-2	
b1	External Device Input signal (CH6)	Available when channel No. 6 is used for the barcode function. Turns on when the data read by the barcode reader is stored in the specified device.	GT37 SoftGOT3000
		Available when channel No. 6 is used for the RFID function. Turns on when the data read by the RFID reader/writer is stored in the specified device when the dedicated protocol is used. Turns on when the data transfer to the RFID controller is completed when the nonprocedural protocol is used. Turns off when the External Device I/O Complete signal (CH6) (System signal 1-2.b6) turns on. ☞ Page 579 System signal 1-2	
b2	External Device Input signal (CH7)	Available when channel No. 7 is used for the barcode function. Turns on when the data read by the barcode reader is stored in the specified device.	
		Available when channel No. 7 is used for the RFID function. Turns on when the data read by the RFID reader/writer is stored in the specified device when the dedicated protocol is used. Turns on when the data transfer to the RFID controller is completed when the nonprocedural protocol is used. Turns off when the External Device I/O Complete signal (CH7) (System signal 1-2.b9) turns on. ☞ Page 579 System signal 1-2	
b3 to b15	—	Use prohibited	—

Numeric value input number

This signal stores the user ID number of a numerical input object when a value input to the object is confirmed.

To clear the stored user ID, turn on the Numeric Value Input Read Complete signal (System signal 1-1.b4).

For details, refer to the following.

☞ Page 590 Checking the confirmation timing of numerical input

To use this signal for text input, configure either of the following settings.

- Selecting [Output object ID of Text Input to the system information device] in the [Environmental Setting] window ([System Information])

☞ Page 594 [System Information]

- Turning on GS450.b2

☞ Page 3640 Monitor Common Control (GS450)

Previous numeric value input (32 bits)

When a value is input in the numerical input, the value before the change (32 bits) is stored.
When the data type of the numerical input is 64 bits, the value of the lower 32 bits is stored.
Only the numerical input to which the user ID is set is effective.

Current numeric value input (32 bits)

The input value (32 bits) determined in the numerical input.
When the data type of the numerical input is 64 bits, the value of the lower 32 bits is stored.
Only the numerical input to which the user ID is set is effective.

GOT error code

The error code of errors occurred in the GOT is stored.
For details on errors, refer to the following.
GOT3000 Series User's Manual (Utility & Maintenance Functions)

GOT error code 2

The classification code of errors occurred in the GOT is stored.
The upper 8 bits store ASCII code G (identification code indicating a GOT error).
The lower 8 bits store values indicating a classification code.

Ex.
For the GOT error (G01) related to the communication and controllers, 4701h is stored.
For details on errors, refer to the following.
GOT3000 Series User's Manual (Utility & Maintenance Functions)

Extended drive information

This signal notifies the usage status of the extended drive information.
The following shows the notification details of each bit.

Bit	Signal name	Description
b0	Drive E File Accessing signal	Turns on while a folder or a file in drive E is manipulated.
b1	Drive E Full signal	Turns on when the free space of drive E is less than 1 kilobyte.
b2	Drive E File Access Error signal	Turns on when an error occurs while a file in drive E is being accessed.
b3	Drive F File Accessing signal	Turns on while a folder or a file in drive F is manipulated.
b4	Drive F Full signal	Turns on when the free space of drive F is less than 1 kilobyte.
b5	Drive F File Access Error signal	Turns on when an error occurs while a file in drive F is being accessed.
b6	Drive G File Accessing signal	Turns on while a folder or a file in drive G is manipulated.
b7	Drive G Full signal	Turns on when the free space of drive G is less than 1 kilobyte.
b8	Drive G File Access Error signal	Turns on when an error occurs while a file in drive G is being accessed.
b9 to b15	—	Use prohibited

Drive Empty Capacity Information

The free space information of each drive is stored.
The value is stored in two word devices.
The unit of the stored value can be specified by using the Unit of Drive Free Space device (GS466).
☞ Page 3645 Unit of Drive Free Space (GS466)
For the available drives by GOT model, refer to the following.
☞ Page 81 Drive configuration and capacity of the GOT

On-screen base screen number

The base screen number being displayed is stored.

The following shows the screen number to be stored.

Display status	Base screen No. 0	Data type of the screen switching device	
		BIN	BCD
Displaying other than user-created screens (such as the utility)	Not existent	-1	Stores the number of the user-created base screen previously displayed.
	Existent	-2	
Screen switching	Not existent	0*1	0*1
	Existent	-1*1	9999*1*2
Displaying base screen	Not existent	1 to 32767	1 to 9999
	Existent	0 to 32767	0 to 9999

*1 When you select [Retain the screen number of on-screen] in the [Environmental Setting] window, the screen number of the screen displayed before the screen switching is stored.
☞ Page 594 [System Information]

*2 If the base screen number is also 9999, the GOT cannot distinguish base screen No. 9999 from the device value (9999) during screen switching.

On-screen window 1 to 5 screen number

The screen number of the window screen being displayed as an overlap window 1 to 5 is stored.

The following shows the screen number to be stored.

Display status	Data type of the screen switching device	
	BIN	BCD
Not displayed or during screen switching	When you select [Retain the screen number of on-screen] in the [Environmental Setting] window, the screen number of the screen displayed before the screen switching is stored. ☞ Page 594 [System Information] For other than the above, the value set to [Screen No. of the window screen to be hidden] in the [Environmental Setting] window is stored. ☞ Page 542 [Screen Switching/Window]	
Displaying base screen	0 to 32767	1 to 9999

Current cursor display object ID

The object ID of the object on which the numerical input or text input is currently displayed is stored.

By setting any of the followings, 0 is stored.

- No object that requires the cursor is displayed on the displayed screen.
- A cursor is not displayed when the screen is switched.

To store 0 when the cursor is deleted, set either of the following.

- Selecting [Clear the cursor information when deleting the cursor] in the [Environmental Setting] window ([System Information])

☞ Page 594 [System Information]

- Turning on GS450.b3

☞ Page 3640 Monitor Common Control (GS450)

Previous cursor display object ID

The object ID of the object on which the numerical input or text input is previously displayed is stored.

By setting any of the followings, 0 is stored.

- No object that requires the cursor is displayed on the displayed screen.
- A cursor is not displayed when the screen is switched.

To store 0 when the cursor is deleted, set either of the following.

- Selecting [Clear the cursor information when deleting the cursor] in the [Environmental Setting] window ([System Information])

☞ Page 594 [System Information]

- Turning on GS450.b3

☞ Page 3640 Monitor Common Control (GS450)

Current cursor display user ID

This signal stores the user ID number of a numerical input object with the cursor being displayed.

To use this signal for text input, configure either of the following settings.

- Selecting [Output object ID of Text Input to the system information device] in the [Environmental Setting] window ([System Information])
- Turning on GS450.b2

The user ID of the object on which the numerical input or text input is currently displayed is stored.

To store 0 when the cursor is deleted, set either of the following.

- Selecting [Clear the cursor information when deleting the cursor] in the [Environmental Setting] window ([System Information])

☞ Page 594 [System Information]

- Turning on GS450.b3

☞ Page 3640 Monitor Common Control (GS450)

Previous cursor display user ID

This signal stores the user ID number of a numerical input object with the cursor displayed previously.

To use this signal for text input, configure either of the following settings.

- Selecting [Output object ID of Text Input to the system information device] in the [Environmental Setting] window ([System Information])
- Turning on GS450.b2

The user ID of the object on which the numerical input or text input is previously displayed is stored.

To store 0 when the cursor is deleted, set either of the following.

- Selecting [Clear the cursor information when deleting the cursor] in the [Environmental Setting] window ([System Information])

☞ Page 594 [System Information]

- Turning on GS450.b3

☞ Page 3640 Monitor Common Control (GS450)

Key code input

When inputting values with the input key (touch switch, numerical input, or text input), the specified key code is stored.

When a key code is stored, the Key Input signal (System signal 2-1.b3) is turned on.

☞ Page 581 System signal 2-1

External I/O function, input information 1

Use the external I/O function for the external input.

The following shows the notification details of each bit.

Bit	Signal name	Description	Model
b0 to b7	Input signal X0 to X7	Input data is written. An external input can take up to three seconds to write data. For avoiding the delay time, use GOT internal devices (GB10 to GB25, GB30 to GB37, GB50 to GB57). ☞ Page 3577 GOT bit register (GB)	GT37 SoftGOT3000
b8	Power supply signal	Turns on when the power is not supplied to an external I/O device.	
b9 to b15	—	Use prohibited	—

External I/O function, input information 2

Use the external I/O function for the external input.

The following shows the notification details of each bit.

Bit	Signal name	Description	Model
b0 to b7	Input signal X8 to XF	Input data is written. An external input can take up to three seconds to write data. For avoiding the delay time, use GOT internal devices (GB10 to GB25, GB30 to GB37, GB50 to GB57). ☞ Page 3577 GOT bit register (GB)	GT37 SoftGOT3000
b8 to b15	—	Use prohibited	—

Previous numeric value input (64 bits)

When a value is input in the numerical input, the value before the change (64 bits) is stored.

Only the numerical input to which the user ID is set is effective.

Current numeric value input (64 bits)

The input value (64 bits) confirmed with the numerical input is stored.

Only the numerical input to which the user ID is set is effective.

10.5.3 How to use the system information

GT37 SoftGOT3000

Use the system information by assigning word devices to each signal.

Setting the read device and write device is required.

For information on how to set the devices, refer to the following.

☞ Page 594 [System Information]

The following shows application examples of the system information.

☞ Page 589 Checking the errors occurred in the GOT
☞ Page 590 Checking the entered key code
☞ Page 590 Checking the confirmation timing of numerical input
☞ Page 591 Checking the cursor display position
☞ Page 591 Deleting the user ID and object ID stored when the cursor is deleted
☞ Page 592 Controlling the screen

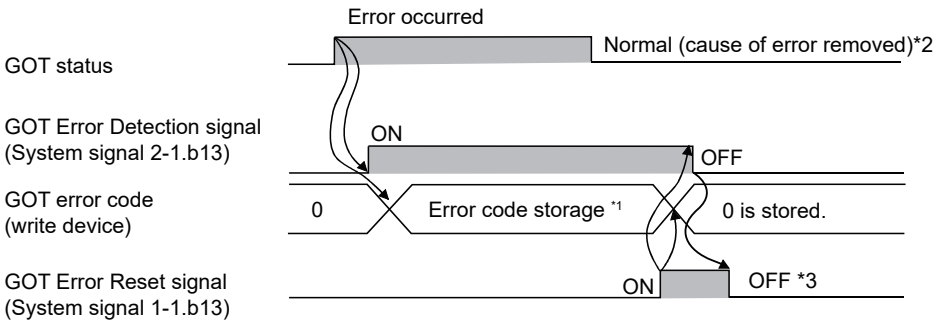
Checking the errors occurred in the GOT

The error codes of errors occurred in the GOT can be confirmed.

The error codes ranging from 300 to 699 are displayed.

For details on the error codes, refer to the following.

GOT3000 Series User's Manual (Utility & Maintenance Functions)



*1 When multiple errors occur simultaneously, the latest error code is stored.

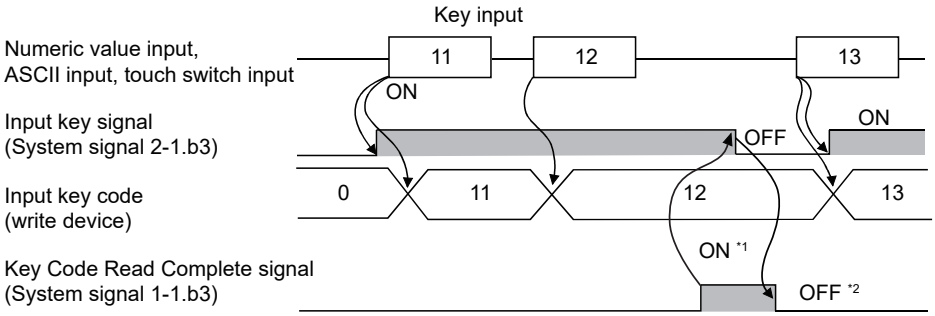
*2 The GOT error code (write device) is not cleared automatically even if the error cause is removed.
Clear the error code by using the GOT Error Reset signal (System signal 1-1.b13).

*3 Check that the GOT Error Detection signal (System signal 2-1.b13) turns off, then turn off the GOT Error Reset signal (System signal 1-1.b13).
If the GOT Error Reset signal (System signal 1-1.b13) remains on, the GOT error code (write device) is reset in the next error occurrence.

PART 5

Checking the entered key code

The entered key code can be checked by input key (touch switch, numerical input, or text input).

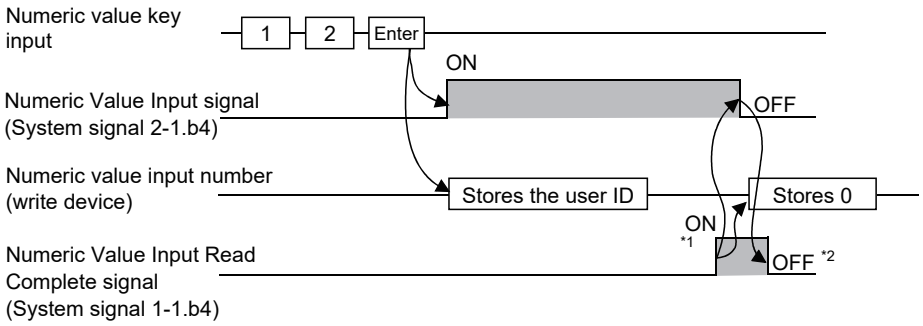


*1 When key entry is completed, the stored key code is held.
When the Key Code Read Complete signal (System signal 1-1.b3) turns on, the Input Key signal (System signal 2-1.b3) turns off.

*2 Check that the Input Key signal (System signal 2-1.b3) turns off, then turn off the Key Code Read Complete signal (System signal 1-1.b3).
If the Key Code Read Complete signal (System signal 1-1.b3) remains on, the stored key code is reset at the next key input.

Checking the confirmation timing of numerical input

The timing for which the input value was determined with the numerical input function can be checked with the user ID written in the numerical input number.



*1 After the numeric value input determination, the stored user ID is held.
The Numeric Value Input signal is cleared when the Numeric Value Input Read Complete signal (System signal 1-1.b4) turns on.

*2 Check that the Numeric Value Input signal (write device) turns off, then turn off the Numeric Value Input Read Complete signal (System signal 1-1.b4).
If the Numeric Value Input Read Complete signal (System signal 1-1.b4) remains on, the user ID cannot be stored or the Numeric Value Input signal cannot be turned on at the next value input and determination.

Checking the cursor display position

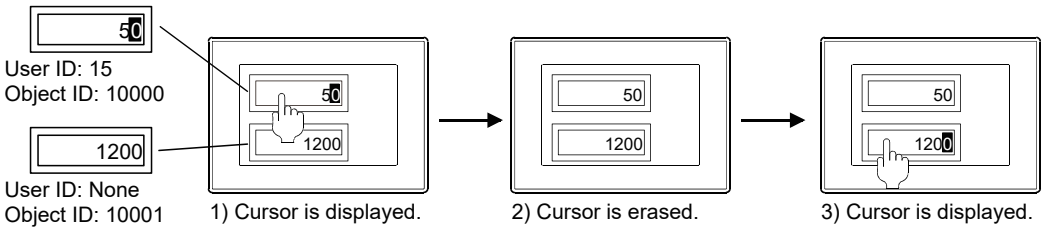
The cursor display position can be checked by writing the information of the object (numerical input and text input) in which a cursor is displayed to the device.

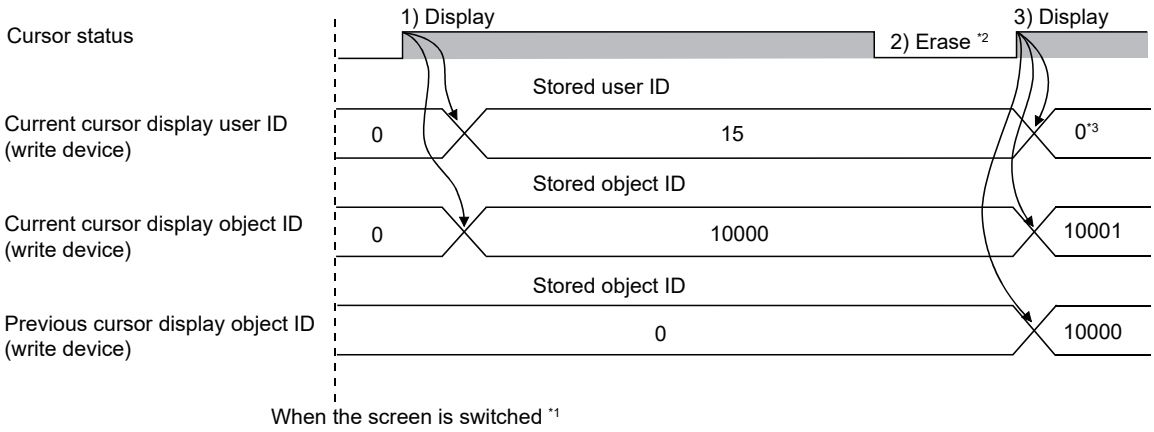
The following shows the object information to be written.

Information	Description
User ID	Set any ID for an object. Set the user ID in the setting dialog of each object.
Object ID	The ID is set automatically when an object is set with GT Designer3.

Ex.

Operation example when the cursor is displayed





*1 If a cursor is not displayed when the screen is switched, 0 is stored.

*2 The stored user ID and object ID are held even when a cursor is erased.

*3 If a cursor is displayed at the object (numeric input, text input) for which a user ID is not set, the cursor position numeric value input is 0.

*4 The current cursor display user ID and previous cursor display user ID operate with the text input when the GOT internal device GS450.b2 turns on.

Deleting the user ID and object ID stored when the cursor is deleted

To store 0 when the cursor is deleted, set either of the following.

- Selecting [Clear the cursor information when deleting the cursor] in the [Environmental Setting] window ([System Information])

☞ Page 594 [System Information]

- Turning on GS450.b3

☞ Page 3640 Monitor Common Control (GS450)

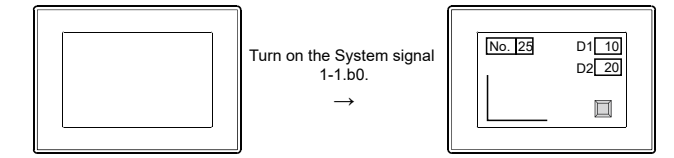
Controlling the screen

☞ Page 592 Disabling the screen saver function
☞ Page 592 Erasing the screen
☞ Page 593 Display control by human sensor
☞ Page 593 Canceling the screen saver mode only when human movement is detected

■Disabling the screen saver function

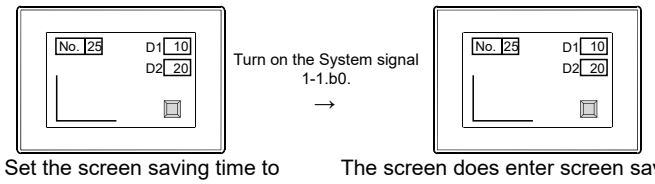
The screen saver function, which is set with the GOT utility, is designed to turn off the screen display if the GOT is not touched within a specified time. This function prevents the screen performance from deteriorating over its operable life.
By turning on the Automatic Screen Saver Disable signal in the system information, the system information function set with the utility (setup) can be disabled.

Ex.
Displaying the monitor screen erased by the automatic screen saver function



The screen is not displayed. The screens is displayed.

Ex.
Preventing the screen saver function from starting after the set time elapses



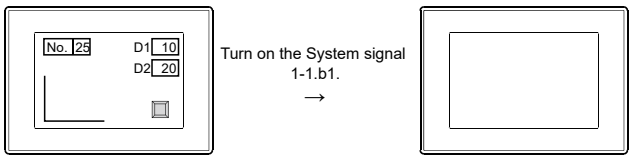
Set the screen saving time to 30 minutes.

The screen does enter screen saver mode after 30 minutes.
(The set time is disabled, and the screen remains displayed.)

■Erasing the screen

By turning on the Forced Screen Saver Enable signal, the monitor screen can be erased.
While this bit is on, the monitor screen is not displayed even when the GOT screen is touched.

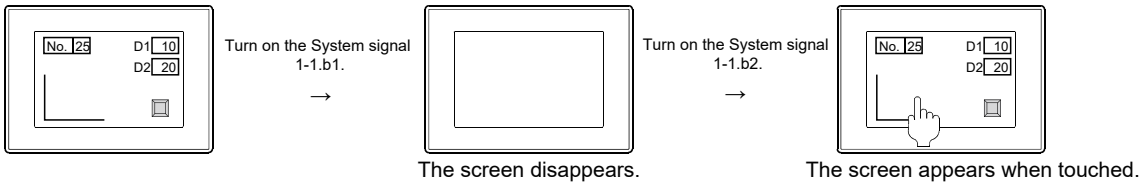
Ex.
Erasing the displayed monitor screen



The screen disappears.

In addition, the monitor screen can be displayed by turning on the Forced Screen Saver Touch-Cancel signal and touching the screen to cancel the forced screen saver function started with the Forced Screen Saver Enable signal.

Ex.
Displaying the monitor screen that is forcibly erased



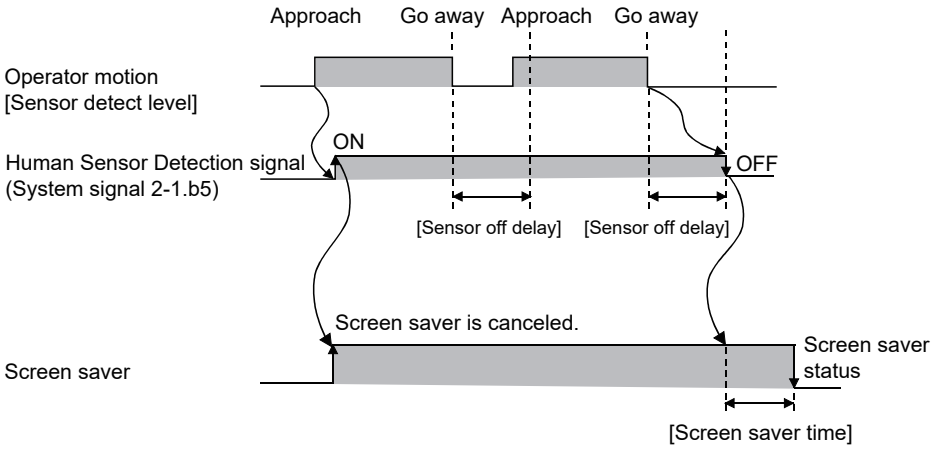
The screen disappears. The screen appears when touched.

■Display control by human sensor

Available for GT3712-X and GT3715-X.

The human sensor is a function that cancels the screen saver mode without touching the GOT.

When an operator approaches the GOT, the screen saver mode can be canceled.



When there is no operator motion around the GOT for the time set in [Sensor off delay], the Human Sensor Detection signal (System signal 2-1.b5) turns off.

When the time set in [Screen save time] elapses after the Human Sensor Detection signal turns off, the GOT enters screen saver mode.

Configure the human sensor settings (including [Motion Sensor Sensitivity] and [Sensor off delay]) in the GOT utility.

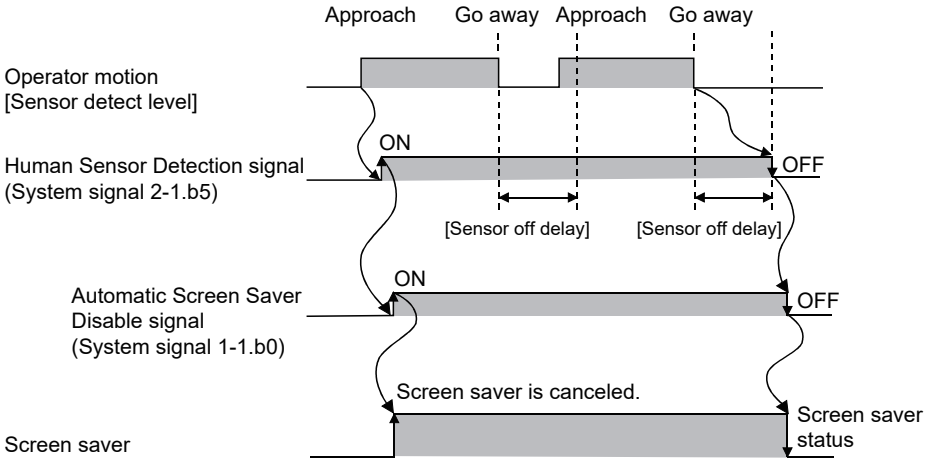
For details on the utility settings, refer to the following manual.

GOT3000 Series User's Manual (Utility & Maintenance Functions)

■Canceling the screen saver mode only when human movement is detected

Available for GT3712-X and GT3715-X.

The screen saver mode can be canceled only when a human movement is detected by disabling cancellation by touch or externally.



To control the screen saver mode, use a sequence program to link the Human Sensor Detection signal with the Automatic Screen Saver Disable signal.

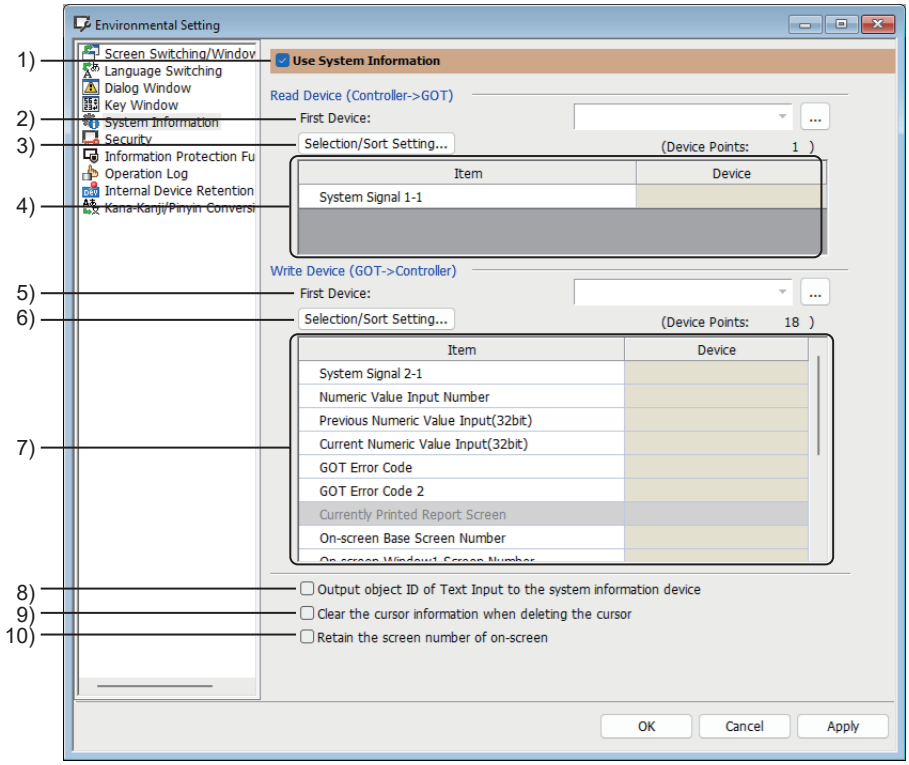
With this setting, the GOT enters screen saver mode after the human sensor OFF delay time elapses, regardless of the screen saving time.

10.5.4 [System Information]

GT37 SoftGOT3000

With [System Information], set the validity for each system information.

Select [Common] → [GOT Environmental Setting] → [System Information] from the menu to display this window.



Item		Description
1)	[Use System Information]	Select this item to enable the system information.
2)	[First Device] (Read)	Set a read device where the system information (read) is stored. A word device can be set. Up to contiguous 3 points of devices from the set device are used for the read device.
3)	[Selection/Sort Setting] button	Displays the [Selection/Sort Setting] dialog. Set the system information and order of the read device to be enabled. ☞ Page 596 [Selection/Sort Setting] dialog
4)	Selected item list (read device)	Displays the enabled system information and the read device assigned to each system information in a list.
5)	[First Device] (Write)	Set a write device where the system information (write) is stored. A word device can be set. Up to contiguous 39 points of devices from the set device are used for the write device.
6)	[Selection/Sort Setting] button	Displays the [Selection/Sort Setting] dialog. Set the system information and order of the write device to be enabled. ☞ Page 596 [Selection/Sort Setting] dialog
7)	Selected item list (write device)	Displays the enabled system information and the write device assigned to each system information in a list.
8)	[Output object ID of Text Input to the system information device]	Outputs the object ID number of a text input object to the following system information devices when data is input to the object. • Numeric Value Input Read Complete signal (System signal 1-1.b4) • Numeric Value Input signal (System signal 2-1.b4) • Numeric value input number • Current cursor display user ID • Previous cursor display user ID
9)	[Clear the cursor information when deleting the cursor]	Stores 0 in the following devices when the cursor is deleted. • Current cursor display object ID • Previous cursor display object ID • Current cursor display user ID • Previous cursor display user ID

Item		Description
10)	[Retain the screen number of on-screen]	Holds the following device values while the screens are switched. (0 is not stored.) • On-screen base screen number • On-screen window 1 screen number • On-screen window 2 screen number • On-screen window 3 screen number • On-screen window 4 screen number • On-screen window 5 screen number

Precautions

■Using a special register of the PLC

Do not use a special register of the PLC as a read device or write device of the system information.

The special register is an internal register whose specification is defined in the PLC.

If the special register is used, the PLC or the GOT may not operate correctly.

■When using global labels for the system information (write device)

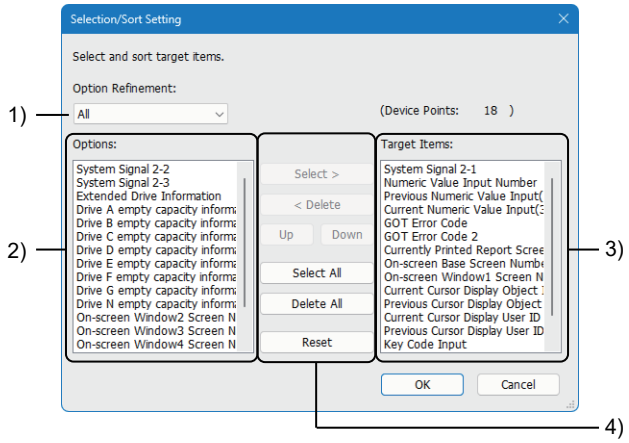
When using global labels for the system information (write device), set the array-type global labels.

If a primitive data type global label is set, system alarm 315 occurs.

[Selection/Sort Setting] dialog

GT37 SoftGOT3000

In the [Selection/Sort Setting] dialog, set items to be enabled and the order of devices.
Display this window from the [Environmental Setting] window ([System Information]).



Item			Description
1)	[Option Refinement]		Narrows down the items displayed in [Options]. This item is displayed only when a write device is set.
2)	[Options]		Items to be disabled with the system information are displayed in a list. Click the buttons on the window to move the item to [Target Items].
3)	[Target Items]		Items to be enabled with the system information are displayed in a list. Contiguous devices are assigned to the items in the list from the top. By clicking the buttons on the window, items can be moved to [Options] or the order of the display can be changed.
4)	Operation buttons	[Select] button	Selects, deletes, or changes the order of the display. Moves an item selected in [Options] to [Target Items].
		[Delete] button	Moves an item selected in [Target Items] to [Options].
		[Up] button	Moves up an item selected in the target items.
		[Down] button	Moves down an item selected in the target items.
		[Select All] button	Moves all items displayed in [Options] to [Target Items].
		[Delete All] button	Moves all items displayed in [Target Items] to [Options]. However, the System signal 1-1 (read device) and the System signal 2-1 (write device) are not moved.
		[Reset] button	Resets [Options] and [Target Items] to the initial status.

10.5.5 Relevant settings

GT37 SoftGOT3000

Set the relevant settings other than the specific settings for the system information as required.
The following shows the functions that are available by configuring the relevant settings.

GOT internal device

☞ Page 3581 GOT special register (GS)

Function	Setting item
Specifying the unit of the drive free space	GS466

PART 5

10.6 Restricting GOT operations and data transfers ([Security])

GT37 SoftGOT3000

For the functions to be set in the [Environmental Setting] window ([Security]), refer to the following.

☞ Page 3038 Restricting display and operation on the GOT (Screen security)
☞ Page 3057 Configuring the security settings for operations in the utility (Functional operation security)
☞ Page 3062 Configuring the security setting for transferring data (Data transfer security)

10.7 Protecting files and communication data ([Information Protection Function])

GT37 SoftGOT3000

For the functions to be set in the [Environmental Setting] window ([Information Protection Function]), refer to the following.

☞ Page 3065 Protecting the files in the GOT (Information protection function)
☞ Page 3069 Encrypting communication data (Encrypted communication function)

PART 5

10.8 Configuring the settings for creating the GOT operation history ([Operation Log])

GT37 SoftGOT3000

For the functions to be set in the [Environmental Setting] window ([Operation Log]), refer to the following.

☞ Page 1909 Configuring the settings for collecting the GOT operation history ([Operation Log])

10.9 Configuring the settings for retaining GOT internal device data at power failure ([Internal Device Retention])

GT37 SoftGOT3000

☞ Page 601 Specifications of the internal device retention
☞ Page 602 How to use the internal device retention function
☞ Page 603 [Internal Device Retention]

The GOT internal device values are saved to the built-in memory (nonvolatile RAM) of the GOT.

The GOT retains the device values monitored before power-off of the GOT, and monitors the retained values again upon power-on of the GOT.

For the specifications of the nonvolatile RAM, refer to the following.

☞ Page 3679 Specifications and operations of the nonvolatile RAM user area

GT SoftGOT3000 saves device values when GT SoftGOT3000 exits.

10.9.1 Specifications of the internal device retention

GT37 SoftGOT3000

Devices used for the internal device retention

The following shows the devices used for the internal device retention and device range.

Device	Range
GOT bit register (GB)	GB64 to GB65535
GOT data register (GD)	GD0 to GD65535

PART 5

10.9.2 How to use the internal device retention function

GT37 SoftGOT3000

How to set the internal device retention function

Configure the settings to enable the internal device retention function according to the following procedure.

Operating procedure

1. Select [Common] → [GOT Environmental Setting] → [Internal Device Retention] from the menu to display the [Environmental Setting] window ([Internal Device Retention]).

☞ Page 603 [Internal Device Retention]

2. Specify the start device of consecutive devices and the number of devices for saving their data to the built-in memory (nonvolatile RAM), and click the [OK] button.
3. Write package data to the GOT.

For the communication method with the GOT, refer to the following.

☞ Page 408 Transferring data to the GOT

For GT SoftGOT3000, the timing for saving device values is settable.

GT SoftGOT3000 User's Manual

Deleting the device values in the built-in memory (nonvolatile RAM)

The device values saved in the built-in memory (nonvolatile RAM) will be deleted in the following cases.

- The project is written with [Initialize nonvolatile RAM user area at the time of writing project] selected in the [Write Option] dialog.
- The built-in memory (nonvolatile RAM) is initialized using [NVRAM management] of the utility.
- Any setting in the [Environmental Setting] window ([Internal Device Retention]) is changed, and then the project data is written to the GOT.
- Project data having a different project ID is written to the GOT.

For settings to delete the device values in the built-in memory (nonvolatile RAM) in GT SoftGOT3000, refer to the following.

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10.9.3 [Internal Device Retention]

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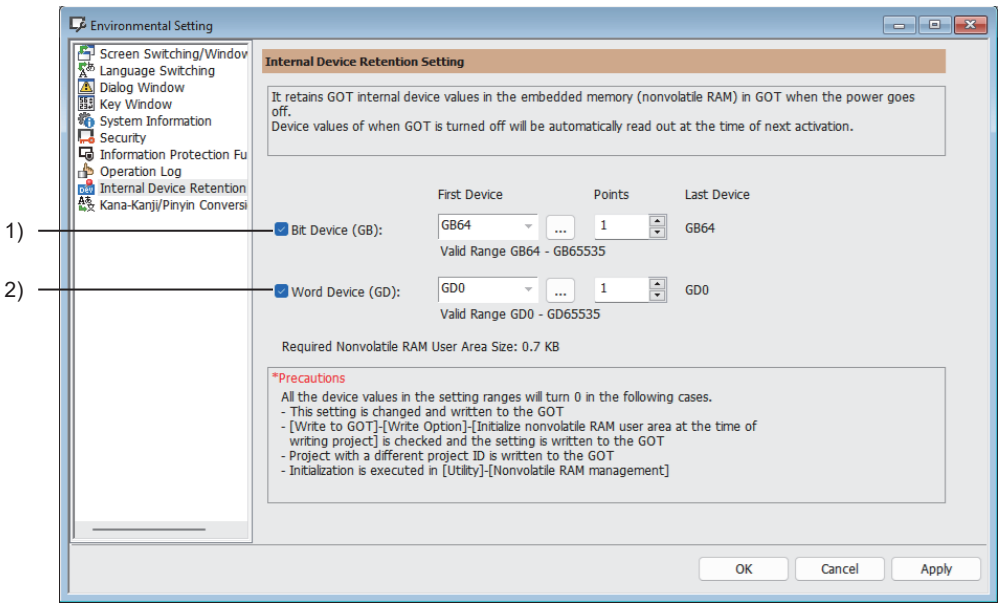
Set the ranges of devices to save their data to the built-in memory (nonvolatile RAM) in [Internal Device Retention].
To display the following window, select [Common] → [GOT Environmental Setting] → [Internal Device Retention] from the menu.



Item			Description
1)	[Bit Device (GB)]	—	Saves the values of GOT bit registers (GB) to the built-in memory (nonvolatile RAM).
		[First Device]	Specify the start device of GOT bit registers (GB).
		[Points]	Specify the number of GOT bit registers (GB).
2)	[Word Device (GD)]	—	Saves the values of GOT data registers (GD) to the built-in memory (nonvolatile RAM).
		[First Device]	Specify the start device of GOT data registers (GD).
		[Points]	Specify the number of GOT data registers (GD).

PART 5

10.10 Configuring the settings for converting a text into kanji or Simplified Chinese characters in the GOT ([Kana-Kanji/Pinyin Conversion])

GT37 SoftGOT3000

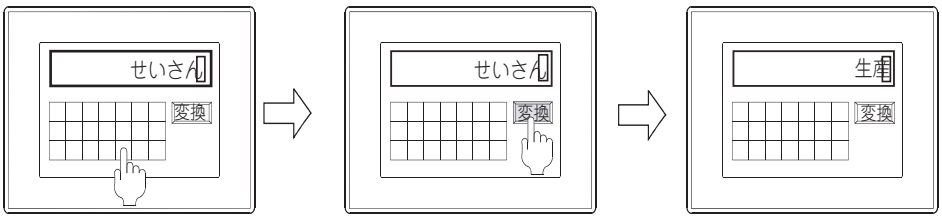
☞ Page 605 Specifications of Kana-Kanji/Pinyin conversion
☞ Page 609 Settings required for Kana-Kanji/Pinyin conversion
☞ Page 610 [Kana-Kanji/Pinyin Conversion]
☞ Page 611 Relevant settings

A text entered with a text input object can be converted into kanji or Simplified Chinese characters.
The following shows the conversion methods.

- Kana-Kanji conversion: Hiragana to kanji
- Pinyin conversion: Pinyin (lowercase alphabetic characters) to Simplified Chinese

Use a touch switch for which key codes for Kana-Kanji/Pinyin conversion are set or a keyboard for Kana-Kanji/Pinyin conversion to convert a text.

Ex.
Converting hiragana characters into kanji characters



Input the hiragana characters by ASCII input.

Touch the [Conversion] switch.

The hiragana characters are converted into the kanji characters.

Precautions

When using Kana-Kanji conversion or Pinyin conversion, data entry to a text input object using a USB keyboard is not available.
Use the key window displayed on the GOT screen for input.

10.10.1 Specifications of Kana-Kanji/Pinyin conversion

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☞ Page 605 Conditions that enable Kana-Kanji conversion
☞ Page 605 Conditions that enable Pinyin conversion
☞ Page 606 Input mode
☞ Page 606 Conversion method
☞ Page 606 Number of characters that can be input and converted at once
☞ Page 606 Supported Kanji
☞ Page 607 Learning conversion results
☞ Page 607 Operation switch
☞ Page 608 Option selection window

PART 5

Conditions that enable Kana-Kanji conversion

Kana-Kanji conversion is enabled by text input that satisfies all the following conditions.

- Selecting [Kana-Kanji/Pinyin Conversion] in the [Extended] tab in the [Text Input] dialog
- Selecting [Kana-Kanji] for [Conversion Method] in [Kana-Kanji/Pinyin Conversion] in the [GOT Environmental Setting] dialog
- Setting the character code and system language

The following shows the combinations of character codes and system languages that are available for Kana-Kanji conversion.

Value in Text Code Format Control (GS456)*1	GOT system language	[Character Code] in the [Device/Style] tab in the [Text Input] dialog*2
0	Japanese	[System Language Link] [Unicode] [S-JIS]
1	• Japanese • English • Chinese (Simplified) • Chinese (Traditional) • Korean	

*1 It changes the character code used for text input.
☞ Page 3643 Text Code Format Control (GS456)

*2 When the character code other than [System Language Link], [Unicode], or [S-JIS] is set, Kana-Kanji conversion is enabled. However, the GOT cannot display the converted characters correctly.

Conditions that enable Pinyin conversion

Pinyin conversion is enabled by text input that satisfies all the following conditions.

- Selecting [Kana-Kanji/Pinyin Conversion] in the [Extended] tab in the [Text Input] dialog
- Selecting [Pinyin Simplified Characters] for [Conversion Method] in [Kana-Kanji/Pinyin Conversion] in the [GOT Environmental Setting] dialog
- Setting the character code and system language

The following shows the combinations of character codes and system languages that are available for Pinyin conversion.

Value in Text Code Format Control (GS456)*1	GOT system language	[Character Code] in the [Device/Style] tab in the [Text Input] dialog*2
0	Chinese (Simplified)	[System Language Link] [Unicode] [GB]
3	• Japanese • English • Chinese (Simplified) • Chinese (Traditional) • Korean	

*1 It changes the character code used for text input.
☞ Page 3643 Text Code Format Control (GS456)

*2 When the character code other than [System Language Link], [Unicode], or [GB] is set, Pinyin conversion is enabled. However, the GOT cannot display the converted characters correctly.

Input mode

Hiragana-input is supported.

Input texts on objects by using the touch switch (key code switch).

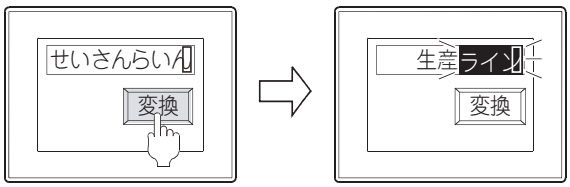
Conversion method

Consecutive phrases can be converted.

Characters are converted when the input characters match the dictionary data completely.

Ex.

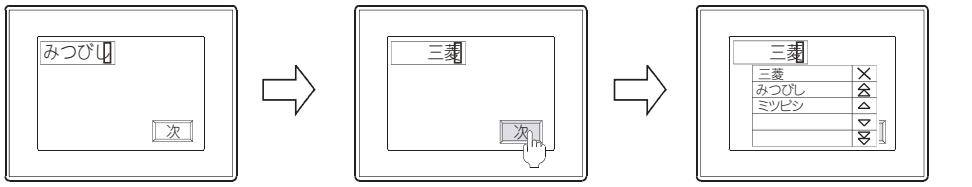
Example) Entering [せいさんらいん] and converting it using Kana-Kanji conversion



Touch the 変換 switch.

Convert "せいさん" and "らいん" separately.

For the first conversion attempt, a single option is displayed. If a second attempt is made, an option selection window appears, showing additional options.



When the Conversion switch is touched once, one conversion option is displayed.

When the switch is touched again, the option selection window is displayed.

Precautions

The four tones are not supported.

Uppercase alphabetic characters cannot be converted into Simplified Chinese characters.

Number of characters that can be input and converted at once

Up to 40 two-byte characters (80 bytes) can be input.

Up to 20 two-byte characters (40 bytes) can be converted.

Precautions

Do not exceed the number of input digits set in the text input.

Otherwise, determining the characters and writing to a device cannot be executed.

Supported Kanji

• Kana-Kanji conversion

Kanji characters classified in the JIS Level-1 and Level-2 Kanji sets are supported.

• Pinyin conversion

GB2312 Chinese characters are supported.

Learning conversion results

The GOT learns Kana-Kanji conversion results and Pinyin conversion results.

No setting is required for the GOT to learn conversion results.

The GOT holds the learning result until powered off or reset.

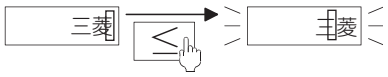
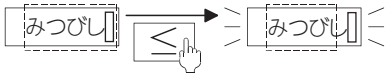
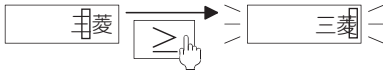
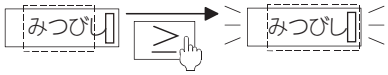
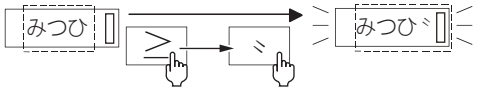
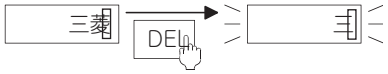
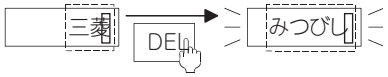
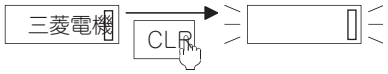
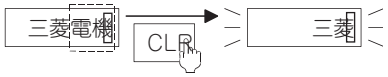
Up to 20 two-byte characters (40 bytes) can be learned.

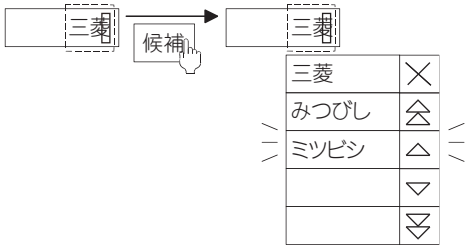
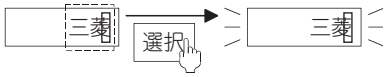
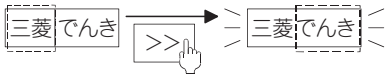
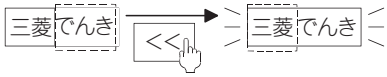
Up to 1000 words can be learned.

Operation switch

The touch switch used for Kana-Kanji/Pinyin conversion operates when key codes are assigned.

When creating a key window by the user, use the following key codes.

Item	Key code	Application and operation
Hiragana characters	Shift JIS code	Used for hiragana-input.
Cursor key (left)	0091h	Moves the cursor. • During input, the cursor is shifted left by one character.  • During conversion, the selected phrase is shortened. 
Cursor key (right)	0090h	Moves the cursor. • During input, the cursor is shifted right by one character.  • During conversion, the selected phrase is extended.  During conversion, touch this key and then enter a sonant mark or p-sound mark to input the mark as one character. 
[DEL] key	0008h	Deletes characters. • During input, the right-most character is deleted.  • During conversion, the conversion is undone. 
[CLR] key	0088h	Clears characters. • During input, all the characters are cleared.  • During conversion, only the characters being converted are cleared. 
Kanji/Simplified Chinese character conversion key	0084h	Converts characters. • During input, the characters are converted. • During conversion, the conversion is undone.

Item	Key code	Application and operation
Option key ([The former candidate] or [The next candidate])	0085h or 0086h	Displays the options. • When this key is touched first, the next option will be displayed. • When this key is touched again, the option selection window will be displayed. 
[>>] key	0087h	Selects the next phrase during conversion. • When a single phrase is converted, the input characters are determined.  • When consecutive phrases are converted, the next phrase is selected. 
[<<] key	0089h	Selects the previous phrase during conversion. • When a single phrase is converted, the conversion is undone. • When consecutive phrases are converted, the previous phrase is selected. 
[Enter] key	000Dh	Writes characters to the device. • During input and conversion, the displayed characters are determined. • After the conversion, the characters are input to the device.

Option selection window

The option selection window displays multiple conversion options in a list at the conversion.

The background color and the scroll button can be selected.

The background color can be selected from [White] or [Black].

The scroll button can be selected from [Page + Line Scroll] or [Page Scroll].

Background color: [White]

Scroll: [Page + Line Scroll]

Background color: [Black]

Scroll: [Page Scroll]

10.10.2 Settings required for Kana-Kanji/Pinyin conversion

GT37 SoftGOT3000

The following settings are required to use Kana-Kanji/Pinyin conversion.

☞ Page 609 Setting a key window
☞ Page 609 Setting an object

Setting a key window

Perform one of the following operations to set a key window.

• Using a key window for text (key window that supports Kana-Kanji/Pinyin conversion)

When GS467.b1 is on, the key window displayed at a touch of an text input object is switched to a key window that supports Kana-Kanji/Pinyin conversion.

Set a bit switch or other objects and turn on GS467.b1.

☞ Page 562 Key window for text (key window that supports Kana-Kanji/Pinyin conversion)

• Using a user-created key window

Create a key window for Kana-Kanji/Pinyin conversion.

KANA key and conversion keys registered in the library can be used.

☞ Page 563 Specifications of the user-created key window
☞ Page 1061 Using the data registered in the library

Use either of the following methods when using the option selection window as well.

• Setting by the project

Select [Common] → [GOT Environmental Setting] → [Kana-Kanji/Pinyin Conversion] from the menu to display the [Kana-Kanji/Pinyin Conversion] window, and select [Use the option selection window].

☞ Page 610 [Kana-Kanji/Pinyin Conversion]

• Setting by screen

Select [Screen] → [Screen Property] from the menu to display the setting dialog, and select [Use the option selection window] in the [Option Selection Window] tab.

☞ Page 313 Changing screen property

Setting an object

Configure the settings to enable Kana-Kanji/Pinyin conversion for a text input object placed on the screen.

☞ Page 1365 [Extended] tab

Setting a system application

Kana-Kanji/Pinyin conversion does not work if the system application (add-on function) for [Kana-Kanji/Pinyin conversion] is not installed on the GOT.

☞ Page 458 [Application Selection] dialog

10.10.3 [Kana-Kanji/Pinyin Conversion]

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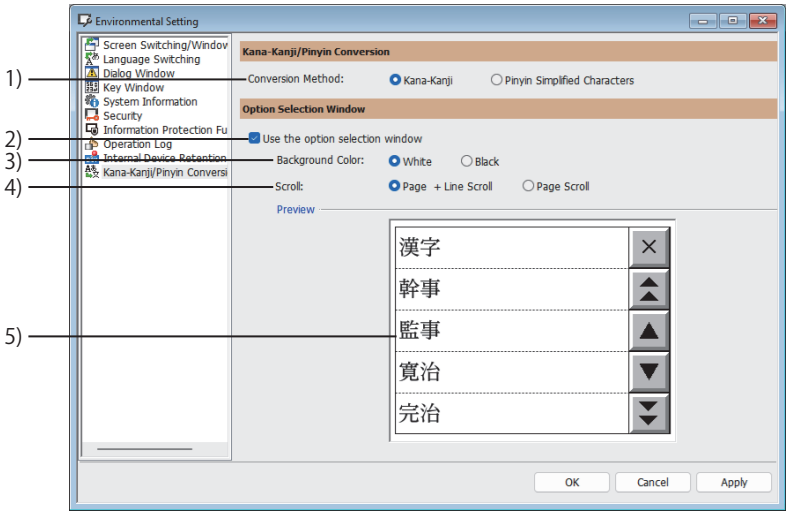
Set how to display the option selection window in [Kana-Kanji/Pinyin Conversion].

Select [Common] → [GOT Environmental Setting] → [Kana-Kanji/Pinyin Conversion] from the menu to display the window.



Item		Description
1)	[Conversion Method]	Select a conversion method.
2)	[Use the option selection window]	Select this item to display the option selection window at Kana-Kanji conversion or Pinyin conversion.
3)	[Background Color]	Select the background color of the option selection window.
4)	[Scroll]	Select the keys to be displayed on the option selection window. • [Page + Line Scroll]: Displays the keys for scrolling by page or by line. • [Page Scroll]: Displays the keys for scrolling by page.
5)	[Preview]	Displays the preview of the option selection window which the settings of [Background Color] and [Scroll] are reflected.

10.10.4 Relevant settings

GT37 SoftGOT3000

GOT internal device

Set the relevant settings other than the specific settings for the Kana-Kanji/Pinyin conversion as required.

The following shows the function that is available by configuring the relevant settings.

☞ Page 3581 GOT special register (GS)

Function	Setting item
Switching a key window for text input to a key window that supports Kana-Kanji conversion or Pinyin conversion	GS467.b1

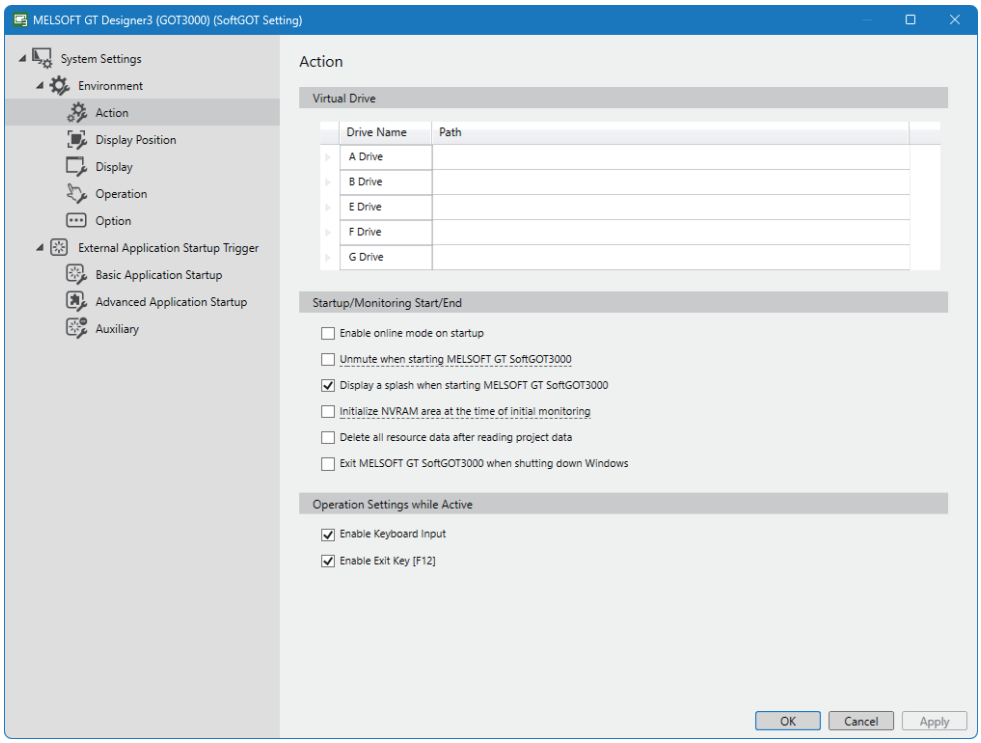
PART 5

11 Configuring the GT SoftGOT3000 settings ([SoftGOT Setting])

Configure the GT SoftGOT3000 settings in GT Designer3.
The settings are saved in the project (GT SoftGOT3000 execution file (*.GTYP)) and applied to the GT SoftGOT3000 module where the project is opened.

11.1 [MELSOFT GT Designer3 (GOT3000) (SoftGOT Setting)] dialog

Select [Common] → [SoftGOT Setting] from the menu to display this dialog.



The dialog can also be displayed from GT SoftGOT3000, but the dialog titles and displayed items may be different between GT Designer3 and GT SoftGOT3000.

For details on each item, refer to the [Set] dialog in the following manual.

📖GT SoftGOT3000 User's Manual

The following shows the differences in displayed items between GT Designer3 and GT SoftGOT3000.

○: Displayed

—: Not displayed

Tree item			Display availability	
			GT Designer3	GT SoftGOT3000
[Basic Settings]	[Project]		—	○
[System Settings]	[Connection]	[Controller Setting]	—*1	○
		[Connecting to Accessories]	—*2	○
	[Environment]	[Action]	○	○
		[Display Position]	○	○
		[Display]	○	○
		[Operation]	○	○
		[Option]	○	○
	[External Application Startup Trigger]	[Basic Application Startup]	○	○
		[Advanced Application Startup]	○	○
		[Auxiliary]	○	○

*1 Controller settings are configured in the [Controller Setting] window of GT Designer3.
☞ Page 729 [Controller Setting]

*2 Barcode and RFID settings are configured in the [Bar Code] dialog and the [RFID] dialog in GT Designer3.
☞ Page 2572 [Bar Code] dialog
☞ Page 2595 [RFID] dialog

12 Configuring the utility settings ([GOT Setup])

GT37 SoftGOT3000

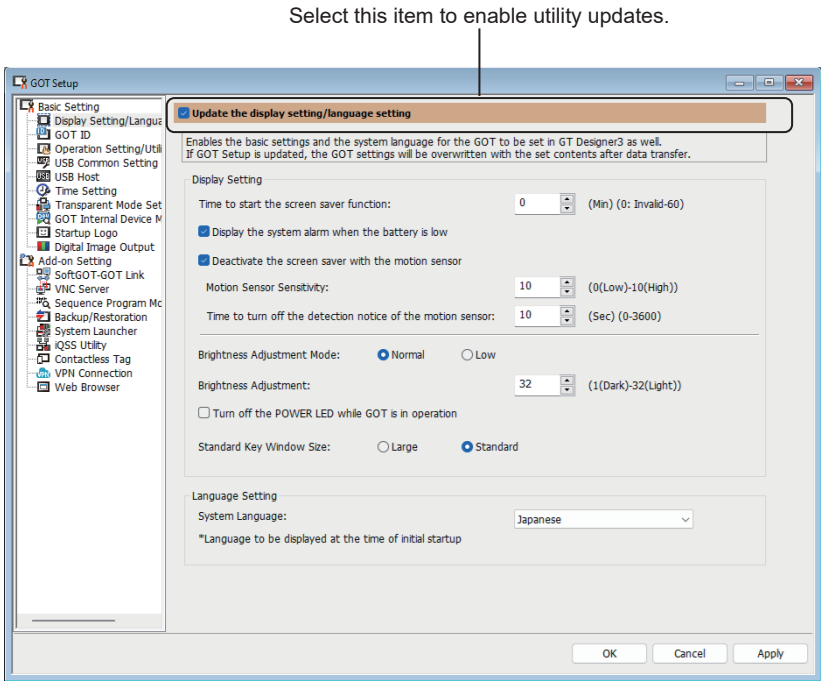
☞ Page 616 Configuring the settings for the display on the GOT ([Display Setting/Language Setting])
☞ Page 620 Setting the identification information to the GOT ([GOT ID])
☞ Page 626 Configuring the settings for the touch operation on the GOT ([Operation Setting/Utility Call Key])
☞ Page 629 Disabling the USB interface on the GOT front face ([USB Common Setting])
☞ Page 630 Configuring the settings for a mouse and a keyboard used with the GOT ([USB Host])
☞ Page 635 Setting the GOT time setting method ([Time Setting])
☞ Page 643 Setting the FA transparent function ([Transparent Mode Setting])
☞ Page 644 Configuring the settings for the GOT internal device monitor ([GOT Internal Device Monitor])
☞ Page 645 Setting a screen to be displayed on the GOT at startup ([Startup Logo])
☞ Page 647 Configuring the external display output settings ([Digital Image Output])
☞ Page 648 Configuring the settings for the SoftGOT-GOT link function ([SoftGOT-GOT Link])
☞ Page 649 Configuring the settings for the VNC server function ([VNC Server])
☞ Page 650 Configuring the settings for the sequence program monitor ([Sequence Program Monitor])
☞ Page 652 Configuring the settings for the backup/restoration function ([Backup/Restoration])
☞ Page 655 Configuring the settings for the system launcher function ([System Launcher])
☞ Page 656 Configuring the settings for the iQSS utility function ([iQSS Utility])
☞ Page 667 Configuring the settings for the GOT contactless tag ([Contactless Tag])
☞ Page 671 Setting the VPN connection function of the GOT ([VPN Connection])
☞ Page 691 Setting the web browser function ([Web Browser])

Relationship between [GOT Setup] and the utility

You can update the GOT utility settings with the settings in GT Designer3 by enabling the settings in the [GOT Setup] window.
Each setting screen in the [GOT Setup] window provides the settings to enable the GT Designer3 settings.

Ex.

[Display Setting/Language Setting] in the [GOT Setup] window



The utility settings are handled as follows when you write or read package data.

Item	Handling of settings	
	Settings with update enabled	Settings with updates disabled
Writing the package data to the GOT	The utility settings are updated with the GT Designer3 settings.	The utility settings will not be updated because the settings in GT Designer3 are disabled. The GOT operates according to its utility settings.
Reading the package data from the GOT	The settings are read from the utility. If any changes are made to the utility settings after the package data is written, the updated package data is read.	The utility settings are not read because the settings in GT Designer3 are disabled. Any changes to the utility settings are not applied to the read package data.

For the utility, refer to the following.

GOT3000 Series User's Manual (Utility & Maintenance Functions)

12.1 Configuring the settings for the display on the GOT ([Display Setting/Language Setting])

GT37 SoftGOT3000

☞ Page 616 Setting targets in [Display Setting/Language Setting]
☞ Page 618 [Display Setting/Language Setting]

In [Display Setting/Language Setting], configure settings for the GOT display and the system language.

12.1.1 Setting targets in [Display Setting/Language Setting]

GT37 SoftGOT3000

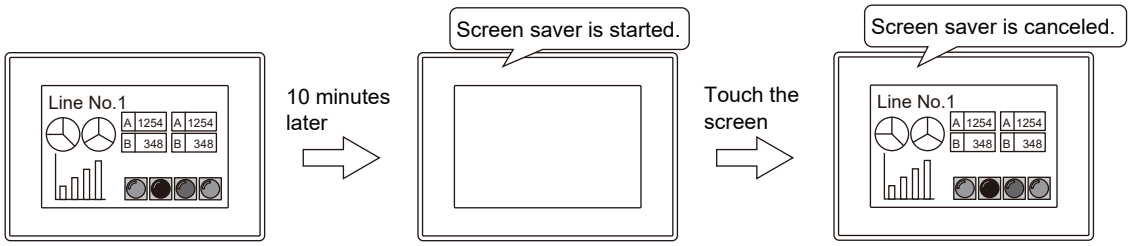
Screen saver

The screen saver function is designed to turn off the screen display if the screen is not touched within a specified time.

The screen saver mode can be canceled by the screen touch operation, the human sensor, and the system information.

Ex.

When the time to the screen saver is set to 10 minutes



For information on how to control the screen saver function with the system information, refer to the following.

☞ Page 592 Controlling the screen

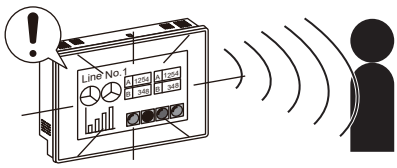
Human sensor

Available for GT3712-X and GT3715-X.

The human sensor detects human approach.

Use the human sensor to release the screen saver mode.

By approaching the GOT, the screen saver mode can be canceled.



Cancels the screen saver mode by detecting human approach

The human sensor operation can be controlled with the system information as well.

For information on how to control the human sensor with the system information, refer to the following.

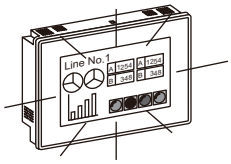
☞ Page 592 Controlling the screen

Brightness adjustment mode

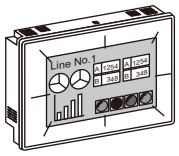
You can change the brightness adjustment mode of the backlight.

Select [Normal] or [Low] for the brightness adjustment mode.

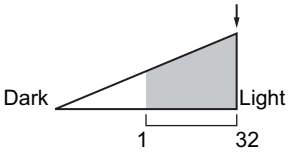
To reduce the luminous intensity of the GOT screen, select [Low] instead of [Normal] for [Brightness Adjustment Mode].

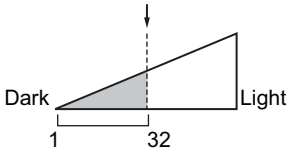


Brightness adjustment mode: [Normal]
Brightness adjustment: [32]



Brightness adjustment mode: [Low]
Brightness adjustment: [32]



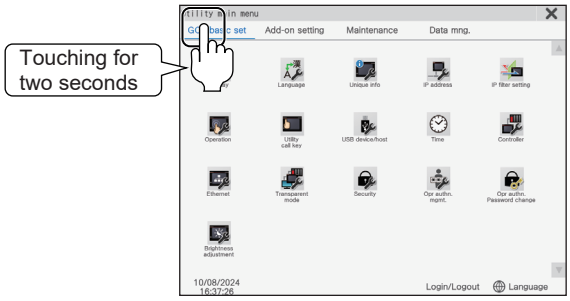


■Temporarily switching the brightness adjustment mode to the [Normal] mode in the utility screen

In the [Low] mode, touching the left edge of the utility main menu screen for two seconds enters the [Normal] mode temporarily.

The brightness adjustment mode returns to the original mode at the following timing.

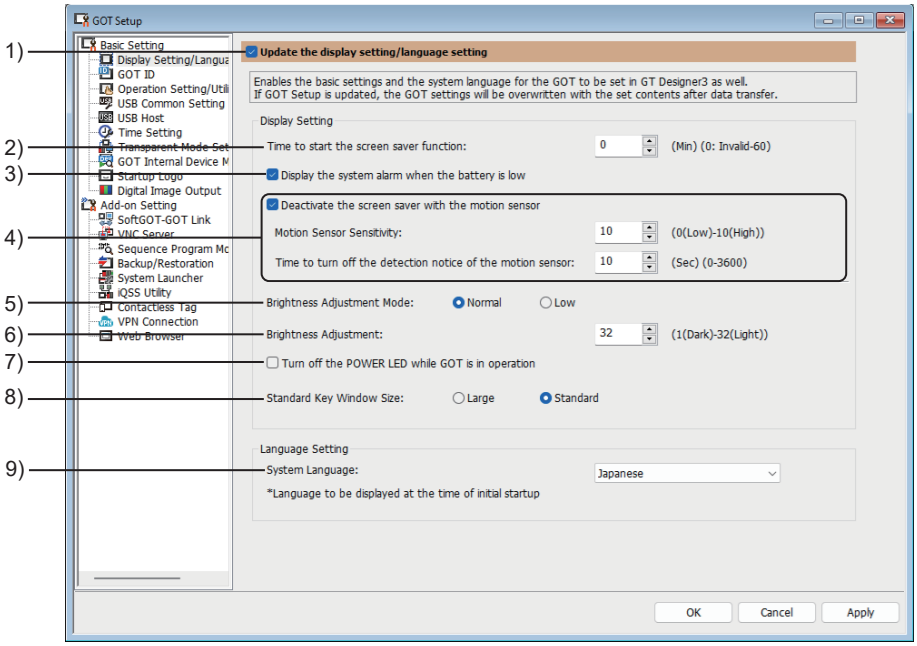
- When the screen is switched to a monitor screen
- When the setting of [Brightness adjust] or [Brightness adjustment] is changed in the utility (The screen is displayed using the set value of [Brightness adjust] and [Brightness adjustment].)



12.1.2 [Display Setting/Language Setting]

GT37 SoftGOT3000

In [Display Setting/Language Setting], configure settings for the GOT display and the system language.
Select [Common] → [GOT Setup] → [Basic Setting] → [Display Setting/Language Setting] from the menu to display this window.



Item			Description
1)	[Update the display setting/language setting]		Updates the setting data in the GOT with the ones set on GT Designer3 when package data is written. Select this item to configure the settings in [Display Setting/Language Setting]. When a project is read from the GOT, the setting changed in the utility is applied.
2)	[Time to start the screen saver function]		Not available for GT SoftGOT3000. Set the time to the screen saver. ☞ Page 616 Screen saver
3)	[Display the system alarm when the battery is low]		Not available for GT SoftGOT3000. Select this item to display the system alarm when the battery voltage is low.
4)	[Deactivate the screen saver with the motion sensor]	—	Available for GT3712-X and GT3715-X. If a model other than the above is used, this setting is not applied. Cancels the screen saver mode when the human sensor detects the human motion. Select this item to set the sensor detection level and the time to turn off the Human Sensor Detection signal. ☞ Page 616 Human sensor
		[Motion Sensor Sensitivity]	Set the human sensor detection level.
		[Time to turn off the detection notice of the motion sensor]	Set the time from when the human sensor stops detecting the human motion to when the Human Sensor Detection signal turns off.
5)	[Brightness Adjustment Mode]		Not available for GT SoftGOT3000. Select the brightness adjustment mode of the backlight. ☞ Page 617 Brightness adjustment mode
			In [Low] mode, the GOT cannot detect the backlight failure. To detect the backlight failure, set the brightness adjustment mode to [Standard].
			In [Low] mode, the screen may flicker, or the screen display may turn off. If you do not use the GOT in a dark place, set the brightness adjustment mode to [Normal].
6)	[Brightness Adjustment]		Not available for GT SoftGOT3000. Set the intensity of the backlight.
7)	[Turn off the POWER LED while GOT is in operation]		Not available for GT SoftGOT3000. The power LED turns off even when the GOT is operating. Even if this item is selected, the power LED remains on until the startup logo appears after the GOT starts up to check the operation.
8)	[Standard Key Window Size]		Select the size of the standard key window.

Item		Description
9)	[System Language]	At the initial startup of the GOT, select the language to be used for the utility and the system message.

Point

When the GOT model GT3708-X is selected, it is recommended to change the [Standard Key Window Size] setting to [Large] to ensure operability.

12.2 Setting the identification information to the GOT ([GOT ID])

GT37 SoftGOT3000

☞ Page 620 GOT identification information
☞ Page 621 How to use the identification information
☞ Page 623 [GOT ID]

In [GOT ID], set the information such as the GOT ID, GOT name, and Ethernet interface.

12.2.1 GOT identification information

GT37 SoftGOT3000

The GOT identification information below is used to identify the GOT.

Item	Overview
GOT ID	ID number to identify the GOT
GOT name	Name to identify the GOT. Use as the identification information when obtaining the GOT list by the network.
Detailed description	Detailed description for the GOT. Describe the supplemental information of the GOT.
Ethernet interface setting at the GOT side	The communication interface setting at the GOT side for using the Ethernet connection.

Set the identification information for each GOT.

Up to 256 pieces of GOT identification information can be stored for a project.

12.2.2 How to use the identification information

GT37 SoftGOT3000

The following shows the usages of the GOT identification information.

☞ Page 621 Performing various operations in each GOT in one project
☞ Page 622 Switching the destination GOT for writing the package data

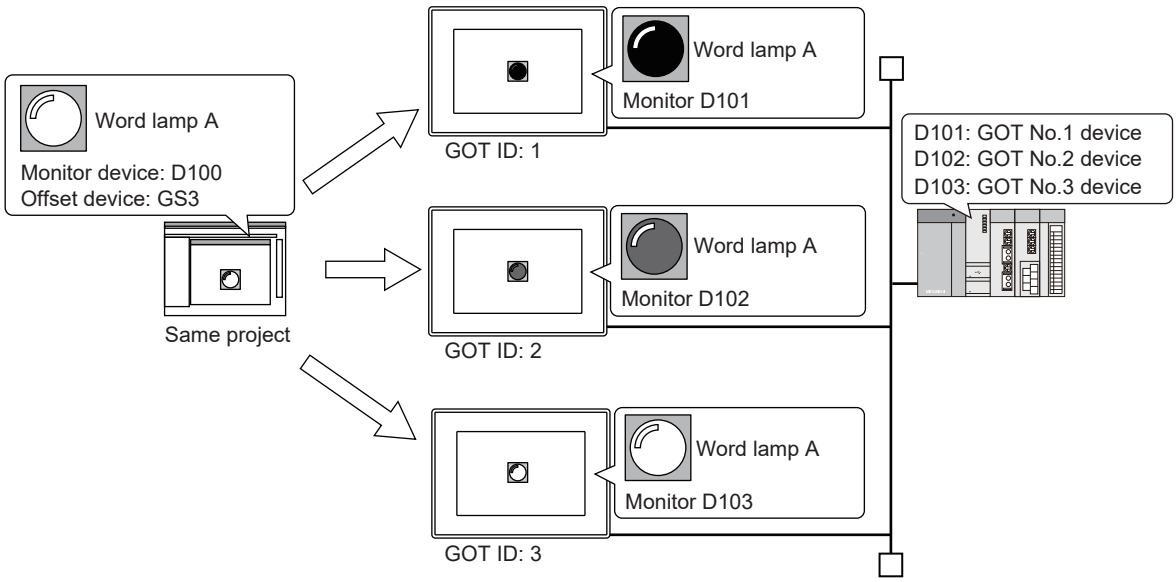
Performing various operations in each GOT in one project

The GOT ID is stored in the GOT special register (GS3).

Using the GOT special register (GS3) allows object operations and script controls to have difference even when the same project is written to multiple GOTs.

Ex.

Writing the same project to three GOTs with different GOT IDs



PART 5

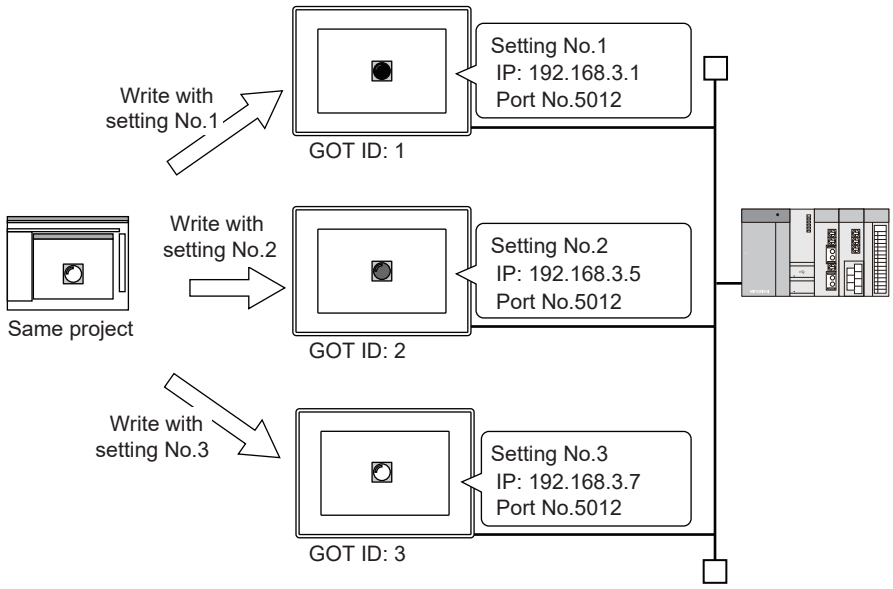
Switching the destination GOT for writing the package data

The Ethernet setting can be stored for each GOT ID.

This enables the Ethernet interface setting to be switched when the destination GOT for writing package data is switched.

Use this function to switch the communication setting in a system where multiple GOTs which use the same project exist.

If the communication setting switching is unnecessary, preparing multiple settings is unnecessary.



Precautions

■Ethernet interface settings which are not included in the GOT identification information

The following settings are not included the GOT identification information.

- Number of retry
- Startup time
- Communication timeout time
- Send delay time

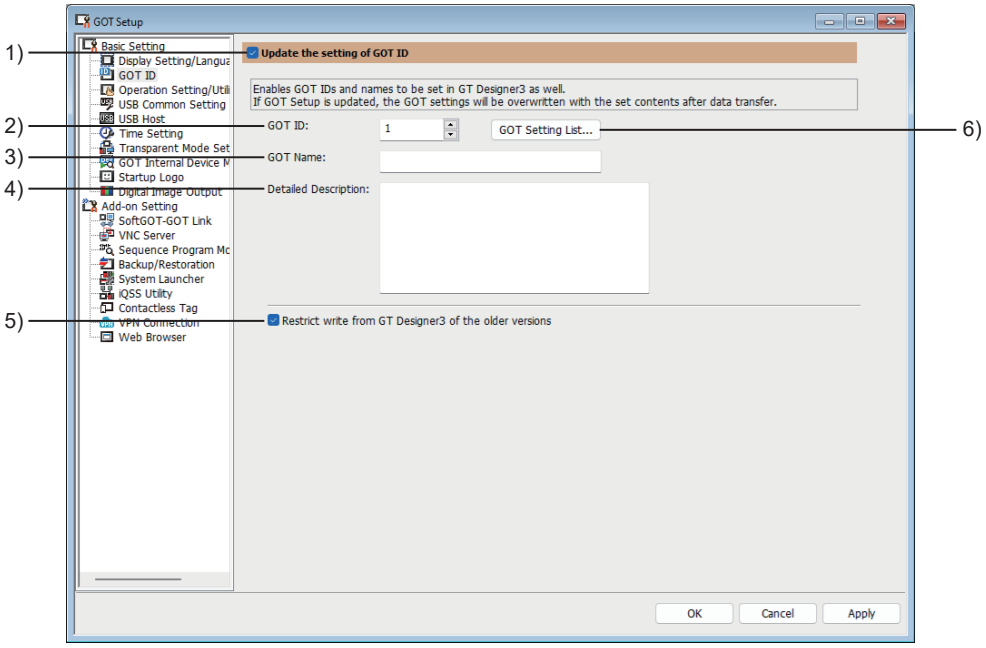
These settings cannot be changed by the GOT ID No. switching.

12.2.3 [GOT ID]

GT37 SoftGOT3000

In [GOT ID], set the GOT ID and GOT name.

Select [Common] → [GOT Setup] → [Basic Setting] → [GOT ID] from the menu to display this window.



Item		Description
1)	[Update the setting of GOT ID]	Updates the setting data in the GOT with the ones set on GT Designer3 when package data is written. Select this item to configure the settings in [GOT ID].
2)	[GOT ID]	Set an ID number to identify the GOT. The setting range is [1] to [32767].
3)	[GOT Name]	Set a name to identify the GOT. Up to 32 characters can be set.
4)	[Detailed Description]	Set a description about the GOT. Up to 512 characters can be set. The line feed cannot be used.
5)	[Restrict write from GT Designer3 of the older versions]	Data writing from GT Designer3 is restricted if its version is older than the one used to write the package data.
6)	[GOT Setting List] button	Not available for GT SoftGOT3000. Displays the [GOT Setting List] dialog. In the [GOT Setting List] dialog, you can set the GOT information which have been previously registered by selecting from a list. ☞ Page 624 [GOT Setting List] dialog

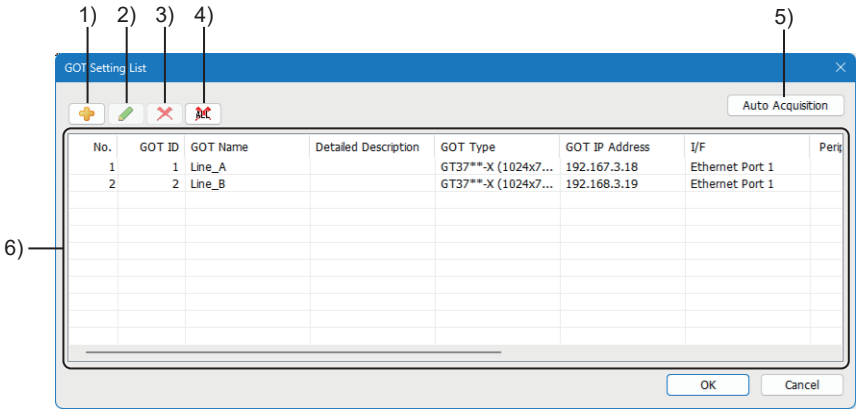
[GOT Setting List] dialog

GT37 SoftGOT3000

In the [GOT Setting List] dialog, add or edit the GOT identification information.

Up to 256 GOT identification information settings can be stored.

Select one from the GOT identification information list and click the [OK] button. The selected information is set to the [GOT Setup] window ([GOT ID]).

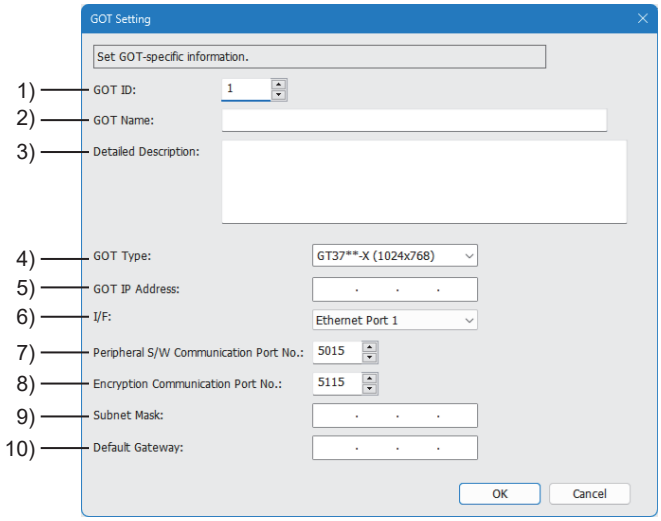


Item		Description
1)	[Add] button	Adds new GOT individual information to the list. Enter the GOT individual information in the [GOT Setting] dialog. ☞ Page 625 [GOT Setting] dialog
2)	[Edit] button	Edits the GOT identification information that is being selected in the GOT identification information list. Enter the GOT individual information in the [GOT Setting] dialog. ☞ Page 625 [GOT Setting] dialog
3)	[Delete] button	Deletes the GOT identification information that is being selected in the GOT setting list.
4)	[Delete All] button	Deletes all GOT identification information registered to the project.
5)	[Auto Acquisition] button	Click the [Auto Acquisition] button to acquire the GOT identification information.
6)	GOT identification information list	A list of the GOT identification information saved in the project.

■[GOT Setting] dialog

GT37 SoftGOT3000

In the [GOT Setting] dialog, edit the GOT identification information to be registered to the project.



Item		Description
1)	[GOT ID]	Set an ID number to identify the GOT. The setting range is [0] to [32767]. If 0 is set, the GOT ID is not used.
2)	[GOT Name]	Set a name to identify the GOT. Up to 32 characters can be set.
3)	[Detailed Description]	Set a description about the GOT. Up to 512 characters can be set. The line feed cannot be inserted into the description.
4)	[GOT Type]	Set the GOT type. GT SoftGOT3000 is not displayed. For the correspondence between the GOT types and GOT models, refer to the following. ☞ Page 55 Model
5)	[GOT IP Address]	Set the IP address of the GOT. The setting range is [0].[0].[0].[0] to [255].[255].[255].[255].
6)	[I/F]	Set the interface for the GOT IP address.
7)	[Peripheral S/W Communication Port No.]	Set the port No. used for the communication with GT Designer3. The setting range is [1024] to [65534]. Do not set the port number used for the other settings. To change the number, it is recommended to use a number in the 50000s or higher.
8)	[Encryption Communication Port No.]	Set the port number used for the encrypted communication with GT Designer3. The setting range is [1024] to [65534]. Do not set the port number used for the other settings. To change the number, it is recommended to use a number in the 50000s or higher.
9)	[Subnet Mask]	Set the subnet mask for the GOT. The setting range is [0].[0].[0].[0] to [255].[255].[255].[255].
10)	[Default Gateway]	Set the default gateway. The setting range is [0].[0].[0].[0] to [255].[255].[255].[255].

12.3 Configuring the settings for the touch operation on the GOT ([Operation Setting/ Utility Call Key])

GT37 SoftGOT3000

☞ Page 626 Setting targets in [Operation Setting/Utility Call Key]
☞ Page 627 [Operation Setting/Utility Call Key]

In [Operation Setting/Utility Call Key], configure settings for the GOT operations and the utility call key.

12.3.1 Setting targets in [Operation Setting/Utility Call Key]

GT37 SoftGOT3000

Buzzer sound

GT37 SoftGOT3000

A buzzer that sounds when the touch panel is touched.

Set no sound, the short sound, or the long sound as the buzzer sound.

In addition, the pitch of the buzzer can be changed. (Not available for GT SoftGOT3000.)

Key sensitivity

GT37 SoftGOT3000

Sensitivity of the touch panel.

The touch detection speed of the touch panel (sensitivity) and the pressing pressure that is required to detect the touch operation (pressing pressure) can be changed in this setting.

Utility call key

GT37 SoftGOT3000

A key that calls the utility screen from the monitor screen.

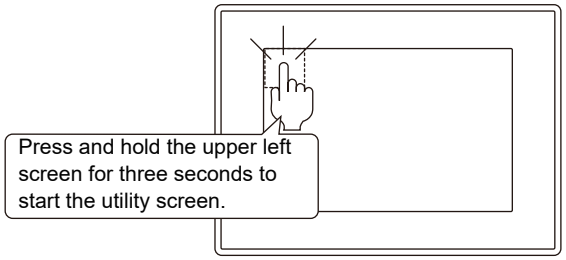
Arrange the utility call key one of the four corners.

The utility key is not displayed on the screen.

To activate the utility call key, press the utility call key for a certain period.

Change the depression length for the utility call key activation in this setting.

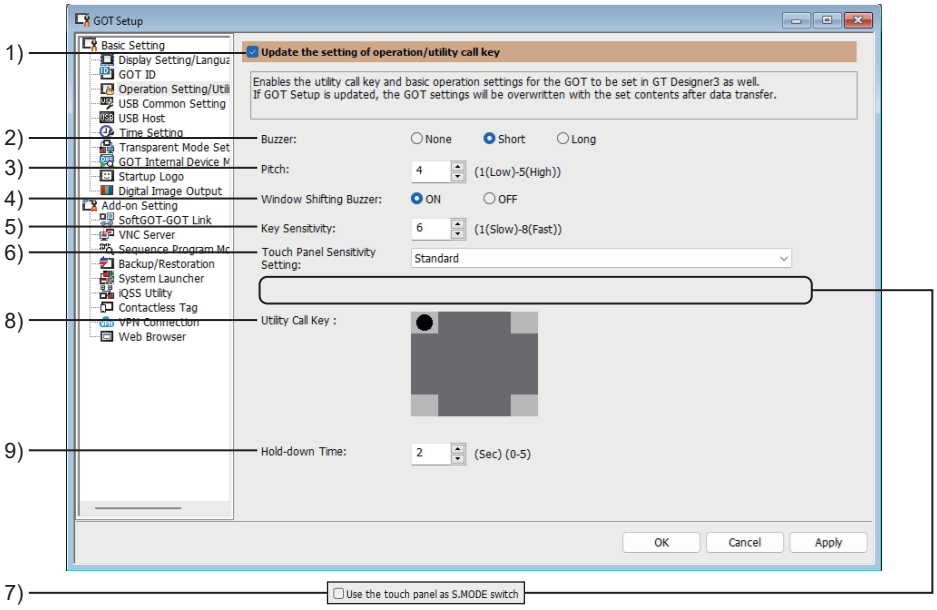
• Utility call key: Arranged on the upper left
• Depression length: Three seconds



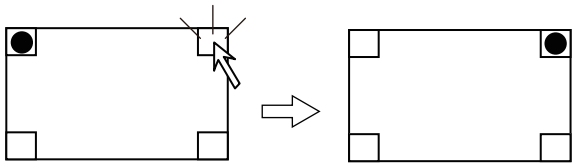
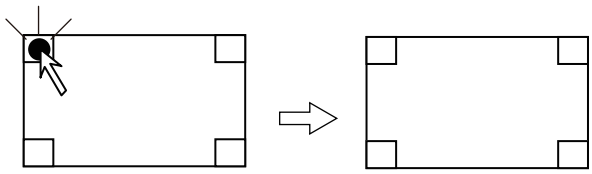
12.3.2 [Operation Setting/Utility Call Key]

GT37 SoftGOT3000

In [Operation Setting/Utility Call Key], configure settings for the GOT operations and the utility call key.
Select [Common] → [GOT Setup] → [Basic Setting] → [Update the setting of operation/utility call key] from the menu to display this window.



Item		Description
1)	[Update the setting of operation/utility call key]	Updates the setting data in the GOT with the ones set on GT Designer3 when package data is written. Select this item to configure the settings in [Operation Setting/Utility Call Key]. When a project is read from the GOT, the setting changed in the utility is applied.
2)	[Buzzer]	Select the buzzer sound for the touch operations of objects and buttons.
3)	[Pitch]	Not available for GT SoftGOT3000. Set the pitch of the buzzer sound for the touch operations of objects and buttons.
4)	[Window Shifting Buzzer]	Select whether to sound or not the buzzer when moving the window screen.
5)	[Key Sensitivity]	Not available for GT SoftGOT3000. Set the speed for the utility call key to detect the touch operation of the touch panel.
6)	[Touch Panel Sensitivity Setting]	Available for GT37-W. Set the sensitivity of the touch panel.
7)	[Use the touch panel as S.MODE switch]	Available for GT37-X. The GOT touch panel operates as an equivalent to the S.MODE switch. The S.MODE switch can be used without opening the control panel. For the S.MODE switch, refer to the following. ☞ Page 628 Functions of the S.MODE switch

Item		Description
8)	[Utility call key]	Select the position to arrange the key (utility call key) that calls the utility screen from the monitor screen. The squares on the four corners indicate the positions where the utility call key can be arranged. The black circle indicates the position of the utility call key. Click one of the squares on the four corners to select the position of the utility call key.  Click any corner square to change the position of the black circle. To disable the utility call key, click the black circle.  Click the black circle to deselect the square.
9)	[Hold-down Time]	Not available for GT SoftGOT3000. Set the depression length from you touch the utility call key to when the utility call key starts function.

Functions of the S.MODE switch

The S.MODE switch is used for the following applications.

When the touch panel is used as an S.MODE switch, applications it supports differ from those supported by the S.MODE switch on the GOT rear face.

Application	Availability	
	Touch panel S.MODE switch	GOT rear face S.MODE switch
By powering on the GOT while pressing the S.MODE switch, the GOT enters system installation mode. If the data storage contains the BootOS or package data, installation is started.	Available However, installation of the BootOS is not available.	Available
After powering on the GOT, pressing the S.MODE switch immediately after [Booting] appears in the upper left displays the utility on the screen.	Available	Available

12.4 Disabling the USB interface on the GOT front face ([USB Common Setting])

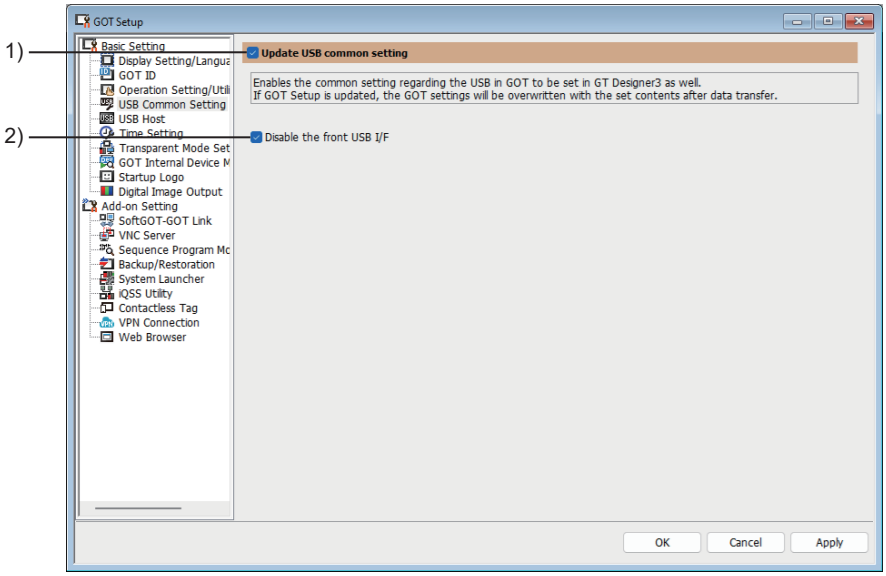
GT37 SoftGOT3000

Disable the USB interface on the GOT front face.

12.4.1 [USB Common Setting]

In [USB Common Setting], disable the USB interface on the GOT front face.

Select [Common] → [GOT Setup] → [Basic Setting] → [USB Common Setting] from the menu to display this window.



Item		Description
1)	[Update USB common setting]	Updates the setting data in the GOT with the ones set on GT Designer3 when package data is written. Select this item to configure the settings in [USB Common Setting]. When a project is read from the GOT, the setting changed in the utility is applied.
2)	[Disable the front USB I/F]	Disable the USB interface (host and device) on the GOT front face.

12.5 Configuring the settings for a mouse and a keyboard used with the GOT ([USB Host])

GT37 SoftGOT3000

☞ Page 630 Using a USB mouse
☞ Page 631 Using a USB keyboard
☞ Page 633 Using multiple USB devices together
☞ Page 634 [USB Host]

The GOT responds to the input from the USB mouse and keyboard connected to the USB interface (host). (USB mouse function, USB keyboard function)

In [USB Host], enable or disable the USB mouse and USB keyboard connected to the GOT.

12.5.1 Using a USB mouse

When you connect a USB mouse to the USB interface (host) of the GOT, a mouse cursor is displayed on the GOT.

You can perform touch operations with a left click.

Precautions

■Touch operation during clicking

Do not touch the GOT screen while you are clicking the USB mouse.

The GOT recognizes the operation as 2-point press.

■Canceling the screen saver mode with a USB mouse

Moving the mouse cursor or a left click cancels the screen saver mode.

It is recommended that you cancel the screen saver mode by moving the mouse cursor.

Moving the mouse cursor while left-clicking may cause screen touches after the screen saver mode is canceled and result in malfunction.

Applicable USB mouse

A two-button mouse is applicable.

A wheeled mouse and a mouse with more than two buttons can be used as a two-button mouse.

Wheels or special buttons on the mouse cannot be used.

Some GOT models do not support mice equipped with special function.

Screens that are not operable with a USB mouse

The following screens are not operable with a USB mouse.

- Touch panel calibration screen of the utility
- Touch panel check screen

12.5.2 Using a USB keyboard

You can use a USB keyboard by connecting it to the USB interface (host) of the GOT.
When you connect a USB barcode reader or an RFID controller to the USB interface (host) of the GOT, the device will be handled as a USB keyboard.
The GOT receives inputs from a USB keyboard as key codes.

Precautions

■Precautions on the USB keyboard

The kana input with a USB keyboard is unavailable.
To enter hiragana or Pinyin characters and convert the entry into kanji or Simplified Chinese characters using Kana-Kanji/Pinyin conversion, use the key window displayed on the GOT screen.

■Precautions on the RFID controller

The RFID function is not available for the RFID controller connected to the USB interface (host) of the GOT.
Use the RFID controller that can be connected to the RS-232/422/485 interface of the GOT for the RFID function.

Applicable USB keyboard

The following keyboards can be used.

- Japanese 106 keyboard
- English 101 keyboard

Forward-compatible keyboards, including Japanese 109 keyboard or English 104 keyboard, are also available.
However, the keys which do not exist on Japanese 106 keyboard and English 101 keyboard are not available.
Some GOT models do not support keyboards equipped with special function such as the hub function.

Applicable USB barcode reader and RFID controller

USB barcode readers and RFID controllers must satisfy the following requirements.

- Equipped with a USB keyboard (HID) interface
- Compliant with USB standards

For the USB barcode readers and RFID controllers applicable to the USB mouse/keyboard function, refer to the following Technical Bulletin.
📖List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)
Key codes that can be input from a USB barcode reader or an RFID controller are the same as those of a USB keyboard.

Operations corresponding to the USB keyboard inputs

The following shows the operations corresponding to the USB keyboard inputs.

Operation	Description
Operations on the numerical input or text input	Corresponds to the operations with key codes such as numerical input, text input, and cursor movement. For the key code of the GOT corresponding to each key on the USB keyboard, refer to the following. ☞ Page 632 Correspondence between the USB keyboard and GOT key codes
Screen operations for the utility and monitor functions	Corresponds to the screen operations for the utility and monitor functions. You can input the ID and a password on the authentication screen.
Operations on the dialog window	Corresponds to the key operations on the dialog window. For the key on the USB keyboard corresponding to each key on the dialog window, refer to the following. ☞ Page 632 Correspondence between the USB keyboard and dialog window

■Correspondence between the USB keyboard and GOT key codes

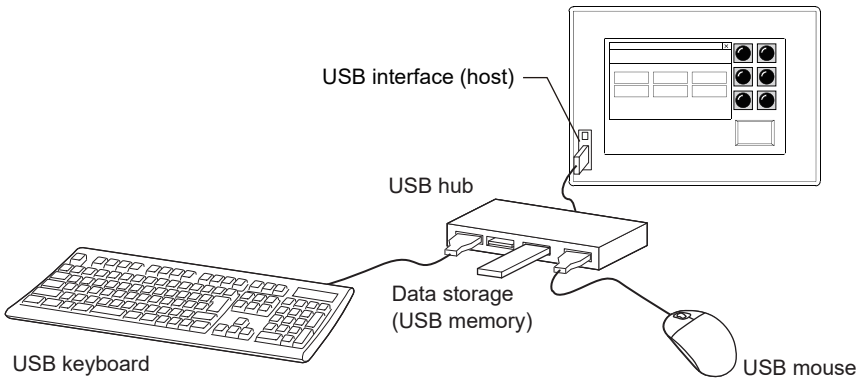
Key on the USB keyboard	GOT key code (HEX)	Action
Back space	0008	Delete the character on the cursor.
Enter	000D	Write the entry to a specified device, display the cursor on the target object, move the cursor to a different object, or close the key window. The operations of the key window and cursor after the inputs are confirmed vary depending on the setting in the [Environment Settings] window ([Key Window]). ☞ Page 570 [Key Window]
Esc	001B	Cancel the entry.
- (Hyphen)	002D	Reverse the sign of the value (for the numerical input only).
. (Period)	002E	Enter a decimal point (for the numerical input only).
0 to 9	0030 to 0039	Enter a numeric character (for the numerical input only).
A to F	0041 to 0046	
Character keys and symbol keys	Key codes corresponding to the characters and symbols	Enter a character. (ASCII-compatible) Kana input is not supported.
→	0080	Moves the cursor
←	0081	
↑	0082	
↓	0083	
Delete	0088	Deletes all the entered characters.
Ctrl + →	0090	Moves cursor within object Lengthens or shortens a segment during conversion to Kanji or Simplified Chinese characters.
Ctrl + ←	0091	
Ctrl + ↑	FFFA	Increment
Ctrl + ↓	FFFB	Decrement

■Correspondence between the USB keyboard and dialog window

Key on the dialog window	Key on the USB keyboard	Key code of USB barcode reader and RFID controller
[OK] key [Confirm] key [Yes] key	Y Shift + Y Enter	59h(Y) 79h(y) 0Dh(Enter)
[Cancel] key [Stop] key [No] key	N Shift + N Esc	4Eh(N) 6Eh(n) 1Bh(Esc)

12.5.3 Using multiple USB devices together

You can use USB devices such as a USB mouse and USB memory simultaneously via a USB hub connected to the USB interface (host) of the GOT.



Item	Specifications
Number of USB devices that can be used	A total of 12 devices (excluding USB hubs) • Up to 4 USB devices (mouse, keyboard, etc.) assignable to GOT drives and channels • Up to 4 USB devices (memory) assignable to GOT drives • Up to four USB devices (audio, web camera, etc.) assignable to channels A total of 900 mA is allowed for USB devices connected to the front USB interface (USB Type-C) and the rear USB interface (USB Type-A).
Applicable USB hub	Up to 4 devices connected in cascade

For the specifications of the USB interface such as USB standards, refer to the following.

GOT3000 Series User's Manual (Hardware)

Precautions

The USB interface of the GOT does not support simultaneous use of the device and host.

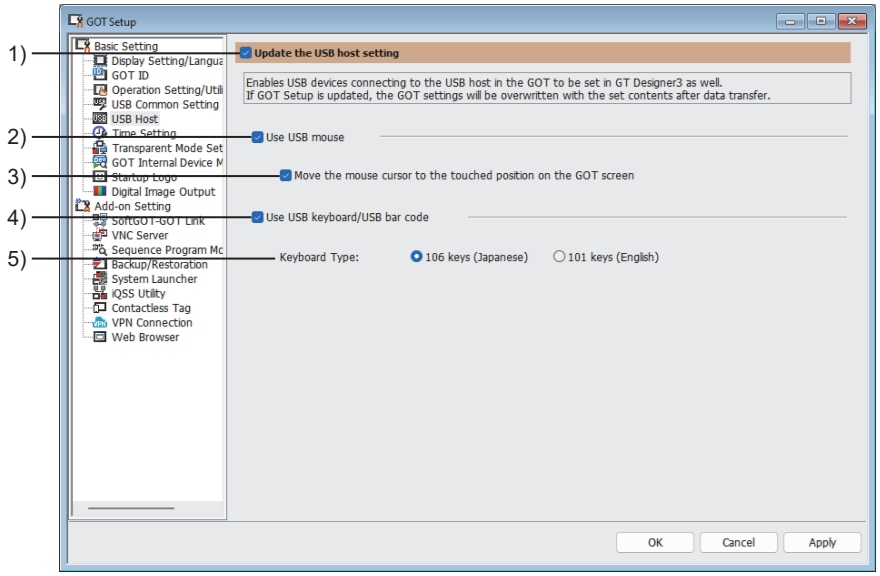
When a USB device (excluding a hub) is connected to the USB interface, the action (host or device) is switched.

12.5.4 [USB Host]

GT37 SoftGOT3000

In [USB Host], set USB devices to be connected to the GOT.

Select [Common] → [GOT Setup] → [Basic Setting] → [USB Host] from the menu to display this window.



Item		Description
1)	[Update the USB host setting]	Updates the setting data in the GOT with the ones set on GT Designer3 when package data is written. Select this item to configure the settings in [USB Host]. When a project is read from the GOT, the setting changed in the utility is applied.
2)	[Use USB mouse]	Enables a USB mouse connected to the USB interface (host) of the GOT.
3)	[Move the mouse cursor to the touched position on the GOT screen]	Select this item to move the mouse cursor to a position you touch.
4)	[Use USB keyboard/USB bar code]	Enables a USB keyboard, USB barcode reader, or RFID controller connected to the USB interface (host) of the GOT.
5)	[Keyboard Type]	Select the type of a USB keyboard to be used. Make sure that the setting is consistent with the type of the USB keyboard to be used. Otherwise, some characters cannot be input correctly.

12.6 Setting the GOT time setting method ([Time Setting])

GT37 SoftGOT3000

☞ Page 636 Clock synchronization method
☞ Page 637 Controllers available for the time setting function and the time notification function
☞ Page 638 Changing the current time with the GOT special register (GS)
☞ Page 639 [Time Setting]

In [Time Setting], the setting method for the clock data between the GOT and the controller is set.

GT SoftGOT3000 uses the clock of the personal computer.

When setting the clock synchronization in GT SoftGOT3000, note the following.

Precautions

■Time setting function on GT SoftGOT3000

The time on the personal computer is changed when the time setting function is performed.

In the following cases, do not use the time setting function because the clock data will not be synchronized between the personal computer and the controller.

- The user who has started GT SoftGOT3000 does not have the authority to change the system time.
- The clock of the personal computer is synchronized with an Internet time server.
- Sortware that periodically adjusts the clock of the personal computer is used.

■Personal computer time zone when using GT SoftGOT3000

Set the same time zone for the personal computer and controller.

Otherwise, a time difference occurs.

■Setting change in the utility

You cannot use GT SoftGOT3000 to change the clock synchronization method in the utility.

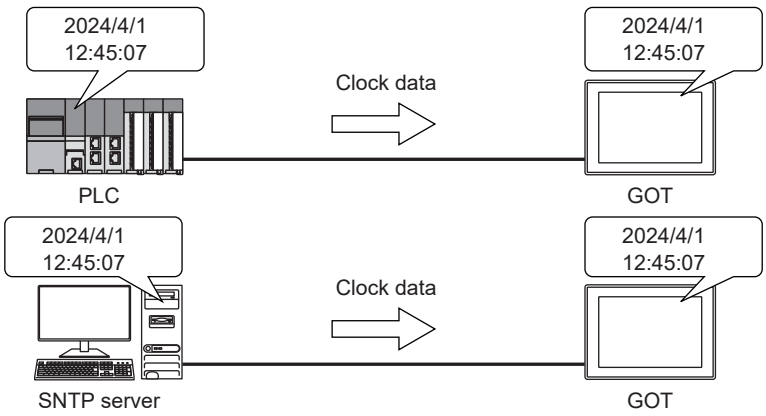
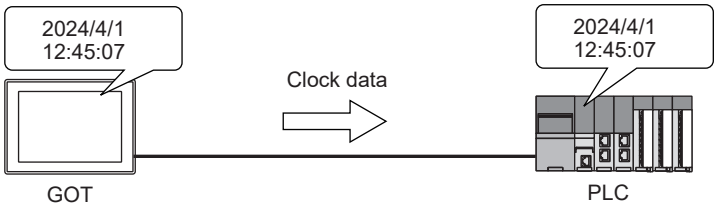
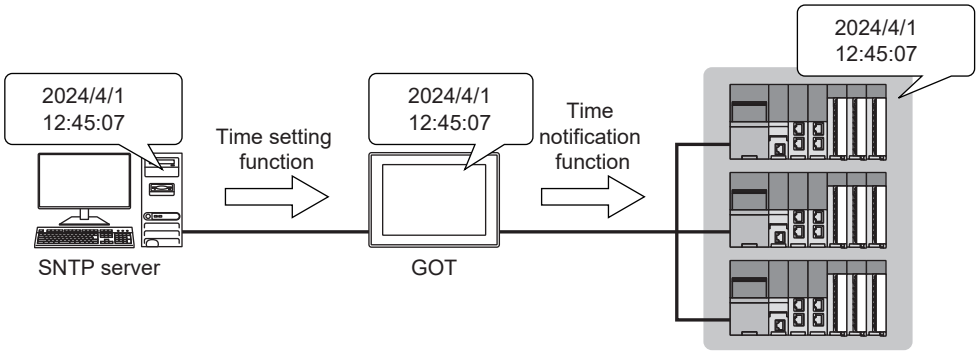
Set the clock synchronization method in GT Designer3.

PART 5

12.6.1 Clock synchronization method

GT37 SoftGOT3000

The following shows the clock synchronization method on the GOT.

Clock synchronization method	Description
Time setting function	Acquire the clock data of the controller or the SNTP server and change the clock data of the GOT. GT SoftGOT3000 cannot acquire the clock data from the SNTP server.  At startup, the GOT clock data is synchronized with the clock data of the controller or SNTP server. Since the GOT does not need to hold the clock data while the power is off, a built-in battery is not required. If the GOT needs to hold the clock data at startup, install a battery. To set the time of the GOT using the controller, the settings of the GOT must be adjusted to the time zone schedule of the controller. To set the controller clock data of the controller, refer to the manual of the controller you use.
Time notification function	Notify the clock data of the GOT to the controller to change that of the controller.  At the timing of the trigger, set the clock data of the controller to that of the GOT. Since the GOT must hold the clock data while the power is off, a built-in battery is required.*1 Set the clock data of the GOT in the utility.
	After the time notification function is performed, the target controller acts differently depending on its system configuration (such as the multiple CPU system). For example, the target controller CPU may notify the obtained time data to another CPU. For the controller action, refer to the manual of the controller used.
Using the time setting function and the time notification function together	The time setting function acquires the clock data of the target controller or the SNTP server, and the time setting function changes the clock data of the other controllers. 

*1 The battery is sold separately.
To use the time notification function, purchase the battery, establish connection, and configure the setting.
For information on how to connect the battery, refer to the following manual.
GOT3000 Series User's Manual (Hardware)

12.6.2 Controllers available for the time setting function and the time notification function

GT37 SoftGOT3000

GOTs other than GT SoftGOT3000 perform the time setting function or the time notification function to the controllers equipped with a clock.

For controllers equipped with a clock, refer to the following.

GOT3000 Series User's Manual (Connection)

For the controllers subjected to the time setting function and the time notification function by GT SoftGOT3000, refer to the following.

GT SoftGOT3000 User's Manual

Time setting function and time notification function for network-connected controllers

When the GOT and controllers are connected using any of the following connection types, only the controller of the host station or master station (specified control station) is targeted for the time setting function and the time notification function.

Connection type	Target of time setting function and time notification function
Ethernet connection	Host station
CC-Link IE TSN connection*1*2*3	Network (communication unit)
CC-Link IE Field Network connection*1	Master station (specified control station)

*1 When this station is disconnected, the GOT cannot perform the time setting function or the time notification function on the station.

*2 After the time distribution from the master station, the time is set in the GOT.
For the time distribution from the master station, refer to the following.
MELSEC iQ-R CC-Link IE TSN User's Manual (Application)

*3 The time notification function is not supported.

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12.6.3 Changing the current time with the GOT special register (GS)

GT37 SoftGOT3000

Changing the current time of the GOT

GT37 SoftGOT3000

When GS512.b0 is turned on, the current time of the GOT is changed to the time specified with GS513 to GS516.

☞ Page 3647 Time Change Information (GS512)

☞ Page 3647 Changed Time (GS513 to GS516)

Function	Setting item	Bit	Description
Time Change signal	GS512	b0	A trigger device to change the current time Changes the clock data of the GOT to the data of the change time (GS513 to GS516) when the bit is turned on.
Change time	GS513	b8 to b15	Two lower digits of year (data type: BCD)
		b0 to b7	Month (data type: BCD)
	GS514	b8 to b15	Day (data type: BCD)
		b0 to b7	Hour (data type: BCD)
	GS515	b8 to b15	Minute (data type: BCD)
		b0 to b7	Second (data type: BCD)
	GS516	b8 to b15	Use prohibited
		b0 to b7	Day (0: Sunday, 1: Monday, 2: Tuesday, 3: Wednesday, 4: Thursday, 5: Friday, 6: Saturday)

Checking the current time of the GOT

GT37 SoftGOT3000

The GOT writes the clock data (current time) into the following devices.

☞ Page 3607 Present Time (GS650 to GS653)

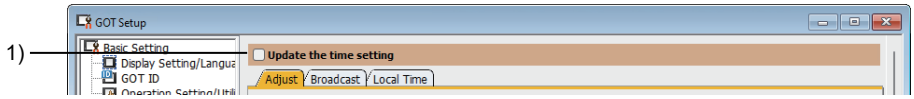
Function	Setting item	Bit	Description
Current time	GS650	b8 to b15	Two lower digits of year (data type: BCD)
		b0 to b7	Month (data type: BCD)
	GS651	b8 to b15	Day (data type: BCD)
		b0 to b7	Hour (data type: BCD)
	GS652	b8 to b15	Minute (data type: BCD)
		b0 to b7	Second (data type: BCD)
	GS653	b8 to b15	Use prohibited
		b0 to b7	Day (0: Sunday, 1: Monday, 2: Tuesday, 3: Wednesday, 4: Thursday, 5: Friday, 6: Saturday)

12.6.4 [Time Setting]

GT37 SoftGOT3000

In [Time Setting], the setting method for the clock data of the GOT is set.

Select [Common] → [GOT Setup] → [Basic Setting] → [Time Setting] from the menu to display this window.



Item		Description
1)	[Update the time setting]	Updates the setting data in the GOT with the ones set on GT Designer3 when package data is written. Select this item to configure the settings in [Time Setting]. When a project is read from the GOT, the setting changed in the utility is applied. ☞ Page 640 [Adjust] tab ☞ Page 641 [Broadcast] tab ☞ Page 642 [Local Time] tab

Precautions

■Time setting function and time notification function for the same controller

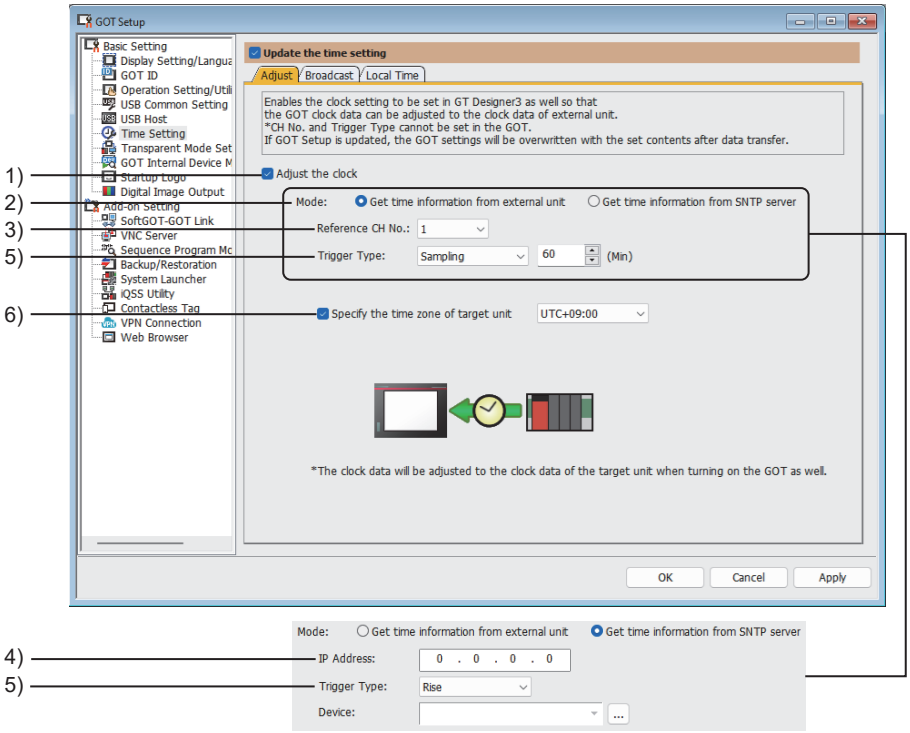
When executing both the time setting function and the time notification function for the same controller, configure different trigger type settings for each of them to separate their execution timing.

Otherwise, clock data may be delayed.

PART 5

[Adjust] tab

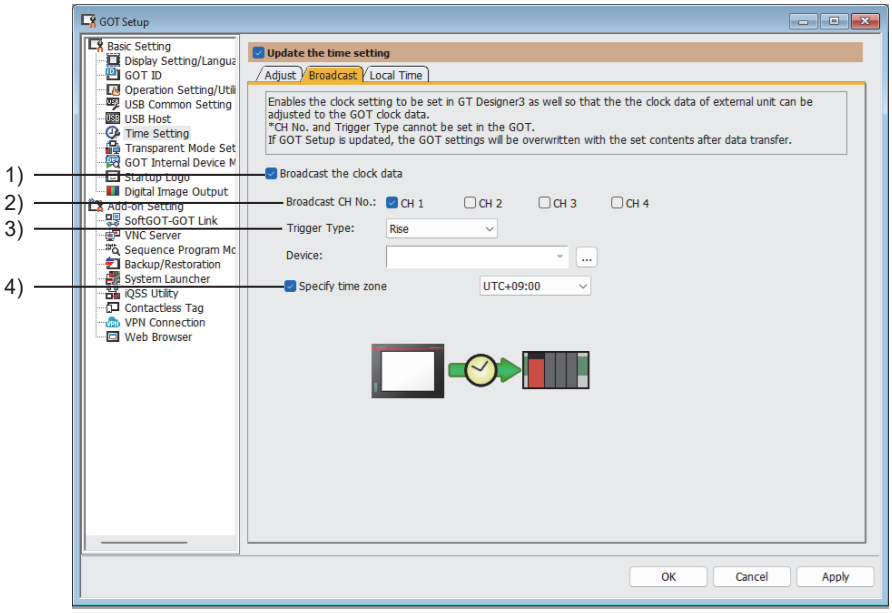
GT37 SoftGOT3000



Item		Description
1)	[Adjust the clock]	Select this item to use the time setting function. Select this item to set how to acquire the clock data.
2)	[Mode]	Set the destination device of the clock data and how to acquire the clock data. In GT SoftGOT3000, this item is not displayed and [Get time information from external unit] is selected. When [Get time information from external unit] is selected, set [Reference CH No.] and [Trigger Type]. When [Get time information from SNTP server] is selected, set [IP Address] and [Trigger Type] of the destination.
		When [Get time information from SNTP server] is selected, enable the Ethernet interface of the GOT in the [I/F Communication Setting] dialog or other setting dialogs. The clock data is acquired via Ethernet. If no Ethernet interface is usable, the clock data cannot be acquired. ☞ Page 773 How to use the I/F communication setting
3)	[Reference CH No.]	This item is settable when [Mode] is set to [Get time information from external unit]. Set the channel No. to connect the device from which the clock data is acquired.
4)	[IP Address]	This item is settable when [Mode] is set to [Get time information from SNTP server]. Set the IP address of the SNTP server from which the clock data is acquired. The setting range is [0].[0].[0].[0] to [255].[255].[255].[255].
5)	[Trigger Type]	Set the trigger to acquire the clock data. When [Rise] or [Fall] is selected, set the trigger device. When [Sampling] is selected, set the cycle in the range from [1] minute to [1440] minutes.
6)	[Specify the time zone of target unit]	Not available for GT SoftGOT3000. Select this item to set the time zone of the destination device of the clock data. When [Custom] is selected, the time difference with UTC can be set by 15 minutes.

[Broadcast] tab

GT37 SoftGOT3000



Item		Description
1)	[Broadcast the clock data]	Select this item to use the time notification function. Select this item to set how to notify the clock data.
2)	[Broadcast CH No.]	Set the channel No. to connect the destination device of the clock data.
3)	[Trigger Type]	Set the trigger to notify the clock data. When [Rise] or [Fall] is selected, set the trigger device. When [Sampling] is selected, set the cycle in the range from [1] minute to [1440] minutes.
4)	[Specify time zone]	Not available for GT SoftGOT3000. Select this item to set the time zone of the destination device of the clock data. When [Custom] is selected, the time difference with UTC can be set by 15 minutes.

[Local Time] tab

GT37 SoftGOT3000

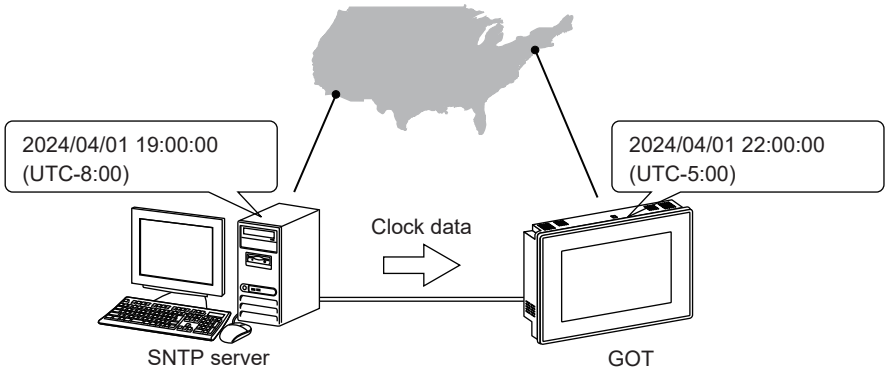
Set the time difference from UTC and perform the time setting according to the local time in the region where the GOT is installed.

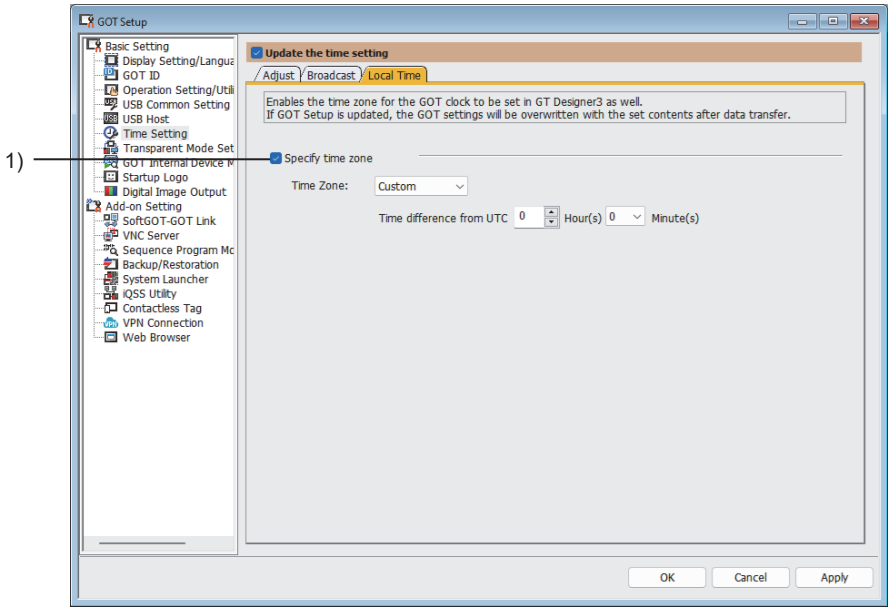
This setting enables the time setting among countries or regions in different time zones.

Daylight saving time setting is not supported.

Ex.

When the time zone of the region where the GOT is installed is UTC-5:00, select [UTC-5:00] for [Time Zone] to set the clock in the GOT to the local time.





Item		Description
1)	[Specify time zone]	Select this item to set the time zone. When [Custom] is selected, the time difference with UTC can be set by 15 minutes.

12.7 Setting the FA transparent function ([Transparent Mode Setting])

GT37 SoftGOT3000

In [Transparent Mode Setting], set a channel number used for the FA transparent function when using the multi-channel function.

The FA transparent function transfers data between a personal computer and controllers through the GOT.

You can select only one channel of the GOT for data transfer.

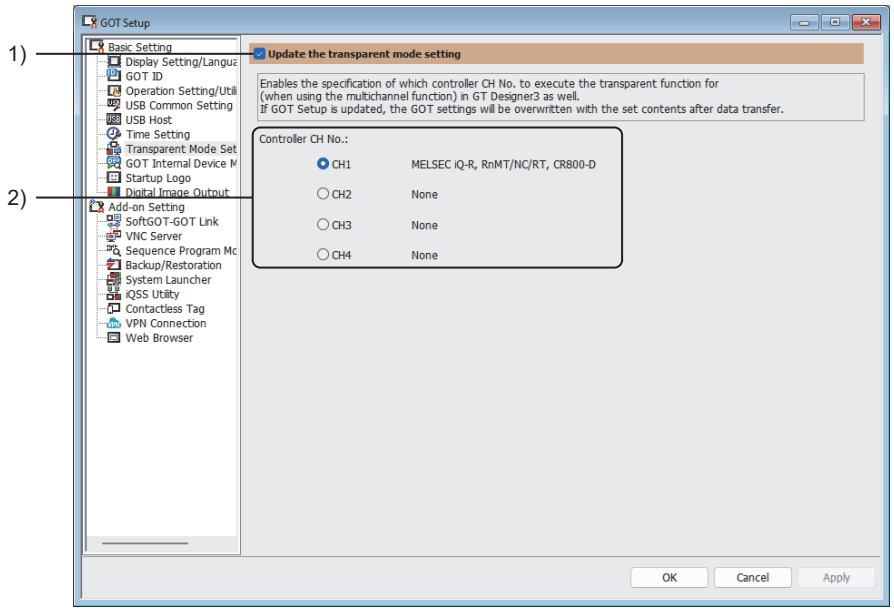
For details on the FA transparent function, refer to the following.

GOT3000 Series User's Manual (Connection)

12.7.1 [Transparent Mode Setting]

In [Transparent Mode Setting], set a channel number used for the FA transparent function when using the multi-channel function.

Select [Common] → [GOT Setup] → [Basic Setting] → [Transparent Mode Setting] from the menu to display this window.



Item		Description
1)	[Update the transparent mode setting]	Updates the setting data in the GOT with the ones set on GT Designer3 when package data is written. Select this item to configure the settings in [Transparent Mode Setting]. When a project is read from the GOT, the setting changed in the utility is applied.
2)	[Controller CH No.]	Select a channel number used for the FA transparent function.

12.8 Configuring the settings for the GOT internal device monitor ([GOT Internal Device Monitor])

GT37 SoftGOT3000

☞ Page 644 [GOT Internal Device Monitor]

In [GOT Internal Device Monitor], configure the settings of the GOT internal device monitor.

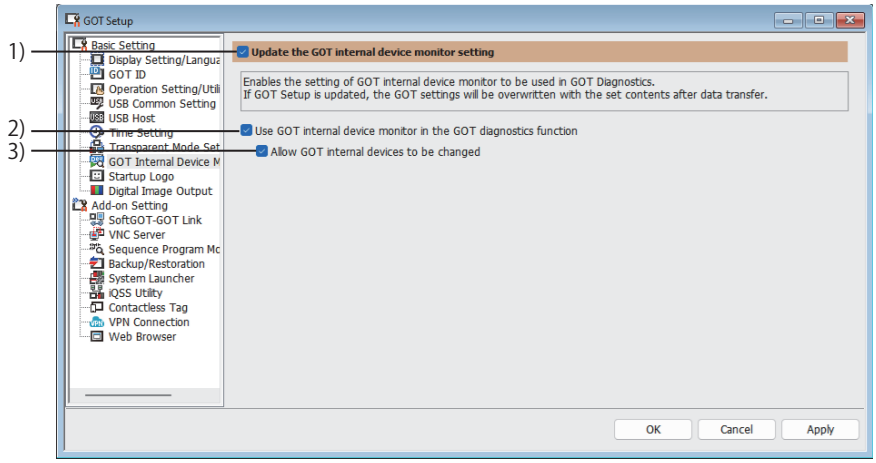
For details on the GOT internal device monitor of the GOT diagnostics function, refer to the following.

☞ Page 3080 Checking the causes and corrective actions for errors (GOT diagnostics)

12.8.1 [GOT Internal Device Monitor]

In [GOT Internal Device Monitor], configure the settings of the GOT internal device monitor.

Select [Common] → [GOT Setup] → [Basic Setting] → [GOT Internal Device Monitor] from the menu to display the following window.



Item		Description
1)	[Update the GOT internal device monitor setting]	Overwrites the settings of the GOT with the settings of GT Designer3 when package data is written to the GOT. Select this item to enable the settings in [GOT Internal Device Monitor]. When a project is read from the GOT, the setting changed in the utility is applied.
2)	[Use GOT internal device monitor in the GOT diagnostics function]	Allows GT Designer3 to monitor the GOT internal devices when the GOT diagnostics runs.
3)	[Allow GOT internal devices to be changed]	Allows GT Designer3 to change the values of the GOT internal devices when the GOT diagnostics runs.

12.9 Setting a screen to be displayed on the GOT at startup ([Startup Logo])

GT37 SoftGOT3000

☞ Page 645 Specifications of the startup logo
☞ Page 646 [Startup Logo]

In [Startup Logo], set an image (startup logo) to be displayed at GOT startup.
Any user-selected image or pre-installed startup logo in the GOT can be displayed as a startup logo.

12.9.1 Specifications of the startup logo

GT37 SoftGOT3000

Item	Specifications
Number of settings	1 setting per project
Display position	Center of the screen
Image that can be used as the startup logo	The following file formats are supported. • BMP format: *.bmp • JPEG format: *.jpg, *.jpeg, *.jpe When the resolution is higher than that of the GOT, the GOT displays only the part that lies within the screen by using the center of the image as the reference.

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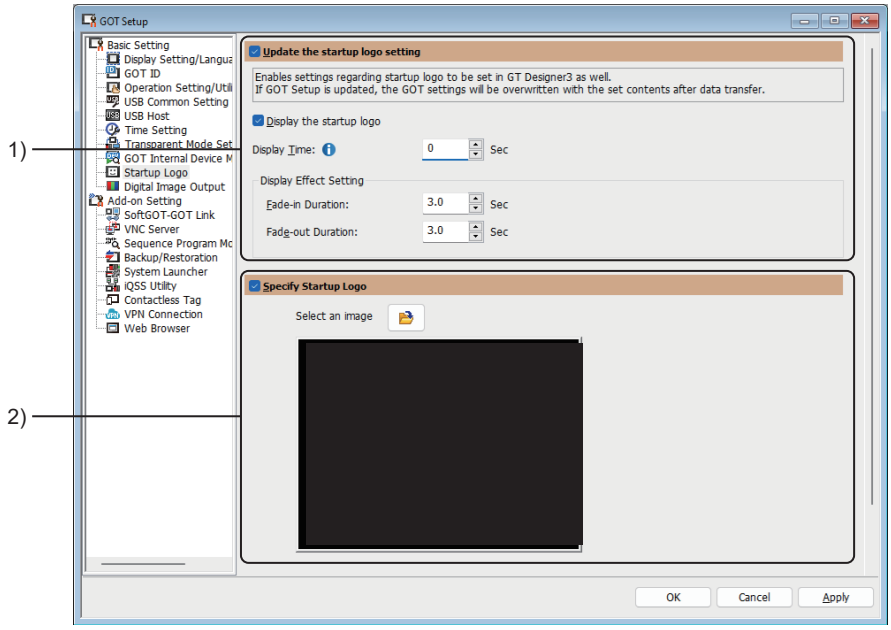
12.9.2 [Startup Logo]

GT37 SoftGOT3000

In [Startup Logo], set an image (startup logo) to be displayed at GOT startup.

Select [Common] → [GOT Setup] → [Basic Setting] → [Startup Logo] from the menu to display this window.



Item			Description
1)	[Update the startup logo setting]	—	Updates the setting data in the GOT with the ones set on GT Designer3 when package data is written. Select this item to configure the settings in [Update the startup logo setting]. When a project is read from the GOT, the setting changed in the utility is applied.
		[Display the startup logo]	Displays the logo at GOT startup. Specify the image to be displayed as the startup logo in [Display the startup logo]. If no image is specified, the pre-installed startup logo is displayed.
		[Display Time]	Set the period of time for displaying the startup logo. The setting range is [0] seconds to [60] seconds. If the time required for the startup processing is longer than the time set in [Display Time], the startup logo is displayed even during the startup processing.
		[Fade-in Duration]	Set the fade-in and fade-out effects for the startup logo. The setting range is [0.0] seconds to [10.0] seconds. [Fade-in Duration] and [Fade-out Duration] are not included in [Display Time]. Setting this item will slow down startup because the total time the startup logo is displayed is the sum of [Fade-in Duration], [Display Time], and [Fade-out Duration].
		[Fade-out Duration]	
2)	[Specify Startup Logo]	—	Set an image file to be used as the startup logo.
		[Select an image] button	Displays the [Open] dialog. Select an image file to be used as the startup logo. The preview of the selected image file is displayed. If the specified image cannot be displayed, the pre-installed startup logo is displayed.

Precautions

■Precautions for utilizing a project

When you utilize a project where the GOT installation orientation is set to [Vertical], set the startup logo again.

Otherwise, the utilized startup logo is rotated and appears in the destination project.

12.10 Configuring the external display output settings ([Digital Image Output])

GT37 SoftGOT3000

☞ Page 647 [Digital Image Output]

In [Digital Image Output], set the screen image to be output to an external display using the image output function.

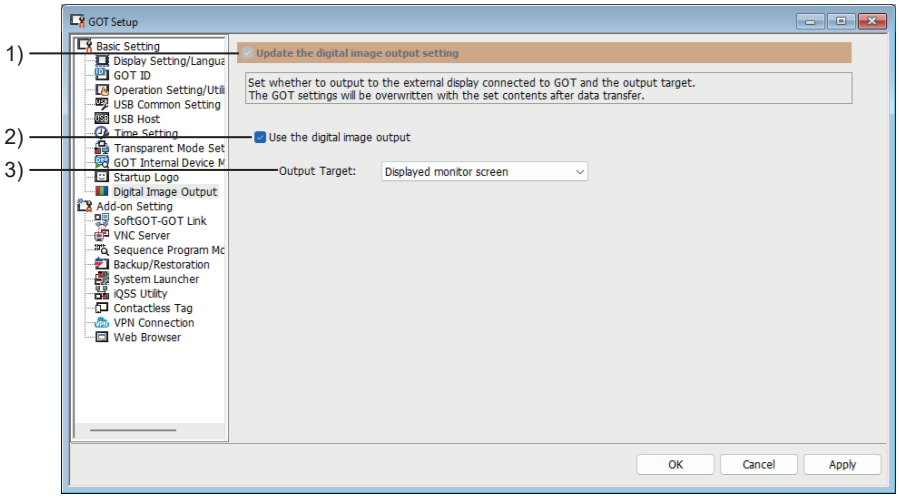
For details on the video output function, refer to the following.

☞ Page 2698 Displaying the GOT screen on an external display (video output function)

12.10.1 [Digital Image Output]

In [Digital Image Output], set the screen image to be output to an external display using the image output function.

Select [Common] → [GOT Setup] → [Basic Setting] → [Digital Image Output] from the menu to display this window.



Item		Description
1)	[Update the digital image output setting]	This item is already selected but cannot be deselected. Updates the setting data in the GOT with the ones set on GT Designer3 when package data is written. When a project is read from the GOT, the setting changed in the utility is applied.
2)	[Use the digital image output]	Enables the GOT screen output to an external display.
3)	[Output Target]	Select the screen to be output to an external display.

PART 5

12.11 Configuring the settings for the SoftGOT-GOT link function ([SoftGOT-GOT Link])

GT37 SoftGOT3000

☞ Page 648 [SoftGOT-GOT Link]

In [SoftGOT-GOT Link], configure the settings for the authorization of the SoftGOT-GOT link function and others.

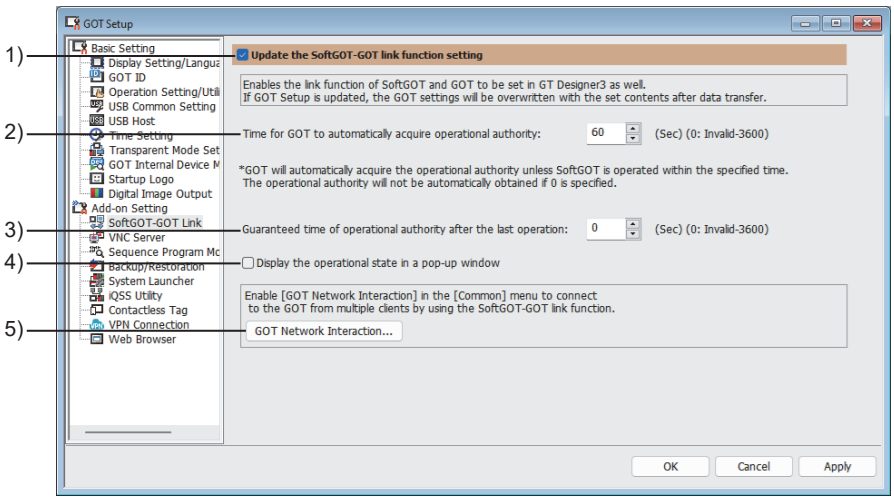
For details on the SoftGOT-GOT link function, refer to the following.

GT SoftGOT3000 User's Manual

12.11.1 [SoftGOT-GOT Link]

In [SoftGOT-GOT Link], configure the settings for the authorization of the SoftGOT-GOT link function and others.

Select [Common] → [GOT Setup] → [Add-on Setting] → [SoftGOT-GOT Link] from the menu to display this window.



Item		Description
1)	[Update the SoftGOT-GOT link function setting]	Overwrites the settings of the GOT with the settings of GT Designer3 when package data is written to the GOT. Select this item to configure the settings in [SoftGOT-GOT Link]. When a project is read from the GOT, the setting changed in the utility is applied.
2)	[Time for GOT to automatically acquire operational authority]	Set a period of time for the GOT to obtain the operation after GT SoftGOT3000 obtains the operation right and is then operated. The setting range is [0] (Invalid), or [1] to [3600] seconds.
3)	[Guaranteed time of operational authority after the last operation]	Set a period of time for the GOT or GT SoftGOT3000 to retain the operation right after either one obtains the operation right and is then operated. The setting range is [0] (Invalid), or [1] to [3600] seconds. This setting is disabled when GS447.b1 is turned on. When [Use GOT network interaction function] is selected in the [GOT Network Interaction] dialog, the authorization guarantee time set for the GOT network interaction function is prioritized.
4)	[Display the operational state in a pop-up window]	When the GT SoftGOT3000 or the GOT does not have the operation right, information about the device with the operation right will pop up.
5)	[GOT Network Interaction] button	Displays the [GOT Network Interaction] dialog.

12.12 Configuring the settings for the VNC server function ([VNC Server])

GT37 SoftGOT3000

☞ Page 649 [VNC Server]

In [VNC Server], configure the settings for the authorization of the VNC server function.

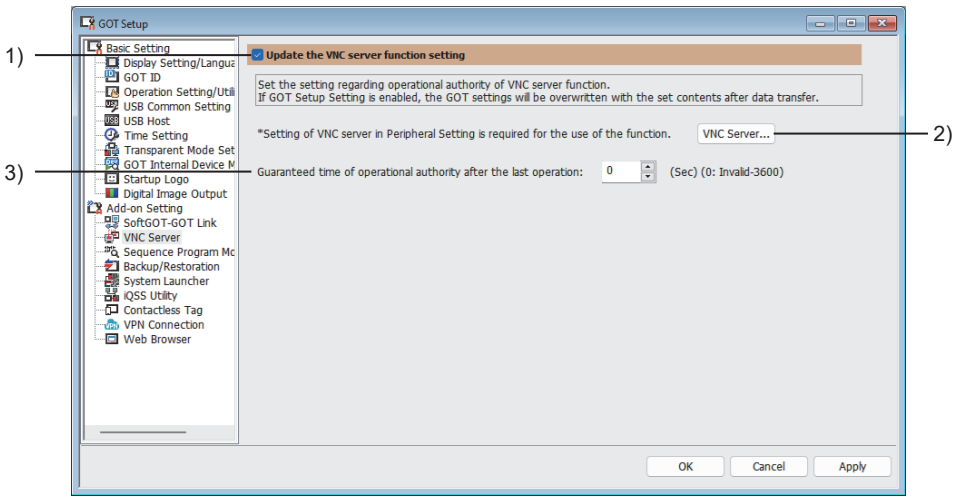
For details on the VNC server function, refer to the following.

☞ Page 2638 Viewing the GOT from a personal computer (VNC server function)

12.12.1 [VNC Server]

In [VNC Server], configure the settings for the authorization of the VNC server function.

Select [Common] → [GOT Setup] → [Add-on Setting] → [VNC Server] from the menu to display this window.



Item		Description
1)	[Update the VNC server function setting]	Updates the setting data in the GOT with the ones set on GT Designer3 when package data is written. Select this item to configure the settings in [VNC Server]. When a project is read from the GOT, the setting changed in the utility is applied.
2)	[VNC Server] button	Set how to connect the VNC server. Click this button to display the [VNC Server] dialog. ☞ Page 2650 [VNC Server] dialog
3)	[Guaranteed time of operational authority after the last operation]	Set the time to retain the authorization after the VNC server (GOT) or the VNC client (personal computer) obtains the authorization and then the VNC server (GOT) or the VNC client (personal computer) is operated. This setting is disabled when GS1792.b8 is turned on. When [Use GOT network interaction function] is selected in the [GOT Network Interaction] dialog, the authorization guarantee time set for the GOT network interaction function is prioritized.

12.13 Configuring the settings for the sequence program monitor ([Sequence Program Monitor])

GT37 SoftGOT3000

☞ Page 651 [Sequence Program Monitor]

In [Sequence Program Monitor], configure the settings for reading sequence programs and displaying comments on the sequence program monitor.

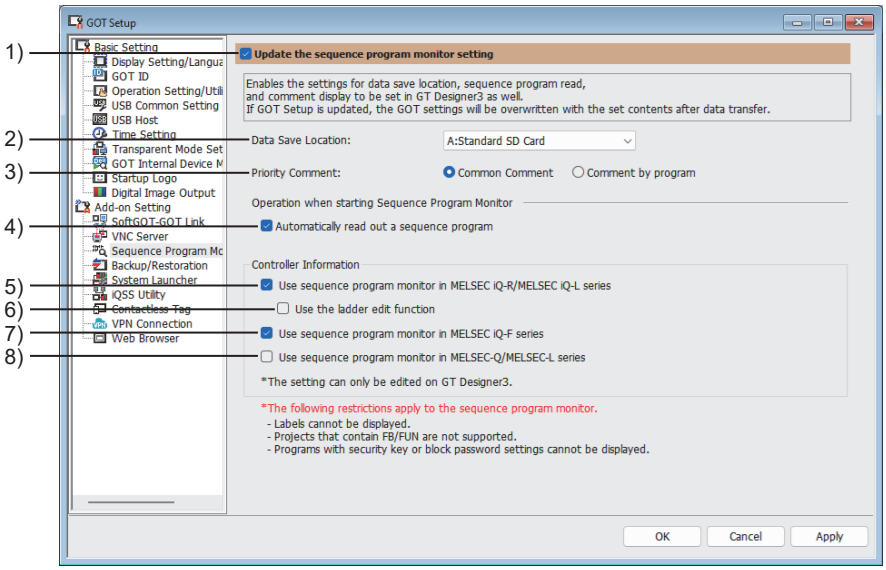
For details on the sequence program monitor, refer to the following.

GOT3000 Series User's Manual (Utility & Maintenance Functions)

12.13.1 [Sequence Program Monitor]

In [Sequence Program Monitor], configure the settings for reading sequence programs and displaying comments on the sequence program monitor.

Select [Common] → [GOT Setup] → [Add-on Setting] → [Sequence Program Monitor] from the menu to display this window.



Item		Description
1)	[Update the sequence program monitor setting]	Overwrites the settings of the GOT with the settings of GT Designer3 when package data is written to the GOT. Select this item to configure the settings in [Sequence Program Monitor]. When a project is read from the GOT, the setting changed in the utility is applied.
2)	[Data Save Location]	Select a destination to save the data of the sequence program monitor. For the available drives by GOT model, refer to the following. ☞ Page 81 Drive configuration and capacity of the GOT
3)	[Priority Comment]	Select the priority comment when a common comment and each program comment are set for the same device in the sequence program.
4)	[Automatically read out a sequence program]	Automatically reads a sequence program from the controller at the sequence program monitor startup.
5)	[Use sequence program monitor in MELSEC iQ-R/MELSEC iQ-L series]	Enables the sequence program monitor (iQ-R/iQ-L ladder). Select this item to incorporate a system application (add-on function) of [Sequence Program Monitor (iQ-R/iQ-L Ladder)] into the package data.
6)	[Use the ladder edit function]	Enables the ladder edit function in the sequence program monitor (iQ-R/iQ-L ladder).
7)	[Use sequence program monitor in MELSEC iQ-F series]	Allows the use of the sequence program monitor (iQ-F ladder). Select this item to incorporate a system application (add-on function) of [Sequence Program Monitor (iQ-F Ladder)] into the package data. The ladder edit function is also usable.
8)	[Use sequence program monitor in MELSEC Q/MELSEC L series]	Allows the use of the sequence program monitor (Q/L ladder). Select this item to incorporate a system application (add-on function) of [Sequence Program Monitor (Q/L Ladder)] into the package data. The ladder edit function is also usable.

12.14 Configuring the settings for the backup/restoration function ([Backup/Restoration])

GT37 SoftGOT3000

☞ Page 652 [Backup/Restoration]
☞ Page 653 [Trigger Setting] dialog
☞ Page 654 [Device List] dialog (trigger device, process notification device)
☞ Page 654 Relevant settings

In [Backup/Restoration], set the destination for saving backup data and configure the trigger backup settings.

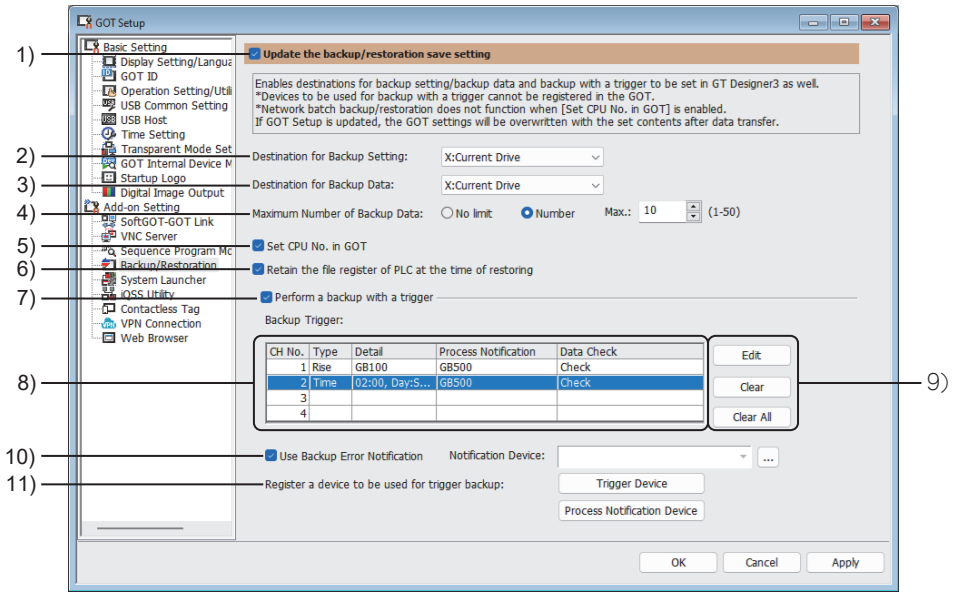
For details on the backup/restoration function, refer to the following.

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

12.14.1 [Backup/Restoration]

In [Backup/Restoration], set the destination for saving backup data and configure the trigger backup settings.

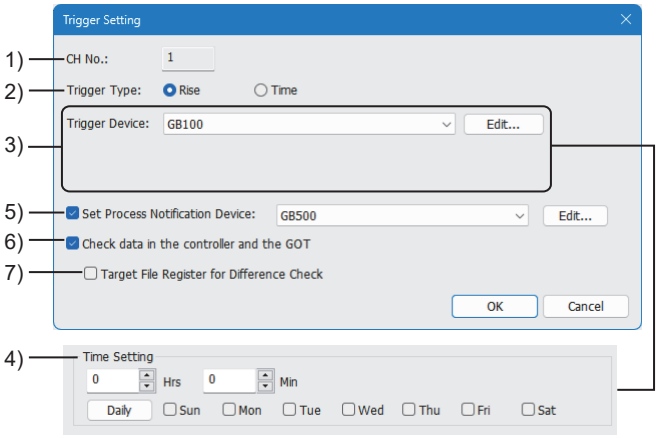
Select [Common] → [GOT Setup] → [Add-on Setting] → [Backup/Restoration] from the menu to display this window.



Item		Description
1)	[Update the backup/restore save setting]	Overwrites the settings of the GOT with the settings of GT Designer3 when package data is written to the GOT. Select this item to configure the settings in [Backup/Restoration]. When a project is read from the GOT, the setting changed in the utility is applied.
2)	[Destination for Backup Setting]	Select a destination to save the backup setting. For the available drives by GOT model, refer to the following. ☞ Page 81 Drive configuration and capacity of the GOT
3)	[Destination for Backup Data]	Select a destination to save the backup data. For the available drives by GOT model, refer to the following. ☞ Page 81 Drive configuration and capacity of the GOT
4)	[Maximum Number of Backup Data]	Select the maximum number of saved backup data. • [No limit]: Saves as much backup data as possible to the drive selected in [Destination for Backup Data]. • [Number]: Saves data up to the specified number of data sets. After selecting this item, set the maximum number of saved backup data. The setting range is [1] to [50].
5)	[Set CPU No. in GOT]	Select this item to set the CPU number of the PLC which executes a backup.
6)	[Retain the file register of PLC at the time of restoring]	Retains the file registers of a PLC at restoration.
7)	[Perform a backup with a trigger]	Select this item to execute a backup by a trigger you set. After selecting this item, set the backup trigger from the list of backup triggers.

Item			Description
8)	List of backup trigger settings		Lists the backup trigger settings. • [CH No.]: Channel number for which the backup trigger setting is used • [Type]: Trigger type • [Detail]: Details of the setting • [Process Notification]: Backup process notification device • [Data Check]: Indicates if the data check after the backup is performed or not.
9)	Operation button of backup trigger settings	—	The following buttons edit the list of backup trigger settings.
		[Edit] button	The [Trigger Setting] dialog appears. ☞ Page 653 [Trigger Setting] dialog
		[Clear] button	Deletes the selected backup trigger setting.
		[Clear All] button	Deletes all the backup trigger settings.
10)	[Use Backup Error Notification]		Stores the channel number of the backup trigger in the notification device if an error occurs during the backup. After selecting this item, set [Notification Device]. A word device can be used for the notification device.
11)	[Register a device to be used for trigger backup]	—	Register the devices used for the trigger backup. Up to 10 devices can be registered for each trigger device and process notification device.
		[Trigger Device] button	Displays the [Device List (Trigger Device)] dialog. Register bit devices used for the trigger device. ☞ Page 654 [Device List] dialog (trigger device, process notification device)
		[Process Notification Device] button	Displays the [Device List (Process Notification Device)] dialog. Register bit devices used for the process notification device. ☞ Page 654 [Device List] dialog (trigger device, process notification device)

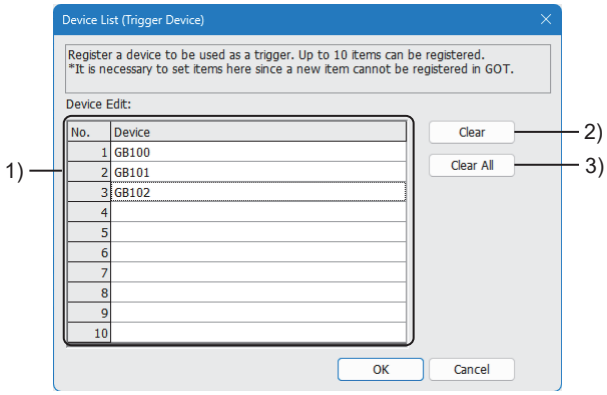
12.14.2 [Trigger Setting] dialog



Item			Description
1)	[CH No.]		Channel number for which the backup trigger setting is used.
2)	[Trigger Type]		Select a trigger type to execute the backup.
3)	[Trigger Device]	—	Select a trigger device from the devices set in the [Device List (Trigger Device)] dialog. This item is displayed when [Rise] is selected in [Trigger Type].
		[Trigger Device] button	Displays the [Device List (Trigger Device)] dialog. Register bit devices used for the trigger device. ☞ Page 654 [Device List] dialog (trigger device, process notification device)
4)	[Time Setting]	—	Set the time and day to take the backup. This item is displayed when [Time] is selected in [Trigger Type].
		[Daily] button	Selects all the days.
5)	[Set Process Notification Device]	—	Select a device to notify a backup is in process. Select a process notification device from the devices set in the [Device List (Process Notification Device)] dialog.
		[Edit] button	Displays the [Device List (Process Notification Device)] dialog. Register bit devices used for the process notification device. ☞ Page 654 [Device List] dialog (trigger device, process notification device)
6)	[Check data in the controller and the GOT]		Select this item to check the data in the controller and backup data in the GOT when a backup is executed.

Item		Description
7)	[Target File Register for Difference Check]	Select this item to check if the file register is changed when a backup is executed. If the file register is changed as a result of the check, a backup is executed. This item can be selected when [Check data in the controller and the GOT] is selected.

12.14.3 [Device List] dialog (trigger device, process notification device)



Item		Description
1)	Device list	Lists the trigger devices or process notification devices. Click the [Device] field to display the [...] button. Set the trigger device or process notification device. The bit device is available.
2)	[Clear] button	Deletes the selected device.
3)	[Clear All] button	Deletes all the devices.

12.14.4 Relevant settings

Configure the relevant settings in addition to the specific settings for the backup/restoration function as required.
The following shows the functions that are available by configuring the relevant settings.

GOT internal device

☞ Page 3581 GOT special register (GS)

Function	Setting item
Executing the GOT data package acquisition when the trigger backup is complete	GS522.b6

12.15 Configuring the settings for the system launcher function ([System Launcher])

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☞ Page 655 [System Launcher]

In [System Launcher], configure the settings of the system launcher function.

For details on the system launcher function and the system launcher (servo network) function, refer to the following.

GOT3000 Series User's Manual (Utility & Maintenance Functions)

Point

Installing system applications (add-on functions)

To use various monitor functions from the system configuration screen, install the system applications (add-on functions) required for the system launcher function and also for the monitor function to the GOT.

Otherwise, monitor functions cannot be invoked from the system configuration screen of the system launcher.

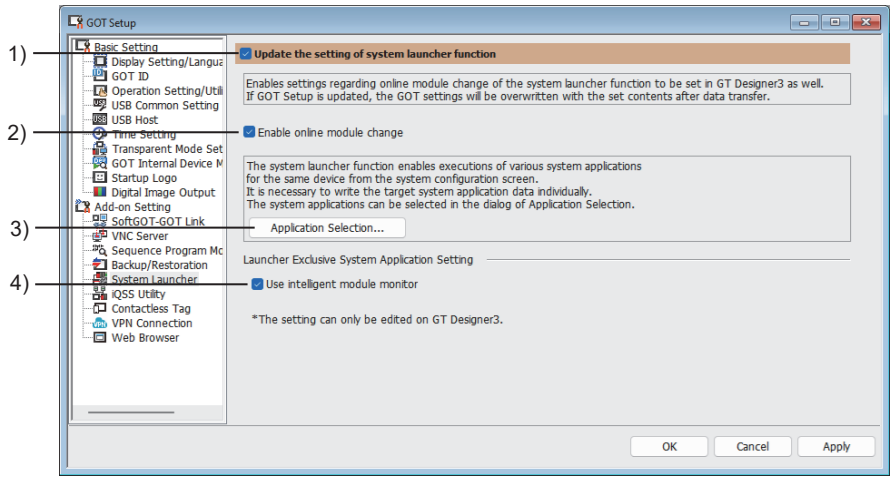
For details, refer to the following.

☞ Page 458 [Application Selection] dialog

12.15.1 [System Launcher]

In [System Launcher], configure the settings of the system launcher function.

Select [Common] → [GOT Setup] → [Add-on Setting] → [System Launcher] from the menu to display the following window.



Item		Description
1)	[Update the setting of system launcher function]	Overwrites the settings of the GOT with the settings of GT Designer3 when package data is written to the GOT. Enables the setting items in [System Launcher] to be set. When a project is read from the GOT, the setting changed in the utility is applied.
2)	[Enable online module change]	Enables the online module change for PLCs by operating the GOT.
3)	[Application Selection] button	Displays the [Application Selection] dialog. Select a system application to be added to package data. ☞ Page 458 [Application Selection] dialog
4)	[Use intelligent module monitor]	Enables the intelligent module monitor function.

12.16 Configuring the settings for the iQSS utility function ([iQSS Utility])

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☞ Page 656 [iQSS Utility]
☞ Page 657 [CSP+ for iQSS Data Write] dialog
☞ Page 658 Equipment compatible with the iQSS utility

In [iQSS Utility], configure the settings of the storage location for iQSS data (CSP+).

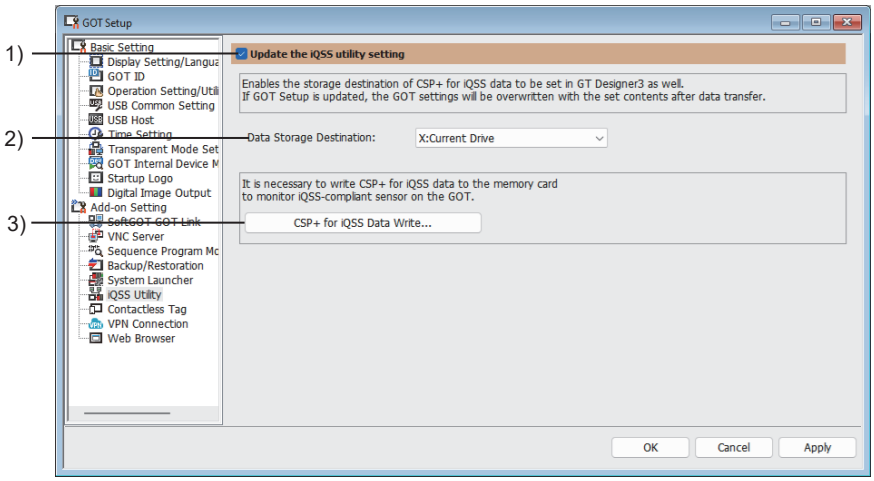
For details on the iQSS utility, refer to the following.

GOT3000 Series User's Manual (Utility & Maintenance Functions)

12.16.1 [iQSS Utility]

In [iQSS Utility], specify iQSS data (CSP+) to be written to a data storage, and select a drive of the GOT as the storage location.

Select [Common] → [GOT Setup] → [Add-on Setting] → [iQSS Utility] from the menu to display the following window.

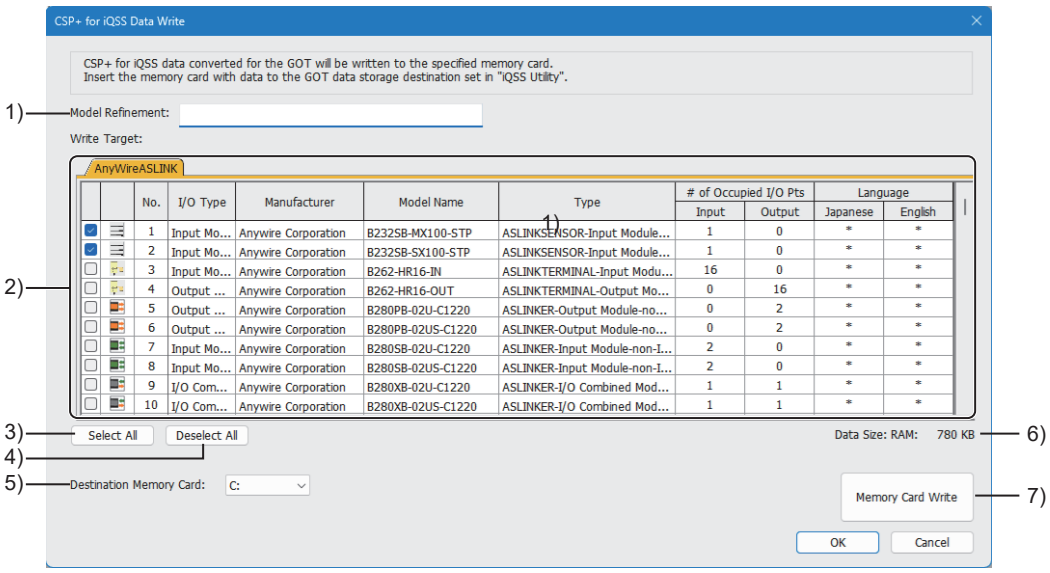


Item		Description
1)	[Update the iQSS utility setting]	Overwrites the settings of the GOT with the settings of GT Designer3 when package data is written to the GOT. Enables the setting items in [iQSS Utility] to be set. When a project is read from the GOT, the setting changed in the utility is applied.
2)	[Data Storage Destination]	Select a drive at which iQSS data (CSP+) is located. For the available drives by GOT model, refer to the following. ☞ Page 81 Drive configuration and capacity of the GOT
3)	[CSP+ for iQSS Data Write] button	Write iQSS data (CSP+) to a data storage installed on the personal computer. Click this button to display the [CSP+ for iQSS Data Write] dialog. ☞ Page 657 [CSP+ for iQSS Data Write] dialog

12.16.2 [CSP+ for iQSS Data Write] dialog

Write iQSS data (CSP+) to a data storage installed on the personal computer.

Select [Communication] → [CSP+ for iQSS Data Write] from the menu to display the following dialog.



Item			Description
1)	[Model Refinement]		Narrows down iQSS data (CSP+) in [Write Target] by the entered model name. Up to 48 characters can be set. Numeric characters, A to Z, a to z, a one-byte space, and the following symbols are available. !#$%&()+,-=@[\]^_`{} The entered characters are case-insensitive.
2)	[Write Target]	—	Lists iQSS data (CSP+) to be written to a data storage. All pieces of iQSS data (CSP+) are arranged in tabs by network type. Use the checkbox to select the iQSS data (CSP+) to be written to a data storage. For equipment compatible with the iQSS utility, refer to the following. ☞ Page 658 Equipment compatible with the iQSS utility
		[No.]	iQSS data (CSP+) number
		[I/O Type]	Input/output type of the target equipment
		[Manufacturer]	Manufacturer of the target equipment
		[Model Name]	Model of the target equipment
		[Type]	Type of the target equipment
		[# of Occupied I/O]	• [Input] Number of inputs for the target equipment • [Output] Number of outputs for the target equipment
		[Language]	Displays an asterisk (*) when this version of data exists. • [Japanese] Indicates the presence or absence of the Japanese version of iQSS data (CSP+). • [English] Indicates the presence or absence of the English version of iQSS data (CSP+).
3)	[Select All] button		Selects all pieces of iQSS data (CSP+) in [Write Target].
4)	[Delete All] button		Deselects all pieces of iQSS data (CSP+) in [Write Target].
5)	[Destination Memory Card]		Select a drive (data storage) to which iQSS data (CSP+) is written. The selectable drives depend on the personal computer.
6)	[Data Size]		Displays the space of the operation memory (RAM) that is required to store the iQSS data (CSP+) selected in [Write Target]. For the available space in the GOT user area, refer to the following. ☞ Page 81 Drive configuration and capacity of the GOT
7)	[Memory Card Write] button		Writes data listed in [Write Target] to a data storage.

12.16.3 Equipment compatible with the iQSS utility

Anywire Corporation

Model name	Type			
B232SB-MX100-STP	ASLINKSENSOR	Input Module	non-isolated	Comb type Main-Module
B232SB-SX100-STP	ASLINKSENSOR	Input Module	non-isolated	Comb type Sub-Module
B262-HR16-IN	ASLINKTERMINAL	Input Module	non-isolated	Input Panel Switch
B262-HR16-OUT	ASLINKTERMINAL	Output Module	non-isolated	Output LED Display
B280PB-02U-C1220	ASLINKER	Output Module	non-isolated	Sink Type
B280PB-02US-C1220	ASLINKER	Output Module	non-isolated	Source Type
B280SB-02U-C1220	ASLINKER	Input Module	non-isolated	Sink Type
B280SB-02US-C1220	ASLINKER	Input Module	non-isolated	Source Type
B280XB-02U-C1220	ASLINKER	I/O Combined Module	non-isolated	Sink Type
B280XB-02US-C1220	ASLINKER	I/O Combined Module	non-isolated	Source Type
B281PB-02U-2D220	ASLINKER	Output Module	non-isolated	Sink Type
B281PB-02U-2D720	ASLINKER	Output Module	non-isolated	Sink Type
B281PB-02U-2D820	ASLINKER	Output Module	non-isolated	Sink Type
B281PB-02U-7CC20	ASLINKER	Output Module	non-isolated	Sink Type
B281PB-02U-CC20	ASLINKER	Output Module	non-isolated	Sink Type
B281PB-02U-CD220	ASLINKER	Output Module	non-isolated	Sink Type
B281PB-02U-CD720	ASLINKER	Output Module	non-isolated	Sink Type
B281PB-02U-CD820	ASLINKER	Output Module	non-isolated	Sink Type
B281PB-02US-2D220	ASLINKER	Output Module	non-isolated	Source Type
B281PB-02US-2D720	ASLINKER	Output Module	non-isolated	Source Type
B281PB-02US-2D820	ASLINKER	Output Module	non-isolated	Source Type
B281PB-02US-7CC20	ASLINKER	Output Module	non-isolated	Source Type
B281PB-02US-CC20	ASLINKER	Output Module	non-isolated	Source Type
B281PB-02US-CD220	ASLINKER	Output Module	non-isolated	Source Type
B281PB-02US-CD720	ASLINKER	Output Module	non-isolated	Source Type
B281PB-02US-CD820	ASLINKER	Output Module	non-isolated	Source Type
B281SB-02U-2D220	ASLINKER	Input Module	non-isolated	Sink Type
B281SB-02U-2D720	ASLINKER	Input Module	non-isolated	Sink Type
B281SB-02U-2D820	ASLINKER	Input Module	non-isolated	Sink Type
B281SB-02U-7CC20	ASLINKER	Input Module	non-isolated	Sink Type
B281SB-02U-CC20	ASLINKER	Input Module	non-isolated	Sink Type
B281SB-02U-CD220	ASLINKER	Input Module	non-isolated	Sink Type
B281SB-02U-CD720	ASLINKER	Input Module	non-isolated	Sink Type
B281SB-02U-CD820	ASLINKER	Input Module	non-isolated	Sink Type
B281SB-02US-2D220	ASLINKER	Input Module	non-isolated	Source Type
B281SB-02US-2D720	ASLINKER	Input Module	non-isolated	Source Type
B281SB-02US-2D820	ASLINKER	Input Module	non-isolated	Source Type
B281SB-02US-7CC20	ASLINKER	Input Module	non-isolated	Source Type
B281SB-02US-CC20	ASLINKER	Input Module	non-isolated	Source Type
B281SB-02US-CD220	ASLINKER	Input Module	non-isolated	Source Type
B281SB-02US-CD720	ASLINKER	Input Module	non-isolated	Source Type
B281SB-02US-CD820	ASLINKER	Input Module	non-isolated	Source Type
B281XB-02U-2D220	ASLINKER	I/O Combined Module	non-isolated	Sink Type
B281XB-02U-2D620	ASLINKER	I/O Combined Module	non-isolated	Sink Type
B281XB-02U-2D720	ASLINKER	I/O Combined Module	non-isolated	Sink Type
B281XB-02U-2D820	ASLINKER	I/O Combined Module	non-isolated	Sink Type
B281XB-02U-7CC20	ASLINKER	I/O Combined Module	non-isolated	Sink Type
B281XB-02U-CC20	ASLINKER	I/O Combined Module	non-isolated	Sink Type

Model name	Type			
B281XB-02U-CD220	ASLINKER	I/O Combined Module	non-isolated	Sink Type
B281XB-02U-CD620	ASLINKER	I/O Combined Module	non-isolated	Sink Type
B281XB-02U-CD720	ASLINKER	I/O Combined Module	non-isolated	Sink Type
B281XB-02U-CD820	ASLINKER	I/O Combined Module	non-isolated	Sink Type
B281XB-02US-2D220	ASLINKER	I/O Combined Module	non-isolated	Source Type
B281XB-02US-2D620	ASLINKER	I/O Combined Module	non-isolated	Source Type
B281XB-02US-2D720	ASLINKER	I/O Combined Module	non-isolated	Source Type
B281XB-02US-2D820	ASLINKER	I/O Combined Module	non-isolated	Source Type
B281XB-02US-7CC20	ASLINKER	I/O Combined Module	non-isolated	Source Type
B281XB-02US-CC20	ASLINKER	I/O Combined Module	non-isolated	Source Type
B281XB-02US-CD220	ASLINKER	I/O Combined Module	non-isolated	Source Type
B281XB-02US-CD620	ASLINKER	I/O Combined Module	non-isolated	Source Type
B281XB-02US-CD720	ASLINKER	I/O Combined Module	non-isolated	Source Type
B281XB-02US-CD820	ASLINKER	I/O Combined Module	non-isolated	Source Type
B283SB-01-1KC	ASLINKSENSOR	Input Module	non-isolated	Separate Type(Receiver)
B283SB-01-1KP	ASLINKSENSOR	Output Module	non-isolated	Separate Type(Light source)
B283SB-01-1KR	ASLINKSENSOR	Input Module	non-isolated	Retroreflective type
B283SB-01-1KS	ASLINKSENSOR	Input Module	non-isolated	Diffuse reflection type
B284SB-01-1KLP30*1	ASLINKSENSOR	Input Module	non-isolated	Compound pressure(-100~100kPa)
B284SB-01-1KLP30A	ASLINKSENSOR	Input Module	non-isolated	Compound pressure(-100~100kPa)
B284SB-01-1KNP30*1	ASLINKSENSOR	Input Module	non-isolated	Negative pressure(-100~0kPa)
B284SB-01-1KNP30A	ASLINKSENSOR	Input Module	non-isolated	Negative pressure(-100~0kPa)
B284SB-01-1KPLP30*1	ASLINKSENSOR	Input Module	non-isolated	Positive pressure(0~100KPa)
B284SB-01-1KPLP30A	ASLINKSENSOR	Input Module	non-isolated	Positive pressure(0~100KPa)
B284SB-01-1KPP30*1	ASLINKSENSOR	Input Module	non-isolated	Positive pressure(0~1MPa)
B284SB-01-1KPP30A	ASLINKSENSOR	Input Module	non-isolated	Positive pressure(0~1MPa)
B284SB-02-1KLP30*1	ASLINKSENSOR	Input Module	non-isolated	Compound pressure(-100~100kPa)
B284SB-02-1KLP30A	ASLINKSENSOR	Input Module	non-isolated	Compound pressure(-100~100kPa)
B284SB-02-1KNP30*1	ASLINKSENSOR	Input Module	non-isolated	Negative pressure(-100~0kPa)
B284SB-02-1KNP30A	ASLINKSENSOR	Input Module	non-isolated	Negative pressure(-100~0kPa)
B284SB-02-1KPLP30*1	ASLINKSENSOR	Input Module	non-isolated	Positive pressure(0~100KPa)
B284SB-02-1KPLP30A	ASLINKSENSOR	Input Module	non-isolated	Positive pressure(0~100KPa)
B284SB-02-1KPP30*1	ASLINKSENSOR	Input Module	non-isolated	Positive pressure(0~1MPa)
B284SB-02-1KPP30A	ASLINKSENSOR	Input Module	non-isolated	Positive pressure(0~1MPa)
B284SB-J1-1KLP30	ASLINKSENSOR	Input Module	non-isolated	Compound pressure(-100~100kPa)
B284SB-J1-1KNP30	ASLINKSENSOR	Input Module	non-isolated	Negative pressure(-100~0kPa)
B284SB-J1-1KPLP30	ASLINKSENSOR	Input Module	non-isolated	Positive pressure(0~100KPa)
B284SB-J1-1KPP30	ASLINKSENSOR	Input Module	non-isolated	Positive pressure(0~1MPa)
B285SB-01-1K1	ASLINKSENSOR	Input Module	non-isolated	Cylinder Switch
B289SB-01AF-CAM20	ASLINKAMP	Input Module	non-isolated	Fiber Sensor Amplifier
B289SB-01AF-CAS	ASLINKAMP	Input Module	non-isolated	Fiber Sensor Amplifier
B289SB-01AK-CAM20	ASLINKAMP	Input Module	non-isolated	Proximity Sensor Amplifier
B289SB-01AK-CAS	ASLINKAMP	Input Module	non-isolated	Proximity Sensor Amplifier
B289SB-01AP-CAM20	ASLINKAMP	Input Module	non-isolated	Photoelectronic Sensor Amplifier
B289SB-01AP-CAS	ASLINKAMP	Input Module	non-isolated	Photoelectronic Sensor Amplifier
B295SB-01-1K24	ASLINKSENSOR	Input Module	non-isolated	Proximity Switch(M8 Screw type)
B295SB-01-1K25	ASLINKSENSOR	Input Module	non-isolated	Proximity Switch(M12 Screw type)
B295SB-01-1K26	ASLINKSENSOR	Input Module	non-isolated	Proximity Switch(M18 Screw type)
B295SB-01-1K27	ASLINKSENSOR	Input Module	non-isolated	Proximity Switch(M30 Screw type)
B297SB-01-1K40	ASLINKSENSOR	Input Module	non-isolated	Photointerrupter(Standard type)
B298PB-02U-M12	ASLINKER	Output Module	non-isolated	Sink Type
B298PB-02US-M12	ASLINKER	Output Module	non-isolated	Source Type
B298SB-02U-M12	ASLINKER	Input Module	non-isolated	Sink Type

Model name	Type			
B298SB-02US-M12	ASLINKER	Input Module	non-isolated	Source Type
B298XB-02U-M12	ASLINKER	I/O Combined Module	non-isolated	Sink Type
B298XB-02US-M12	ASLINKER	I/O Combined Module	non-isolated	Source Type
B2N87SB-02D-CC20	ASLINKER	Input Module	non-isolated	Sink Type
B2N87SB-02DS-CC20	ASLINKER	Input Module	non-isolated	Source Type
BA-F116(-12)	ASLINKAMP	Input Module	non-isolated	Fiber Sensor Amplifier
BL2109PB-04PS-1K	ASLINKTERMINAL	Output Module	isolated	Source Type
BL227PB-T07P02V-P	POKAYOKETERMINAL	Output Module	isolated	No Definition
BL227PB-T07P06M-P	POKAYOKETERMINAL	Output Module	isolated	No Definition
BL227PB-T14P02V-P	POKAYOKETERMINAL	Output Module	isolated	No Definition
BL227PB-T14P06M-P	POKAYOKETERMINAL	Output Module	isolated	No Definition
BL227XB-K02VL-P	POKAYOKETERMINAL	I/O Combined Module	isolated	No Definition
BL227XB-K02VN-P	POKAYOKETERMINAL	I/O Combined Module	isolated	No Definition
BL227XB-K02V-P	POKAYOKETERMINAL	I/O Combined Module	isolated	No Definition
BL227XB-K06ML-P	POKAYOKETERMINAL	I/O Combined Module	isolated	No Definition
BL227XB-K06MN-P	POKAYOKETERMINAL	I/O Combined Module	isolated	No Definition
BL227XB-K06M-P	POKAYOKETERMINAL	I/O Combined Module	isolated	No Definition
BL227XB-K71MN-P	POKAYOKETERMINAL	I/O Combined Module	isolated	No Definition
BL227XB-K71M-P	POKAYOKETERMINAL	I/O Combined Module	isolated	No Definition
BL227XB-K71VN-P	POKAYOKETERMINAL	I/O Combined Module	isolated	No Definition
BL227XB-K71V-P	POKAYOKETERMINAL	I/O Combined Module	isolated	No Definition
BL227XB-K72MN-P	POKAYOKETERMINAL	I/O Combined Module	isolated	No Definition
BL227XB-K72M-P	POKAYOKETERMINAL	I/O Combined Module	isolated	No Definition
BL227XB-K72N-P	POKAYOKETERMINAL	I/O Combined Module	isolated	No Definition
BL227XB-K72VN-P	POKAYOKETERMINAL	I/O Combined Module	isolated	No Definition
BL227XB-K72V-P	POKAYOKETERMINAL	I/O Combined Module	isolated	No Definition
BL227XB-T07P02V-C	POKAYOKETERMINAL	Input Module	isolated	No Definition
BL227XB-T07P06M-C	POKAYOKETERMINAL	Input Module	isolated	No Definition
BL227XB-T14P02V-C	POKAYOKETERMINAL	Input Module	isolated	No Definition
BL227XB-T14P06M-C	POKAYOKETERMINAL	Input Module	isolated	No Definition
BL264PB-16FS-T5	ASLINKTERMINAL	Output Module	isolated	Source Type
BL264PB-16F-T5	ASLINKTERMINAL	Output Module	isolated	Sink Type
BL265PB-16F-2-20	ASLINKTERMINAL	Output Module	isolated	Sink Type
BL265PB-16FS-2-20	ASLINKTERMINAL	Output Module	isolated	Source Type
BL265PB-32F-2-20	ASLINKTERMINAL	Output Module	isolated	Sink Type
BL265PB-32FS-2-20	ASLINKTERMINAL	Output Module	isolated	Source Type
BL265SB-16F-2-20	ASLINKTERMINAL	Input Module	isolated	Sink Type
BL265SB-16FS-2-20	ASLINKTERMINAL	Input Module	isolated	Source Type
BL265SB-32F-2-20	ASLINKTERMINAL	Input Module	isolated	Sink Type
BL265SB-32FS-2-20	ASLINKTERMINAL	Input Module	isolated	Source Type
BL265XB-18F-E84-20	ASLINKTERMINAL	I/O Combined Module	isolated	Sink Type
BL265XB-32F-2-20	ASLINKTERMINAL	I/O Combined Module	isolated	Sink Type
BL265XB-32FS-2-20	ASLINKTERMINAL	I/O Combined Module	isolated	Source Type
BL287PB-02F-2D220	ASLINKER	Output Module	isolated	Sink Type
BL287PB-02F-2D720	ASLINKER	Output Module	isolated	Sink Type
BL287PB-02F-2D820	ASLINKER	Output Module	isolated	Sink Type
BL287PB-02F-7CC20	ASLINKER	Output Module	isolated	Sink Type
BL287PB-02F-CC20	ASLINKER	Output Module	isolated	Sink Type
BL287PB-02F-CD220	ASLINKER	Output Module	isolated	Sink Type
BL287PB-02F-CD720	ASLINKER	Output Module	isolated	Sink Type
BL287PB-02F-CD820	ASLINKER	Output Module	isolated	Sink Type
BL287PB-02FS-2D220	ASLINKER	Output Module	isolated	Source Type
BL287PB-02FS-2D720	ASLINKER	Output Module	isolated	Source Type

Model name	Type			
BL287PB-02FS-2D820	ASLINKER	Output Module	isolated	Source Type
BL287PB-02FS-7CC20	ASLINKER	Output Module	isolated	Source Type
BL287PB-02FS-CC20	ASLINKER	Output Module	isolated	Source Type
BL287PB-02FS-CD220	ASLINKER	Output Module	isolated	Source Type
BL287PB-02FS-CD720	ASLINKER	Output Module	isolated	Source Type
BL287PB-02FS-CD820	ASLINKER	Output Module	isolated	Source Type
BL287SB-02F-2D220	ASLINKER	Input Module	isolated	Sink Type
BL287SB-02F-2D720	ASLINKER	Input Module	isolated	Sink Type
BL287SB-02F-2D820	ASLINKER	Input Module	isolated	Sink Type
BL287SB-02F-7CC20	ASLINKER	Input Module	isolated	Sink Type
BL287SB-02F-CC20	ASLINKER	Input Module	isolated	Sink Type
BL287SB-02F-CD220	ASLINKER	Input Module	isolated	Sink Type
BL287SB-02F-CD720	ASLINKER	Input Module	isolated	Sink Type
BL287SB-02F-CD820	ASLINKER	Input Module	isolated	Sink Type
BL287SB-02FS-2D220	ASLINKER	Input Module	isolated	Source Type
BL287SB-02FS-2D720	ASLINKER	Input Module	isolated	Source Type
BL287SB-02FS-2D820	ASLINKER	Input Module	isolated	Source Type
BL287SB-02FS-7CC20	ASLINKER	Input Module	isolated	Source Type
BL287SB-02FS-CC20	ASLINKER	Input Module	isolated	Source Type
BL287SB-02FS-CD220	ASLINKER	Input Module	isolated	Source Type
BL287SB-02FS-CD720	ASLINKER	Input Module	isolated	Source Type
BL287SB-02FS-CD820	ASLINKER	Input Module	isolated	Source Type
BL287XB-02F-2D220	ASLINKER	I/O Combined Module	isolated	Sink Type
BL287XB-02F-2D620	ASLINKER	I/O Combined Module	isolated	Sink Type
BL287XB-02F-2D720	ASLINKER	I/O Combined Module	isolated	Sink Type
BL287XB-02F-2D820	ASLINKER	I/O Combined Module	isolated	Sink Type
BL287XB-02F-7CC20	ASLINKER	I/O Combined Module	isolated	Sink Type
BL287XB-02F-CC20	ASLINKER	I/O Combined Module	isolated	Sink Type
BL287XB-02F-CD220	ASLINKER	I/O Combined Module	isolated	Sink Type
BL287XB-02F-CD620	ASLINKER	I/O Combined Module	isolated	Sink Type
BL287XB-02F-CD720	ASLINKER	I/O Combined Module	isolated	Sink Type
BL287XB-02F-CD820	ASLINKER	I/O Combined Module	isolated	Sink Type
BL287XB-02FS-2D220	ASLINKER	I/O Combined Module	isolated	Source Type
BL287XB-02FS-2D620	ASLINKER	I/O Combined Module	isolated	Source Type
BL287XB-02FS-2D720	ASLINKER	I/O Combined Module	isolated	Source Type
BL287XB-02FS-2D820	ASLINKER	I/O Combined Module	isolated	Source Type
BL287XB-02FS-7CC20	ASLINKER	I/O Combined Module	isolated	Source Type
BL287XB-02FS-CC20	ASLINKER	I/O Combined Module	isolated	Source Type
BL287XB-02FS-CD220	ASLINKER	I/O Combined Module	isolated	Source Type
BL287XB-02FS-CD620	ASLINKER	I/O Combined Module	isolated	Source Type
BL287XB-02FS-CD720	ASLINKER	I/O Combined Module	isolated	Source Type
BL287XB-02FS-CD820	ASLINKER	I/O Combined Module	isolated	Source Type
BL296PB-04F-4A-20	ASLINKTERMINAL	Output Module	isolated	Sink Type
BL296PB-04F-4B-20	ASLINKTERMINAL	Output Module	isolated	Sink Type
BL296PB-04FS-4A-20	ASLINKTERMINAL	Output Module	isolated	Source Type
BL296PB-04FS-4B-20	ASLINKTERMINAL	Output Module	isolated	Source Type
BL296PB-08F	ASLINKTERMINAL	Output Module	isolated	Sink Type
BL296PB-08F-10-20	ASLINKTERMINAL	Output Module	isolated	Sink Type
BL296PB-08F-11	ASLINKTERMINAL	Output Module	isolated	Sink Type
BL296PB-08F-11-V50	ASLINKTERMINAL	Output Module	isolated	Sink Type
BL296PB-08F-20	ASLINKTERMINAL	Output Module	isolated	Sink Type
BL296PB-08F-3	ASLINKTERMINAL	Output Module	isolated	Sink Type
BL296PB-08F-3-V50	ASLINKTERMINAL	Output Module	isolated	Sink Type

Model name	Type			
BL296PB-08F-4-20	ASLINKTERMINAL	Output Module	isolated	Sink Type
BL296PB-08F-4A-20	ASLINKTERMINAL	Output Module	isolated	Sink Type
BL296PB-08F-4E-20	ASLINKTERMINAL	Output Module	isolated	Sink Type
BL296PB-08F-9-20	ASLINKTERMINAL	Output Module	isolated	Sink Type
BL296PB-08FS	ASLINKTERMINAL	Output Module	isolated	Source Type
BL296PB-08FS-10-20	ASLINKTERMINAL	Output Module	isolated	Source Type
BL296PB-08FS-11	ASLINKTERMINAL	Output Module	isolated	Source Type
BL296PB-08FS-11-V50	ASLINKTERMINAL	Output Module	isolated	Source Type
BL296PB-08FS-20	ASLINKTERMINAL	Output Module	isolated	Source Type
BL296PB-08FS-3	ASLINKTERMINAL	Output Module	isolated	Source Type
BL296PB-08FS-3-V50	ASLINKTERMINAL	Output Module	isolated	Source Type
BL296PB-08FS-4-20	ASLINKTERMINAL	Output Module	isolated	Source Type
BL296PB-08FS-4A-20	ASLINKTERMINAL	Output Module	isolated	Source Type
BL296PB-08FS-4E-20	ASLINKTERMINAL	Output Module	isolated	Source Type
BL296PB-08FS-9-20	ASLINKTERMINAL	Output Module	isolated	Source Type
BL296PB-08FS-V50	ASLINKTERMINAL	Output Module	isolated	Source Type
BL296PB-08F-V50	ASLINKTERMINAL	Output Module	isolated	Sink Type
BL296PB-08RS	ASLINKTERMINAL	Output Module	isolated	G2R-1-SN DC24V
BL296PB-08RSN	ASLINKTERMINAL	Output Module	isolated	DriverOnly
BL296PB-08RSS	ASLINKTERMINAL	Output Module	isolated	G3R-ODX02SN DC5-24
BL296PB-08RSS1	ASLINKTERMINAL	Output Module	isolated	G3R-OA202SZN DC5-24
BL296PB-08RSS2	ASLINKTERMINAL	Output Module	isolated	G3R-OA202SLN DC5-24
BL296PB-08RSS3	ASLINKTERMINAL	Output Module	isolated	G3RZ-201SLN DC24
BL296PB-08RSS4	ASLINKTERMINAL	Output Module	isolated	G3R-OD201SN DC5-24
BL296PB-16F-11-V50	ASLINKTERMINAL	Output Module	isolated	Sink Type
BL296PB-16F-3-V50	ASLINKTERMINAL	Output Module	isolated	Sink Type
BL296PB-16F-4A-20	ASLINKTERMINAL	Output Module	isolated	Sink Type
BL296PB-16FS-11-V50	ASLINKTERMINAL	Output Module	isolated	Source Type
BL296PB-16FS-3-V50	ASLINKTERMINAL	Output Module	isolated	Source Type
BL296PB-16FS-4A-20	ASLINKTERMINAL	Output Module	isolated	Source Type
BL296PB-16FS-V50	ASLINKTERMINAL	Output Module	isolated	Source Type
BL296PB-16F-V50	ASLINKTERMINAL	Output Module	isolated	Sink Type
BL296SB-04F-4A-20	ASLINKTERMINAL	Input Module	isolated	Sink Type
BL296SB-04F-4B-20	ASLINKTERMINAL	Input Module	isolated	Sink Type
BL296SB-04F-4PA-20	ASLINKTERMINAL	Input Module	isolated	Sink Type
BL296SB-04FS-4A-20	ASLINKTERMINAL	Input Module	isolated	Source Type
BL296SB-04FS-4B-20	ASLINKTERMINAL	Input Module	isolated	Source Type
BL296SB-08F	ASLINKTERMINAL	Input Module	isolated	Sink Type
BL296SB-08F-10-20	ASLINKTERMINAL	Input Module	isolated	Sink Type
BL296SB-08F-11	ASLINKTERMINAL	Input Module	isolated	Sink Type
BL296SB-08F-11-V50	ASLINKTERMINAL	Input Module	isolated	Sink Type
BL296SB-08F-20	ASLINKTERMINAL	Input Module	isolated	Sink Type
BL296SB-08F-3	ASLINKTERMINAL	Input Module	isolated	Sink Type
BL296SB-08F-3-V50	ASLINKTERMINAL	Input Module	isolated	Sink Type
BL296SB-08F-4-20	ASLINKTERMINAL	Input Module	isolated	Sink Type
BL296SB-08F-4A-20	ASLINKTERMINAL	Input Module	isolated	Sink Type
BL296SB-08F-4E-20	ASLINKTERMINAL	Input Module	isolated	Sink Type
BL296SB-08F-4P-20	ASLINKTERMINAL	Input Module	isolated	Sink Type
BL296SB-08F-4PA-20	ASLINKTERMINAL	Input Module	isolated	Sink Type
BL296SB-08F-9-20	ASLINKTERMINAL	Input Module	isolated	Sink Type
BL296SB-08FS	ASLINKTERMINAL	Input Module	isolated	Source Type
BL296SB-08FS-10-20	ASLINKTERMINAL	Input Module	isolated	Source Type
BL296SB-08FS-11	ASLINKTERMINAL	Input Module	isolated	Source Type

Model name	Type			
BL296SB-08FS-11-V50	ASLINKTERMINAL	Input Module	isolated	Source Type
BL296SB-08FS-20	ASLINKTERMINAL	Input Module	isolated	Source Type
BL296SB-08FS-3	ASLINKTERMINAL	Input Module	isolated	Source Type
BL296SB-08FS-3-V50	ASLINKTERMINAL	Input Module	isolated	Source Type
BL296SB-08FS-4-20	ASLINKTERMINAL	Input Module	isolated	Source Type
BL296SB-08FS-4A-20	ASLINKTERMINAL	Input Module	isolated	Source Type
BL296SB-08FS-4E-20	ASLINKTERMINAL	Input Module	isolated	Source Type
BL296SB-08FS-9-20	ASLINKTERMINAL	Input Module	isolated	Source Type
BL296SB-08FS-V50	ASLINKTERMINAL	Input Module	isolated	Source Type
BL296SB-08F-V50	ASLINKTERMINAL	Input Module	isolated	Sink Type
BL296SB-16F-11-V50	ASLINKTERMINAL	Input Module	isolated	Sink Type
BL296SB-16F-3-V50	ASLINKTERMINAL	Input Module	isolated	Sink Type
BL296SB-16F-4A-20	ASLINKTERMINAL	Input Module	isolated	Sink Type
BL296SB-16F-4PA-20	ASLINKTERMINAL	Input Module	isolated	Sink Type
BL296SB-16FS-11-V50	ASLINKTERMINAL	Input Module	isolated	Source Type
BL296SB-16FS-3-V50	ASLINKTERMINAL	Input Module	isolated	Source Type
BL296SB-16FS-4A-20	ASLINKTERMINAL	Input Module	isolated	Source Type
BL296SB-16FS-V50	ASLINKTERMINAL	Input Module	isolated	Source Type
BL296SB-16F-V50	ASLINKTERMINAL	Input Module	isolated	Sink Type
BL296XB-04F-4A-20	ASLINKTERMINAL	I/O Combined Module	isolated	Sink Type
BL296XB-04F-4B-20	ASLINKTERMINAL	I/O Combined Module	isolated	Sink Type
BL296XB-04F-4PA-20	ASLINKTERMINAL	I/O Combined Module	isolated	Sink Type
BL296XB-04FS-4A-20	ASLINKTERMINAL	I/O Combined Module	isolated	Source Type
BL296XB-04FS-4B-20	ASLINKTERMINAL	I/O Combined Module	isolated	Source Type
BL296XB-08F	ASLINKTERMINAL	I/O Combined Module	isolated	Sink Type
BL296XB-08F-10-20	ASLINKTERMINAL	I/O Combined Module	isolated	Sink Type
BL296XB-08F-11	ASLINKTERMINAL	I/O Combined Module	isolated	Sink Type
BL296XB-08F-11-V50	ASLINKTERMINAL	I/O Combined Module	isolated	Sink Type
BL296XB-08F-20	ASLINKTERMINAL	I/O Combined Module	isolated	Sink Type
BL296XB-08F-3	ASLINKTERMINAL	I/O Combined Module	isolated	Sink Type
BL296XB-08F-3-V50	ASLINKTERMINAL	I/O Combined Module	isolated	Sink Type
BL296XB-08F-4-20	ASLINKTERMINAL	I/O Combined Module	isolated	Sink Type
BL296XB-08F-4A-20	ASLINKTERMINAL	I/O Combined Module	isolated	Sink Type
BL296XB-08F-4E-20	ASLINKTERMINAL	I/O Combined Module	isolated	Sink Type
BL296XB-08F-4P-20	ASLINKTERMINAL	I/O Combined Module	isolated	Sink Type
BL296XB-08F-4PA-20	ASLINKTERMINAL	I/O Combined Module	isolated	Sink Type
BL296XB-08F-9-20	ASLINKTERMINAL	I/O Combined Module	isolated	Sink Type
BL296XB-08FS	ASLINKTERMINAL	I/O Combined Module	isolated	Source Type
BL296XB-08FS-10-20	ASLINKTERMINAL	I/O Combined Module	isolated	Source Type
BL296XB-08FS-11	ASLINKTERMINAL	I/O Combined Module	isolated	Source Type
BL296XB-08FS-11-V50	ASLINKTERMINAL	I/O Combined Module	isolated	Source Type
BL296XB-08FS-20	ASLINKTERMINAL	I/O Combined Module	isolated	Source Type
BL296XB-08FS-3	ASLINKTERMINAL	I/O Combined Module	isolated	Source Type
BL296XB-08FS-3-V50	ASLINKTERMINAL	I/O Combined Module	isolated	Source Type
BL296XB-08FS-4-20	ASLINKTERMINAL	I/O Combined Module	isolated	Source Type
BL296XB-08FS-4A-20	ASLINKTERMINAL	I/O Combined Module	isolated	Source Type
BL296XB-08FS-4E-20	ASLINKTERMINAL	I/O Combined Module	isolated	Source Type
BL296XB-08FS-9-20	ASLINKTERMINAL	I/O Combined Module	isolated	Source Type
BL296XB-08FS-V50	ASLINKTERMINAL	I/O Combined Module	isolated	Source Type
BL296XB-08F-V50	ASLINKTERMINAL	I/O Combined Module	isolated	Sink Type
BL296XB-08P-4-20	ASLINKTERMINAL	I/O Combined Module	isolated	Sink Type
BL296XB-08P-4A-20	ASLINKTERMINAL	I/O Combined Module	isolated	Sink Type
BL296XB-16F-11-V50	ASLINKTERMINAL	I/O Combined Module	isolated	Sink Type

Model name	Type			
BL296XB-16F-3-V50	ASLINKTERMINAL	I/O Combined Module	isolated	Sink Type
BL296XB-16F-4A-20	ASLINKTERMINAL	I/O Combined Module	isolated	Sink Type
BL296XB-16F-4PA-20	ASLINKTERMINAL	I/O Combined Module	isolated	Sink Type
BL296XB-16FS-11-V50	ASLINKTERMINAL	I/O Combined Module	isolated	Source Type
BL296XB-16FS-3-V50	ASLINKTERMINAL	I/O Combined Module	isolated	Source Type
BL296XB-16FS-4A-20	ASLINKTERMINAL	I/O Combined Module	isolated	Source Type
BL296XB-16FS-V50	ASLINKTERMINAL	I/O Combined Module	isolated	Source Type
BL296XB-16F-V50	ASLINKTERMINAL	I/O Combined Module	isolated	Sink Type
BL2EMSB-08F-B	ASLINKTERMINAL	Input Module	isolated	Sink Type
BL2L87PB-02F-CC20	ASLINKER	Output Module	isolated	Sink Type
BL2L87SB-02F-CC20	ASLINKER	Input Module	isolated	Sink Type
BL2L87XB-02F-CC20	ASLINKER	I/O Combined Module	isolated	Sink Type
BL2LN87SB-02D-CC20	ASLINKER	Input Module	isolated	Sink Type
BL2LN87SB-02DS-CC20	ASLINKER	Input Module	isolated	Source Type
BM-C27-DM9-3012-5050	ASLINKSENSOR	Input Module	non-isolated	Cylinder Sensor
BM-C27-DM9-50-5050	ASLINKSENSOR	Input Module	non-isolated	Cylinder Sensor
BM-K1117G-M04-1K	ASLINKSENSOR	Input Module	non-isolated	M4 amplifier relay type
BM-K1117G-M04-3012	ASLINKSENSOR	Input Module	non-isolated	M4 amplifier relay M12CN type
BM-K1117G-M05-1K	ASLINKSENSOR	Input Module	non-isolated	M5 amplifier relay type
BM-K1117G-M05-3012	ASLINKSENSOR	Input Module	non-isolated	M5 amplifier relay M12CN type
BM-K1117G-S04-1K	ASLINKSENSOR	Input Module	non-isolated	d4 amplifier relay type
BM-K1117G-S04-3012	ASLINKSENSOR	Input Module	non-isolated	d4 amplifier relay M12CN type
BM-K1117G-S05-1K	ASLINKSENSOR	Input Module	non-isolated	d5.4 amplifier relay type
BM-K1117G-S05-3012	ASLINKSENSOR	Input Module	non-isolated	d5.4 amplifier relay M12CN type
BS-H0117-1KC	ASLINKSENSOR	Input Module	non-isolated	Separate Type(Receiver)
BS-H0117-1KP	ASLINKSENSOR	Output Module	non-isolated	Separate Type(Light source)
BS-H0117-30C12	ASLINKSENSOR	Input Module	non-isolated	Separate Type(Receiver)
BS-H0117-30P12	ASLINKSENSOR	Output Module	non-isolated	Separate Type(Light source)
BS-H0117G-1KC	ASLINKSENSOR	Input Module	non-isolated	Separate Type(Receiver)
BS-H0117G-1KP	ASLINKSENSOR	Output Module	non-isolated	Separate Type(Light source)
BS-H0217-1K	ASLINKSENSOR	Input Module	non-isolated	Retroreflective type
BS-H0217-3012	ASLINKSENSOR	Input Module	non-isolated	Retroreflective type
BS-H0217G-1K	ASLINKSENSOR	Input Module	non-isolated	Retroreflective type
BS-H0317-1K	ASLINKSENSOR	Input Module	non-isolated	Diffuse reflection type
BS-H0317-3012	ASLINKSENSOR	Input Module	non-isolated	Diffuse reflection type
BS-H0317G-1K	ASLINKSENSOR	Input Module	non-isolated	Diffuse reflection type
BS-K1117C-M12-1K	ASLINKSENSOR	Input Module	non-isolated	M12 chemical resistant type
BS-K1117C-M12-3012	ASLINKSENSOR	Input Module	non-isolated	M12 Chemical resistant type
BS-K1117C-M18-1K	ASLINKSENSOR	Input Module	non-isolated	M18 chemical resistant type
BS-K1117C-M18-3012	ASLINKSENSOR	Input Module	non-isolated	M18 Chemical resistant type
BS-K1117C-M30-1K	ASLINKSENSOR	Input Module	non-isolated	M30 chemical resistant type
BS-K1117C-M30-3012	ASLINKSENSOR	Input Module	non-isolated	M30 Chemical resistant type
BS-K1117-M08-1K	ASLINKSENSOR	Input Module	non-isolated	Proximity Sensor M8 shield type
BS-K1117-M08-3012	ASLINKSENSOR	Input Module	non-isolated	Proximity Sensor M8 shield type
BS-K1117-M12-1K	ASLINKSENSOR	Input Module	non-isolated	Proximity Sensor M12 shield type
BS-K1117-M12-3012	ASLINKSENSOR	Input Module	non-isolated	Proximity Sensor M12 shield type
BS-K1117-M18-1K	ASLINKSENSOR	Input Module	non-isolated	Proximity Sensor M18 shield type
BS-K1117-M18-3012	ASLINKSENSOR	Input Module	non-isolated	Proximity Sensor M18 shield type
BS-K1117-M30-1K	ASLINKSENSOR	Input Module	non-isolated	Proximity Sensor M30 shield type
BS-K1117-M30-3012	ASLINKSENSOR	Input Module	non-isolated	Proximity Sensor M30 shield type
BS-K1117M-M12-1K	ASLINKSENSOR	Input Module	non-isolated	M12 full stainless body type
BS-K1117M-M12-3012	ASLINKSENSOR	Input Module	non-isolated	M12 full stainless body type
BS-K1117M-M18-1K	ASLINKSENSOR	Input Module	non-isolated	M18 full stainless body type

Model name	Type			
BS-K1117M-M18-3012	ASLINKSENSOR	Input Module	non-isolated	M18 full stainless body type
BS-K1117M-M30-1K	ASLINKSENSOR	Input Module	non-isolated	M30 full stainless body type
BS-K1117M-M30-3012	ASLINKSENSOR	Input Module	non-isolated	M30 full stainless body type
BS-K1117S-M12-1K	ASLINKSENSOR	Input Module	non-isolated	M12 spattering resistance type
BS-K1117S-M12-3012	ASLINKSENSOR	Input Module	non-isolated	M12 spattering resistance type
BS-K1117S-M18-1K	ASLINKSENSOR	Input Module	non-isolated	M18 spattering resistance type
BS-K1117S-M18-3012	ASLINKSENSOR	Input Module	non-isolated	M18 spattering resistance type
BS-K1117S-M30-1K	ASLINKSENSOR	Input Module	non-isolated	M30 spattering resistance type
BS-K1117S-M30-3012	ASLINKSENSOR	Input Module	non-isolated	M30 spattering resistance type
BS-K1118-M12-1K	ASLINKSENSOR	Input Module	non-isolated	Proximity Sensor M12 IP68 type
BS-K1118-M12-3012	ASLINKSENSOR	Input Module	non-isolated	M12 IP68 M12CN type
BS-K1118-M18-1K	ASLINKSENSOR	Input Module	non-isolated	Proximity Sensor M18 IP68 type
BS-K1118-M18-3012	ASLINKSENSOR	Input Module	non-isolated	M18 IP68 M12CN type
BS-K1118-M30-1K	ASLINKSENSOR	Input Module	non-isolated	Proximity Sensor M30 IP68 type
BS-K1118-M30-3012	ASLINKSENSOR	Input Module	non-isolated	M30 IP68 M12CN type
BS-K1217-M08-1K	ASLINKSENSOR	Input Module	non-isolated	Proximity M08 non-shield type
BS-K1217-M08-3012	ASLINKSENSOR	Input Module	non-isolated	Proximity M08 non-shield type
BS-K1217-M12-1K	ASLINKSENSOR	Input Module	non-isolated	Proximity M12 non-shield type
BS-K1217-M12-3012	ASLINKSENSOR	Input Module	non-isolated	Proximity M12 non-shield type
BS-K1217-M18-1K	ASLINKSENSOR	Input Module	non-isolated	Proximity M18 non-shield type
BS-K1217-M18-3012	ASLINKSENSOR	Input Module	non-isolated	Proximity M18 non-shield type
BS-K1217-M30-1K	ASLINKSENSOR	Input Module	non-isolated	Proximity M30 non-shield type
BS-K1217-M30-3012	ASLINKSENSOR	Input Module	non-isolated	Proximity M30 non-shield type
BS-K1217-T42A-V1K	ASLINKSENSOR	Input Module	non-isolated	Flat type
BS-K1217-T42A-V3012	ASLINKSENSOR	Input Module	non-isolated	Flat M12CN type
BS-K4117-M12-1K	ASLINKSENSOR	Input Module	non-isolated	M12 allmetal detect
BS-K4117-M12-3012	ASLINKSENSOR	Input Module	non-isolated	M12 allmetal detect M12CN type
BS-K4117-M18-1K	ASLINKSENSOR	Input Module	non-isolated	M18 allmetal detect
BS-K4117-M18-3012	ASLINKSENSOR	Input Module	non-isolated	M18 allmetal detect M12CN type
BS-K4117-M30-1K	ASLINKSENSOR	Input Module	non-isolated	M30 allmetal detect
BS-K4117-M30-3012	ASLINKSENSOR	Input Module	non-isolated	M30 allmetal detect M12CN type
BS-K5217-M18-1K	ASLINKSENSOR	Input Module	non-isolated	M18 Capacitive
BS-K5217-M18-3012	ASLINKSENSOR	Input Module	non-isolated	M18 Capacitive M12CN type
BS-K5217-M30-1K	ASLINKSENSOR	Input Module	non-isolated	M30 Capacitive
BS-K5217-M30-3012	ASLINKSENSOR	Input Module	non-isolated	M30 Capacitive M12CN type
BS-L0117-1KC	ASLINKSENSOR	Input Module	non-isolated	LaserSensor(Through-beam)
BS-L0117-1KP	ASLINKSENSOR	Output Module	non-isolated	LaserSensor(Through-beam)
BS-L0217-1K	ASLINKSENSOR	Input Module	non-isolated	LaserSensor(Retroreflective type)
LA-A12W	ASLINKAMP	Input Module	non-isolated	Analog input
LA-A1AW	ASLINKAMP	Input Module	isolated	Analog input
LA-DA12W	ASLINKAMP	Output Module	non-isolated	Analog output
LA-DA1AW	ASLINKAMP	Output Module	isolated	Analog output
LA-DV12W	ASLINKAMP	Output Module	non-isolated	Analog output
LA-DV1AW	ASLINKAMP	Output Module	isolated	Analog output
LA-F1011	ASLINKAMP	Input Module	isolated	Fiber Sensor Amplifier
LAL-R10W	ASLINKAMP	Input Module	isolated	Temperature Input Unit
LB-A12W	ASLINKAMP	Input Module	non-isolated	Analog input
LB-A1AW	ASLINKAMP	Input Module	isolated	Analog input
LB-DA12W	ASLINKAMP	Output Module	non-isolated	Analog output
LB-DA1AW	ASLINKAMP	Output Module	isolated	Analog output
LB-DV12W	ASLINKAMP	Output Module	non-isolated	Analog output
LB-DV1AW	ASLINKAMP	Output Module	isolated	Analog output
LB-F1011	ASLINKAMP	Input Module	isolated	Fiber Sensor Amplifier

Model name	Type			
LBL-R10W	ASLINKAMP	Input Module	isolated	Temperature Input Unit
LSL-H011-1KC	ASLINKSENSOR	Input Module	isolated	Separate Type(Receiver)
LSL-H011-1KP	ASLINKSENSOR	Output Module	isolated	Separate Type(Light source)
LSL-H021-1K	ASLINKSENSOR	Input Module	isolated	Retroreflective type
LSL-H031-1K	ASLINKSENSOR	Input Module	isolated	Diffuse reflection type

*1 To enable the alarm bit function, write the profile data of this model and the profile data of the model having "A" at the end of this model name.
Example: Write the profile data of [B284SB-01-1KLP30A] as well, to enable the alarm bit function of [B284SB-01-1KLP30].
Otherwise, the equipment is handled as a general-purpose remote module when the alarm bit function is enabled.

NITTO KOHKI CO.

Model name	Type			
DELVO	ASLINKTERMINAL	I/O Combined Module	isolated	Sink Type

12.17 Configuring the settings for the GOT contactless tag ([Contactless Tag])

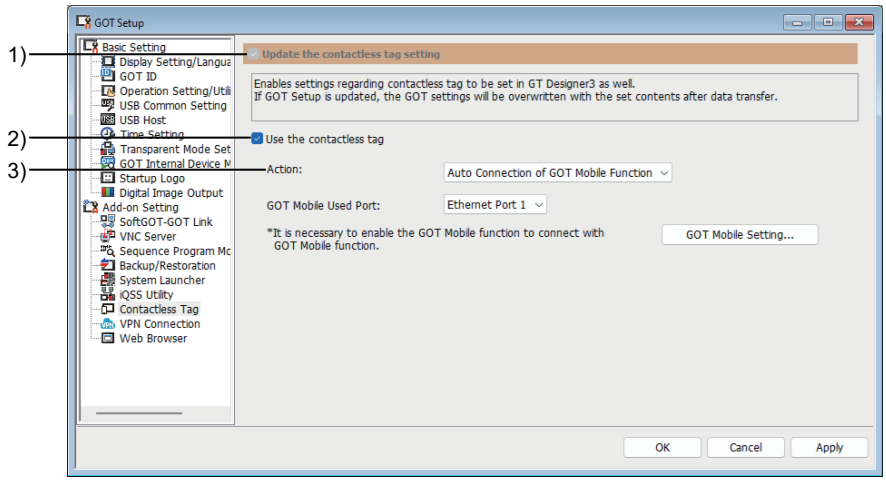
GT37 SoftGOT3000

In [Contactless Tag], enable or disable the built-in contactless tag in the GOT and configure the settings for the operation. When the contactless tag is enabled, you can perform the preset action by holding the device over the GOT's contactless tag.

12.17.1 [Contactless Tag]

In [Contactless Tag], enable or disable the built-in contactless tag in the GOT and configure the settings for the operation.

Select [Common] → [GOT Setup] → [Add-on Setting] → [Contactless Tag] from the menu to display this window.

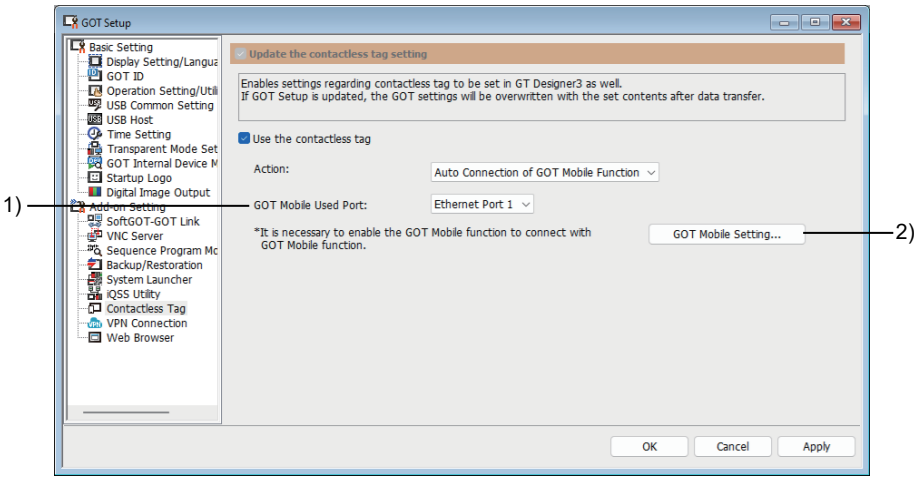


Item			Description
1)	[Update the contactless tag setting]		This item is already selected but cannot be deselected. Updates the setting data in the GOT with the ones set on GT Designer3 when package data is written. When a project is read from the GOT, the setting changed in the utility is applied.
2)	[Use the contactless tag]		Enables the contactless tag embedded in the GOT.
3)	[Action]	—	Select an action for the contactless tag and configure the settings required for the selected action.
		[Auto Connection of GOT Mobile Function]	Connects the client with the server (GOT) automatically using the contactless tag. ☞ Page 668 [Auto Connection of GOT Mobile Function]
		[Acquire Phone Number]	Acquires the set phone number using the contactless tag. ☞ Page 668 [Acquire Phone Number]
		[Acquire URL]	Acquires the set URL using the contactless tag. ☞ Page 669 [Acquire URL]
		[Acquire SMS Send]	Acquires the set SMS sending setup using the contactless tag. ☞ Page 669 [Acquire SMS Send]
		[Acquire Mail Send]	Acquires the set e-mail sending setup using the contactless tag. ☞ Page 670 [Acquire Mail Send]
		[Acquire String]	Acquires the set character string using the contactless tag. ☞ Page 670 [Acquire String]

[Auto Connection of GOT Mobile Function]

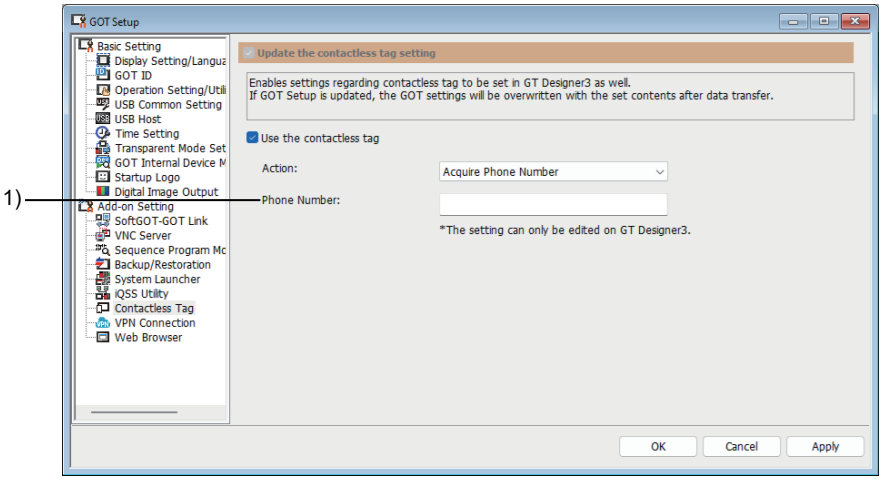
For details on the GOT Mobile function, refer to the following.

☞ Page 2736 Monitoring a controller from tablets or other devices (GOT Mobile function)



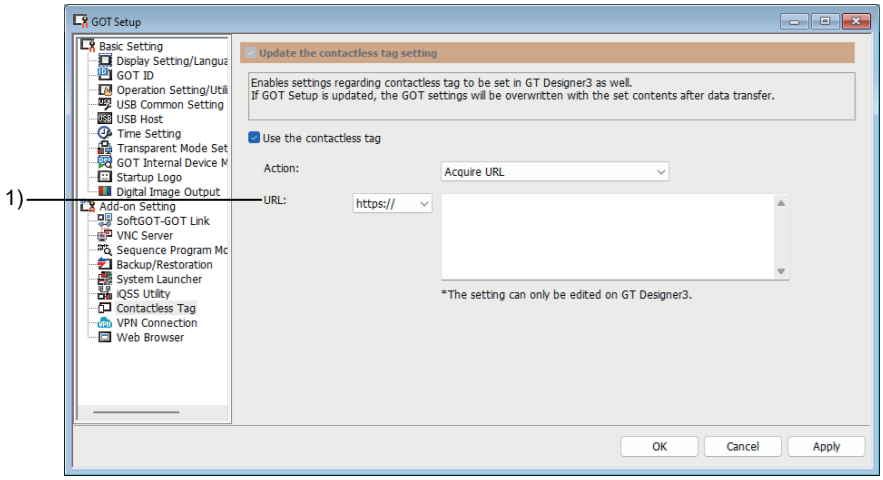
Item		Description
1)	[GOT Mobile Used Port]	Select the GOT's Ethernet port used for connection between the server (GOT) and the client of the GOT Mobile function.
2)	[GOT Mobile Setting] button	Displays the [GOT Mobile Setting] window. ☞ Page 2817 [GOT Mobile Setting] window

[Acquire Phone Number]



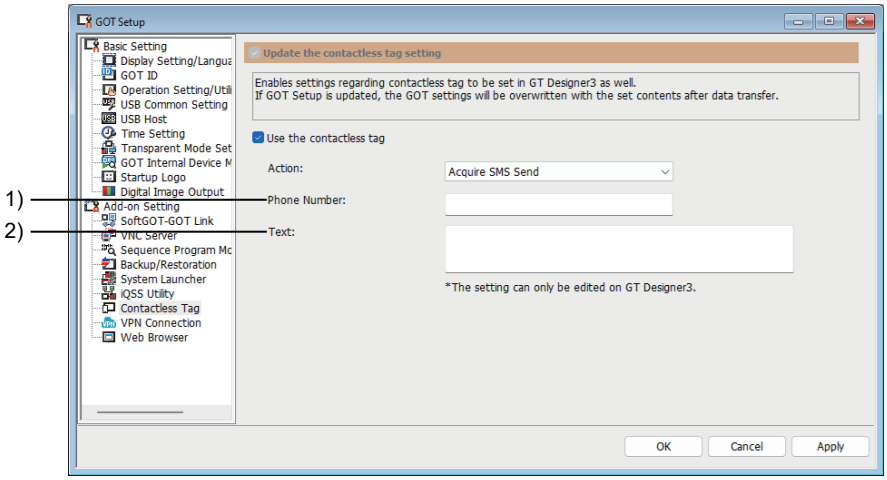
Item		Description
1)	[Phone Number]	Set a phone number. Up to 15 characters can be entered.

[Acquire URL]



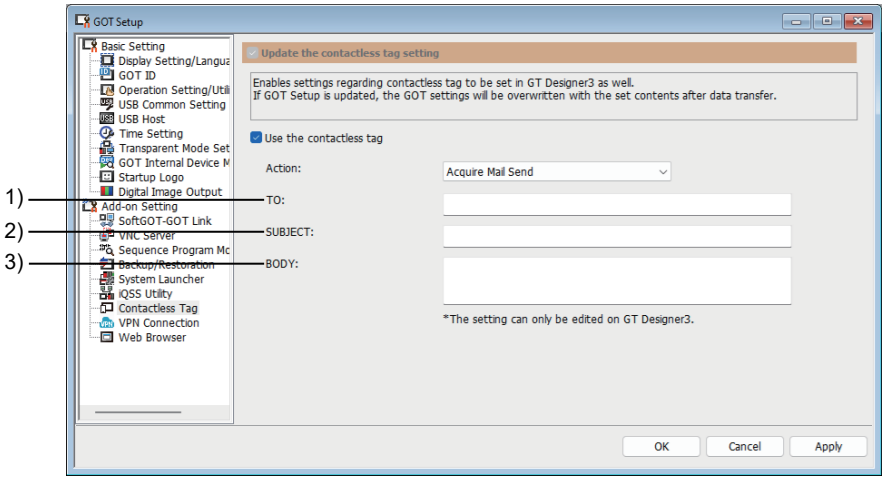
Item		Description
1)	[URL]	Set a URL. Up to 400 characters can be entered.

[Acquire SMS Send]



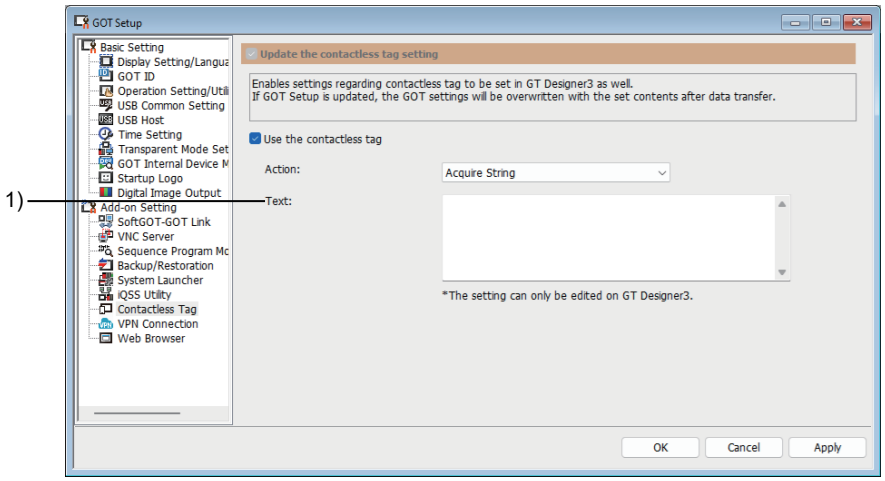
Item		Description
1)	[Phone Number]	Set a phone number. Only one-byte numeric input is allowed.
2)	[String]	Enter text. Up to 100 characters can be entered.

[Acquire Mail Send]



Item		Description
1)	[TO]	Enter the address. Up to 100 characters can be entered.
2)	[SUBJECT]	Enter the subject. Up to 50 characters can be entered.
3)	[BODY]	Enter the text body. Up to 180 characters can be entered.

[Acquire String]



Item		Description
1)	[String]	Enter text. Up to 500 characters can be entered.

12.18 Setting the VPN connection function of the GOT ([VPN Connection])

GT37 SoftGOT3000

☞ Page 671 Overview of the VPN connection function
☞ Page 673 Specifications of the VPN connection function
☞ Page 674 How to set the VPN connection function
☞ Page 689 [VPN Connection]
☞ Page 690 Relevant settings
☞ Page 690 Troubleshooting

In [VPN Connection], configure the relevant settings for the VPN function of the GOT.

12.18.1 Overview of the VPN connection function

GT37 SoftGOT3000

This function establishes VPN connections using the software VPN embedded in the GOT without using a VPN router. You can establish safe communications between each terminal (such as a personal computer or a tablet) and the GOT through a cloud server.

The following functions are protected by the VPN connection function.

- Communication between GT Designer3 and the GOT
- FA transparent function
- VNC server function
- GOT Mobile function
- OPC UA server function

The VPN connection function uses the following licenses.

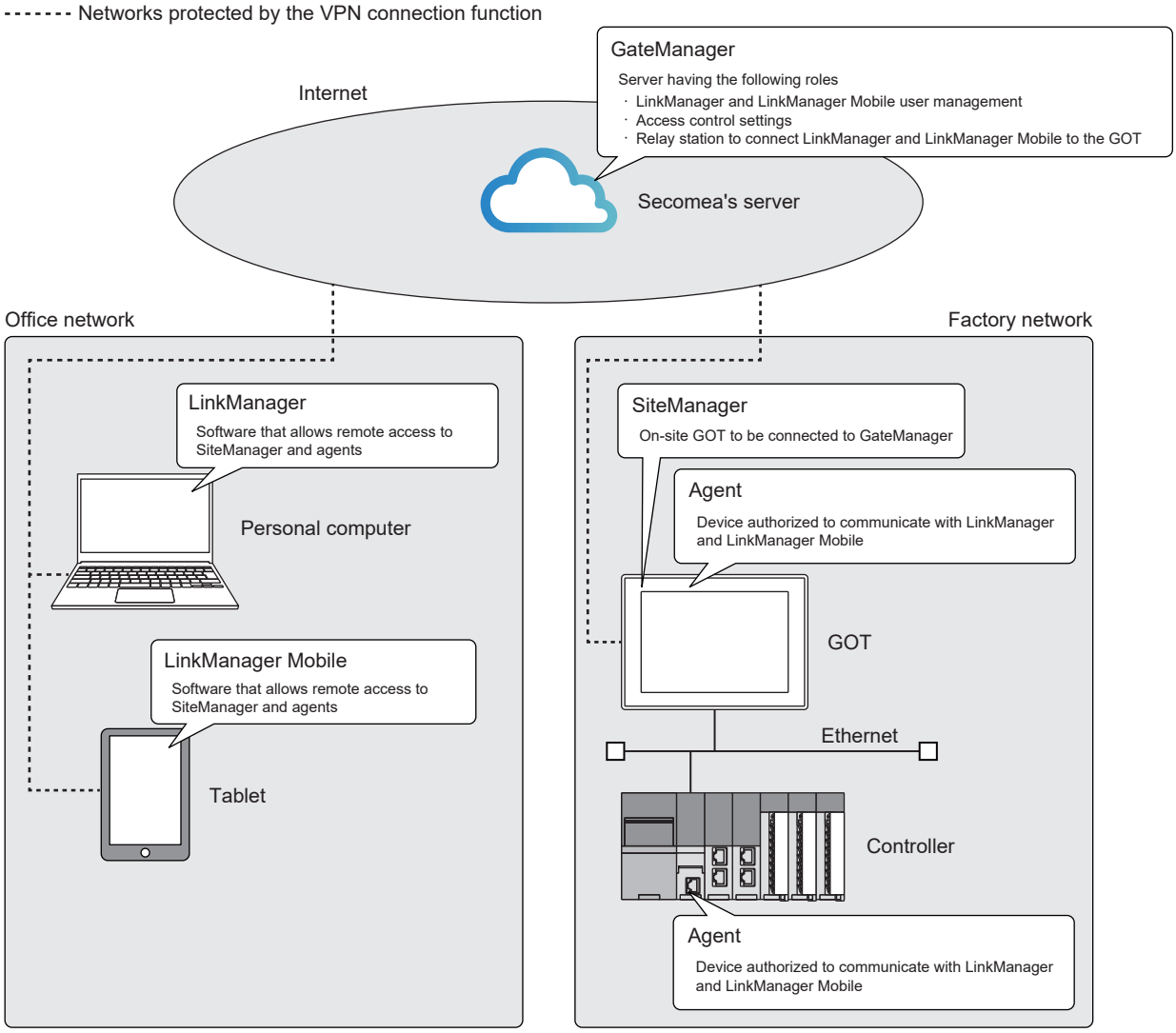
License	Description
VPN connection function license	The license to be registered to the GOT to use the VPN connection function.
SiteManager license	The license required to use Secomea products. To use the VPN connection function, a contract through a Secomea partner is required. For information on Secomea partners, refer to the following. https://secomea.com/partners/ Note that the above website may be changed without notification.

PART 5

Functionality and software relationships and terminology

The following shows an example of network configuration for accessing the GOT installed in the factory from a personal computer in a remote office.

LinkManager installed on a personal computer communicates with the GOT (SiteManager) through GateManager (Secomea's server).



Item	Description
GateManager	Secomea's server on the cloud. Users do not need to prepare their own servers. Access the server via a web browser and configure the settings to manage users and access authority of LinkManager and LinkManager Mobile. The server also acts as a relay station to connect LinkManager and LinkManager Mobile to the GOT.
LinkManager	Software that allows remote access to SiteManager and agents. In this section, this is the generic term for the following software products. • LinkManager: Software that runs on the personal computer to be connected to the GOT • LinkManager Mobile: LinkManager software for smartphones and tablets
SiteManager	On-site GOT to be connected to GateManager. The GOT using the VPN connection function requires the software SiteManager Embedded to communicate with GateManager. SiteManager Embedded is included in the system application (add-on function) of the VPN connection function.
Agent	Generic term for devices (GOT and controllers connected to the GOT) authorized by SiteManager to communicate with LinkManager and LinkManager Mobile.

12.18.2 Specifications of the VPN connection function

GT37 SoftGOT3000

☞ Page 673 Recommended LinkManager installations
☞ Page 673 Type of SiteManager license
☞ Page 673 Required system application (add-on function)
☞ Page 673 Connection/disconnection record (operation log)

Recommended LinkManager installations

Up to four devices are recommended.

Type of SiteManager license

The applicable communication route varies depending on the type of SiteManager license purchased from Secomea.

Applicable: ○

Not applicable: —

Communication route	Type of license	
	SiteManager Embedded-Basic	SiteManager Embedded-Extend5 SiteManager Embedded-Extend10
Between LinkManager and the GOT	○	○
Between LinkManager and the controller via the GOT	—	○
Between LinkManager and the controller via the GOT using the GOT FA transparent function	○	○

Required system application (add-on function)

To use the VPN connection function, [VPN Connection Function] must be selected from the system applications (add-on functions).

Configuring one of the following settings in the [GOT Setup] window ([VPN Connection]) incorporates the application into the package data automatically.

- Select [Update the VPN connection function].
- Select [Use VPN].

Connection/disconnection record (operation log)

Connections and disconnections of the GOT from Link Manager are recorded in the operation log.

However, those from LinkManager Mobile are not recorded.

12.18.3 How to set the VPN connection function

GT37 SoftGOT3000

Configuring all the following settings allows you to remotely access the GOT from terminals.

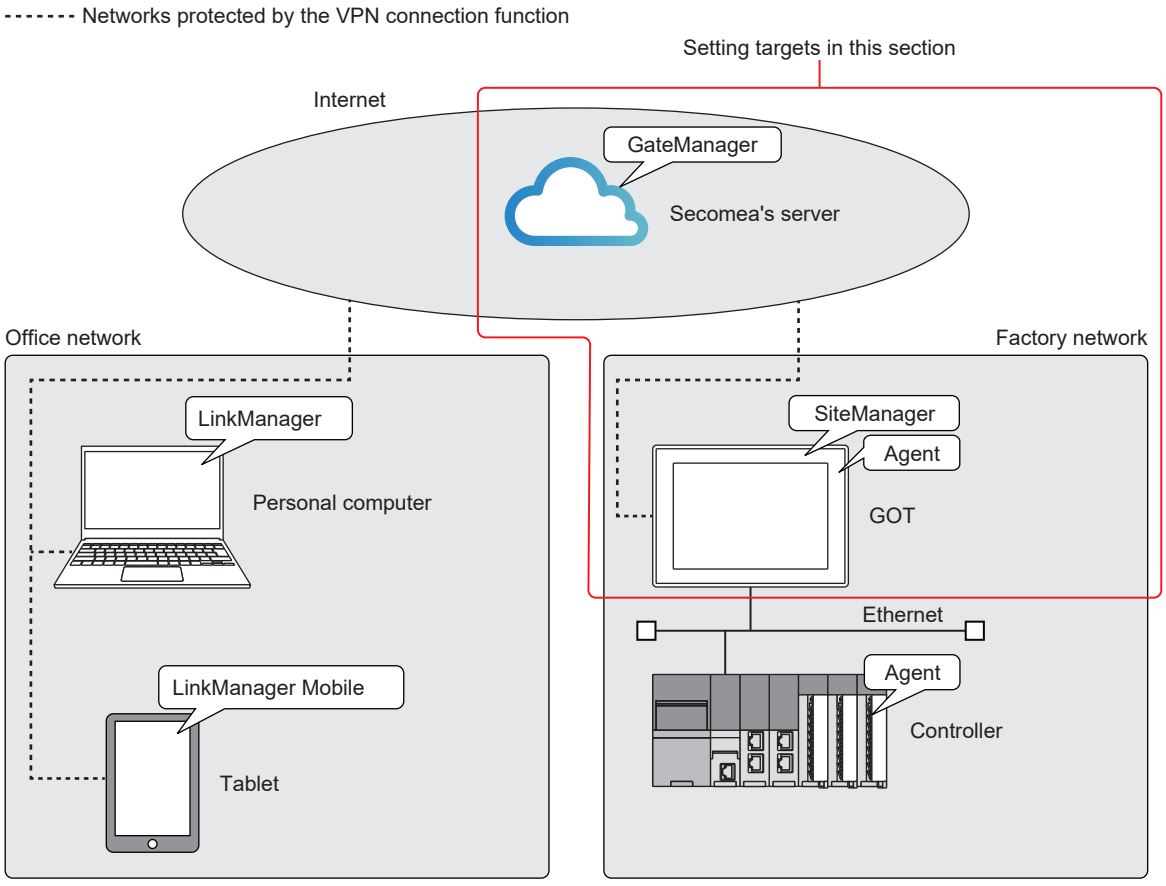
☞ Page 674 Connecting SiteManager (GOT) and GateManager
☞ Page 679 Connecting LinkManager and GateManager
☞ Page 685 Setting the agents to be accessed from LinkManager

Point

To use the VPN connection function, the VPN connection function license must be registered on the GOT.
Even if the VPN connection function license is not registered, you can try the VPN connection function after starting the GOT, until the connection time between SiteManager (GOT) and GateManager reaches 30 minutes.
If the VPN connection function license is registered during the trial period, the function remains in trial mode until the GOT (SiteManager) is stopped and reconnected.
After 30 minutes, the connection is forcibly disconnected, even if the GOT is in operation.
Before incorporating the GOT into your product, register the VPN connection function license to the GOT.

Connecting SiteManager (GOT) and GateManager

☞ Page 675 Registering a VPN connection function license to the GOT
☞ Page 675 Settings on SiteManager (GOT)
☞ Page 676 Logging in to GateManager
☞ Page 678 SiteManager license assignment in GateManager



■Registering a VPN connection function license to the GOT

Request a VPN connection function license, and register the license to the GOT.

For the registration method, refer to the following.

☞ Page 3686 License registration method

■Settings on SiteManager (GOT)

Configure the settings to allow SiteManager (GOT) to connect to GateManager in GT Designer3.

Operating procedure

1. Select [Common] → [GOT Setup] → [Add-on Setting] → [VPN Connection] from the menu to display the [GOT Setup] window ([VPN Connection]).

☞ Page 689 [VPN Connection]

2. Select [Update the VPN connection function] and [Use VPN], and configure each setting.
3. Click the [OK] button to complete the VPN connection function settings.
4. Place objects such as a bit switch and bit lamp for monitoring the following GOT special registers that notifies and controls the VPN connection function.

GOT special register	Description
GS2051.b0	Notifies users of the connection status between SiteManager (GOT) and GateManager. It is turned off while the connection is stopped. It is turned on during connection. Place an object such as a bit lamp for checking the ON/OFF state. ☞ Page 1276 Placing a lamp The connection status can also be checked on the [VPN connection function] screen in the utility.
GS2051.b1	Notifies users of the operation status of the VPN connection function in SiteManager (GOT). It is turned off while the operation is stopped. It is turned on during operation. Place an object such as a bit lamp for checking the ON/OFF state. ☞ Page 1276 Placing a lamp The operation status can also be checked on the [VPN connection function] screen in the utility.
GS2565.b0	Controls the connection between SiteManager (GOT) and GateManager. Turning on this register starts connection between SiteManager (GOT) and GateManager. Turning off this register stops connection between SiteManager (GOT) and GateManager. Place an object such as a bit switch for controlling the ON/OFF status. ☞ Page 1191 Placing a touch switch

5. Write package data into the GOT to restart the GOT.

☞ Page 408 Transferring data to the GOT

6. Turn on GS2565.b0 using an object such as a touch switch to start connecting to GateManager.
7. Check the connection status between SiteManager (GOT) and GateManager and operation status of the VPN connection function in SiteManager (GOT) by checking either of the following item.

- Status of GS2051.b0 and GS2051.b1 set for the objects such as bit lamps
- [VPN connection function] screen in the utility

Point

The settings in the [GOT Setup] window ([VPN Connection]) can also be configured in the utility.

Even if the settings are changed during VPN connection, the VPN connection continues with the settings before the change.

To apply the new settings, stop the VPN connection once and start it again.

GOT3000 Series User's Manual (Utility & Maintenance Functions)

■Logging in to GateManager

Log in to GateManager from the personal computer and open the management screen.

Specifications and functions of Secomea's products may be changed without notification.

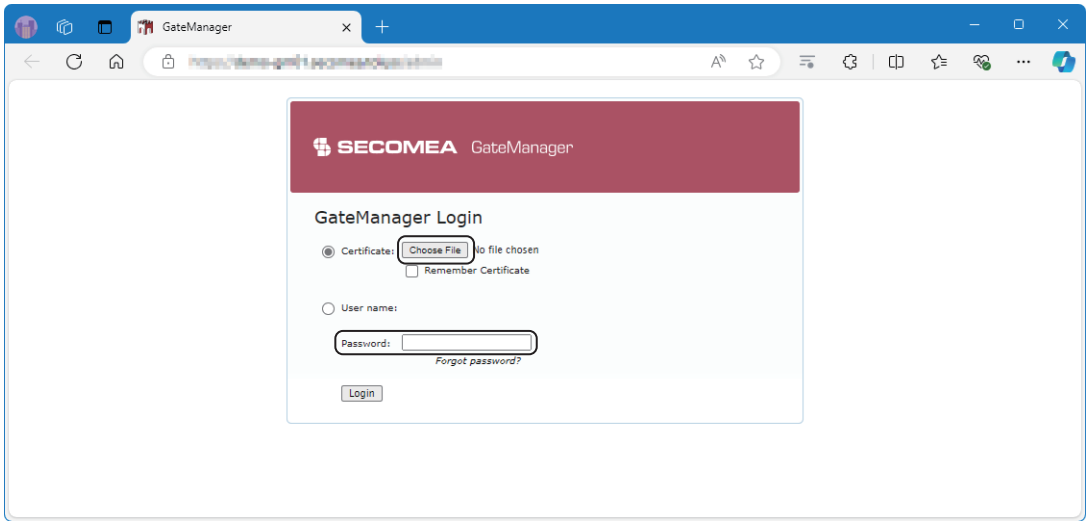
For the latest information, contact Secomea.

Operating procedure

1. Click the URL link found in the e-mail from Secomea to open the GateManager login screen.

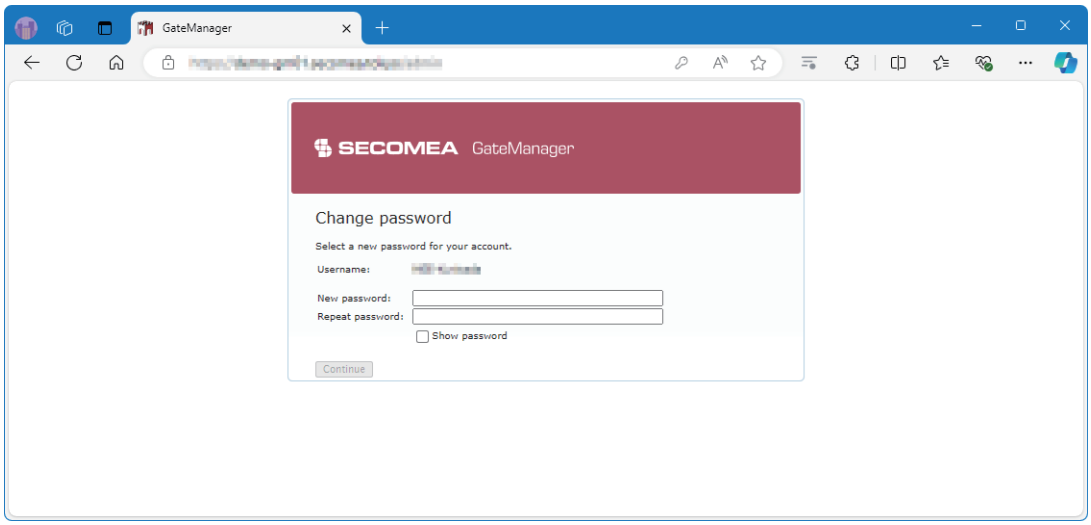
2. After performing the following operations, click the [Login] button.

- Click the [Choose File] button, and then specify the certificate for login (*.gmc) attached to the e-mail.
- Enter the password indicated in the body of the e-mail.

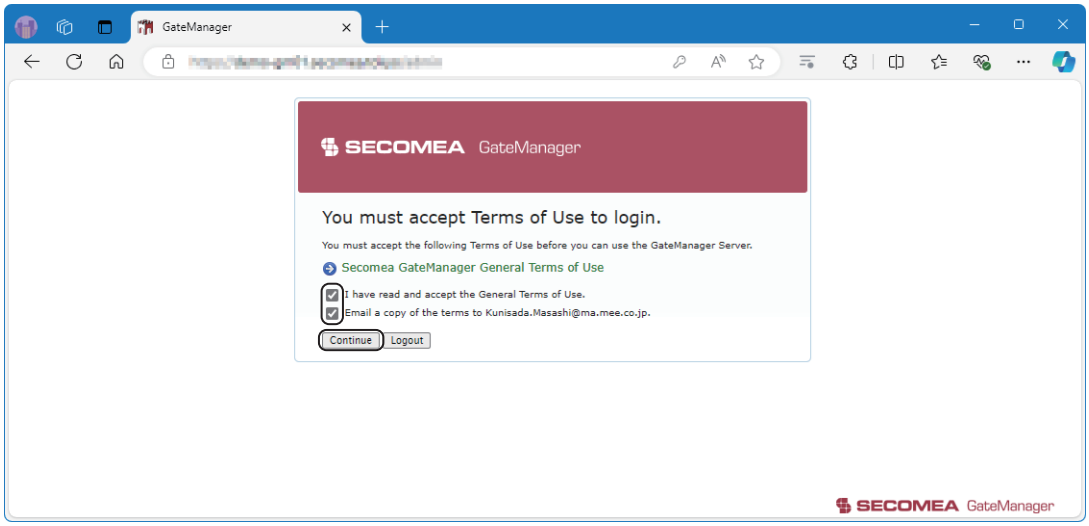


3. When logging in for the first time, you must change the password and accept the terms of use.

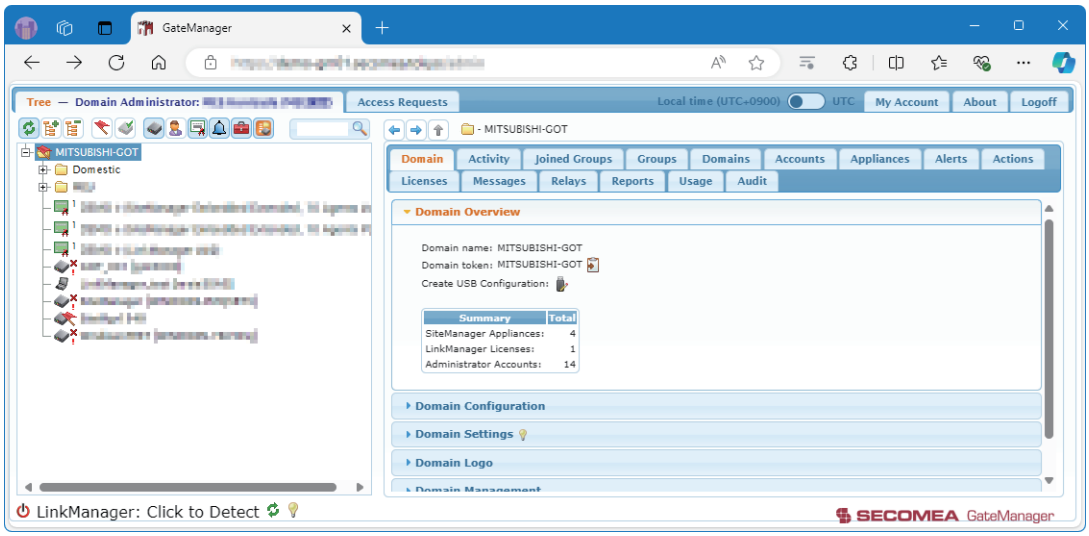
Enter a new password to be used for the next and subsequent logins, and then click the [Continue] button.



4. Only when logging in for the first time, you will be asked to agree to the license agreement as shown below.
Select the upper checkbox and click the [Continue] button.
(If you wish to receive the contents of the license agreement by e-mail, check the lower checkbox as well.)



When you log in, the GateManager management screen appears.



■SiteManager license assignment in GateManager

To establish connection between GateManager and SiteManager (GOT), assign the SiteManager license to SiteManager (GOT).

The number of assignable licenses differs depending on the type of the SiteManager license you purchased.

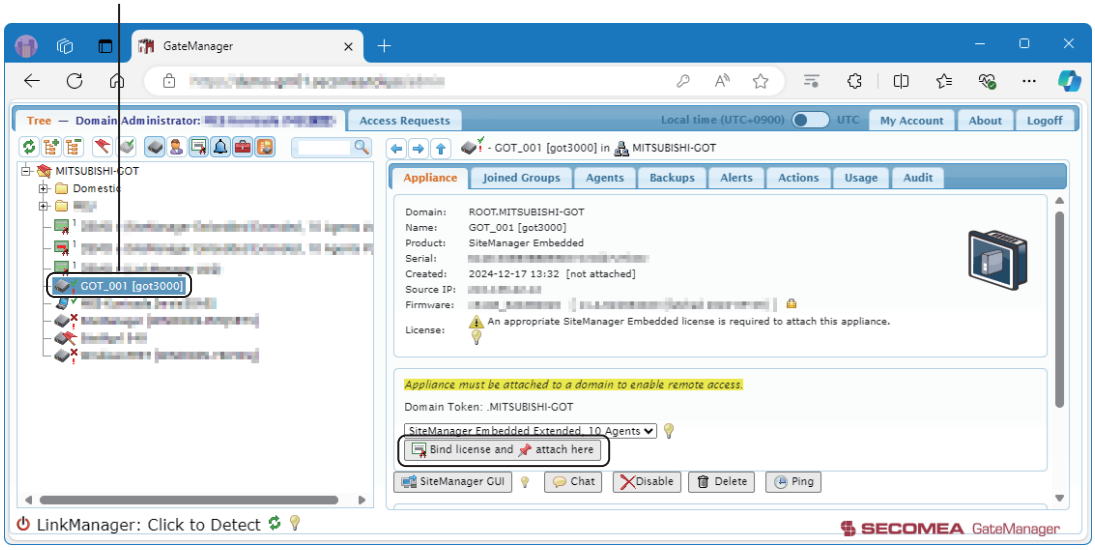
Specifications and functions of Secomea's products may be changed without notification.

For the latest information, contact Secomea.

Operating procedure

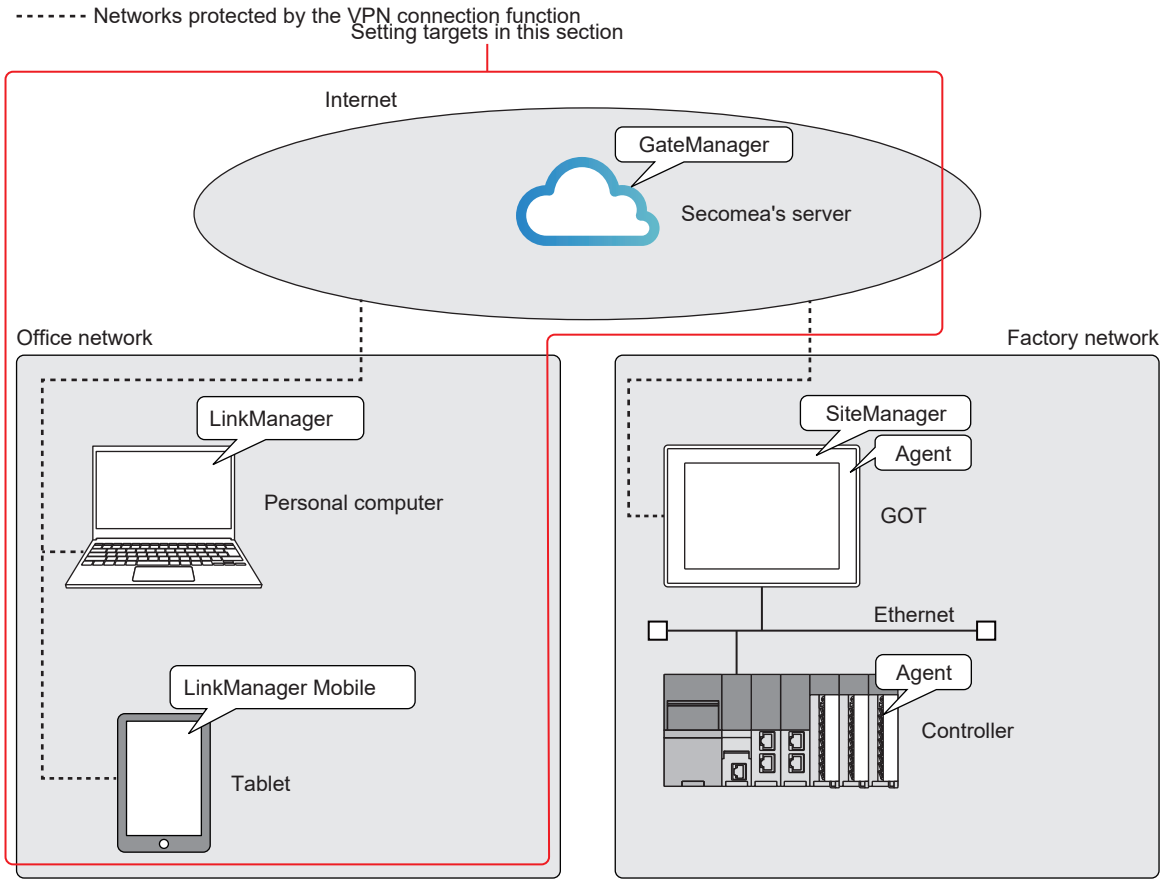
1. In the GateManager management screen, select SiteManager to assign the SiteManager license.
2. Click the [Bind license and attach here] button to assign the SiteManager license and establish the connection between GateManager and SiteManager (GOT).

Select SiteManager to which the SiteManager license is to be assigned.



Connecting LinkManager and GateManager

☞ Page 680 Creating a LinkManager account
☞ Page 681 Logging in to LinkManager
☞ Page 683 Installing LinkManager application



Specifications and functions of Secomea's products may be changed without notification.
For the latest information, contact Secomea.

■Creating a LinkManager account

In the GateManager management screen, create a LinkManager account.

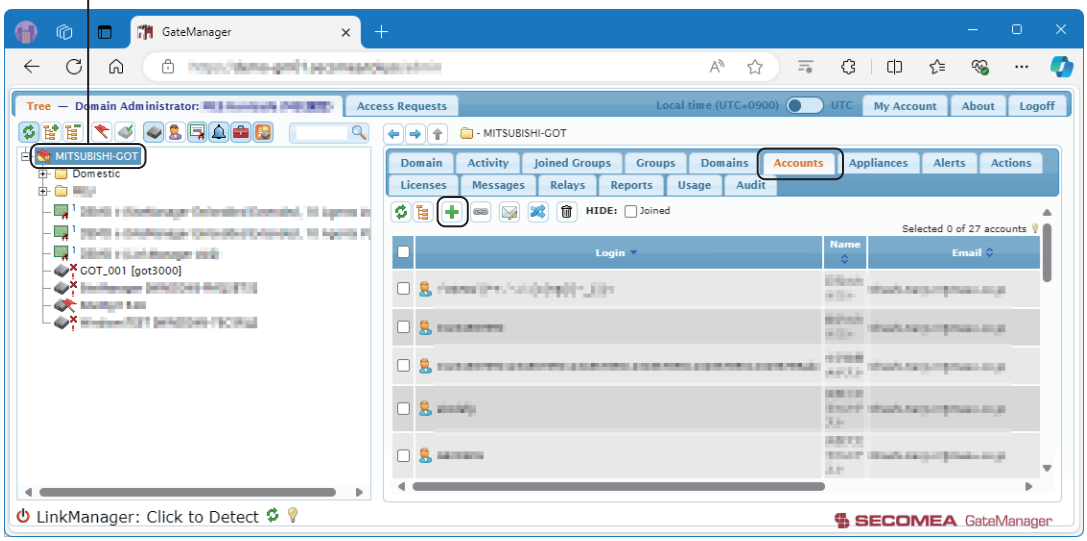
For information on how to log in to GateManager, refer to the following.

☞ Page 676 Logging in to GateManager

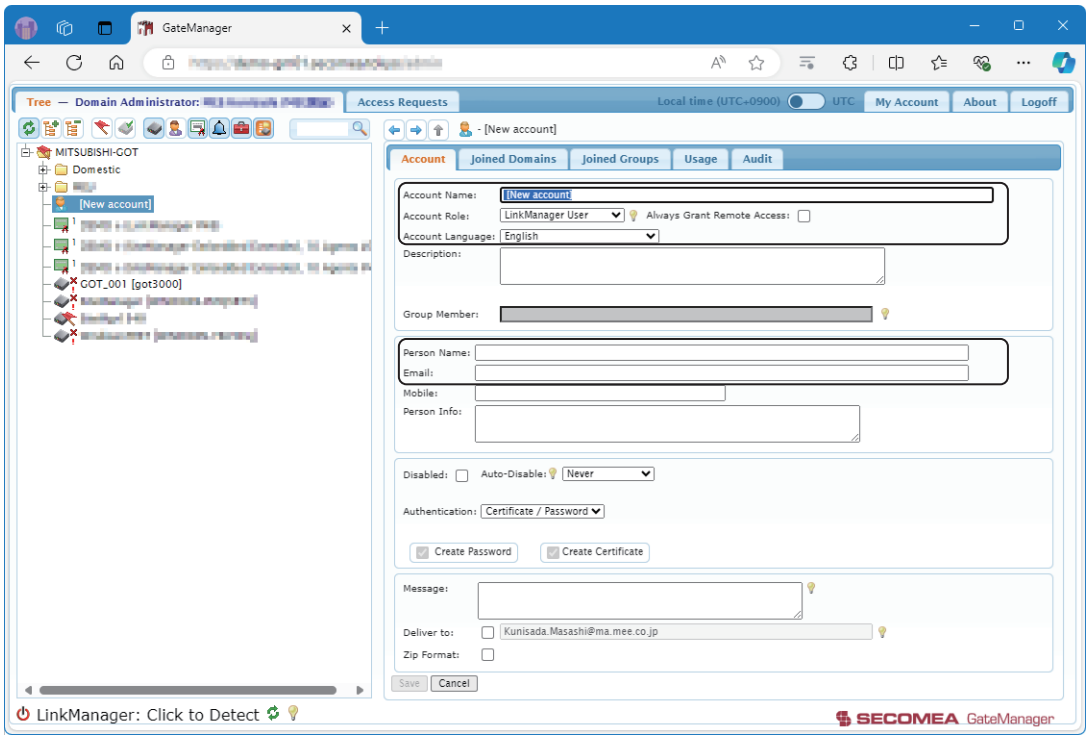
Operating procedure

1. In the GateManager management screen, select a folder and click the [+] button in the [Accounts] tab.

Select a folder.



2. Configure the following settings in the displayed pane, and click the [Save] button.



Item	Description
[Account Name]	User name to be displayed on the GOT
[Account Role]	Type of account
[Account Language]	Language to be used
[Person Name]	Name to be displayed with parentheses following the user name
[Email]	E-mail address You will receive information to log in to the LinkManager management screen.

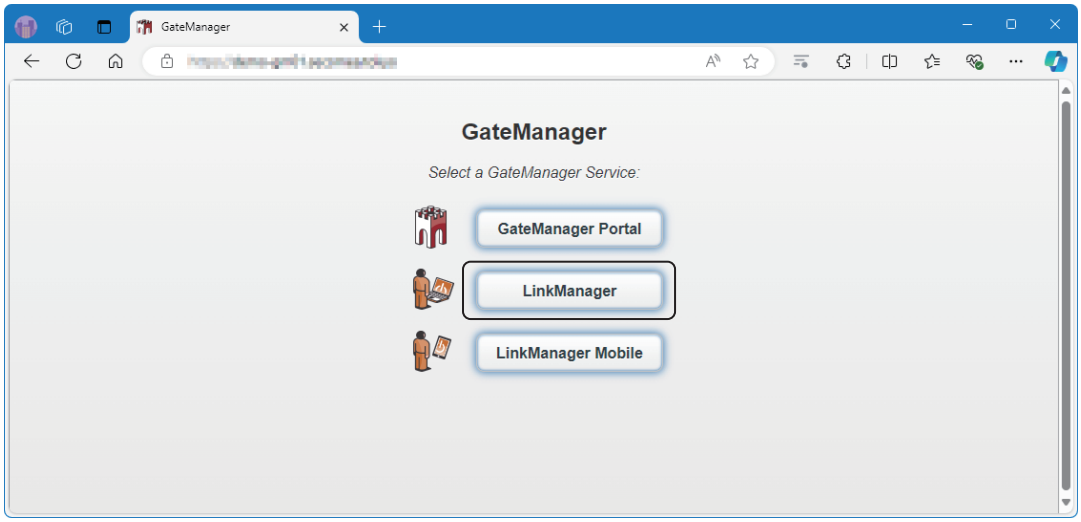
A LinkManager account is created. You will receive information to log in to the LinkManager management screen from Secomea.

■Logging in to LinkManager

Log in to LinkManager from the personal computer and open the management screen.

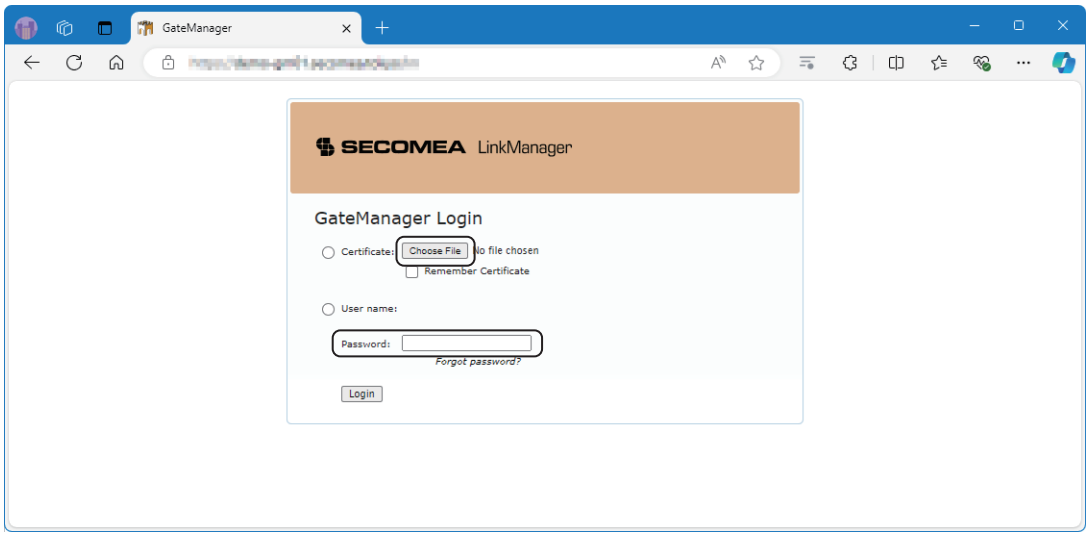
Operating procedure

1. Click the URL link in the e-mail sent from Secomea to the LinkManager account to open the GateManager landing page.
2. Click [LinkManager] to open the LinkManager login screen.



3. After performing the following operations, click the [Login] button.

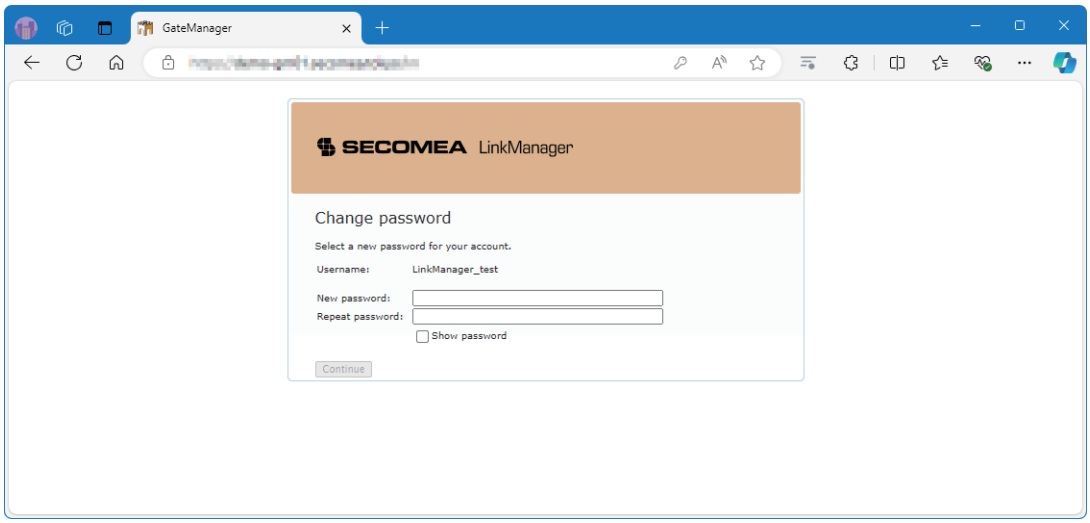
- Click the [Choose File] button, and then specify the certificate for login (*.gml) attached to the e-mail.
- Enter the password indicated in the body of the e-mail.



PART 5

4. When logging in for the first time, you must change the password and accept the terms of use.

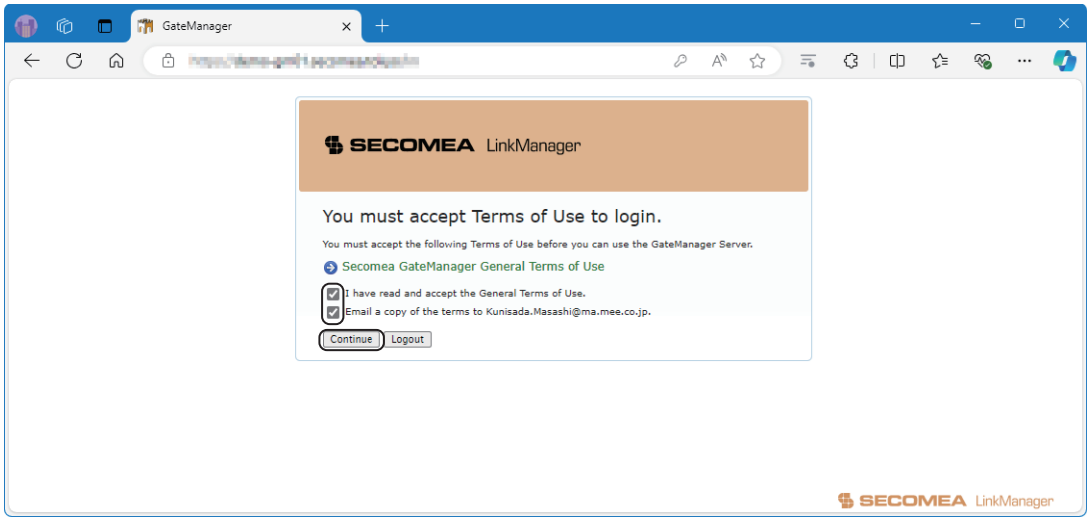
Enter a new password to be used for the next and subsequent logins, and then click the [Continue] button.



5. Only when logging in for the first time, you will be asked to agree to the license agreement as shown below.

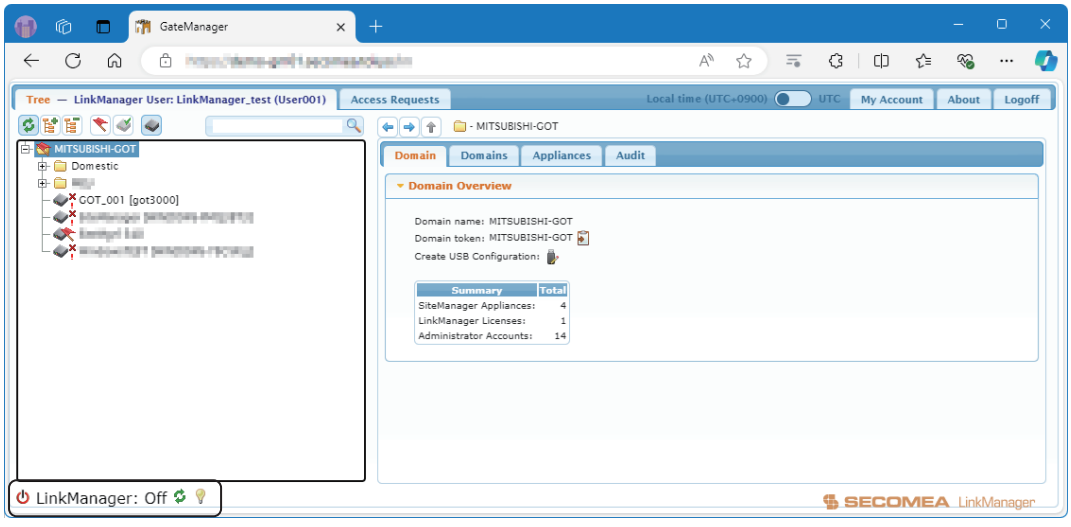
Select the upper checkbox and click the [Continue] button.

(If you wish to receive the contents of the license agreement by e-mail, check the lower checkbox as well.)



When you log in, the LinkManager management screen appears.

Since LinkManager is not installed on the personal computer at this time, [LinkManager: Off] is displayed in the lower left corner of the management screen.

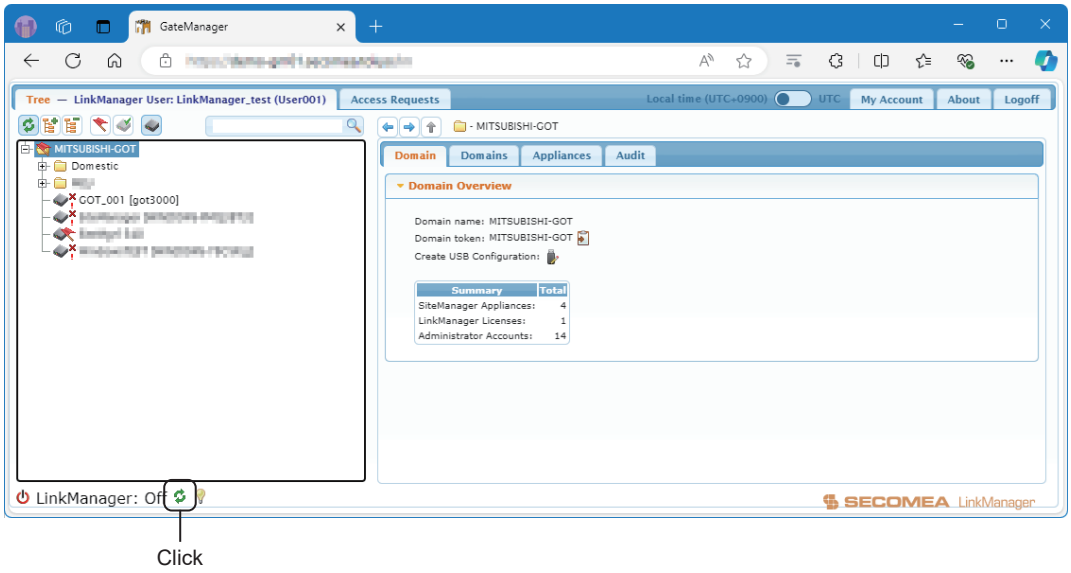


■Installing LinkManager application

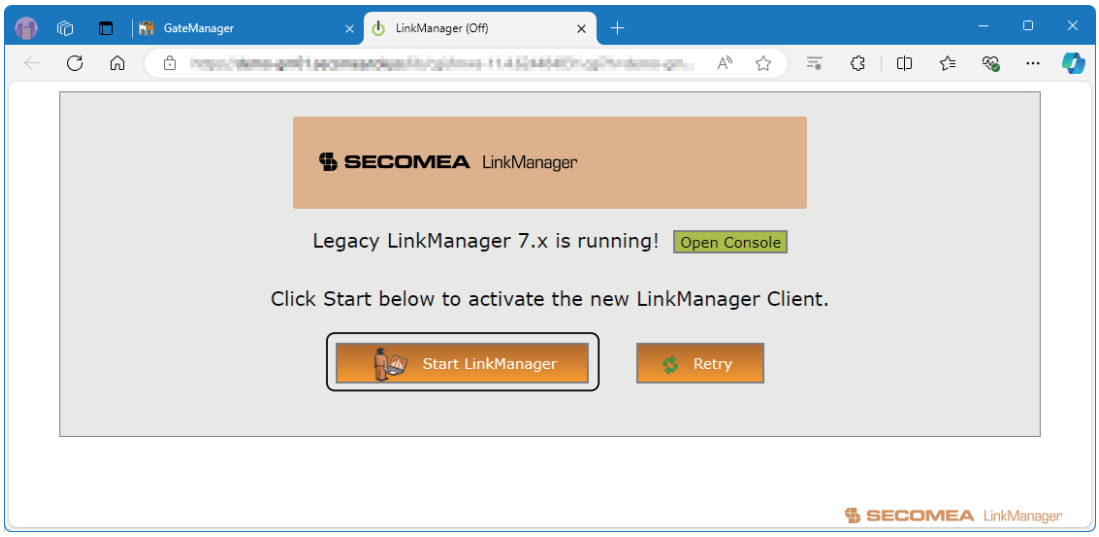
Install LinkManager on the personal computer.

Operating procedure

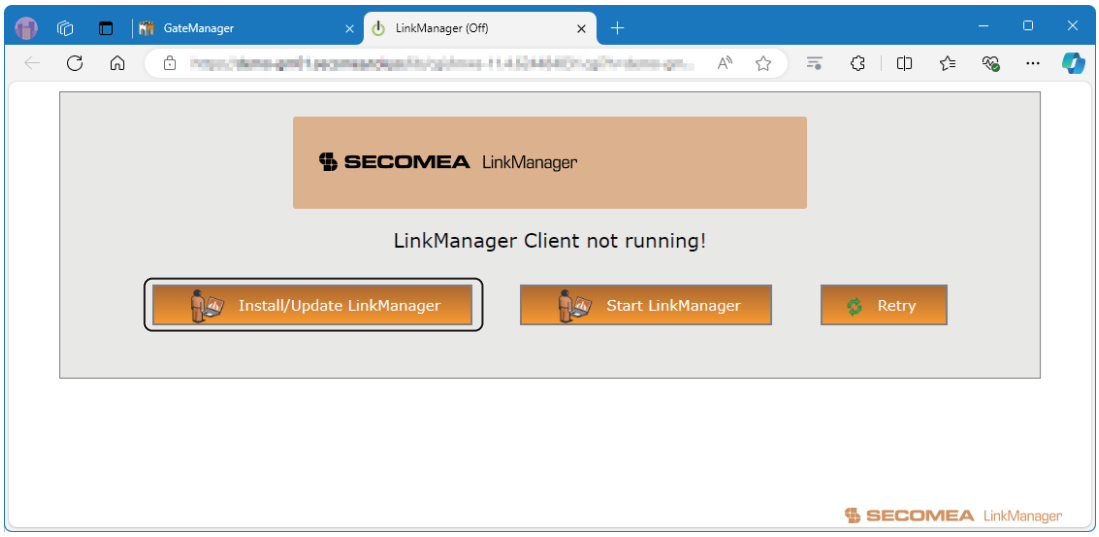
1. Click the following icon in the LinkManager management screen.



2. Click the [Start LinkManager] button.

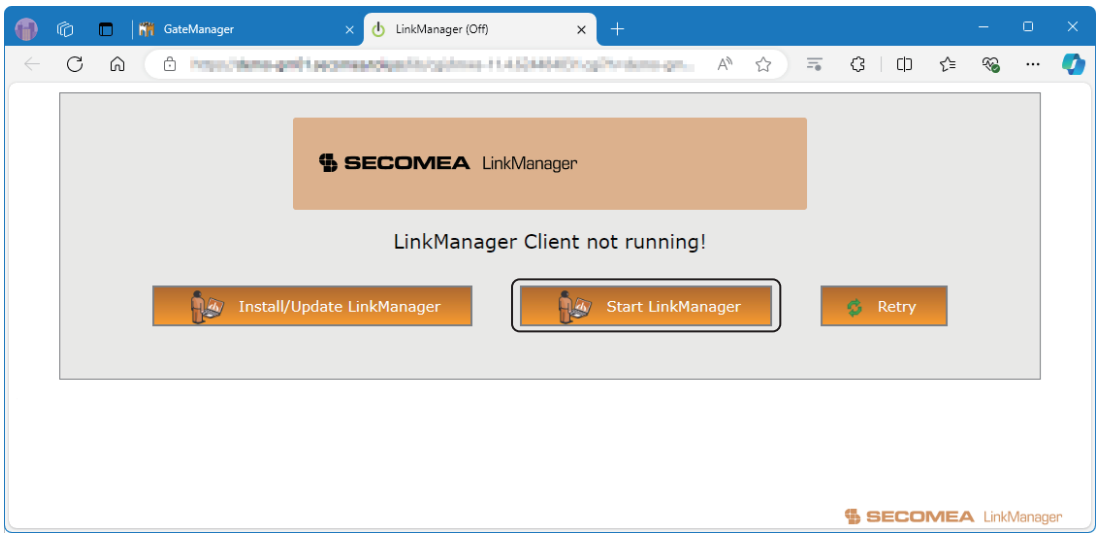


3. Click the [Install LinkManager] button to download the LinkManager application (*.exe).
Do not close the LinkManager management screen.

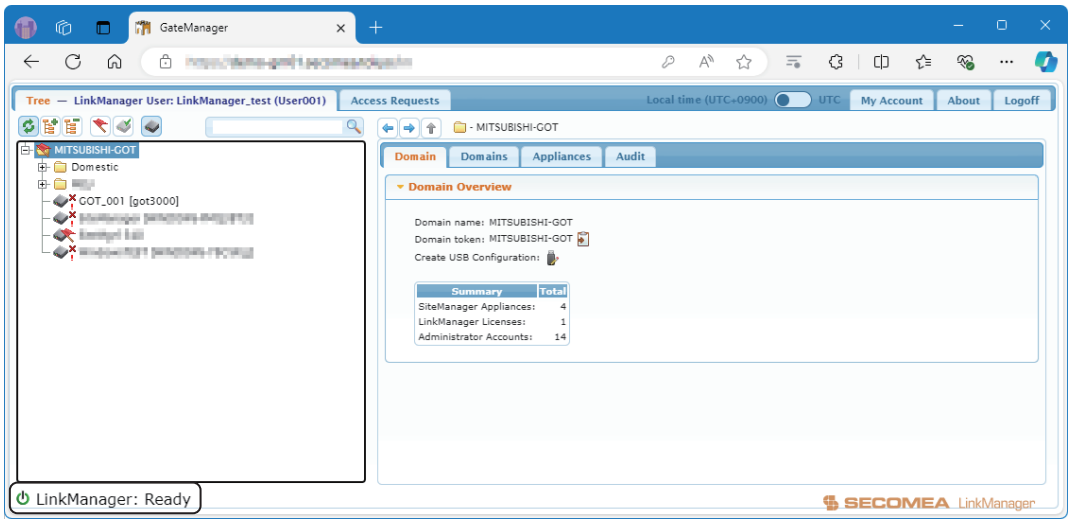


4. Open the downloaded file to display the installation screen.
Follow the instructions on the screen to install the application.

5. After installation, click the [Start LinkManager] button to start LinkManager.



[LinkManager: Off] displayed in the lower left corner of the LinkManager management screen will change to [LinkManager: Ready].

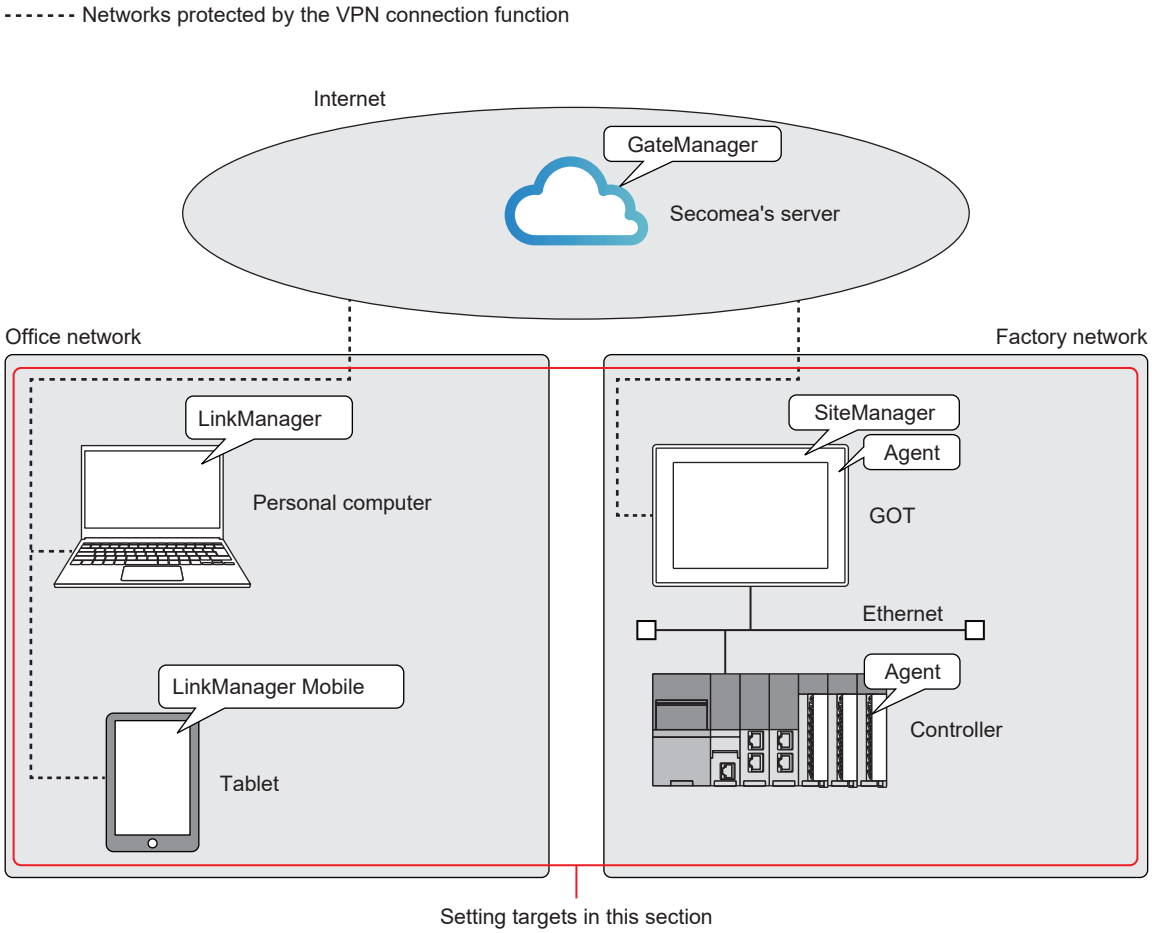


The LinkManager icon is displayed in the task tray.

Setting the agents to be accessed from LinkManager

Register the devices (agents) you want to remotely access from the terminal such as a personal computer or tablet.
Register the GOT as an agent as well.
To establish communications between LinkManager and an agent, enable the communications in SiteManager.
You can configure the agent settings from the GateManager site or LinkManager site.
The following describes the setting procedure from the LinkManager site.

☞ Page 686 Registering an agent
☞ Page 688 Connecting LinkManager and an agent



Specifications and functions of Secomea's products may be changed without notification.
For the latest information, contact Secomea.

Point

If the agent settings are changed during VPN connection, the new settings are immediately applied.

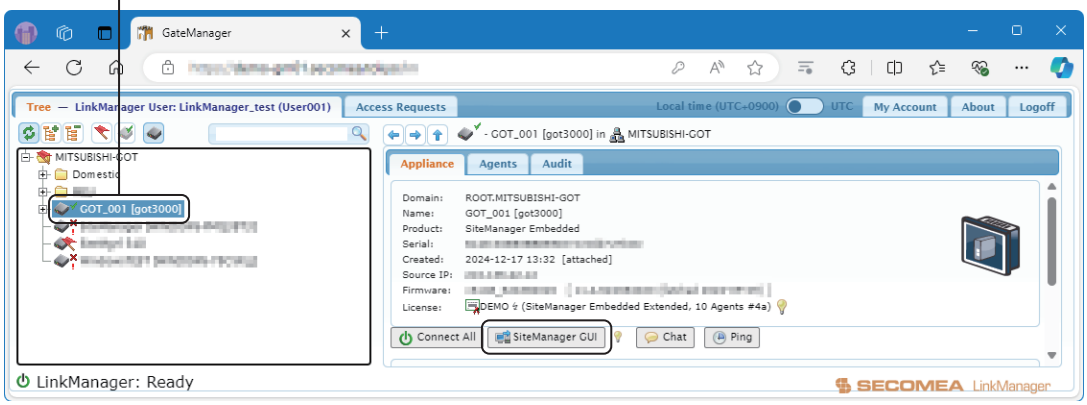
■Registering an agent

The following provides an example for changing the default agent settings.

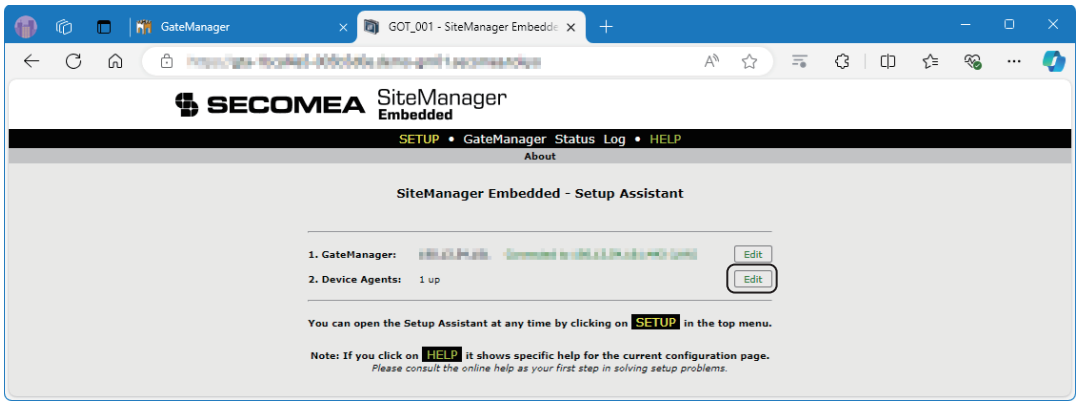
Operating procedure

1. In the LinkManager management screen, select SiteManager for which you want to change the settings, and click the [SiteManager GUI] button.

Select SiteManager whose settings are to be changed.

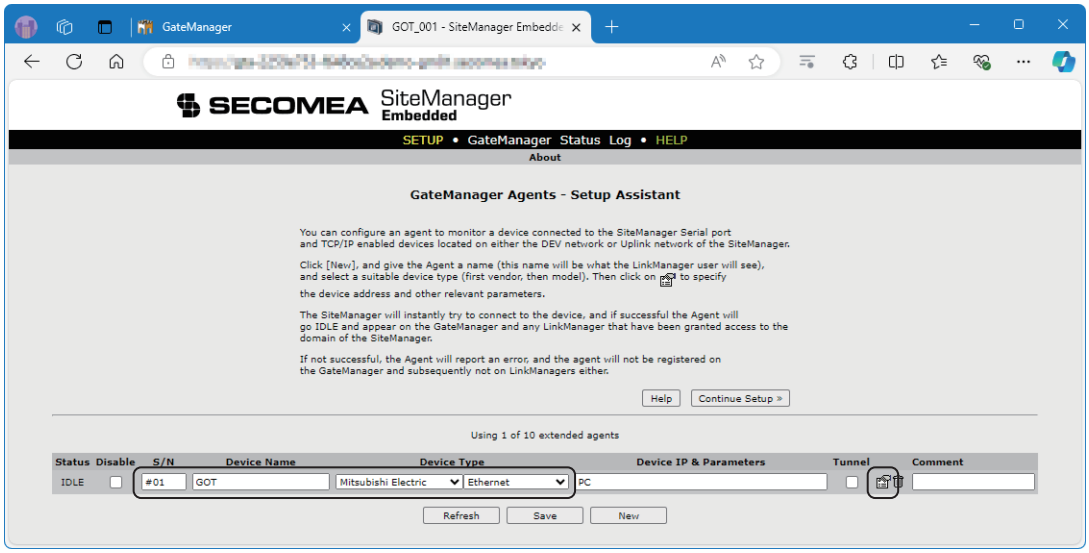


2. Click the [Edit] button shown below.

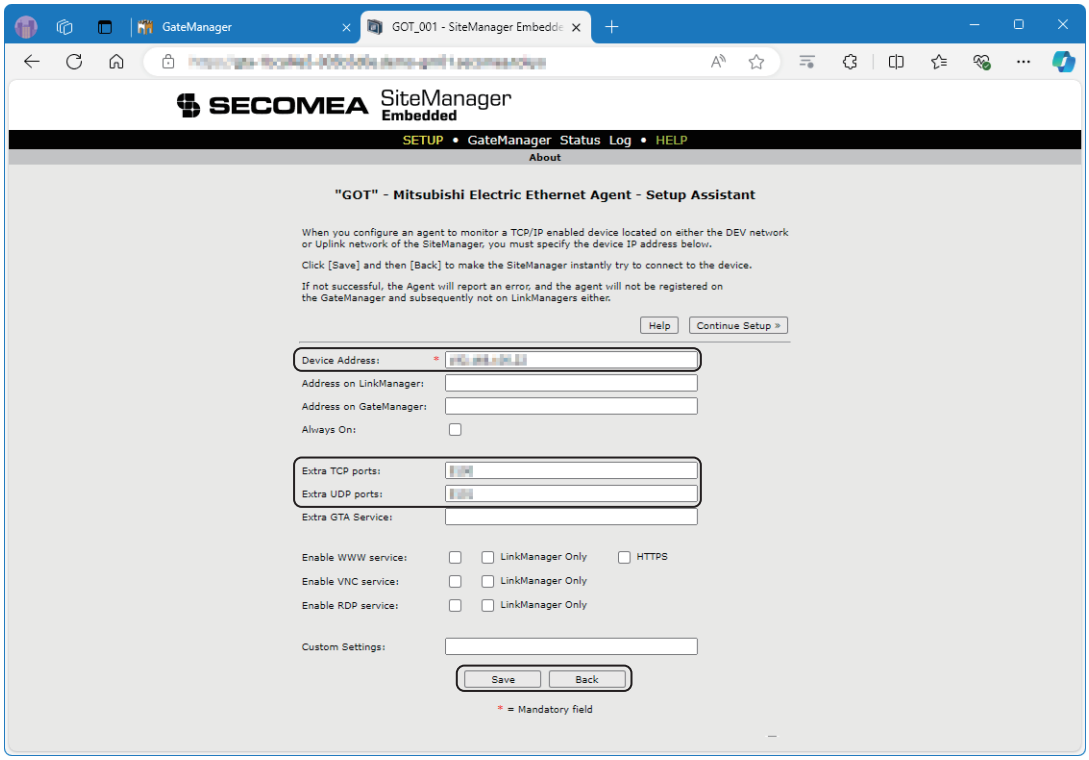


3. Enter each setting item.

Click the icon shown below to display the detail setting screen.

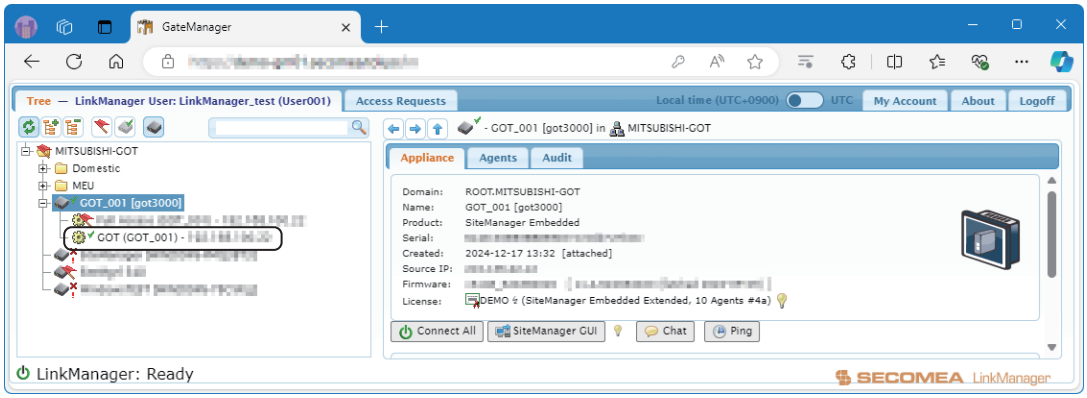


4. Set the following items and click the [Save] button. Then, click the [Back] button.



Item	Description
[Device Address]	Set the IP address of the device to enable its communication.
[Extra TCP ports]	Set the TCP port number of the device to enable its communication.
[Extra UDP ports]	Set the UDP port number of the device to enable its communication.

Update the LinkManager management screen to update the agent information according to the settings.



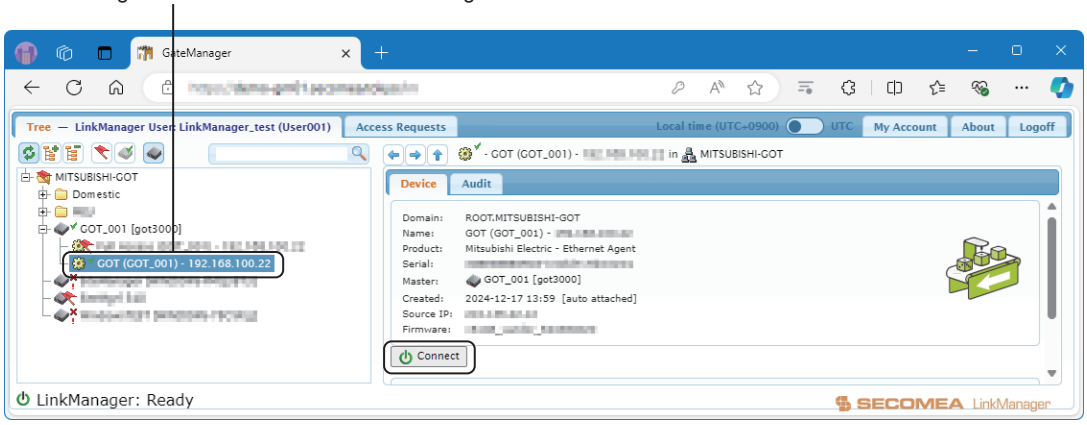
■Connecting LinkManager and an agent

Start communications between LinkManager and an agent.

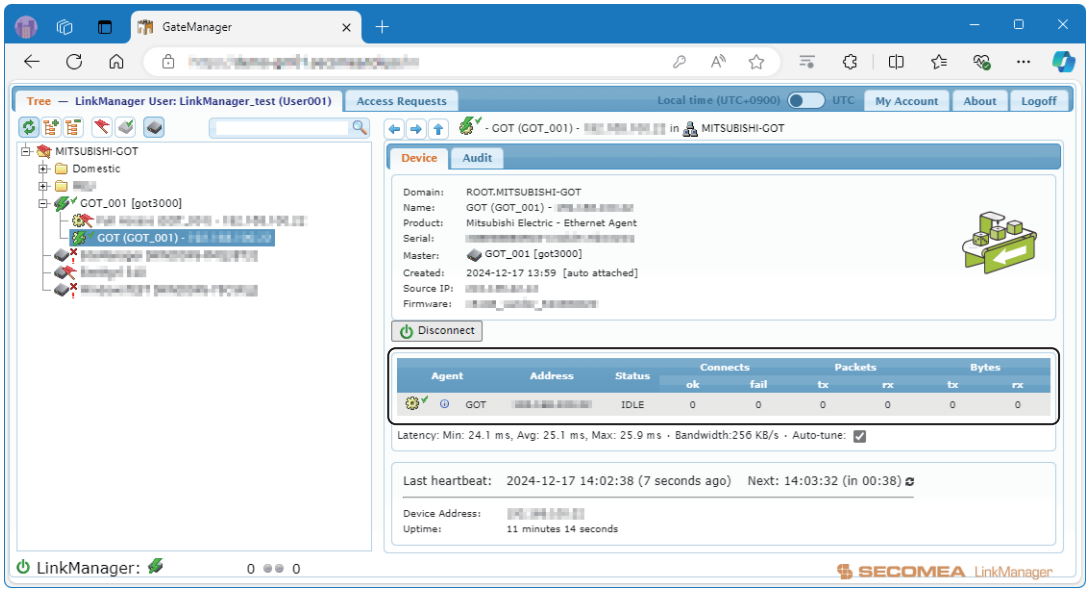
Operating procedure

In the LinkManager management screen, select the agent to be connected from LinkManager, and click the [Connect] button.

Select the agent to be connected from LinkManager.



LinkManager and the agent start communicating with each other, and information on the communications is displayed in the screen of the LinkManager site.



12.18.4 [VPN Connection]

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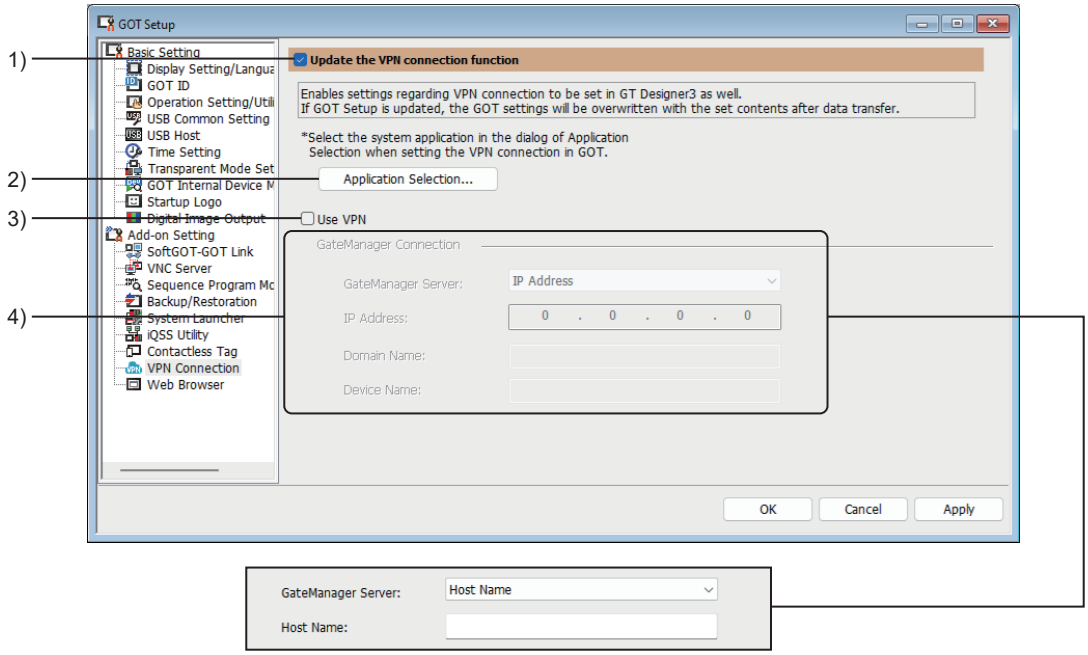
Configure the settings of GateManager to which SiteManager (GOT) is connected.

Select [Common] → [GOT Setup] → [Add-on Setting] → [VPN Connection] from the menu to display this window.



When [Host Name] is selected for [GateManager Server]

Item			Description
1)	[Update the VPN connection function]		Updates the setting data in the GOT with the ones set on GT Designer3 when package data is written. Select this item to configure the settings in [VPN Connection]. When a project is read from the GOT, the setting changed in the utility is applied.
2)	[Application Selection] button		Displays the [Application Selection] dialog. ☞ Page 458 [Application Selection] dialog To use the VPN connection function, select [VPN Connection Function] on the [System Application] tab. When [Use VPN] is selected, this setting is not required because the system application of the VPN connection is incorporated in the package data automatically.
3)	[Use VPN]		Enables the VPN connection function.
4)	[GateManager Connection]	[GateManager Server]	Select how to specify the GateManager server.
		[IP Address]	This item is displayed when [IP Address] is selected for [GateManager Server]. Specify the GateManager server with the IP address. The setting range is [0.0.0.0] to [255.255.255.255].
		[Host Name]	This item is displayed when [Host Name] is selected for [GateManager Server]. Specify the GateManager server with the host name. Up to 127 characters can be set. One-byte alphanumeric characters, hyphens (-), and periods (.) can be used.
		[Domain Name]	Set the domain name of the GateManager server. Up to 127 characters can be set. One-byte alphanumeric characters, hyphens (-), and periods (.) can be used.
		[Device Name]	Set the name of the device used to display the SiteManager (GOT) name in the GateManager site. Up to 127 characters can be set. One-byte alphanumeric characters, one-byte spaces, and the following symbols can be used. ! " # $ % & ' ( ) * + , ` - . / : ; < = > ? @ [¥] ^ _ { | } ~ A one-byte space cannot be used at the start or end of the device name. A one-byte space can be used between characters. Two or more one-byte spaces cannot be used consecutively.

12.18.5 Relevant settings

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The VPN connection function has other relevant settings besides the specific settings.
The following shows the functions that are available by configuring the relevant settings.

GOT internal device

☞ Page 3581 GOT special register (GS)

Function	Setting item
Notifying users of the connection status between SiteManager (GOT) and GateManager.	GS2051.b0
Notifying users of the operation status of the VPN connection function in SiteManager (GOT).	GS2051.b1
Starting or stopping the connection between SiteManager (GOT) and GateManager.	GS2565.b0

12.18.6 Troubleshooting

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Issue	Possible cause	Solution
The VPN connection cannot be established.	The VPN connection is invalid.	• Check that the network cables are connected. • Check that the router or any other repeater is powered on.
	The settings of the VPN connection function are incorrect.	Check the VPN connection settings. ☞ Page 674 How to set the VPN connection function
	The access is blocked by firewall or security software.	Check that the use of the IP address and port number to be used for VPN connection is allowed.
The communication speed is low.	More than the recommended number of terminals (such as personal computers and tablets) are connected.	Keep the number of connected terminals within the recommended number. ☞ Page 673 Recommended LinkManager installations
	Access is concentrated.	Connect again after a while.
	Continuous long-term use of the terminal (such as a personal computer or a tablet) or router has decreased its processing capacity.	Restart the terminal or router continuously used for a long time.
	Your ISP (Internet Service Provider) restricts your Internet bandwidth or speed.	Check with your ISP (Internet Service Provider).
	The network of your plan is slow.	Review your Internet plan.
	The maximum transmission unit (MTU) of data that the device can transmit at one time is inappropriate.	Check the MTU value and change it to the appropriate value.

12.19 Setting the web browser function ([Web Browser])

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☞ Page 692 Overview of the web browser function
☞ Page 693 Specifications of the web browser function
☞ Page 698 How to set the web browser function
☞ Page 701 Launching or exiting a web browser window
☞ Page 702 Operation on the web browser window
☞ Page 707 Operation control on the web browser window
☞ Page 709 [Web Browser]
☞ Page 710 [Web Browser] dialog (peripheral setting)
☞ Page 711 Relevant settings
☞ Page 711 Troubleshooting

In [Web Browser], configure the settings of the web browser function.

12.19.1 Overview of the web browser function

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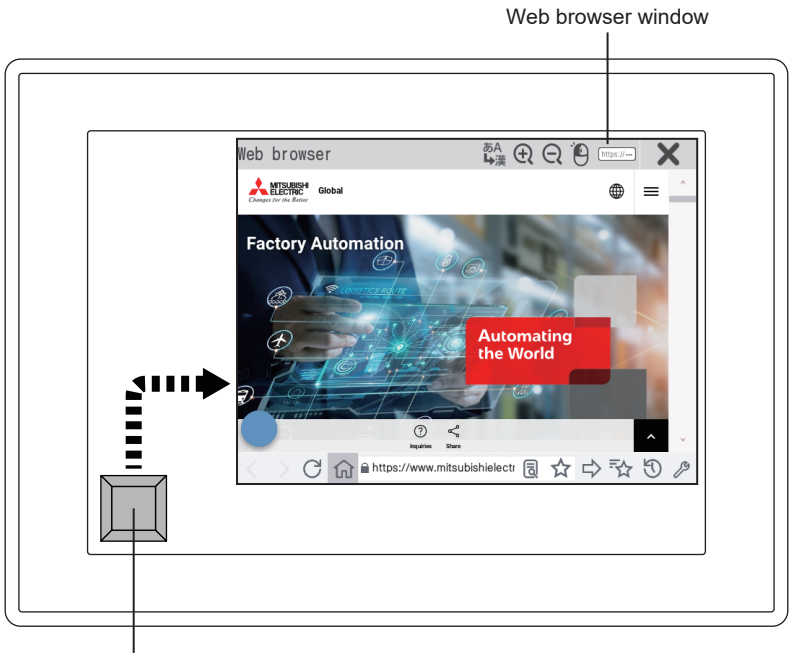
The web browser function launches a web browser on the GOT.
This function allows you to launch a web browser window to display websites, access the devices equipped with the web server function, and use web applications.



Precautions

■Access to websites

Ensure that you trust the website before visiting it.

■Difference between the web browser window and standard web browsers

The website displayed in the web browser window may look different from the one displayed in browsers on your personal computer.

12.19.2 Specifications of the web browser function

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☞ Page 693 Specifications of the web browser window
☞ Page 697 Encrypted communication
☞ Page 697 Required system application (add-on function)
☞ Page 697 Resource for the system window

Specifications of the web browser window

Item	Specifications	Remarks
Display language	Japanese English Chinese (Simplified) Chinese (Traditional) Korean	The display language can be switched by setting the system language. Any unsupported HTML element or text will be displayed in English regardless of the system language setting.
Maximum number of web browser windows that can be launched	1	—
Supported contents	• HTML (except for video playback) • CSS • JavaScript	For the actions not supported by the web browser window, refer to the following. ☞ Page 693 Actions not supported by the web browser window For the detailed specifications of the web browser window, refer to the following. ☞ Page 694 Detailed specifications of the web browser window
Text input method	• Text input key window • USB keyboard	The text input key window has two types: the standard key window and user-created key window. For the text input key window setting, refer to the following. ☞ Page 698 How to set the web browser function
		For the USB keyboard, refer to the following. ☞ Page 630 Configuring the settings for a mouse and a keyboard used with the GOT ([USB Host]) When text is input using a USB keyboard, the buzzer is not output.
Security specifications	SRI (Subresource Integrity) is supported.	If an integrity attribute is specified for HTML, SRI checks that the external reference files have not been manipulated.

■Actions not supported by the web browser window

Item	Description
Downloading files	Files cannot be downloaded from the Internet or a web server to the GOT drive.
Uploading files	Files cannot be uploaded from the GOT drive to the Internet or a web server.
Displaying HTML files saved using a character code other than UTF-8	If the character code of the HTML file is not set using a <meta> element, it is decoded as UTF-8. Therefore, characters in HTML files saved with a character code other than UTF-8 become garbled. To avoid garbled characters, perform any of the following. • Saving HTML files as UTF-8 • Setting the character code of the HTML file using a <meta> element in the <head> element
	When setting the character code of the HTML file using a <meta> element, set it in the first 1024 bytes of the HTML file. The following shows examples for setting the character code to UTF-8. Example 1) <head> <meta charset="utf-8"/> </head> Example 2) <head> <meta http-equiv="content-type" content="text/html; charset=utf-8"/> </head>
Executing or displaying content	The following content cannot be executed or displayed. • Content using Java Applet • Content using ActiveX controls or scripts (such as VBScript and Jscript)
Selecting, copying, and pasting text	Not available
Displaying tabs	Not available
Changing mouse cursor display	Even if the mouse cursor is hovered over a specific element on a web page, the mouse cursor display does not change in the web browser window.

Item	Description
Displaying tooltips	Tooltips, which usually appear when the mouse cursor is hovered over an element on a web page, may not be displayed. Tooltips are not displayed for the following element and attribute. • Tooltip display by the <title> element of SVG • Tooltip display by the title attribute of HTML (in HTML elements, all the elements that support the title attribute)

■Detailed specifications of the web browser window

The following shows the compatibility with markup languages, APIs, and others.

○: Compatible

△: Partially compatible

×: Not compatible

Item	Compatibility	Remarks
HTML5	△	For the available HTML elements, refer to the following. ☞ Page 695 Available HTML elements
HTML4.01	△	
XHTML1.0	○	—
XML1.0	○	—
XSLT1.0	○	—
CSS1	○	—
CSS2.1	△	—
CSS3	△	—
DOM1	○	—
DOM2	○	—
DOM3	△	—
ECMAScript 6th Edition	○	—
XMLHttpRequest	○	—
SSL2.0	×	—
SSL3.0	×	—
TLS1.0	×	—
TLS1.1	×	—
TLS1.2	○	—
TLS1.3	○	—
SVG1.1	△	—
WebGL	×	—
Canvas	△	—
WebStorage(localStorage, sessionStorage)	○	—
Web Sockets	○	—
MSE/EME(Media Source Extensions/Encrypted Media Extensions)	×	—
WebDriver	×	—
Selenium Driver	×	—
Fetch API	△	—
Streams API	△	—
WebRTC	×	—
Multiple tabs	×	—
Multiple windows	×	—
Window zoom	○	—
Internationalized domain name	○	—
Complex Text Layout	○	—
Right-to-Left writing	○	—
Speech recognition	×	—
jpeg	○	—
gif	○	—
png	○	—
WebP	×	—
BMP	○	—

Item	Compatibility	Remarks
TIFF	×	—
APNG	○	—
AVIF	×	—
MP4	×	—
WAV	×	—
FLV	×	—
OGV	×	—
DivX	×	—
PDF	×	—

■Available HTML elements

The following shows the compatibility of the web browser function with HTML elements.

○: Compatible

△: Partially compatible

×: Not compatible

Element name	Compatibility	Remarks
<!--...-->	○	—
<DOCTYPE>	○	—
<a>	○	—
<abbr>	×	A tooltip does not appear even if the mouse cursor is placed on the <abbr> element.
<address>	○	—
<area>	○	—
<article>	○	—
<aside>	○	—
<audio>	×	—
<b>	○	—
<base>	○	—
<bdi>	○	—
<bdo>	○	—
<blockquote>	○	—
<body>	○	—
 	○	—
<button>	○	—
<canvas>	○	—
<caption>	○	—
<cite>	○	—
<code>	○	—
<col>	○	—
<colgroup>	○	—
<data>	○	—
<datalist>	×	—
<dd>	○	—
<del>	○	—
<details>	○	—
<dfn>	○	—
<dialog>	○	—
	○	—
<dl>	○	—
<dt>	○	—
	○	—
<embed>	○	Files in unsupported formats cannot be displayed or played.
<fieldset>	○	—
<figcaption>	○	—

Element name	Compatibility	Remarks
<figure>	○	—
<footer>	○	—
<form>	○	—
<h1> ... <h6>	○	—
<head>	○	—
<header>	○	—
<hgroup>	○	—
<hr>	○	—
<html>	○	—
<i>	○	—
<iframe>	○	—
<img>	○	Images in unsupported formats cannot be displayed. If [Display image in Web browser] is deselected, alternative text will not be displayed when images are not displayed.
<input>	△	The following type attribute setting values are not supported. • type="color" • type="week"
<ins>	○	—
<kbd>	○	—
<label>	○	—
<legend>	○	—
	○	—
<link>	○	—
<main>	○	—
<map>	○	—
<mark>	○	—
<math>	×	—
<meta>	○	—
<meter>	○	—
<nav>	○	—
<noscript>	○	—
<object>	△	Files in unsupported formats cannot be displayed or played.
	○	—
<optgroup>	△	—
<option>	○	—
<output>	○	—
<p>	○	—
<picture>	○	—
<pre>	○	—
<progress>	○	—
<q>	○	—
<rp>	○	—
<rt>	○	—
<ruby>	○	—
<s>	○	—
<samp>	×	—
<script>	○	—
<search>	×	—
<section>	○	—
<select>	○	—
<slot>	○	—
<small>	○	—
<source>	○	—
	○	—

Element name	Compatibility	Remarks
	○	—
<style>	○	—
<sub>	○	—
<summary>	○	—
<sup>	○	—
<svg>	△	—
<table>	○	—
<tbody>	○	—
<td>	○	—
<template>	○	—
<textarea>	○	—
<tfoot>	○	—
<th>	○	—
<thead>	○	—
<time>	○	—
<title>	○	—
<tr>	○	—
<track>	×	—
<u>	○	—
	○	—
<var>	○	—
<video>	×	—
<wbr>	○	—

Precautions

■Precautions for system language switching

If the system language is switched after a web browser is launched, some text will not change in conjunction with system language.

Switch the system language before launching the web browser, or restart the web browser after switching the system language.

Encrypted communication

The web browser function supports encrypted communications.

Server authentication is performed using a certificate issued by the certificate authority to allow access to the web server that supports https.

The certificate issued by the certificate authority is transferred to the GOT when [Web Browser] of the system application (add-on function) is written.

☞ Page 3069 Encrypting communication data (Encrypted communication function)

Required system application (add-on function)

To use the web browser function, [Web Browser] must be selected from the system applications (add-on functions).

Placing a special function switch with the following setting in the screen incorporates the application into the package data automatically.

- Select [Web Browser] for [Switch Action] in the [Special Function Switch] dialog ([SP Function] tab).

Resource for the system window

The web browser function displays web browser windows as system windows.

Use an overlap window as a resource to display a system window.

For the resource of the system window, refer to the following.

☞ Page 536 Using an overlap window as the system window

12.19.3 How to set the web browser function

GT37 SoftGOT3000

Configure all of the following settings to use the web browser function.

Setting	Description
GOT Ethernet setting	Configure the settings to connect the GOT to Ethernet. ☞ Page 713 Setting the GOT Ethernet interface ([GOT Ethernet Setting]) In the following cases, configure the DNS server settings in the GOT. • The host name is used to access a web server. • The host name is used to access a proxy server. ☞ Page 717 Configuring the settings common to Ethernet interfaces
Special function switch setting	Place a special function switch to launch the web browser window. For information on how to place a special function switch, refer to the following. ☞ Page 1198 Setting touch switches Select [Web Browser] for [Switch Action] in the [Special Function Switch] dialog ([SP Function] tab). ☞ Page 1230 [SP Function] tab

Configure the following settings as necessary.

Setting	Description
System window setting	Set the overlap windows to be used as resources for web browser windows (system windows). The overlap windows 4 and 5 are set to be used as resources by default. ☞ Page 542 [Screen Switching/Window]
Text input key window setting	Set the key window to input text in the web browser window. The standard key window is set to be used by default. The following operations are not supported by the standard key window. Use a user-created key window. • Input of characters not supported by the GOT (such as Cyrillic characters) • Input of line feeds To use a user-created key window, configure all of the following settings in the [Basic Setting] tab of the [Environmental Setting] window ([Key Window]). • Select [User-created (individual setting)] in [Key Window]. • Change [Key Window Type] of [Web Browser Text] to [User-created] and set [Window Screen No.]. This setting can be configured only for each project, not for each screen (screen property). For information on how to create a user-created key window, refer to the following. ☞ Page 568 How to create a user-created key window For details on the settings to use Kana-Kanji/Pinyin conversion, refer to the following. ☞ Page 604 Configuring the settings for converting a text into kanji or Simplified Chinese characters in the GOT ([Kana-Kanji/Pinyin Conversion]) ☞ Page 710 [Web Browser] dialog (peripheral setting) The option selection window settings can be configured only for each project, not for each screen (screen property).
	To insert a line feed to enter the text in two or more lines in the web browser window, place key code switches in the user-created key window, and set the following items in the [Key Code Switch] dialog ([Key Code] tab). • Select [Numerical/Text Input] for [Key Code Type]. • Set the key code to [000A]. ☞ Page 1251 [Key Code Switch] dialog
	For the specifications of the key window in the web browser function, refer to the following. ☞ Page 699 Specifications of the key window in the web browser function
Additional setting of the operation memory	Configure the relevant settings for the operation memory to be used in the web browser function. If the operation memory is insufficient, some content may not be displayed. ☞ Page 709 [Web Browser]
Web browser setting	Configure the following settings to be used in the web browser function. • Setting to enable image display • Setting to enable alarm popup display • Setting to enable cookies • Setting to enable histories • Proxy server settings • Website settings • Setting to enable Kana-Kanji/Pinyin conversion • Resource file settings ☞ Page 709 [Web Browser] ☞ Page 710 [Web Browser] dialog (peripheral setting)

Specifications of the key window in the web browser function

■Specifications of the standard key window in the web browser function

Some specifications of the standard key window in the web browser function differ from those of the standard key window for inputting numerical values and other data in the GOT.

The following table lists the specifications that differ.

Specification with different actions		Action
Key	[AC] key	This key is equivalent to the Back space key in a web browser on your personal computer. It deletes the character on the left of the cursor.
	[DEL] key	This key is equivalent to the Delete key in a web browser on your personal computer. It deletes the character on the right of the cursor.
	Cursor keys (screen)	The keys do not operate. (The cursor keys (object), which move the cursor right or left inside objects, can operate.)
Settings not applied		The following settings in the [Environmental Setting] window (the [Basic Setting] tab of [Key Window]) or in the [Key Window Basic Setting] tab of the screen properties are not applied to the standard key window in the web browser function. • [Display value during input] • [Display previous value] • [Display input function range]

For the specifications of the standard key window for inputting numerical values and others in the GOT, refer to the following.

☞ Page 558 Specifications of the standard key window

■Objects that operate in the user-created key window

The following objects operate in the user-created key window.

Object	Remarks
Touch switch	Only the touch switches whose [Key Code Type] is [Numerical/Text Input]] will operate. ☞ Page 1251 [Key Code] tab
	For the touch switches displayed in the user-created key window, the following settings are disabled. • [Lamp(Timing to change shape/text)] • [Comment] of [Text Type] • [Use offset] • [Operation Log Target] • [Control displaying/hiding] • [Trigger] • [Use Object Script] The behavior when [Only if conditions are met] is selected for [Buzzer] is the same as that of [Always].
Key window object	☞ Page 1887 Placing an object to display the input information

PART 5

Specifications for excluded host names in Proxy server settings

Domain names or parts of IP addresses can be specified as excluded host names using wild cards (asterisks: *).
If a host name is incorrectly specified with wild cards, the excluded host name setting will be invalid.
The following shows the conditions for specifying names with wild cards.

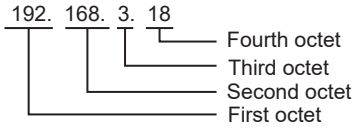
IP address format

- You can specify the numerical values of the first to fourth octets using wild cards.
- Multiple octets can be specified using wild cards.

Example) 192.*.*.*

- You cannot omit the periods that separate the octets.

Example) 192.*



Domain name format

- You can specify a domain-level group of characters in deep hierarchies using a wild card.

Example) *.example.co.jp, *.co.jp

- You cannot use a wild card to include the top and the second level domains.

Example) *.jp

- You cannot use wild cards for two or more domains.

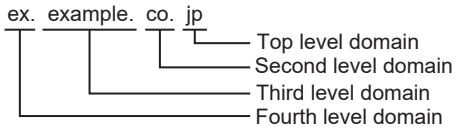
Example) *.*.co.jp

- You cannot use a wild card as a part of any domain.

Example) *ple.co.jp

- You cannot use a wild card as the middle part of a domain.

Example) ex.*.co.jp



12.19.4 Launching or exiting a web browser window

Operation	Description
Launch	Touch a special function switch to launch the web browser window. For information on how to set a special function switch, refer to the following. ☞ Page 698 How to set the web browser function
Exit	Touch the exit button in the upper right corner of the web browser window. ☞ Page 702 Operation on the web browser window

Precautions

■Precautions for turning on the GOT

After the GOT is turned on, the processing to enable launch of a web browser window takes approximately 30 seconds.
If a web browser window is launched before the processing is completed, any screen operation will not be available until the processing is completed.

■Precautions for using a web browser window for a long period of time

If a web browser window is used for an extended period, it may relaunch due to an error.
If the window is relaunched, the URL that was accessed when it was first opened is reloaded.

If a web browser window is used for an extended period, it may stop due to an error.
If the web browser stops, an error notification dialog is displayed and GS2065.b15 is turned on.
If the web browser window stops, you need to restart the GOT to use it again.
The following methods can restart the GOT:

- Power off → on the GOT.
- Turn on GS639.b15.

Prepare a script to turn on GS639.b15 when GS2065.b15 is turned on to restart the GOT automatically when the web browser window stops.
For details on the GOT special registers, refer to the following.
☞ Page 3581 GOT special register (GS)

To ensure stable use of the web browser window, it is recommended to restart the GOT periodically (every 24 hours is recommended).

■Precautions for exiting a web browser window

When a web browser window is closed, the exiting processing may take some time.
If the exiting processing is not completed within five seconds, the web browser window is closed, and the exiting processing continues in the background.
If a web browser window is launched before the exiting processing is completed, a dialog to notify you that the exiting processing is in progress.
Close the dialog and launch the web browser window again.

12.19.5 Operation on the web browser window

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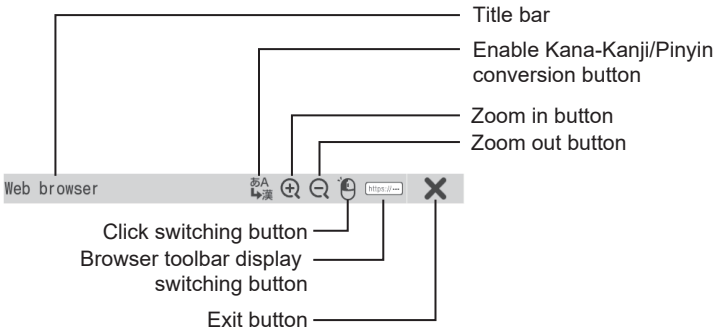
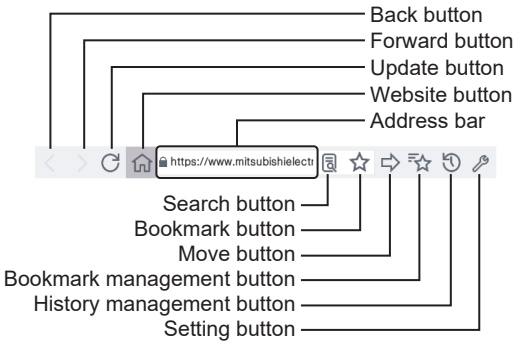
Touch the special function switch to launch the web browser window.

The URL displayed in the launched web browser window and the window size are determined by the settings of the special function switch.

The following shows the displayed contents in the web browser window and how to operate the window.

Item			Description
1)	Application tool bar	—	
		Title bar	Displays the text set in [Window Title] with the special function switch.
		Enable Kana-Kanji/Pinyin conversion button	Appears when [Use Kana-Kanji/Pinyin Conversion] is selected in the [Web Browser] dialog (peripheral setting). Switch the key window for the web browser to the key window for Kana-Kanji/Pinyin conversion.
		Zoom in button Zoom out button	Changes the display magnification of the screen. The change is applied to the contents displayed in the web browser screen. Display of some contents are not changed even if the display magnification is changed. They can be hidden by turning on GS2562.b3 before launching the web browser window.
		Click switching button	Activates the right-click mode. In the right-click mode, touch operation behaves as right-click only once. The right-click mode is deactivated after the touch operation (right-click). Use this mode when displaying the content that supports right-click. It can be hidden by turning on GS2562.b2 before launching the web browser window.
		Browser toolbar display switching button	Displays or hides the browser toolbar. It can be hidden by turning on GS2562.b0 before launching the web browser window.
		Exit button	Closes the web browser window.
2)	Content display area		Displays the content. When the content is larger than the content display area, horizontal and vertical scroll bars are displayed.

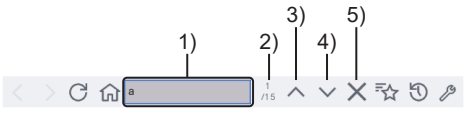
Item			Description
3)	Browser toolbar	—	 Indicates the progress of processing by a bar while a page is being loaded. It can be hidden by turning on GS2562.b1. (You can also display or hide the tool bar after launching the web browser window.)
		Back button	Returns to the previous page. Disabled if the browsing history does not exist or the history saving is disabled.
		Forward button	Moves to the page that had been displayed before the back button was clicked. Disabled if the browsing history does not exist or the history saving is disabled.
		Update button	Updates a page. This button becomes the cancel button while the page is being refreshed.
		Website button	Moves the web browser window to the startup page. If a website URL is configured, moves to that specific URL.
		Address bar	Displays the URL. During https communications, an icon is displayed at the beginning of the URL. Touch the address bar to display the text input key window for web browsers. Up to 8192 characters can be entered in UTF-16 code units.
		Search button	Searches for the text in the page. The browser toolbar enters the search mode. ☞ Page 703 Browser toolbar (search mode)
		Bookmark button	Opens the dialog to confirm bookmarking of the page. If the displayed page is already bookmarked, a dialog appears to confirm the deletion of the bookmark. ☞ Page 704 Dialog to confirm bookmarking
		Move button	Moves to the URL page displayed in the address bar.
		Bookmark management button	Displays a list of bookmarks in the bookmark management screen. ☞ Page 704 Bookmark management screen
		History management button	Displays the list of browsing history in the history management screen. ☞ Page 705 History management screen
		Setting button	Displays the browser settings screen. ☞ Page 705 Browser settings screen

Browser toolbar (search mode)

Click the search button on the browser toolbar to search for the text within the page.

When you enter a keyword as the search text, the search results in the page are highlighted in yellow.

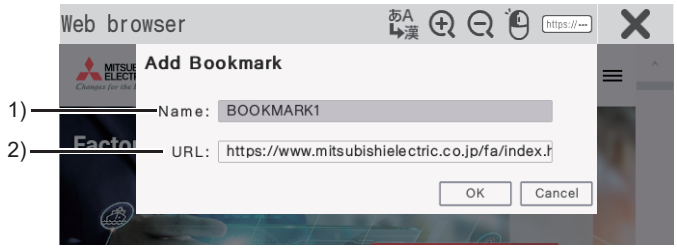
The text focused by the back button or forward button is highlighted in orange.



Item		Description
1)	Search text	Enter the text to be searched for.
2)	Current focus position/Number of hits	Displays the current focus position relative to the total number of hits in the page.
3)	Back button	Moves the focus to the previous hit.
4)	Forward button	Moves the focus to the next hit.
5)	Exit button	Exits the search mode.

Dialog to confirm bookmarking

Touch the bookmark button on the browser toolbar to bookmark the displayed page.



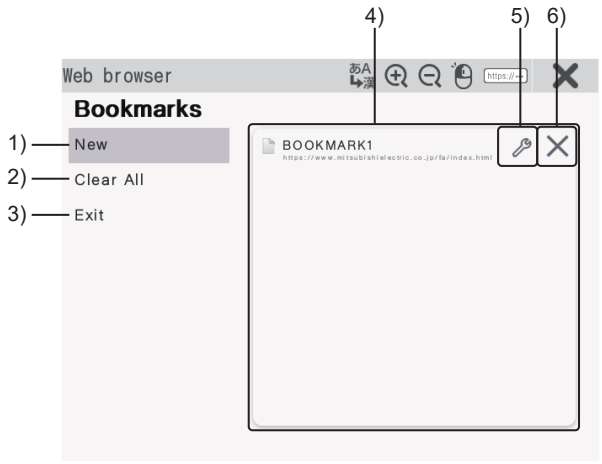
Item		Description
1)	[Name]	Specify the title for the bookmark. The allowable number of characters for the title depends on the text used. If a title longer than the limit is registered, the extra characters will be removed.
2)	[URL]	Specifies the URL to bookmark.

Bookmark management screen

Touching the bookmark management button on the browser toolbar to check the registered bookmarks.

Up to 32 bookmarks are retained, and older bookmarks are deleted when the number exceeds 32.

Bookmarks are saved in the folder specified in the [Web Browser] dialog (peripheral setting).



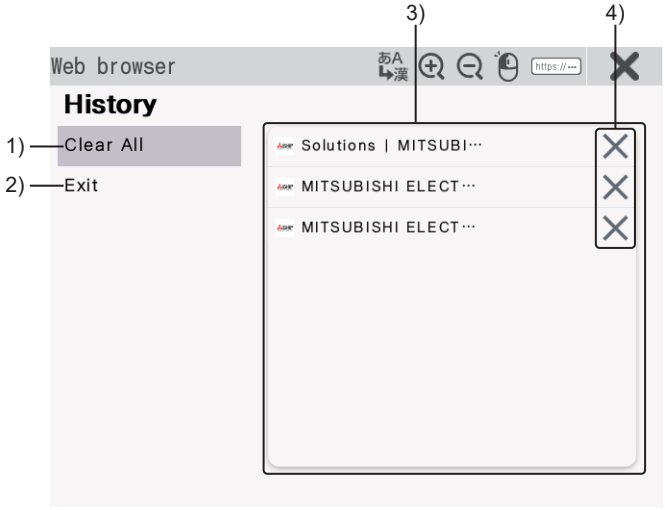
Item		Description
1)	[New] button	Displays the dialog to confirm bookmarking of the page.
2)	[Clear All] button	Deletes all bookmarks.
3)	[Exit] button	Exits the bookmark management screen.
4)	Bookmark list	List of bookmarks. They are displayed in the order of creation. Touch a bookmark to browse the page.
5)	Edit button	Displays the edit dialog.
6)	Delete button	Deletes the bookmark.

History management screen

Click the history management button on the browser toolbar to see the history of pages you have visited.

It retains up to 50 records. If the number of records exceeds 50, the oldest records are deleted.

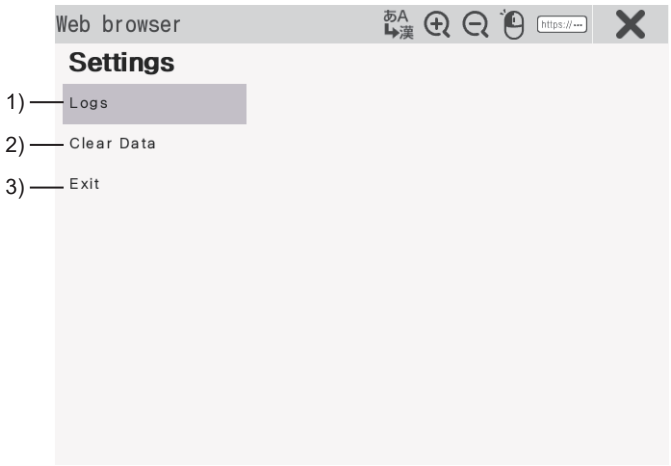
Records are saved in the folder specified in the [Web Browser] dialog (peripheral setting).



Item		Description
1)	[Clear All] button	Deletes all the history records.
2)	[Exit] button	Exits the history management screen.
3)	History list	Lists the history records. The browsing history is displayed from newest to oldest. Touch a history record to browse the page again.
4)	Delete button	Deletes the history.

Browser settings screen

Click the setting button on the browser toolbar to see the browser settings.

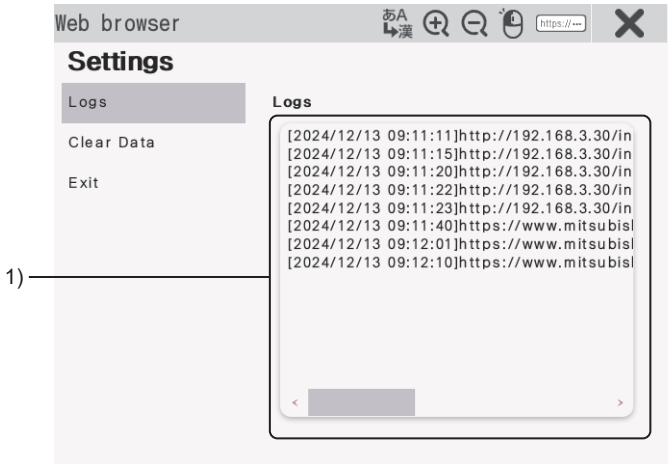


Item		Description
1)	[Logs] button	Displays the log of the web browser function. This button is displayed if GS2562.b14 is on when the web browser is launched. ☞ Page 706 Log display
2)	[Clear Data] button	Displays the data clear. ☞ Page 706 Data clear
3)	[Exit] button	Closes the browser settings screen and returns to the previous screen.

■Log display

To display this screen, GS2562.b14 must be on when the web browser is launched.

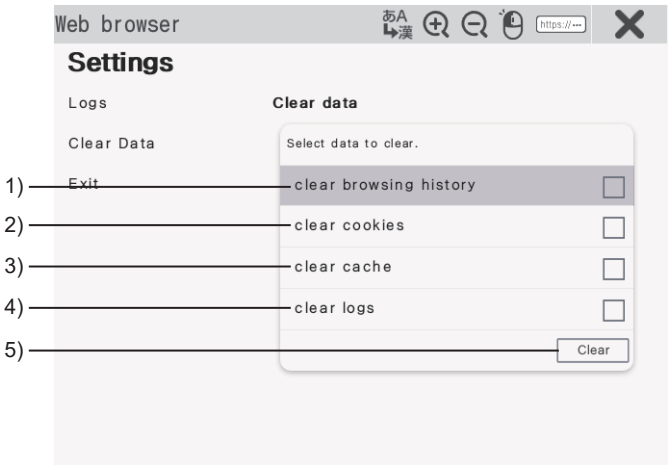
This screen displays information for webpage designers.



Item		Description
1)	Log list	Displays the logs stored at the time this screen is displayed. It retains up to 100 logs. If the number of logs exceeds 100, the oldest logs are discarded.

■Data clear

Touch the [Clear Data] button on the browser settings screen to display this screen.



Item		Description
1)	[clear browsing history]	Allows the history to be deleted.
2)	[clear cookies]	Allows cookies to be deleted.
3)	[clear cache]	Allows cache to be deleted.
4)	[clear logs]	Logs are the target for deletion. This item is displayed if GS2562.b14 is on when the web browser is launched.
5)	[Clear] button	Deletes the selected item(s).

12.19.6 Operation control on the web browser window

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☞ Page 707 Website to be displayed when the web browser window is launched
☞ Page 707 Specifying the display mode of the web browser window
☞ Page 708 Specifying the behavior when the special function switch is clicked after the web browser window is launched
☞ Page 708 Disabling JavaScript (Mobile code execution control function)

Website to be displayed when the web browser window is launched

Specify the URL of the website to be displayed when the web browser window is launched with the special function switch for startup.

Set it in [Specification] under [URL at Startup].

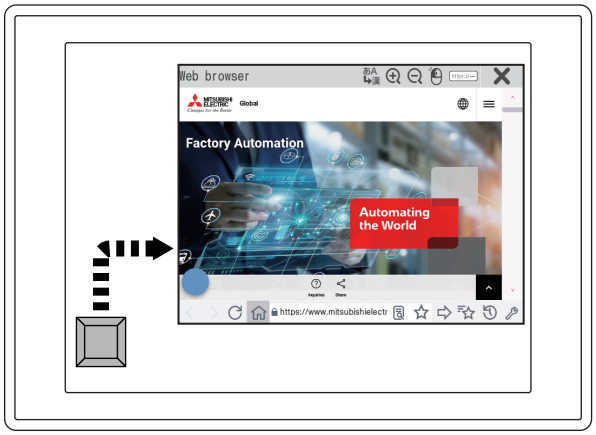
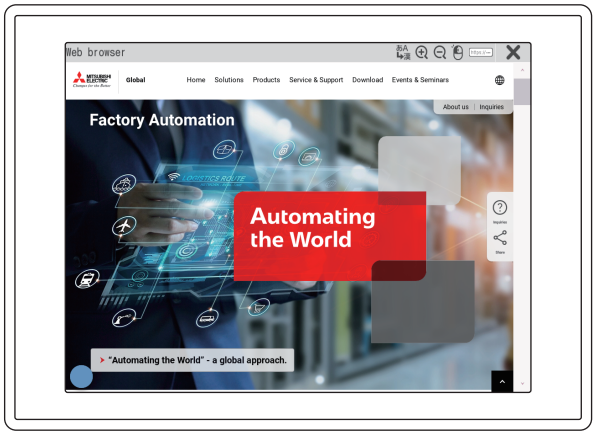
☞ Page 1233 [Web Browser] setting

Specifying the display mode of the web browser window

The web browser window is displayed in the window display mode or full screen mode.

Use GS2562.b10 to switch between the display modes.

The web browser window can be displayed in the full screen mode by turning on GS2562.b10 before launching the web browser window.

GS2562.b10	Display mode	Description
OFF	Window display mode	Displays the web browser window as a window on the base screen. 
ON	Full screen mode	Displays the web browser window on the entire base screen. In the full screen mode, the utility call key does not function. 

Specifying the behavior when the special function switch is clicked after the web browser window is launched

Use GS2562.b11 to switch the behavior when the special function switch is clicked after the web browser window is launched.
You can also switch the behavior after launching the web browser window.

GS2562.b11	Behavior
OFF	Displays the dialog notifying you that the web browser window cannot be launched.
ON	Closes the displayed web browser window. A new web browser window is launched according to the setting of the special function switch you clicked.

Disabling JavaScript (Mobile code execution control function)

Use GS2562.b12 to enable or disable JavaScript.
JavaScript is disabled by turning on GS2562.b12 before launching the web browser window.

GS2562.b12	Behavior
OFF	Enables JavaScript.
ON	Disables JavaScript.

Precautions

The mobile code execution control function prevents JavaScript from being executed.
This function does not determine if the JavaScript code is malicious.

12.19.7 [Web Browser]

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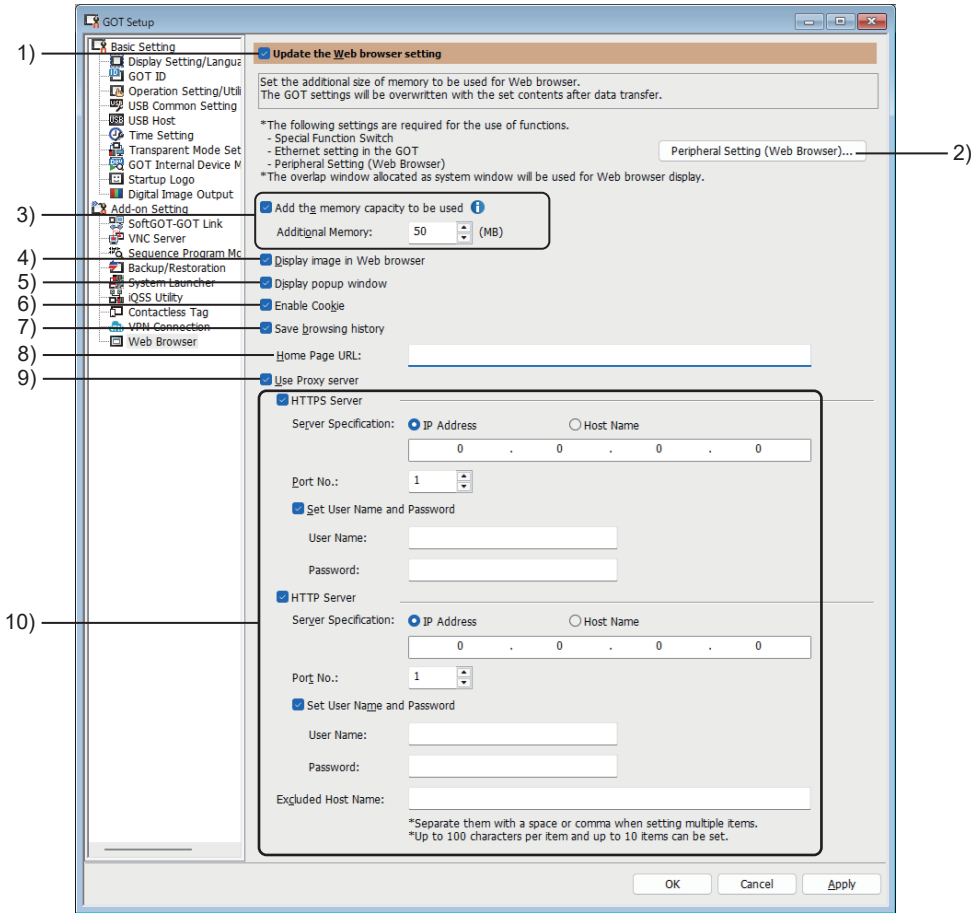
Configure the settings to use the web browser function.

Select [Common] → [GOT Setup] → [Add-on Setting] → [Web Browser] from the menu to display this window.



Item		Description
1)	[Update the Web browser setting]	Configure the web browser settings.
2)	[Peripheral Setting (Web Browser)]	Opens the [Web Browser] dialog (peripheral setting). ☞ Page 710 [Web Browser] dialog (peripheral setting)
3)	[Add the memory capacity to be used]	Add the operation memory to be used in the web browser function. If the operation memory is insufficient, some content may not be displayed. The setting range is [1] MB to [100] MB.
4)	[Display image in Web browser]	Enables the display of images in the web browser. If you access the image file URL directly, the image will be displayed regardless of the setting.
5)	[Display popup window]	Enables the display of popup windows in the web browser. When disabled, popup windows will be blocked except for those initiated by user actions such as touch, mouse, and keyboard operations.
6)	[Enable Cookie]	Enables saving and reading cookies. For information on the save destination setting, refer to the following. ☞ Page 710 [Web Browser] dialog (peripheral setting)
7)	[Save browsing history]	Enables saving of browsing history. For information on the save destination setting, refer to the following. ☞ Page 710 [Web Browser] dialog (peripheral setting)
8)	[Home Page URL]	Set the URL that is displayed when you touch the website button. Up to 512 characters can be set. The input URL must start with http:// or https://. If the URL does not start with http:// or https://, it is considered a format error and the website is not displayed.

Item			Description
9)	[Use Proxy server]		Enables connections via a proxy server. The following authentication methods are supported. • Basic authentication • Digest authentication
10)	[HTTPS Server] [HTTP Server]	—	Enables server settings.
		[Server Specification]	Set either of the following. • IP address: The setting range is [0].[0].[0].[0] to [255].[255].[255].[255]. • Host name: Up to 100 characters, alphanumeric characters and symbols (including hyphen (-) and period (.)), can be entered.
		[Port No.]	Set the port number used for the communication with the proxy server. The setting range is [1] to [65535].
		[Set User Name and Password]	Enables user name and password settings for proxy authentication.
		[User Name]	Set a user name for proxy authentication. Up to 32 characters can be entered.
		[Password]	Set a password for proxy authentication. Up to 32 characters can be entered.
		[Excluded Host Name]	Specify the host names or IP addresses of web servers that can be accessed without using a proxy server. You can enter up to ten options, with a maximum of 100 characters for each. Use a comma (,) or space as the delimiter. Domain names or parts of IP addresses can be specified as excluded host names using wild cards (asterisks: *). For details, refer to the following. ☞ Page 700 Specifications for excluded host names in Proxy server settings

12.19.8 [Web Browser] dialog (peripheral setting)

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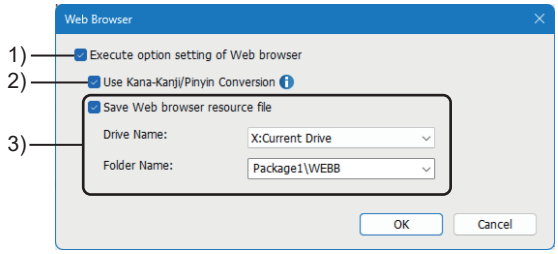

Item			Description
1)	[Execute option setting of Web browser]		Enables the optional settings for web browsers.
2)	[Use Kana-Kanji/Pinyin Conversion]		Enables switching to the key window for Kana-Kanji/Pinyin conversion.
3)	[Save Web browser resource file]	—	Enables the saving of the resource file. When the saving is enabled, historical or other data can be retained even if the GOT is turned off.
		[Drive Name]	Select the save destination folder for the resource file. For the available drives by GOT model, refer to the following. ☞ Page 81 Drive configuration and capacity of the GOT
		[Folder Name]	Specify a folder to save the resource file. You can enter up to 60 characters, including the drive name.

12.19.9 Relevant settings

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The web browser function has other relevant settings besides the specific settings.
The following shows the functions that are available by configuring the relevant settings.

GOT internal device

☞ Page 3581 GOT special register (GS)

Function	Setting item
Hides the browser toolbar display switching button.	GS2562.b0
Hides the browser toolbar.	GS2562.b1
Hides the click switching button.	GS2562.b2
Hides the zoom in button and zoom out button.	GS2562.b3
Displays the web browser window in the full screen mode.	GS2562.b10
Closes the displayed web browser window and launches a new web browser window when the special function switch is clicked with the web browser window launched.	GS2562.b11
Disables JavaScript.	GS2562.b12
Enables switching to the screen that displays logs for webpage designers.	GS2562.b14
Saves the display history of pages containing <iframe> elements, and enables page switching with the back or forward button on the browser toolbar.	GS2562.b15

12.19.10 Troubleshooting

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Issue	Possible cause	Solution
An abnormal URL format error screen is displayed.	The entered URL does not start with http:// or https://.	Add http:// or https:// to the beginning.
A URL acquisition error screen is displayed.	Acquisition of the URL at startup failed.	• Check the URL setting. • Change the method of specifying the URL from device specification to another option. ☞ Page 1233 [Web Browser] setting
Nothing is displayed in the web browser.	The network connection is invalid.	• Check that the network cables are connected. • Check that the router is powered on.
	The access is blocked by firewall or security software.	Check that the use of the IP address and port number to be used for the network connection is allowed.
The communication speed is low.	Access is concentrated.	Connect again after a while.
	Continuous long-term use of the personal computer or router has decreased its processing capacity.	Restart the personal computer or router continuously used for a long time.
	Your ISP (Internet Service Provider) restricts your Internet bandwidth or speed.	Check with your ISP (Internet Service Provider).
	The network of your plan is slow.	Review your Internet plan.
The web browser function does not work properly.	The content is not supported by the web browser function.	Display the content that is supported by the web browser function. ☞ Page 693 Specifications of the web browser window
	Cache is corrupted.	Clear cache in the browser settings screen (data clear). ☞ Page 706 Data clear
The connection error window (Error Has Occurred) is displayed.	The URL to be accessed does not exist.	Reload the file or back to the previous page in the connection error window.
	There is no response from the URL to be accessed.	
	Connection to the proxy server failed due to network issues.	Check the network environment.

PART 5

Issue	Possible cause	Solution
A security warning dialog (Security Warning) is displayed. (When an SSL authentication error has occurred)	The URL was accessed in the following state. • There is no certificate. • The certificate is expired. • There is a problem with the self-signed certificate.	Click the [Cancel] button in the security warning dialog. (Recommended) When the [Proceed] button is clicked, you will be redirected to the website but with the following problems. • The website fails to provide encrypted communication. • The website is not displayed correctly.
		Verify that a certificate is installed, and check its expiration date.
An error dialog indicating that an attempt was made to display unsupported content (MIME Type Not Supported) is displayed.	An attempt was made to display content that cannot be displayed.	Do not display unsupported content. ☞ Page 693 Specifications of the web browser window
The following message is displayed in the notification dialog. [Web browser function has stopped due to an error. Please restart the GOT to use web browser function again.]	An error occurred, and the web browser cannot continue.	To use the web browser function again, restart the GOT. ☞ Page 701 Precautions for using a web browser window for a long period of time
GS2065.b15 turns on.		

13 Setting the GOT Ethernet interface ([GOT Ethernet Setting])

GT37 SoftGOT3000

☞ Page 714 Setting the GOT IP address
☞ Page 717 Configuring the settings common to Ethernet interfaces
☞ Page 719 Setting the IP filter

PART 5

13.1 Setting the GOT IP address

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Set an IP address and a subnet mask for each Ethernet interface of the GOT.
For setting the default gateway, refer to the following.
☞ Page 717 Configuring the settings common to Ethernet interfaces
For the specifications of the GOT interface, refer to the following.
GOT3000 Series User's Manual (Hardware)

13.1.1 [GOT IP Address Setting]

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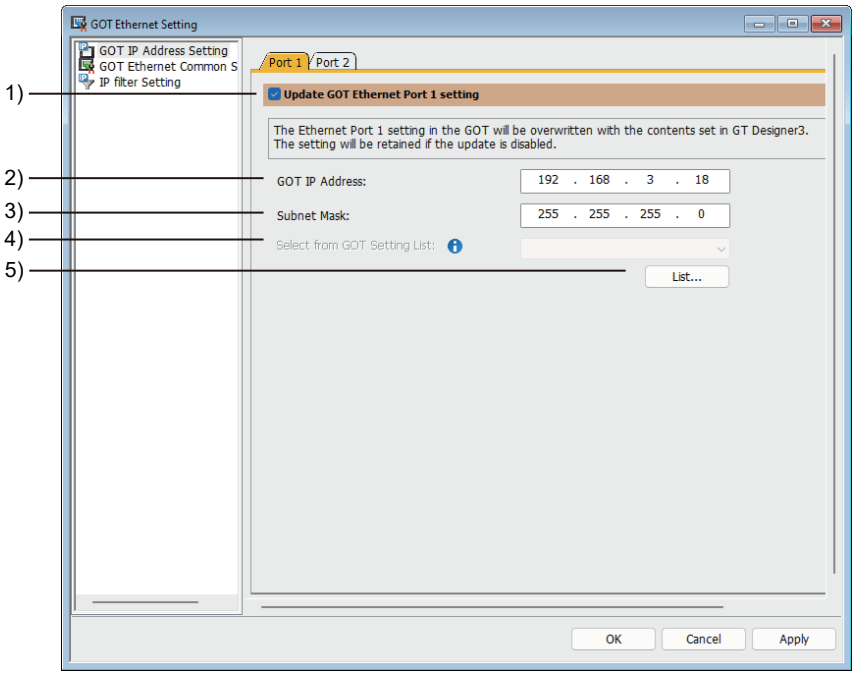
In [GOT IP Address Setting], set an IP address and a subnet mask for each Ethernet interface.
Select [Common] → [GOT Ethernet Setting] → [GOT IP Address Setting] from the menu to display this window.
Switch between the tabs according to the Ethernet port to be set.
☞ Page 715 [Port 1] tab
☞ Page 716 [Port 2] tab

[Port 1] tab

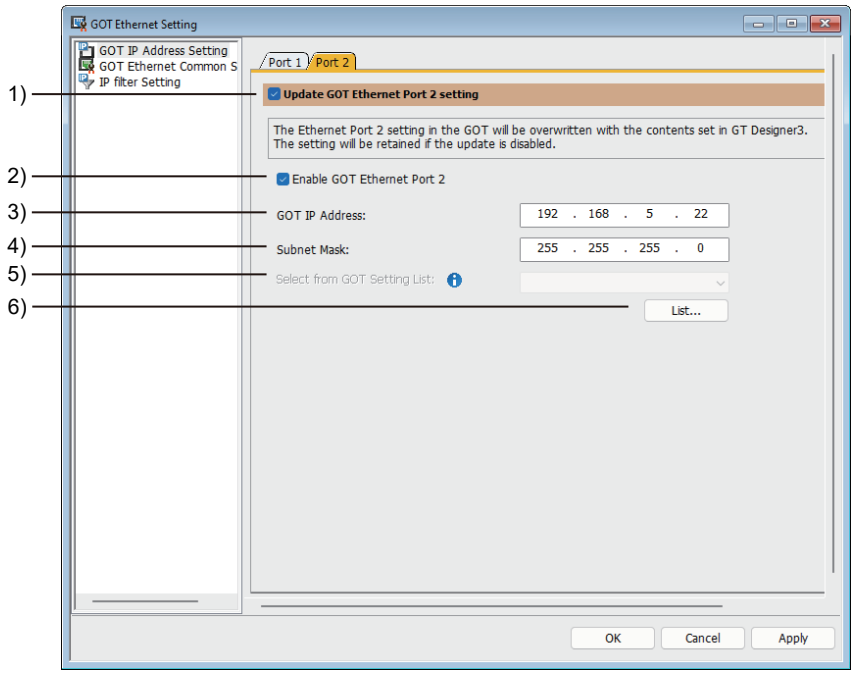
Set an IP address and a subnet mask for Ethernet port 1.



Item		Description
1)	[Update GOT Ethernet Port 1 setting]	Overwrites the settings of the GOT with the settings of GT Designer3 when package data is written to the GOT. Select this item to configure the settings on the [Port 1] tab. When a project is read from the GOT, the setting changed in the utility is applied.
2)	[GOT IP Address]	Set an IP address for Ethernet port 1. The setting range is [0].[0].[0].[0] to [255].[255].[255].[255]. The same network is inaccessible through Ethernet port 1 and Ethernet port 2. Set an IP address for each interface to access a different network.
3)	[Subnet Mask]	Set a subnet mask for Ethernet port 1. The setting range is [0].[0].[0].[0] to [255].[255].[255].[255].
4)	[Select from GOT Setting List]	Select the GOT Ethernet setting to be used among the settings registered in the [GOT Setting List] dialog.
5)	[List] button	Displays the [GOT Setting List] dialog. For details on the settings, refer to the following. ☞ Page 624 [GOT Setting List] dialog

[Port 2] tab

Set an IP address and a subnet mask for Ethernet port 2.



Item		Description
1)	[Update GOT Ethernet Port 2 setting]	Overwrites the settings of the GOT with the settings of GT Designer3 when package data is written to the GOT. Select this item to configure the settings on the [Port 2] tab. When a project is read from the GOT, the setting changed in the utility is applied.
2)	[Enable GOT Ethernet Port 2]	Enables Ethernet port 2.
3)	[GOT IP Address]	Set the IP address for Ethernet port 2. The setting range is [0].[0].[0].[0] to [255].[255].[255].[255]. The same network is inaccessible through Ethernet port 1 and Ethernet port 2. Set an IP address for each interface to access a different network.
4)	[Subnet Mask]	Set a subnet mask for Ethernet port 2. The setting range is [0].[0].[0].[0] to [255].[255].[255].[255].
5)	[Select from GOT Setting List]	Select the GOT Ethernet setting to be used among the settings registered in the [GOT Setting List] dialog.
6)	[List] button	Displays the [GOT Setting List] dialog. For details on the settings, refer to the following. ☞ Page 624 [GOT Setting List] dialog

13.2 Configuring the settings common to Ethernet interfaces

GT37 SoftGOT3000

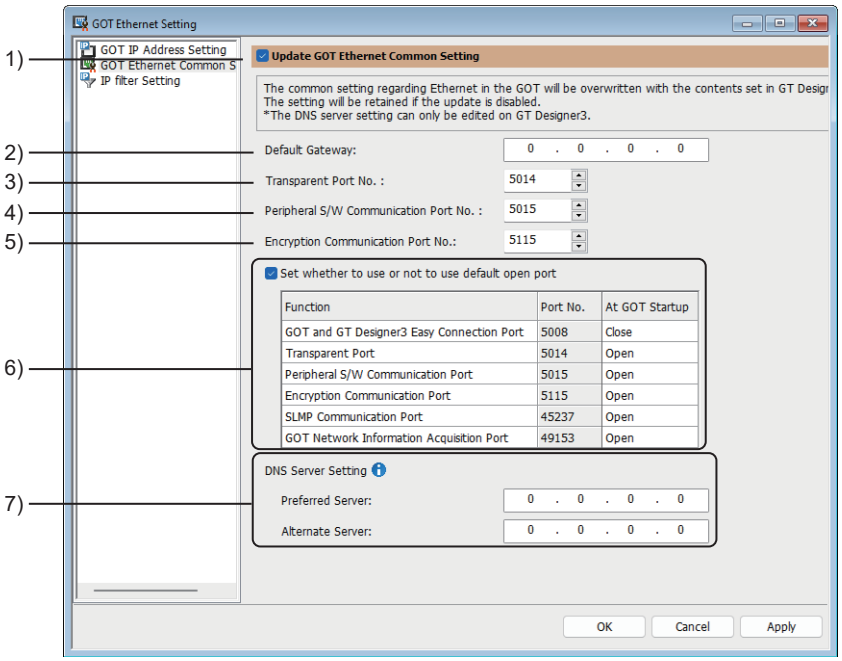
Set the default gateway and other common items for Ethernet interfaces.

13.2.1 [GOT Ethernet Common Setting]

GT37 SoftGOT3000

In [GOT Ethernet Common Setting], set the default gateway and other common items for Ethernet interfaces.

Select [Common] → [GOT Ethernet Setting] → [GOT Ethernet Common Setting] from the menu to display this window.



Item		Description
1)	[Update GOT Ethernet Common Setting]	When this item is selected, the settings of the GOT will be overwritten with the settings of GT Designer3 when package data is written to the GOT. If this item is deselected, the settings will not be overwritten. The Ethernet-related common settings of the GOT will be held. The settings for [DNS Server Setting] can be changed only in GT Designer3.
2)	[Default Gateway]	Set the default gateway. The setting range is [0].[0].[0].[0] to [255].[255].[255].[255].
3)	[Transparent Port No.]*1	Use this port number for the FA transparent function. This setting is common to Ethernet port 1 and Ethernet port 2. The setting range is [1024] to [65534]. Do not set the port number used for the other settings. Duplication of the port number disables communication. To change the number, it is recommended to use a number in the 50000s or higher.
4)	[Peripheral S/W Communication Port No.]*1	Set the port number used for communications with GT Designer3 or Data Transfer Tool. This setting is common to Ethernet port 1 and Ethernet port 2. The setting range is [1024] to [65534]. Do not set the port number used for the other settings. Duplication of the port number disables communication. To change the number, it is recommended to use a number in the 50000s or higher.

Item			Description
5)	[Encryption Communication Port No.]		Set the port number used for encrypted communications with GT Designer3 or Data Transfer Tool . This setting is common to Ethernet port 1 and Ethernet port 2. The setting range is [1024] to [65534]. Do not set the port number used for the other settings. Duplication of the port number disables communication. To change the number, it is recommended to use a number in the 50000s or higher.
6)	[Set whether to use or not to use default open port]*1		Set whether to open or close the ports that are open by default. (Default open port use/nonuse setting function) Select whether to open or close the port used for each function at GOT startup.
7)	[DNS Server Setting]	—	Set a DNS server. Configure the settings when accessing with the host name. If both [Preferred Server] and [Alternate Server] are set to [0.0.0.0], the DNS server settings are disabled.
		[Preferred Server]	Set an IP address for the preferred server. The setting range is [0].[0].[0].[0] to [255].[255].[255].[255].
		[Alternate Server]	Set an IP address for the alternate server. The setting range is [0].[0].[0].[0] to [255].[255].[255].[255].

*1 The port number and the default open port setting can also be changed in the utility.
Open the port to be used. The port number must be the same between GT Designer3 and the GOT.
If the port is closed or the port number is not the same, communications with the GOT is not possible.
GOT3000 Series User's Manual (Utility & Maintenance Functions)

Precautions

■Taking security measures except the open port use/nonuse setting function

The default open port use/nonuse setting function is one method of preventing unauthorized access from external devices such as destruction of programs or data. The function does not prevent unauthorized access completely.
To maintain the security (availability, integrity, and confidentiality) of GOT3000 and the system against unauthorized access from external devices, DoS attacks, computer viruses, and other cyberattacks, take appropriate measures in addition to this function, such as firewalls, virtual private networks (VPNs), and antivirus solutions.
Mitsubishi Electric shall have no responsibility or liability for GOT3000 troubles and system troubles caused by unauthorized access from external devices, DoS attacks, computer virus, and other cyberattacks.

■Reserved port number settings

Numbers below 50000 contains reserved port numbers.
Do not use these numbers when changing from default settings.
When converting a GOT2000 project to a GOT3000 project, ensure that the port number is not already in use.

13.3 Setting the IP filter

GT37 SoftGOT3000

☞ Page 720 Filtering method
☞ Page 722 Filtering list
☞ Page 723 [IP filter Setting]

The IP filter allows or blocks access via an Ethernet network from IP addresses in the filtering list.
When connecting the GOT to Ethernet, it is recommended to use an IP filter.

Precautions

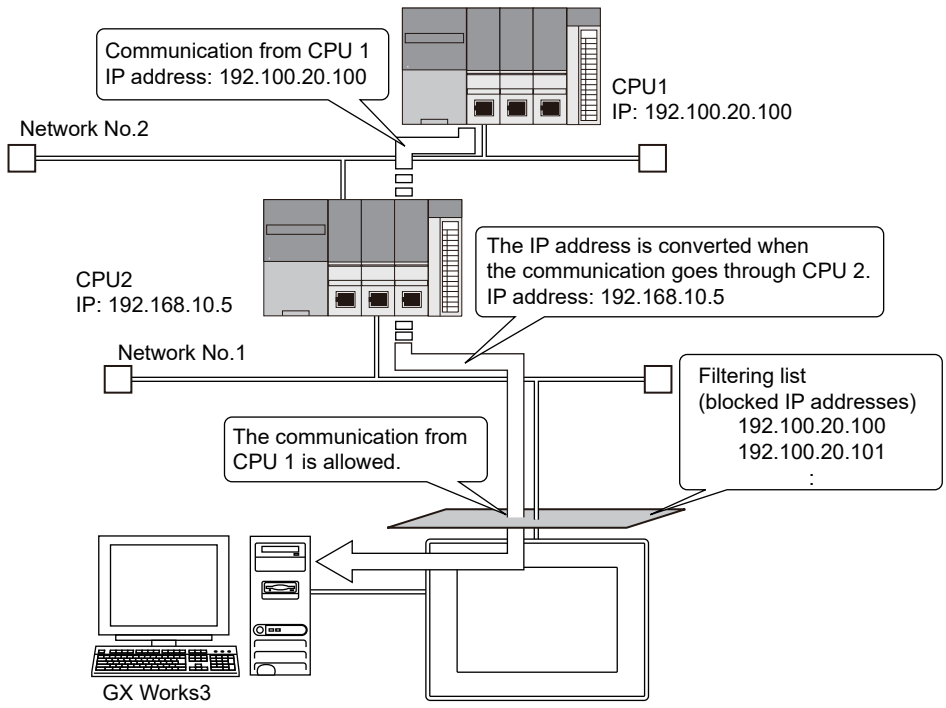
■Taking security measures except the IP filter

The IP filter function is one method of preventing unauthorized access from external devices such as destruction of programs or data. The function does not prevent unauthorized access completely.
To maintain the security (availability, integrity, and confidentiality) of GOT3000 and the system against unauthorized access from external devices, DoS attacks, computer viruses, and other cyberattacks, take appropriate measures in addition to this function, such as firewalls, virtual private networks (VPNs), and antivirus solutions.
Mitsubishi Electric shall have no responsibility or liability for GOT3000 troubles and system troubles caused by unauthorized access from external devices, DoS attacks, computer virus, and other cyberattacks.

■Filtering in communication via network equipment

A source IP address may be converted depending on the network route, such as via a router having the IP address conversion function or via a PLC CPU by using the FA transparent function.
When a controller communicates with the GOT via network equipment whose IP address is unlisted in the filtering list, even if the controller IP address is in the filtering list, the IP filter is not applied.
For network configurations in which a source IP address may be changed, set the filtering list in consideration of routed system equipment.

Ex.
When CPU 1 accesses GX Works3 via CPU 2 on a different network and then via the GOT using the FA transparent function



13.3.1 Filtering method

GT37 SoftGOT3000

The GOT filters access from IP addresses in the filtering list by the following filtering methods.

☞ Page 720 Transmission

☞ Page 721 Blocking

The filtering method is settable in [IP Filter Setting] on GT Designer3 or the GOT utility.

☞ Page 723 [IP filter Setting]

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

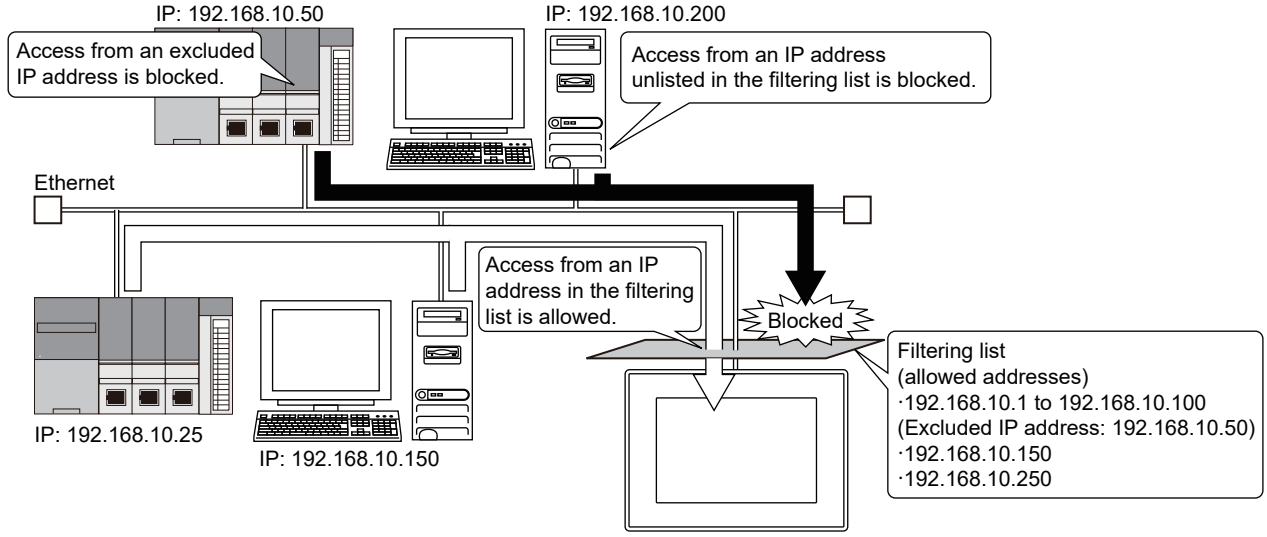
Transmission

The GOT allows access from IP addresses in the filtering list.

The GOT blocks access from IP addresses unlisted in the filtering list.

Excluded IP addresses are settable in the filtering list.

The GOT blocks access from the excluded IP addresses.



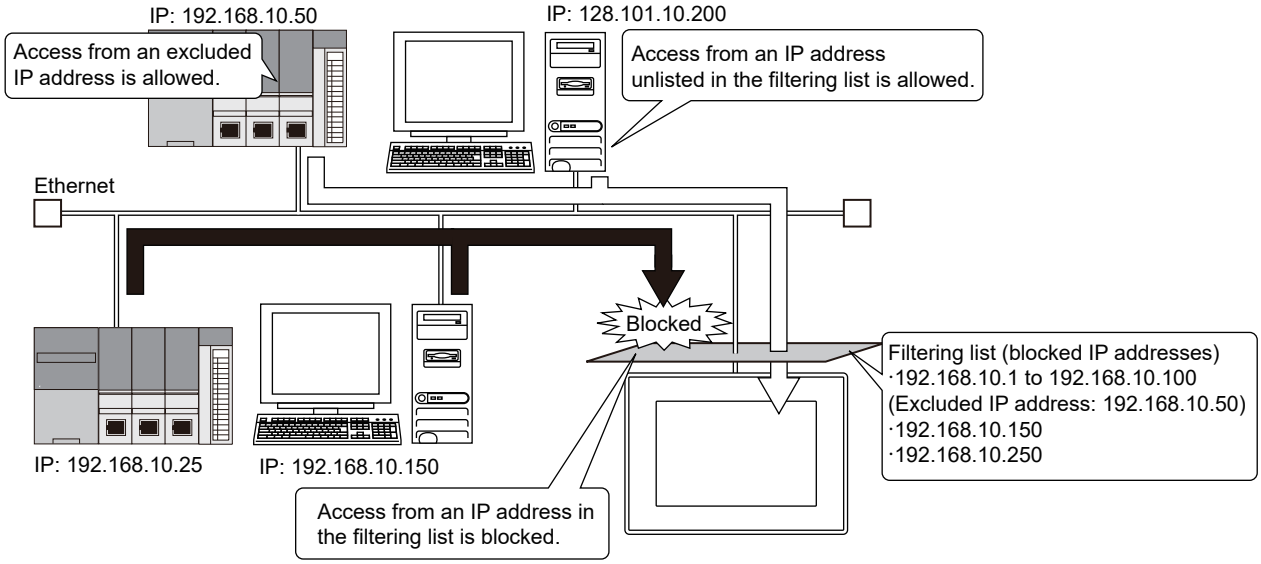
Blocking

The GOT blocks access from IP addresses in the filtering list.

The GOT allows access from IP addresses unlisted in the filtering list.

Excluded IP addresses are settable in the filtering list.

The GOT allows access from the excluded IP addresses.



13.3.2 Filtering list

GT37 SoftGOT3000

The filtering list contains IP addresses to be filtered.

The filtering list is settable in [IP Filter Setting] on GT Designer3 or the GOT utility.

☞ Page 723 [IP filter Setting]

GOT3000 Series User's Manual (Utility & Maintenance Functions)

Specifying the IP address range

You can set the range of IP addresses to be registered in the filtering list.

To set the range of IP addresses, the start IP address and the end IP address must belong to the same subnet.

To set the range of IP addresses belonging to different subnets, group IP addresses by subnet for registration.

The following shows an example where the fourth octet of IP addresses indicates a subnet.

Ex.

Possible settings

- First setting: Start IP address 192.168.3.5, end IP address 192.168.3.255
- Second setting: Start IP address 192.168.4.1, end IP address 192.168.4.20

Ex.

Impossible settings

- First setting: Start IP address 192.168.3.100, end IP address 192.168.3.20
- Second setting: None

Priority of the IP filter settings

When the IP address ranges overlap in the filtering list, the GOT prioritizes the range that has been set earlier.

If an excluded IP address overlaps with an IP address in the already-specified IP address range, the excluded IP address becomes invalid.

Ex.

When the filtering method is blocking

- First setting: 192.168.3.10 to 192.168.3.100, excluded: 192.168.3.90
- Second setting: 192.168.3.80 to 192.168.3.240, excluded: 192.168.3.85

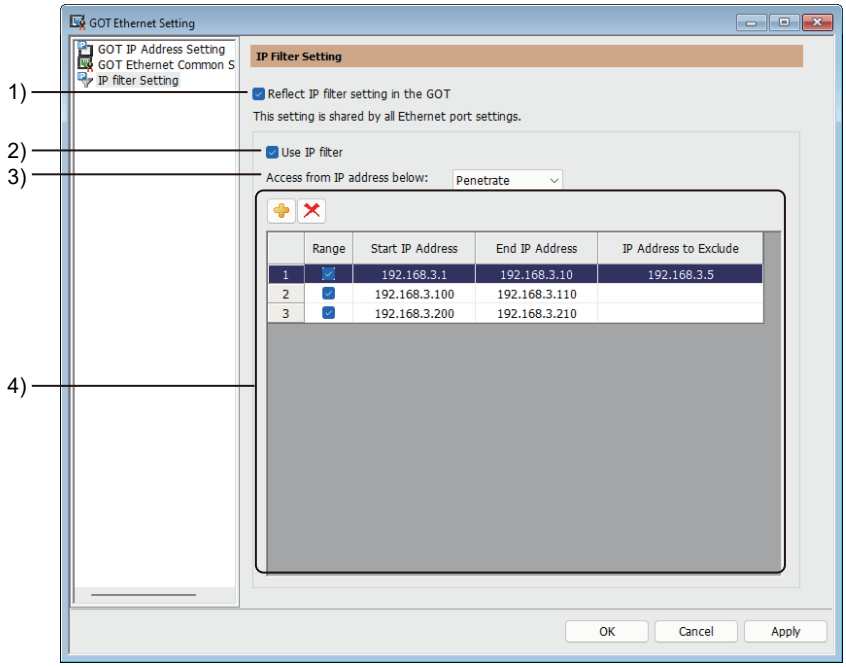
IP address 192.168.3.85 is blocked.

13.3.3 [IP filter Setting]

GT37 SoftGOT3000

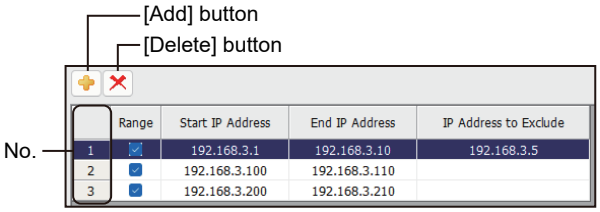
In [IP Filter Setting], set the filtering method and the filtering list.

Select [Common] → [GOT Ethernet Setting] → [IP filter Setting] from the menu to display this window.



Item		Description
1)	[Reflect IP filter setting in the GOT]	Reflects the IP filter setting to the GOT.
2)	[Use IP filter]	Enables the IP filter.
3)	[Access from IP address below]	Select whether to transmit or block access from the IP addresses specified in the filtering list. ☞ Page 720 Filtering method

PART 5

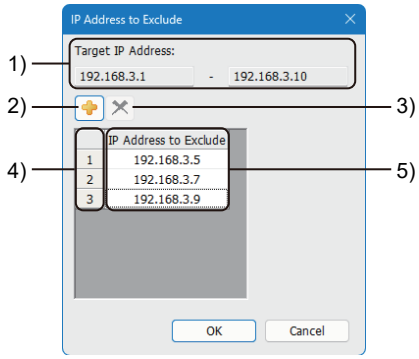
Item			Description
4)	Filtering list	—	Lists IP address ranges to which the IP filter is applied. Up to 32 IP address ranges can be registered.  For details on the filtering list, refer to the following. ☞ Page 722 Filtering list
		[Add] button	Adds an IP filter setting in the bottom of the list.
		[Delete] button	Deletes a selected IP filter setting.
		No.	IP filter setting number Clicking an IP filter setting number selects the row. Hold down the Ctrl key and click a setting number to select or deselect the row while the other rows remain selected or deselected. Select the first row in the range, hold down the Shift key, and click a setting number to select the last row in the range.
		[Range]	Enables the registration of IP addresses by specifying a range. To register IP addresses one by one, clear this item.
		[Start IP Address]	Set the start IP address of the IP address range.
		[End IP Address]	This item is settable only when [Range] is selected. Set the end IP address of the IP address range.
		[IP Address to Exclude]	Set IP addresses excluded from being filtered. Click the [...] button to display the [IP Address to Exclude] dialog. ☞ Page 725 [IP Address to Exclude] dialog

[IP Address to Exclude] dialog

GT37 SoftGOT3000

Set the IP addresses excluded from the IP address range.

Up to 32 IP addresses can be registered for each IP address range.



Item		Description
1)	[Target IP Address]	Displays the IP address range to which the IP filter is applied.
2)	[Add] button	Adds an excluded IP address in the bottom of the list.
3)	[Delete] button	Deletes a selected excluded IP address.
4)	No.	Excluded IP address setting number Clicking an excluded IP address setting number selects the row. Hold down the Ctrl key and click a setting number to select or deselect the row while the other rows remain selected or deselected. Select the first row in the range, hold down the Shift key, and click a setting number to select the last row in the range.
5)	[IP Address to Exclude]	Lists the IP addresses excluded from being filtered.

14 Configuring the communication method between the GOT and the controller ([Controller Setting])

GT37 SoftGOT3000

☞ Page 727 Setting channels
☞ Page 740 Setting the routing information
☞ Page 744 Configuring the setting of the MELSEC redundant function
☞ Page 747 Configuring settings for switching the target station number for monitoring
☞ Page 755 Configuring the settings for switching the monitoring target buffer memory unit number

14.1 Setting channels

GT37 SoftGOT3000

☞ Page 727 How to set channels
☞ Page 729 [Controller Setting]
☞ Page 739 [Controller Type List] window

Set the channel used for the connection between the GOT and controllers.

Setting the communication interface and driver to be used for each channel in a single GOT enables communications with multiple controllers.

Communications with multiple channels (up to four channels) is called the multi-channel function.

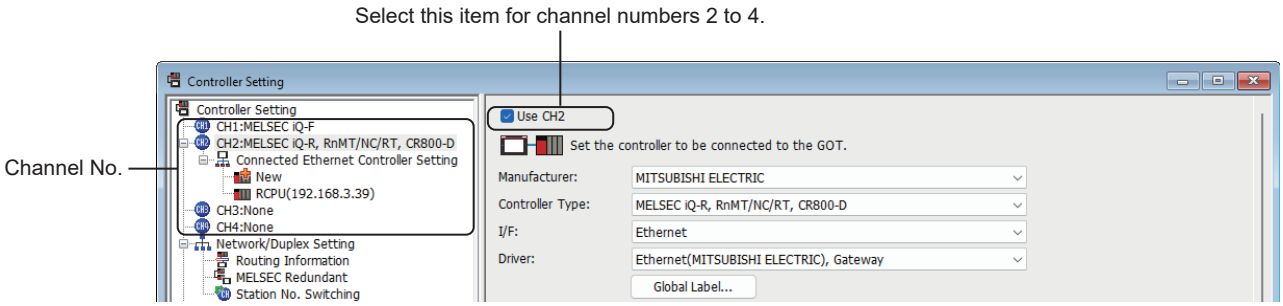
For details on the multi-channel function, refer to the following.

☞ GOT3000 Series User's Manual (Connection)

14.1.1 How to set channels

Operating procedure

1. Select [Common] → [Controller Setting] from the menu to display the [Controller Setting] window.
2. Select a channel number to be used from the controller setting tree.



3. Configure the communication settings for each channel.

☞ Page 729 [Controller Setting]

The settings need to be configured according to the connection type between the GOT and the controller.

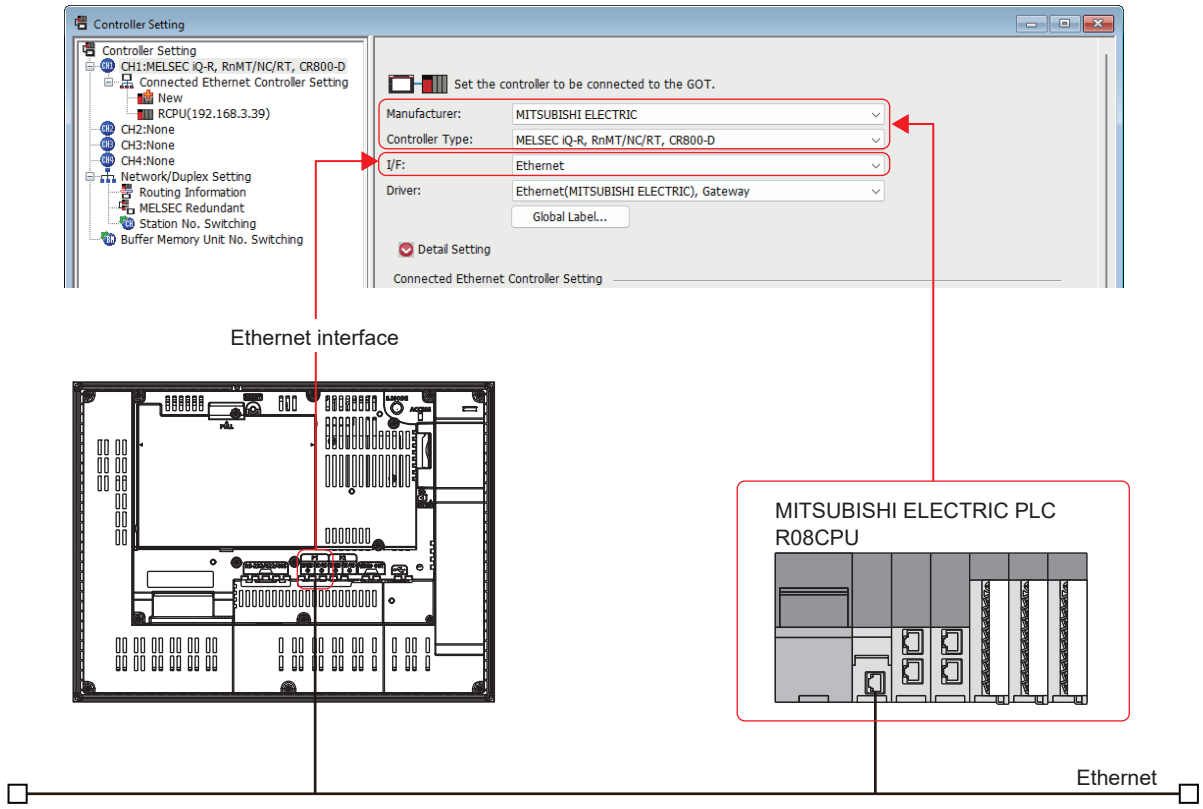
For details on the settings for each connection type, refer to the following.

GOT3000 Series User's Manual (Connection)

PART 5

Ex.

Connection to a Mitsubishi Electric PLC through the Ethernet interface of GT3712-X using channel 1



Precautions

■Changing the channel after the device setting

Do not change the channel to an unused one in the controller setting after the device setting.

If the channel is changed to an unused one, the device of the unused channel must be set again.

■Communication settings with devices on different network segments

When communicating with devices on different network segments via Ethernet, set a different channel for each network segment.

If devices on different network segments are accessed using a single channel, a communication timeout on any of the networks will disable communications with devices on the other networks.

14.1.2 [Controller Setting]

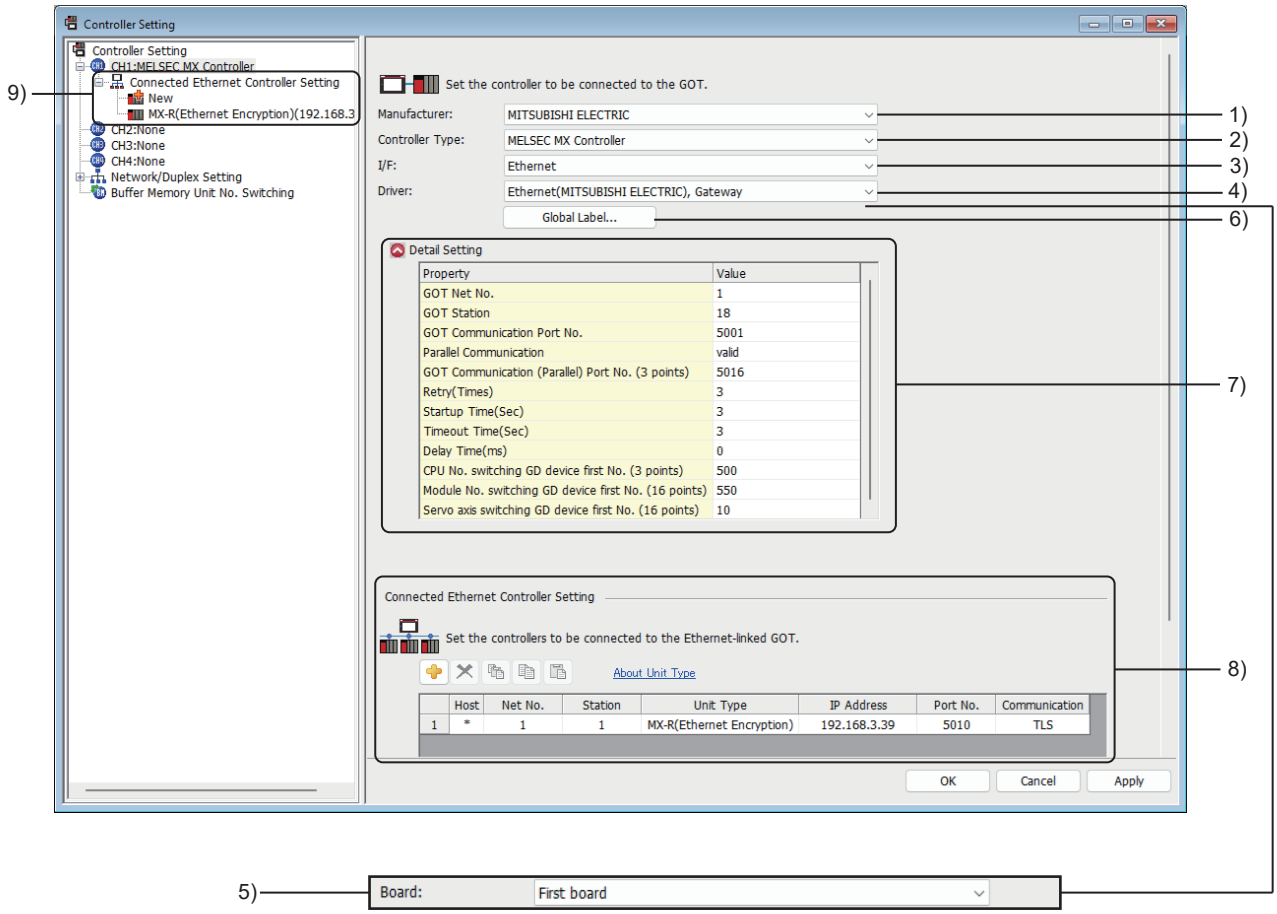
GT37 SoftGOT3000

The settings in this window depend on the conditions, such as the controller model, communication interface, and communication driver used.

The settings need to be configured according to the connection type between the GOT and the controller.

For details on the settings for each connection type, refer to the following.

GOT3000 Series User's Manual (Connection)

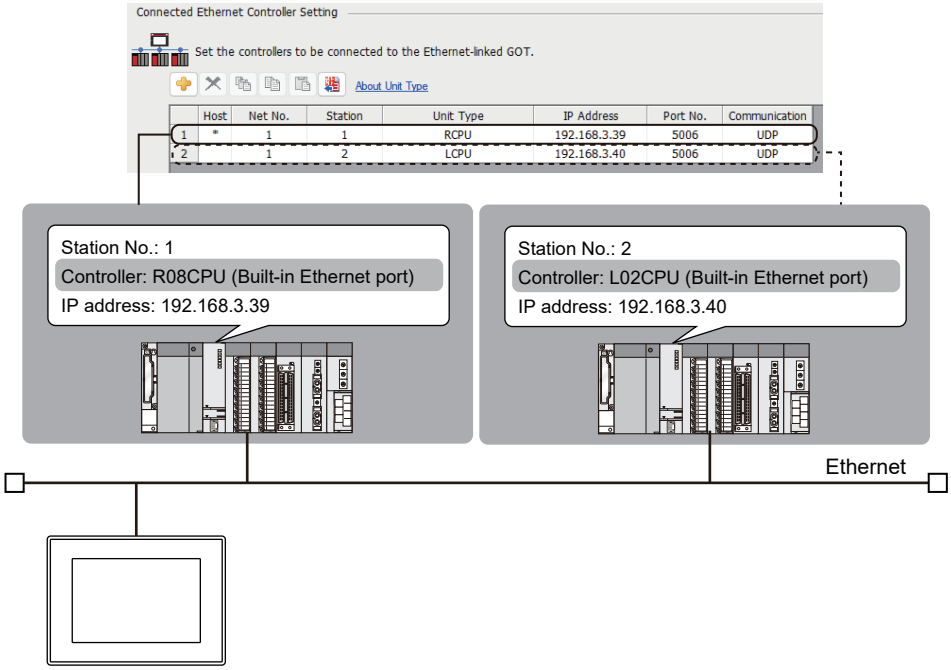


Item		Description
1)	[Manufacturer]	Select the manufacturer of the controller connected to the GOT.
2)	[Controller Type]	Select the model of the controller connected to the GOT.
3)	[I/F]	Select the communication interface of the GOT.
4)	[Driver]	Appears when communication drivers are selectable according to the settings of [Controller Type] and [I/F]. Select the communication driver to be written to the GOT.
5)	[Board]	Appears when GT SoftGOT3000 is selected in the [Type Setting] dialog and [CC-Link IE Field Network Interface Board] is selected for [I/F]. Select the board to be used.

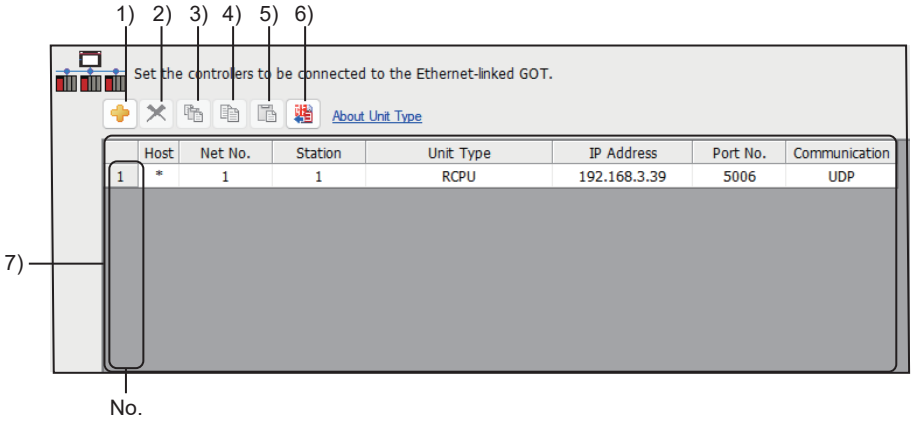
Item			Description
6)	Label/tag setting button	—	Imports labels or tags. ☞ Page 858 Labels and Tags Usable in GT Designer3
		[Global Label] button	Appears when one of the following items is selected for [Controller Type]. • [MELSEC MX Controller] • [MELSEC iQ-R, RnMT/NC/RT, CR800-D] • [MELSEC iQ-L] • [MELIPC] The [Label/Tag/Ethernet Setting List] dialog and the [Add Global Label/Ethernet Setting] dialog are displayed. ☞ Page 862 [Add Global Label/Ethernet Setting] dialog or [Edit Global Label/Ethernet Setting] dialog
		[OMRON NJ/NX Tag] button	Appears when the following item is selected for [Controller Type]. • [OMRON NJ/NX] The [Label/Tag/Ethernet Setting List] dialog and the [Add OMRON NJ/NX Tag] dialog are displayed. ☞ Page 864 [Add OMRON NJ/NX Tag] dialog or [Edit OMRON NJ/NX Tag] dialog
		[RSLogix 5000 Tag] button	Appears when the following item is selected for [Controller Type]. • [AB Control/CompactLogix] The [Label/Tag/Ethernet Setting List] dialog and the [Add RSLogix 5000 Tag] dialog are displayed. ☞ Page 865 [Add RSLogix 5000 Tag] dialog or [Edit RSLogix 5000 Tag] dialog
		[AB Native Tag] button	Appears when the following item is selected for [Controller Type]. • [AB Control/CompactLogix(Tag)] The [Label/Tag/Ethernet Setting List] dialog and the [Add AB Native Tag] dialog are displayed. ☞ Page 865 [Add AB Native Tag] dialog or [Edit AB Native Tag] dialog
		[OPC UA Tag] button	Appears when the following item is selected for [Controller Type]. • [OPC UA] The [Label/Tag/Ethernet Setting List] dialog and the [Add OPC UA Tag] dialog are displayed. ☞ Page 866 [Add OPC UA Tag] dialog or [Edit OPC UA Tag] dialog
7)	[Detail Setting]		Set the connection details, such as the baud rate of the communication driver and the data length. To display or hide the setting items, click the button at the left of [Detail Setting].
8)	[Connected Ethernet Controller Setting]		Appears when [Ethernet] is selected for [I/F]. (It may not appear depending on [Driver].) Register the controller to be connected to the GOT via Ethernet. ☞ Page 731 [Connected Ethernet Controller Setting]
9)	[Connected Ethernet Controller Setting]		Appears for the channel for which [Ethernet] is selected for [I/F]. Indicates the Ethernet equipment registered to each channel. Double-click [New] to add a new Ethernet setting row to the bottom of the list in [Connected Ethernet Controller Setting].

[Connected Ethernet Controller Setting]

In the [Controller Setting] window, if you select an Ethernet interface, [Connected Ethernet Controller Setting] appears.
Register the controller to be connected to the GOT via Ethernet.



The following shows the items displayed in [Connected Ethernet Controller Setting].



Item		Description
1)	[Add] button	Adds a new Ethernet setting row to the bottom of the list.
2)	[Delete] button	Deletes a selected Ethernet setting.
3)	[Duplicate] button	Duplicates a selected Ethernet setting below the bottom row of the list.
4)	[Copy] button	Copies a selected Ethernet setting.
5)	[Paste] button	Pastes a copied Ethernet setting.
6)	[Import from GX Works3 Project] button	Imports the Ethernet settings from the GX Works3 project and register them in [Connected Ethernet Controller Setting]. The [Label/Tag/Ethernet Setting List] dialog and the [Add Global Label/Ethernet Setting] dialog are displayed. ☞ Page 862 [Add Global Label/Ethernet Setting] dialog or [Edit Global Label/Ethernet Setting] dialog

Item			Description
7)	List of controllers connected via Ethernet	—	Lists the controllers connected with the GOT via Ethernet. Displayed items differ depending on the settings for [Manufacturer] or [Controller Type]. The following shows the displayed items regardless of the settings for [Manufacturer] or [Controller Type].
		No.	Ethernet setting number. Clicking an Ethernet setting number selects the row. Hold down the Ctrl key and click a setting number to select or deselect the row while the other rows remain selected or deselected. Select the first row in the range, hold down the Shift key, and click a setting number to select the last row in the range.
		[Host]	Select a host station. Asterisk (*) is displayed with the selected Ethernet setting.
		[Net No.]	Set the network number of the destination Ethernet module.
		[Station]	Select the station number of the destination Ethernet module.
		[Unit Type]	Select the type of the destination Ethernet module. The selectable items for [Unit Type] vary according to the selection for [Controller Type] and [Driver]. For the selectable items for [Unit Type], refer to the following. ☞ Page 732 Selectable items for [Unit Type] For the correspondence between the selectable items for [Unit Type] and the controllers or communication modules, refer to the following. ☞ Page 735 Correspondence between the selection for [Unit Type] and the equipment connected via Ethernet
		[IP Address]	Set the IP address of the controller. The setting range is [0].[0].[0].[0] to [255].[255].[255].[255].
		[Port No.]	Set the port number of the destination Ethernet module.
		[Communication]	Select a communication protocol. Each communication protocol has the following setting upper limit. • TCP (including TLS): Up to 128 in total for all channels • UDP (including DTLS): Up to 128 in total for all channels • Mixture of TCP (including TLS) and UDP (including DTLS) on the same channel: Up to 128 per channel

Selectable items for [Unit Type]

The selectable items for [Unit Type] in [Connected Ethernet Controller Setting] vary according to the selection for [Controller Type].

☞ Page 733 Selectable items for connection to Mitsubishi Electric equipment

☞ Page 734 Selectable items for connection to non-Mitsubishi Electric equipment

■Selectable items for connection to Mitsubishi Electric equipment

The following shows the selectable items when [MITSUBISHI ELECTRIC] is selected for [manufacturer].

[Controller Type] ([Ethernet] is selectable for [I/F].)	[Unit Type] in [Connected Ethernet Controller Setting]
[MELSEC MX Controller]*1	[MX-R(Ethernet Encryption)] [MX-R(Ethernet)] [MX-R(CC-Link IE TSN)] [MX-F(Ethernet Encryption)] [MX-F(Ethernet)] [MX-F(CC-Link IE TSN)] [RCPU] [RnCCPU/RnWCPU] [RnNCCPU] [LHCPU] [FX5CPU] [QnUD(P)V/QnUDE(H)] [Q17nNC] [QnD(H)CCPU] [RJ71GN11-T2/RD78G(H)] [RJ71EN71] [FX5-CCLGN-MS/FX5-nSSC-G] [FX5-ENET] [QJ71E71/LJ71E71] [LCPU] [NZ2GF-ETB] [AJ71E71] [CR800] [CRnD-700] [Q17nDSR]
[MELSEC iQ-R, RnMT/NC/RT, CR800-D]*1	
[MELSEC iQ-L]	
[MELSEC iQ-F]*1	
[MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700]	
[MELSEC-L]	
[MELSEC-A]	
[MELSEC-FX]	[FX]
[MELIPC]	[MELIPC(Virtual Ethernet)]*2 [MELIPC] [MX-R(Ethernet Encryption)] [MX-R(Ethernet)] [MX-R(CC-Link IE TSN)] [MX-F(Ethernet Encryption)] [MX-F(Ethernet)] [MX-F(CC-Link IE TSN)] [RCPU] [RnCCPU/RnWCPU] [RnNCCPU] [LHCPU] [FX5CPU] [QnUD(P)V/QnUDE(H)] [Q17nNC] [QnD(H)CCPU] [RJ71GN11-T2/RD78G(H)] [RJ71EN71] [FX5-CCLGN-MS/FX5-nSSC-G] [FX5-ENET] [QJ71E71/LJ71E71] [LCPU] [NZ2GF-ETB] [AJ71E71] [CR800] [CRnD-700] [Q17nDSR]
[MELSERVO-JE-*C]	[MR-JE-C]
[MELSERVO-J5(W)-*G(-RJ),-JET-*G]	[MR-J5(D)-G/MR-JET-G]
[FREQROL 800/E700NE(Batch monitor)]	[FREQROL]

*1 [Connected Ethernet Controller Setting] appears when [Ethernet(MITSUBISHI ELECTRIC), Gateway] is selected.

*2 Only available for GT SoftGOT3000.

■Selectable items for connection to non-Mitsubishi Electric equipment

The following shows the selectable items when a manufacturer other than [MITSUBISHI ELECTRIC] is selected for [manufacturer].

[Controller Type]	[Unit Type] in [Connected Ethernet Controller Setting]
[OMRON SYSMAC]	[OMRON]
[OMRON NJ/NX]	[OMRON NJ/NX] [CJ1W-EIP21]
[KEYENCE KV-700/1000/3000/5000/7000/8000]	[KEYENCE]
[FUJI MICREX-SX SPH]	[FUJI]
[YASKAWA MP2000]	[YASKAWA]
[YASKAWA MP3000]	
[YASKAWA Robot Controller]	[YASKAWA(YRC1000)]
[YOKOGAWA FA-M3]	[YOKOGAWA]
[AB MicroLogix]	[AB(MicroLogix)]
[AB Control/CompactLogix]	[AB]
[AB Control/CompactLogix(Tag)]	[AB(Tag)]
[LS ELECTRIC XGK]	[XGK-CPU] [XGL-EFMT(B)]
[SIEMENS OP(Ethernet)]	[S7-1500 OP] [S7-200 OP] [S7-200 SMART OP] [S7-300/400 OP] [S7-1200 OP]
[SLMP]	[SLMP]
[MODBUS Server (GOT: Client)]	[MODBUS/TCP] [MODBUS/TCP(unit ID fixed)]

Correspondence between the selection for [Unit Type] and the equipment connected via Ethernet

Set [Unit Type] according to the connected controller or communication module.

☞ Page 735 When connecting Mitsubishi Electric equipment

☞ Page 739 When connecting non-Mitsubishi Electric equipment

■When connecting Mitsubishi Electric equipment

Connected Ethernet controller or communication module			[Unit Type] in GT Designer3
MELSEC MX Controller (MX-R series)		Built-in Ethernet port	• When not performing encrypted communication using TLS/DTLS: [MX-R (Ethernet)] • When performing encrypted communications using TLS/DTLS: [MX-R(Ethernet Encryption)]
		Built-in CC-Link IE TSN port	[MX-R(CC-Link IE TSN)]
		Ethernet module	[RJ71EN71]
		CC-Link IE TSN master/local module	[RJ71GN11-T2/RD78G(H)]
MELSEC MX Controller (MX-F series)		Built-in Ethernet port	• When not performing encrypted communication using TLS/DTLS: [MX-F (Ethernet)] • When performing encrypted communications using TLS/DTLS: [MX-F(Ethernet Encryption)]
		Built-in CC-Link IE TSN port	[MX-R(CC-Link IE TSN)]
		Ethernet module	[FX5-ENET]
		CC-Link IE TSN master/local module	[FX5-CCLGN-MS/FX5-nSSC-G]
RCPU*1	RnCPU	Built-in Ethernet port	[RCPU]
		Ethernet module	[RJ71EN71]
		CC-Link IE TSN master/local module	[RJ71GN11-T2/RD78G(H)]
		Motion module	
		CC-Link IE TSN Plus master/local module	
	Process CPU SIL2 Process CPU	Built-in Ethernet port	[RCPU]
		Ethernet module	[RJ71EN71]
	Safety CPU	Built-in Ethernet port	[RCPU]
		Ethernet module	[RJ71EN71]
		Motion module	[RJ71GN11-T2/RD78G(H)]
	RnENCPU	Built-in Ethernet port (CPU P1)	[RCPU]
		Built-in Ethernet port (P1)	[RJ71EN71]
		Ethernet module	
		CC-Link IE TSN master/local module	[RJ71GN11-T2/RD78G(H)]
		Motion module	
		CC-Link IE TSN Plus master/local module	
	C Controller module	Built-in Ethernet port	[RnCCPU/RnWCPU]
		CC-Link IE TSN master/local module	[RJ71GN11-T2/RD78G(H)]
		Motion module	
	MELSECWinCPU	Built-in Ethernet port	[RnCCPU/RnWCPU]
		CC-Link IE TSN master/local module	[RJ71GN11-T2/RD78G(H)]
Motion CPU (MELSEC iQ-R series)		Built-in Ethernet port	[RCPU]
		Ethernet module	[RJ71EN71]
CNC C80		Display I/F	[RnNCCPU]
		Ethernet module	[RJ71EN71]
Robot controller (MELSEC iQ-R series)	CR800-R(R16RTCPU)	Via a control CPU	[RCPU]
		Display I/F	[CR800]
		Ethernet module	[RJ71EN71]
	CR800-D		[CR800]
LHCPU		Built-in Ethernet port	[LHCPU]

Connected Ethernet controller or communication module			[Unit Type] in GT Designer3
FX5CPU		Built-in Ethernet port	[FX5CPU]
		Ethernet module	[FX5-ENET]
		CC-Link IE TSN master/local module	[FX5-CCLGN-MS/FX5-nSSC-G]
		Motion module	
QCPU*2	Basic model QCPU High Performance model QCPU Process CPU Redundant CPU Universal model QCPU	Built-in Ethernet port	[QnUD(P)V/QnUDE(H)]
		Ethernet module	[QJ71E71/LJ71E71]
	C Controller module		[QnD(H)CCPU]
MELSEC-QS			[QJ71E71/LJ71E71]
Motion CPU (Q series)		PERIPHERAL I/F	[QnUD(P)V/QnUDE(H)]
		Ethernet module	[QJ71E71/LJ71E71]
CNC C70		Display I/F	[Q17nNC]
		Ethernet module	[QJ71E71/LJ71E71]
Robot controller (Q series)	CRnQ-700(Q172DRCPU) CR750-Q(Q172DRCPU) CR751-Q(Q172DRCPU)	Via a control CPU	[QnUD(P)V/QnUDE(H)]
		Ethernet module	[QJ71E71/LJ71E71]
	CR800-Q(Q172DSRCPU)	Via a control CPU	[QnUD(P)V/QnUDE(H)]
		Built-in Ethernet port	[Q17nDSR]
		Ethernet module	[QJ71E71/LJ71E71]
	CRnD-700 CR750-D CR751-D		[CRnD-700]
LCPU		Built-in Ethernet port	[LCPU]
		Ethernet module	[QJ71E71/LJ71E71]
CC-Link IE Field Network Ethernet adapter module			[NZ2GF-ETB]
MELSEC-A			[AJ71E71]
Motion CPU (A series)			
FXCPU			[FX]
MELIPC			[MELIPC]
MR-JE-*C			[MR-JE-C]
MR-J5-□G(-RJ) MR-J5W-□G MR-JET-□G MR-J5D□-G			[MR-J5(D)-G/MR-JET-G]
FR-E7□0-NE			[FREQROL]
FR-A8□0 FR-A8□2 FR-A8□6			
FR-A8□0-E FR-A8□2-E FR-A8□6-E			
FR-A8□0-GN FR-A8□2-GN			
FR-A8□0-E-CRN FR-A8□2-E-CRN			
FR-A8□0-E-R2R FR-A8□2-E-R2R			
FR-A8□0-E-AWH			
FR-A8□0-E-LC			
FR-F8□0 FR-F8□2 FR-F8□6			
FR-F8□0-E FR-F8□2-E			
FR-E8□0-E			

*1 The following lists the applicable RCPU controllers.

RCPU	Model
RnCPU	R00CPU R01CPU R02CPU R04CPU R08CPU R16CPU R32CPU R120CPU
Process CPU	R08PCPU R16PCPU R32PCPU R120PCPU
SIL2 Process CPU	R08PSFCPU R16PSFCPU R32PSFCPU R120PSFCPU
Safety CPU	R08SFCPU R16SFCPU R32SFCPU R120SFCPU
RnENCPU	R04ENCPU R08ENCPU R16ENCPU R32ENCPU R120ENCPU
C Controller module	R12CCPU-V
MELSECWinCPU	R102WCPU-W

*2 The following lists the applicable QCPU controllers.

QCPU	Model
Basic model QCPU	Q00JCPU Q00CPU Q01CPU
High Performance model QCPU	Q02CPU Q02HCPU Q06HCPU Q12HCPU Q25HCPU
Process CPU	Q02PHCPU Q06PHCPU Q12PHCPU Q25PHCPU
Redundant CPU	Q12PRHCPU Q25PRHCPU
Universal model QCPU	Q00UJCPU Q00UJCPU-S8 Q00UCPU Q01UCPU Q02UCPU Q03UDCPU Q04UDHCPU Q06UDHCPU Q10UDHCPU Q13UDHCPU Q20UDHCPU Q26UDHCPU Q03UDECPU Q04UDEHCPU Q06UDEHCPU Q10UDEHCPU Q13UDEHCPU Q20UDEHCPU Q26UDEHCPU Q50UDEHCPU Q100UDEHCPU Q03UDVCPU Q04UDVCPU Q06UDVCPU Q13UDVCPU Q26UDVCPU Q04UDPVCPU Q06UDPVCPU Q13UDPVCPU Q26UDPVCPU
C Controller module	Q12DCCPU-V Q24DHCCPU-V Q24DHCCPU-LS Q24DHCCPU-VG Q26DHCCPU-LS

■When connecting non-Mitsubishi Electric equipment

Manufacturer	Connected Ethernet controller or communication module		[Unit Type] in GT Designer3
OMRON PLC	SYSMAC CJ1 SYSMAC CJ2 SYSMAC CS1		[OMRON]
	NJ	Built-in Ethernet port	[OMRON NJ/NX]
		Ethernet module	[CJ1W-EIP21]
	NX		[OMRON NJ/NX]
KEYENCE PLC			[KEYENCE]
FUJI PLC			[FUJI]
YASKAWA PLC			[YASKAWA]
YASKAWA robot controller			[YASKAWA(YRC1000)]
YOKOGAWA PLC			[YOKOGAWA]
ALLEN-BRADLEY PLC	MicroLogix1000 MicroLogix1100 MicroLogix1200 MicroLogix1400 MicroLogix1500		[AB(MicroLogix)]
	ControlLogix CompactLogix		[AB(Tag)]
LS Industrial Systems PLC	Built-in Ethernet port		[XGK-CPU]
	Ethernet module		[XGL-EFMT(B)]
SIEMENS PLC	SIMATIC S7-1500		[S7-1500 OP]
	SIMATIC S7-1200		[S7-1200 OP]
	SIMATIC S7-300 SIMATIC S7-400		[S7-300/400 OP]
	SIMATIC S7-200 SMART		[S7-200 SMART OP]
	SIMATIC S7-200		[S7-200 OP]
SLMP-compatible device			[SLMP]
MODBUS equipment			To connect a controller under the following conditions, select [MODBUS/TCP]. • The unit ID is fixed to 255 (for connecting with the GOT as the host station). • The unit ID is not fixed. To connect a controller of another station, whose unit ID is fixed to 255, with the GOT, select [MODBUS/TCP(unit ID fixed)].

14.1.3 [Controller Type List] window

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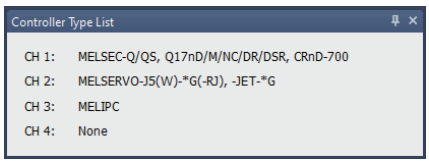
The window displayed to confirm the controllers of each channel.

Select [View] → [Docking Window] → [Controller Type List] from the menu to display this window.



14.2 Setting the routing information

GT37 SoftGOT3000

☞ Page 742 Setting condition of the routing information
☞ Page 742 How to set the routing information
☞ Page 743 [Routing Information]

When the following connection types are used between the GOT and the connected controller, devices on other networks can be monitored.

- Ethernet connection
- MELSECNET/H connection
- CC-Link IE TSN connection
- CC-Link IE Controller Network connection
- CC-Link IE Field Network connection
- SLMP connection
- MODBUS/TCP connection

To monitor devices on other networks, routing information settings are required for the GOT, relay device (relay station), and the devices to be monitored.

Routing information	Description
Destination network	Network number of the network to which the monitored device is connected
Relay network	Network number of the network to which the relay device (relay station) is connected
Relay station	Station number of the relay device

If communications are performed within the host network, routing information settings are not required.

Set the routing information for the GOT in GT Designer3.

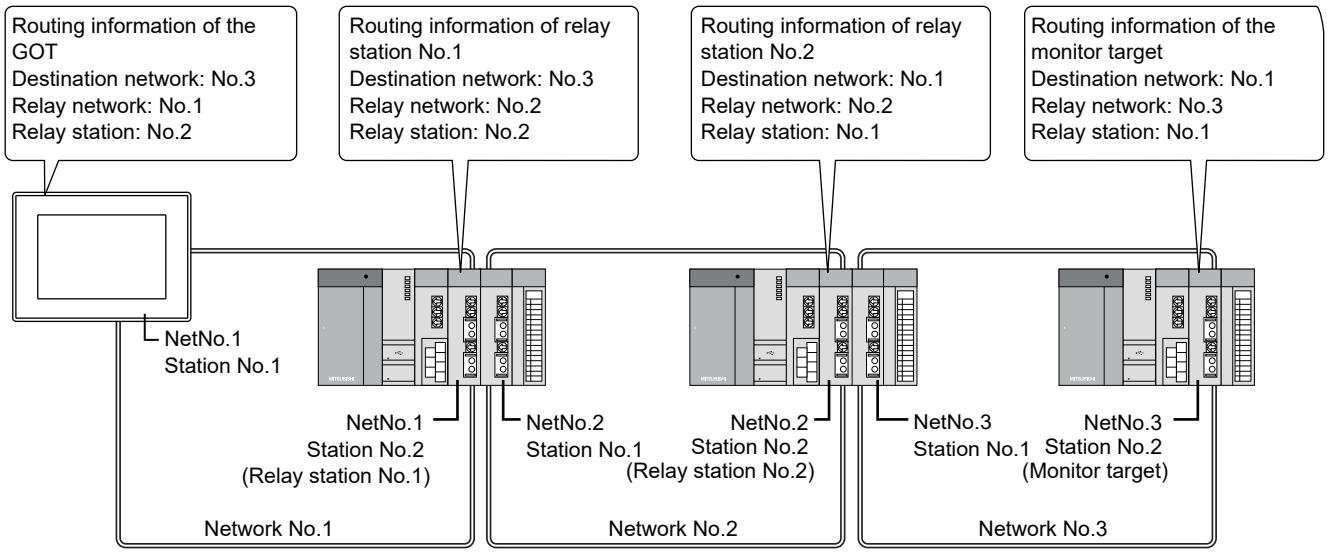
Set the routing information for the relay station using the relay device's setting software.

For details on the routing parameters, refer to the following.

Relay station device		Reference manual
MELSEC MX Controller (MX-R series)		📖Manual for the MELSEC MX Controller
MELSEC MX Controller (MX-F series)		
RCPU		📖MELSEC iQ-R CPU Module User's Manual (Application)
Other than RCPU	Ethernet connection	📖MELSEC-Q/L Ethernet Interface Module User's Manual (Application)
	MELSECNET/H connection	📖Q corresponding MELSECNET/H Network System Reference Manual (PLC to PLC network)
	CC-Link IE Controller Network connection	📖MELSEC-Q CC-Link IE Controller Network Reference Manual
	CC-Link IE Field Network connection	📖MELSEC-Q CC-Link IE Field Network Master/Local Module User's Manual
SLMP server device		📖Manual for the SLMP-compatible device used
MODBUS equipment		📖Manual for the MODBUS equipment used

Ex.

Communicating with a device on network 3 from network 1 to which the GOT is connected, via network 2



Routing information of relay station 2 and the monitored device is required for the response from the monitored device to the GOT.

PART 5

14.2.1 Setting condition of the routing information

The routing information can be set when one of the following items is selected for [Controller Type] in the [Controller Setting] window.

☞ Page 729 [Controller Setting]

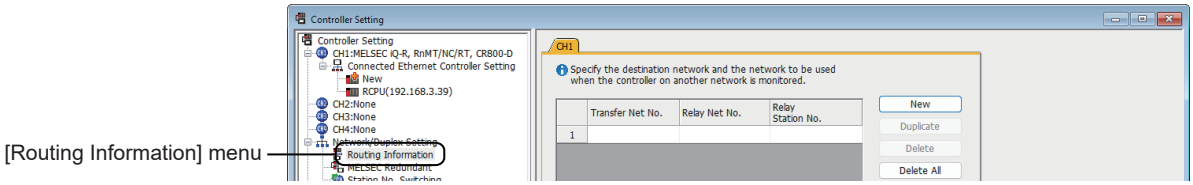
- [MELSEC MX Controller]
- [MELSEC iQ-R, RnMT/NC/RT, CR800-D]
- [MELSEC iQ-F]
- [MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700]
- [MELSEC-L]
- [MELSEC-A]
- [MELIPC]
- [SLMP]
- [MODBUS Server (GOT: Client)]

14.2.2 How to set the routing information

1. Select [Common] → [Controller Setting] from the menu.

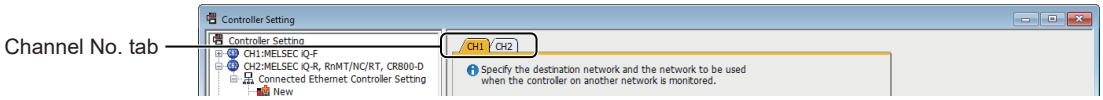
2. The [Controller Setting] window appears.

Select the [Routing Information] menu from the controller setting tree.



3. Configure the routing information setting for each channel.

Select the tab of the channel for which the routing information is set.



Select this item to set the routing information.

☞ Page 743 [Routing Information]

14.2.3 [Routing Information]

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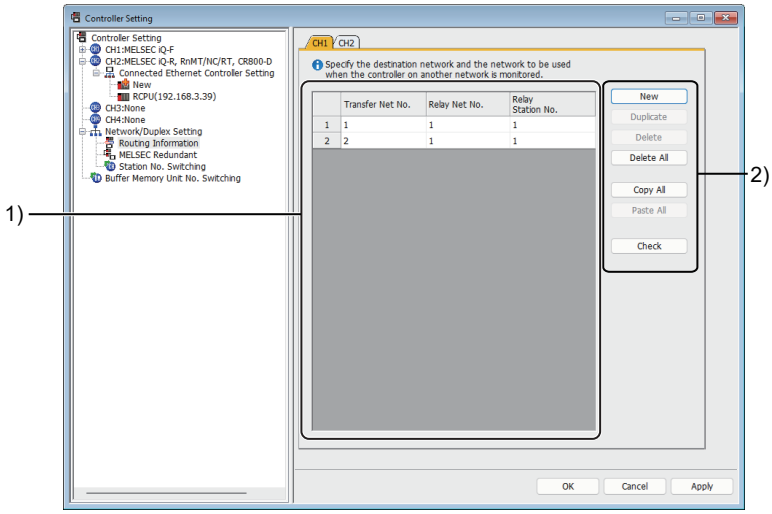
In [Routing Information], set the destination network and specify the network and controller though which data is transferred. Up to 64 sets of routing information can be registered.



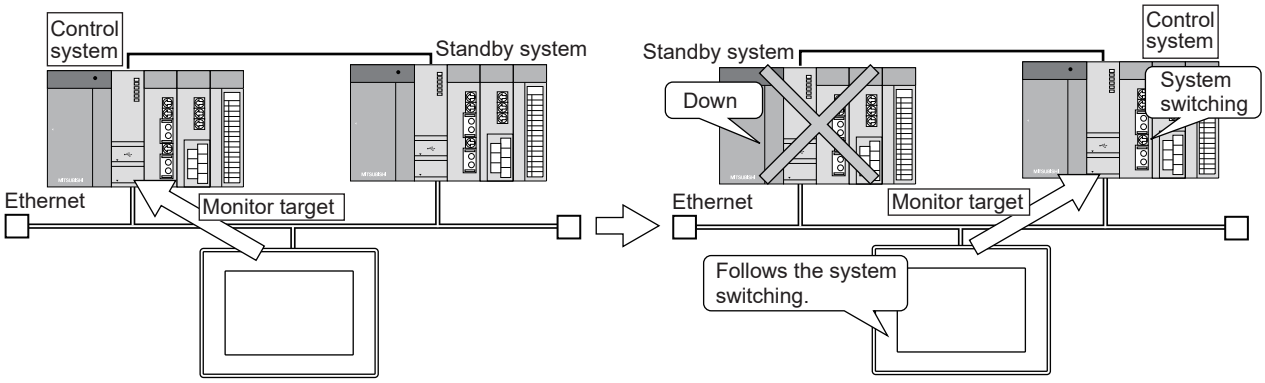
Item			Description
1)	List of routing information settings	—	Lists the routing information settings registered in the project. Each setting can be edited in the list.
		[Transfer Net No.]	Set the network number of the destination network. The setting range is [1] to [239].
		[Relay Net No.]	Set the network number of the relay network. The setting range is [1] to [239].
		[Relay Station No.]	Set the station number of the relay station. The setting range depends on [Controller Type] selected for each channel. • [SLMP]: [0] to [120], [125] • [MODBUS Server (GOT: Client)]: [0] to [247] • Other than the above: [1] to [120]
2)	Buttons for the routing information setting	—	Use the following buttons to add, copy, and delete the routing information setting in the list.
		[New]	Adds a new routing information setting row to the bottom of the list.
		[Duplicate]	Duplicates a selected routing information setting below the bottom row of the list.
		[Delete]	Deletes a selected routing information setting.
		[Delete All]	Deletes all the routing information settings.
		[Copy All]	Copies all the routing information settings in the list of the selected tab. Use this button to utilize the settings for other channels.
		[Paste All]	Pastes the copied settings to the list. The existing settings are overwritten.
		[Check]	Checks if the routing information setting has any error. The following show the points to be checked. • Non-entered items • Setting range • Duplication of the destination network numbers

14.3 Configuring the setting of the MELSEC redundant function

GT37 SoftGOT3000

☞ Page 744 Setting condition of the MELSEC redundant function
☞ Page 745 How to set the MELSEC redundant function
☞ Page 746 [MELSEC Redundant]

You can monitor the redundant system on the GOT by specifying the control system and the standby system.
If the redundant system is the target station, specifying the control system as the target CPU enables consecutive monitoring even when the system is switched from the control system to the standby system.
For details on the redundant system, refer to the following.
📖GOT3000 Series User's Manual (Connection)



14.3.1 Setting condition of the MELSEC redundant function

The MELSEC redundant function is available when one of the following items is selected for [Controller Type] in the [Controller Setting] window.

☞ Page 729 [Controller Setting]

- [MELSEC MX Controller]
- [MELSEC iQ-R, RnMT/NC/RT, CR800-D]
- [MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700]
- [MELIPC]

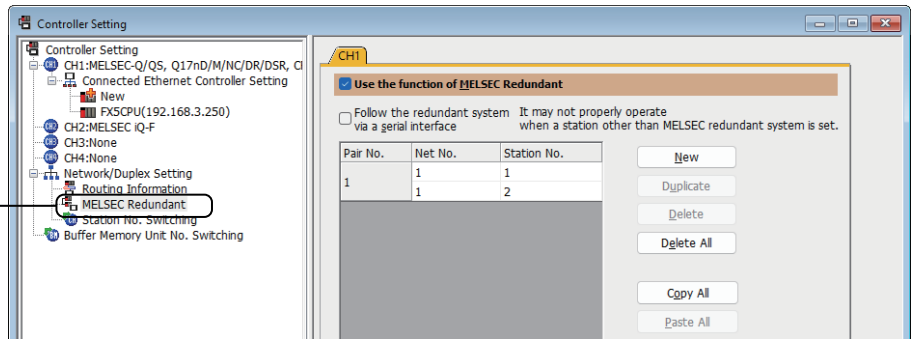
14.3.2 How to set the MELSEC redundant function

1. Select [Common] → [Controller Setting] from the menu.

2. The [Controller Setting] window appears.

Select [MELSEC Redundant] from the setting tree.

[MELSEC Redundant] menu

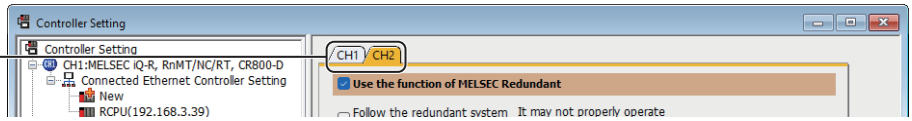


3. Configure the MELSEC redundant setting by channel.

Select the target channel tab, and configure the MELSEC redundant setting.

☞ Page 746 [MELSEC Redundant]

Channel No. tab



Point

When setting the device to be monitored by objects, you can select the control system or the standby system. For the device format for monitoring the standby system, refer to the following.

☞ Page 849 Formats of devices, labels, and tags

PART 5

14.3.3 [MELSEC Redundant]

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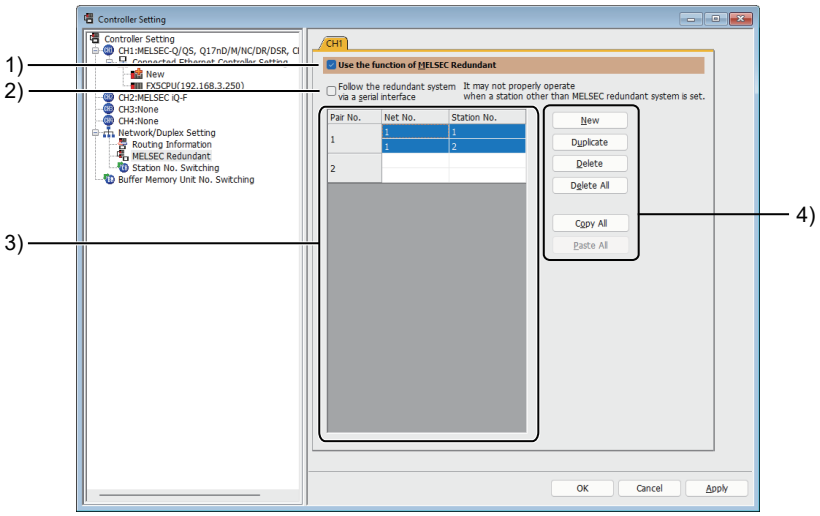
Set a pair of control and standby systems.



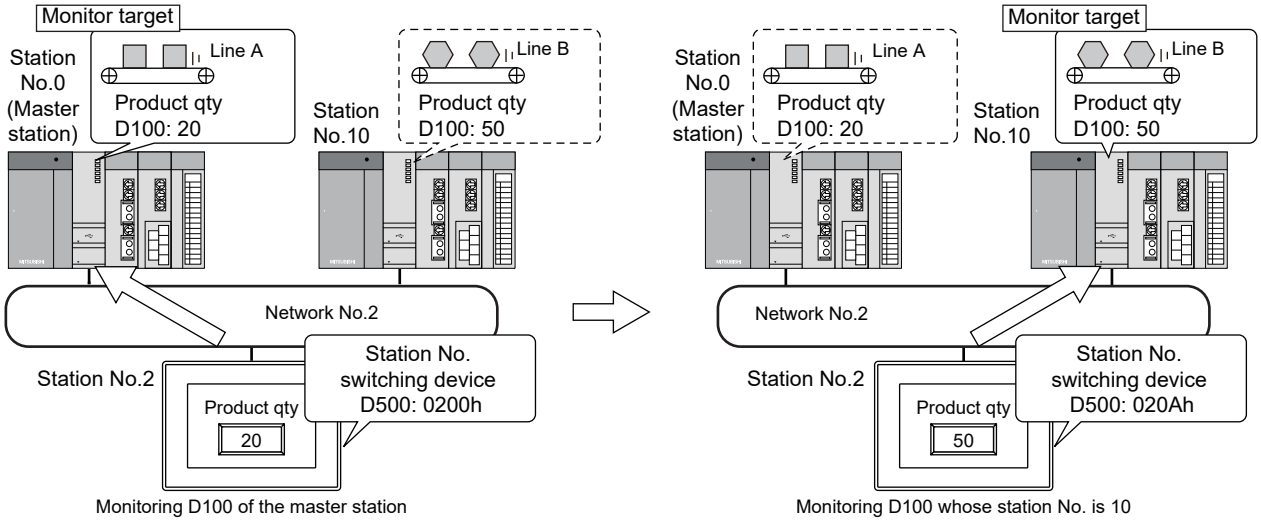
Item			Description
1)	[Use the function of MELSEC Redundant]		Enables the MELSEC redundant function. Select this item to configure the settings in [MELSEC Redundant].
2)	[Follow the redundant system via a serial interface]		Automatically switches the monitoring target upon system switching if the redundant system is connected to the GOT by the serial connection.
3)	MELSEC redundant setting list	—	Lists the MELSEC redundant settings registered in the project. Each setting can be edited in the list.
		[Pair No.]	Pair number of the MELSEC redundant setting The numbers are assigned automatically starting from 1. Setting [Pair No.] is not required to monitor the redundant system that is connected to the GOT by the CC-Link connection (intelligent device station).
		[Net No.]	Set the network numbers for each pair number. The upper row is for the setting of the first redundant CPU. The setting range is [1] to [239]. The lower row is for the setting of the second redundant CPU. The network number of the second redundant CPU is the same as that of the first CPU.
		[Station No.]	Set the station numbers of the redundant CPUs for each pair number. The upper row is for the setting of the first redundant CPU. The lower row is for the setting of the second redundant CPU. The setting range is [0] to [120].
4)	Operation buttons for the MELSEC redundant setting list	—	Add, copy, and delete a MELSEC redundant setting in the list.
		[New] button	Adds a new pair number setting row to the bottom of the list.
		[Duplicate] button	Duplicates a selected pair number setting below the bottom row of the list.
		[Delete] button	Deletes the selected pair number setting.
		[Delete All] button	Deletes all the pair number settings.
		[Copy All] button	Copies all the pair number settings in the list of the selected tab. Use this button to utilize the settings for other channels.
		[Paste All] button	Pastes the copied settings to the list. The existing settings are overwritten.

14.4 Configuring settings for switching the target station number for monitoring

GT37 SoftGOT3000

☞ Page 748 Specifications of the station number switching setting
☞ Page 751 How to switch the station numbers
☞ Page 752 How to configure the station number switching settings
☞ Page 753 [Station No. Switching]
☞ Page 754 Relevant settings

Screen number switching can be used to switch the network number and the station number of the monitored station.
When multiple devices executing the same control are connected on the network, the devices can be monitored on a single monitor screen.
Since the number of objects to be set can be reduced, you can save the built-in memory of the GOT.
Station number switching is performed by changing the value of the station number switching device.
This can also be performed by touching the Change Station No. switch to which the switching destination is set.



Switching between network numbers and station numbers is available within the monitoring range of the GOT.

14.4.1 Specifications of the station number switching setting

☞ Page 748 Specifications of the station number switching device
☞ Page 748 Communication drivers supporting station number switching
☞ Page 749 Functions supporting station number switching
☞ Page 750 Effect of station number switching

Specifications of the station number switching device

The data type of the station number switching device is unsigned 16-bit binary.
The higher and lower bits of the device store the network number and station number to be switched to.

Upper (b15 to b8)	Lower (b7 to b0)
Network No.	Station No.

The following shows examples of switching destinations and device values.

Switching details	Hexadecimal value stored in the station number switching device
Switches to the specified network number and station number	Example) When switching to station number 18 on network number 1 0112h
Switches to the station number set for each object (Same as when station number switching is not performed)	00FEh
Switches to the host station (connection destination)	00FFh

Communication drivers supporting station number switching

The following lists the communication drivers that allow station number switching.
If one controller can be connected to one GOT, station number switching cannot be used even though any of the following drivers is set.
○: Effective, —: Ineffective

Manufacturer Communication protocol	Communication driver	Target for switching	
		Network No.	Station No.
MITSUBISHI ELECTRIC	[Ethernet(MITSUBISHI ELECTRIC), Gateway]	○	○
	[CC-Link IE TSN (built-in Ethernet)]	—	○
	[CC-Link IE TSN]	—	○
	[CC-Link IE Field Network]	—	○
	[Ethernet(FX), Gateway]	○	○
	[Ethernet(MELSERVO), Gateway]	—	○
	[Ethernet(FREQROL(Batch monitor)), Gateway]	○	○
ALLEN-BRADLEY	[Ethernet(AB Tag), Gateway]	—	—
SIEMENS	[Ethernet(SIEMENS OP), Gateway]	—	○
SLMP	[Ethernet(SLMP), Gateway]	○	○
MODBUS	[MODBUS/RTU Client]	—	○
	[MODBUS/TCP Client, Gateway]	○	○

Functions supporting station number switching

○: Supported, ×: Not supported

Function name	Switching	Remarks
Touch switch	○	Indirect devices are also subject to station number switching.
		Deselecting [Include touch switch action, trigger action (screen), and script (screen) for Station No. Switching] in the [Controller Setting] window ([Station No. Switching]) will exclude the write device from station number switching. ☞ Page 753 [Station No. Switching]
Lamp	○	—
Numerical display Numerical input	○	When using the numerical input or text input, switch the station number after the completion of the input operation. If the station number is switched during the input operation, the data may not be written to the monitored device correctly. Before changing the value of the station number switching device with the key window, complete the input operation using the System signal 2-1.b11 notifying that the key window is being displayed. ☞ Page 576 Setting a device which controls the GOT operations or notifies the GOT status ([System Information])
Text display Text input	○	
Date display Time display	×	—
Comment display	○	—
Parts display	○	—
Frame animation	○	—
Historical data list display	○	Logging devices are not subject to station number switching.
Alarm monitoring	×	—
Alarm popup display	×	—
Alarm display	○	—
Recipe	×	—
Recipe display (record list)	○	—
Line graph	○	—
Trend graph	○	—
Bar graph	○	—
Band graph Pie graph	○	—
Scatter graph	○	Station number switching cannot be executed when the memory storage is used.
Historical trend graph	○	Logging devices are not subject to station number switching.
Graphical meter	○	—
Level	○	—
Panel meter	○	—
Slider	○	—
Document display	○	—
Digital image display	×	—
Project script	×	—
Screen script	○	Deselecting [Include touch switch action, trigger action (screen), and script (screen) for Station No. Switching] in the [Controller Setting] window ([Station No. Switching]) will exclude the assigned device from station number switching. ☞ Page 753 [Station No. Switching]
Object script	○	—
Script parts	○	Deselecting [Include touch switch action, trigger action (screen), and script (screen) for Station No. Switching] in the [Controller Setting] window ([Station No. Switching]) will exclude the assigned device from station number switching. ☞ Page 753 [Station No. Switching]
Operation log	×	—
Logging	×	—
Device data transfer	×	—
Trigger action (project)	×	—

Function name	Switching	Remarks
Trigger action (screen)	○	Deselecting [Include touch switch action, trigger action (screen), and script (screen) for Station No. Switching] in the [Controller Setting] window ([Station No. Switching]) will exclude the device that operates when the condition is satisfied from station number switching. ☞ Page 753 [Station No. Switching]
Time action	×	—
Screen switching	×	—
Language switching	×	—
System language switching	×	—
System information	×	—

Precautions

Functions that do not support station number switching operate with the device of the station number set for each function.
Note that if an object that supports station number switching and an object that does not support station number switching are placed on the same screen, the monitoring target station number will vary depending on the object when screen switching is performed.

Effect of station number switching

■Redrawing of objects

All the objects on the screen will be redrawn when the station number is switched.
Thus, the display speed of the object may become slow temporarily.

14.4.2 How to switch the station numbers

Switch the station numbers with either of the following methods.

Method	Description
Station number switching with the station number switching device	Station number switching is executed by storing the value indicating the switching destination in the station number switching device. For the value stored in the station number switching device, refer to the following. ☞ Page 748 Specifications of the station number switching device
Station number switching with the Change Station No. switch	Touching the Change Station No. switch executes station number switching. In this case, the setting of the station number switching device is required. For the Change Station No. switch settings, refer to the following. ☞ Page 1227 [Change Station No. Switch] dialog

Precautions

■Station number switching while a dialog window is displayed

The dialog window operates according to the value of the station number switching device which is set when the dialog window is displayed.

If the value of station number switching device is changed while the dialog window is displayed, the display and operation of the object on the dialog window are not changed.

14.4.3 How to configure the station number switching settings

The following settings are required for station number switching.

Setting		Description
Screen properties		Settings need to be configured in the screen property for the screen where station number switching is performed.
[Controller Setting] window	Set the station number switching device.	Set the station number switching device for each project or screen type.
	Set the channel subject to station number switching.	Set whether to enable or disable station number switching for each channel.

Set the Change Station No. switch as necessary.

☞ Page 1227 [Change Station No. Switch] dialog

Operating procedure

1. Select [Switch Station No.] in the screen property for each screen where station number switching is performed.

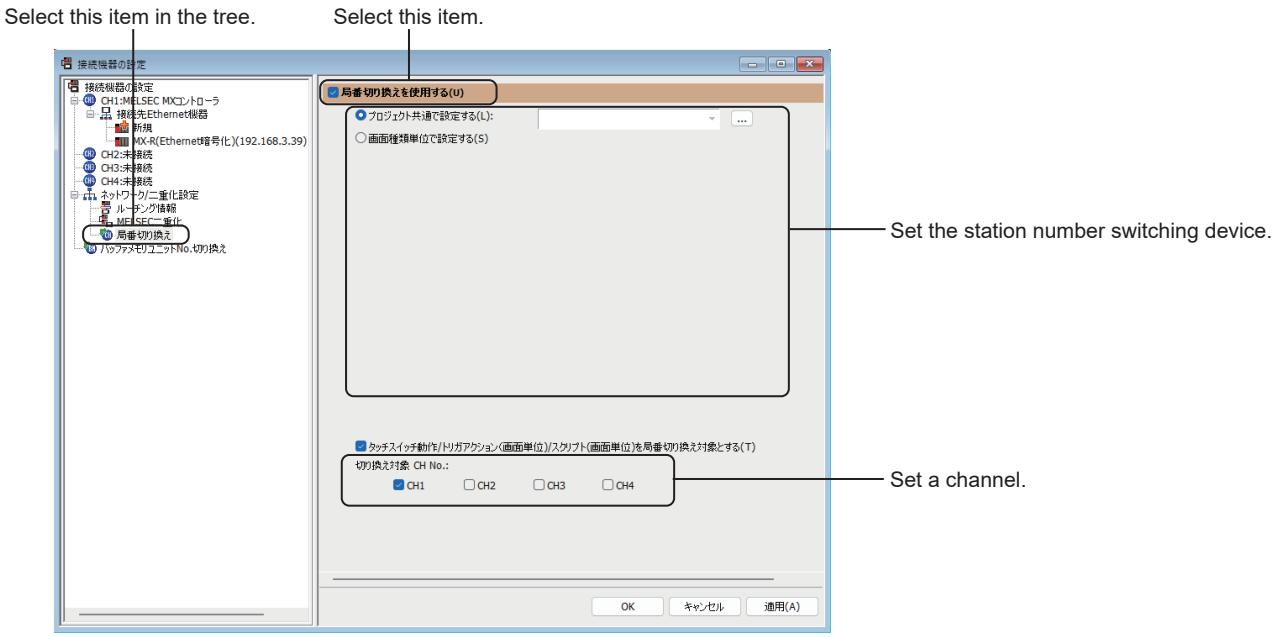
Screen type	Reference
Base screen properties	☞ Page 314 [Basic] tab
Window screen properties	☞ Page 323 [Basic] tab

2. Select [Common] → [Controller Setting] from the menu to display the [Controller Setting] window.

3. Select the [Station No. Switching] menu from the controller setting tree.

Select [Use Station No. Switching], and then set the station number switching device and the channel for which station number switching is enabled.

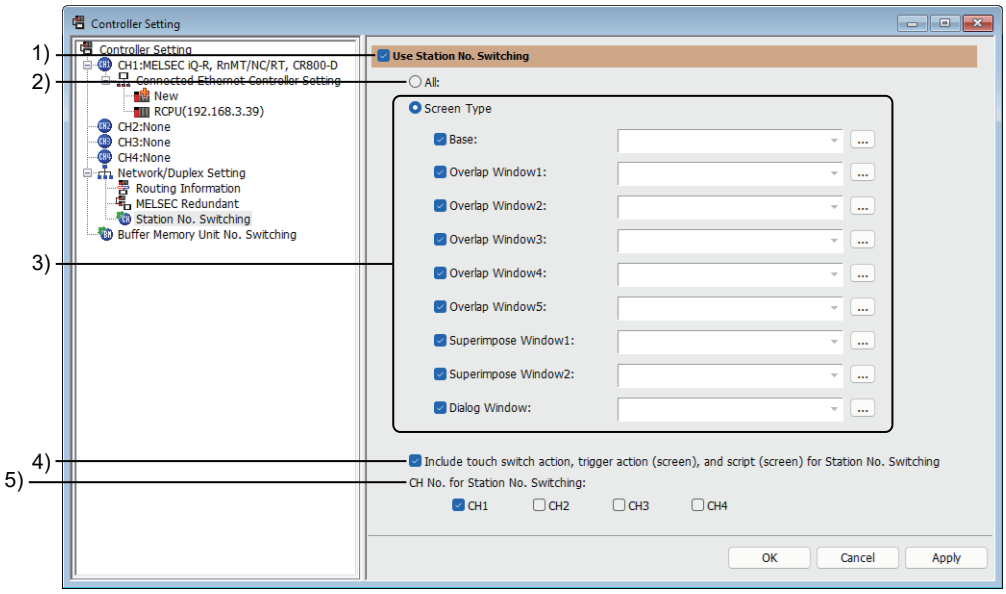
☞ Page 753 [Station No. Switching]



14.4.4 [Station No. Switching]

GT37 SoftGOT3000

Set the station number switching device.



Item		Description
1)	[Use Station No. Switching]	Enable the station number switching. Select this item to configure each setting in [Station No. Switching].
2)	[All]	Station number switching is executed across the whole project. Select this item, and then set the station number switching device (word device). The bit device cannot be specified as the word device. Data type: Unsigned 16-bit binary ☞ Page 834 How to set devices, labels, and tags
3)	[Screen Type]	Enables station number switching by screen type. Select this item, then select the screen type for which station number switching is performed, and then set the station number switching device (word device). The bit device cannot be specified as the word device. Data type: Unsigned 16-bit binary ☞ Page 834 How to set devices, labels, and tags
4)	[Include touch switch action, trigger action (screen), and script (screen) for Station No. Switching]	Sets the devices of touch switches, trigger actions (per screen), and screen scripts as the target of station number switching. For details, refer to the following. ☞ Page 749 Functions supporting station number switching
5)	[CH No. for Station No. Switching]	Select the channel number for which station number switching is executed.

Point

When a GOT internal register (GD) is set as the station number switching device, the GOT starts monitoring station number 0 on network number 0 immediately after power-on until the value of the station number switching device (GD) is set.
In this case, a system alarm due to the communication timeout may occur depending on the connection type.
To avoid a system alarm, create an initially-displayed screen with no object, and set the station number switching device (GD) and its value on the screen.

14.4.5 Relevant settings

Configure the relevant settings other than the specific settings for the station number switching function as required.
The following shows the functions that are available by configuring the relevant settings.

Screen properties

Select the screen editor on which settings are configured, and select [Screen] → [Screen Property] from the menu to display the screen properties.

Screen type	Reference
Base screen properties	☞ Page 314 [Basic] tab
Window screen properties	☞ Page 323 [Basic] tab

The following shows the settings relevant to station number switching.

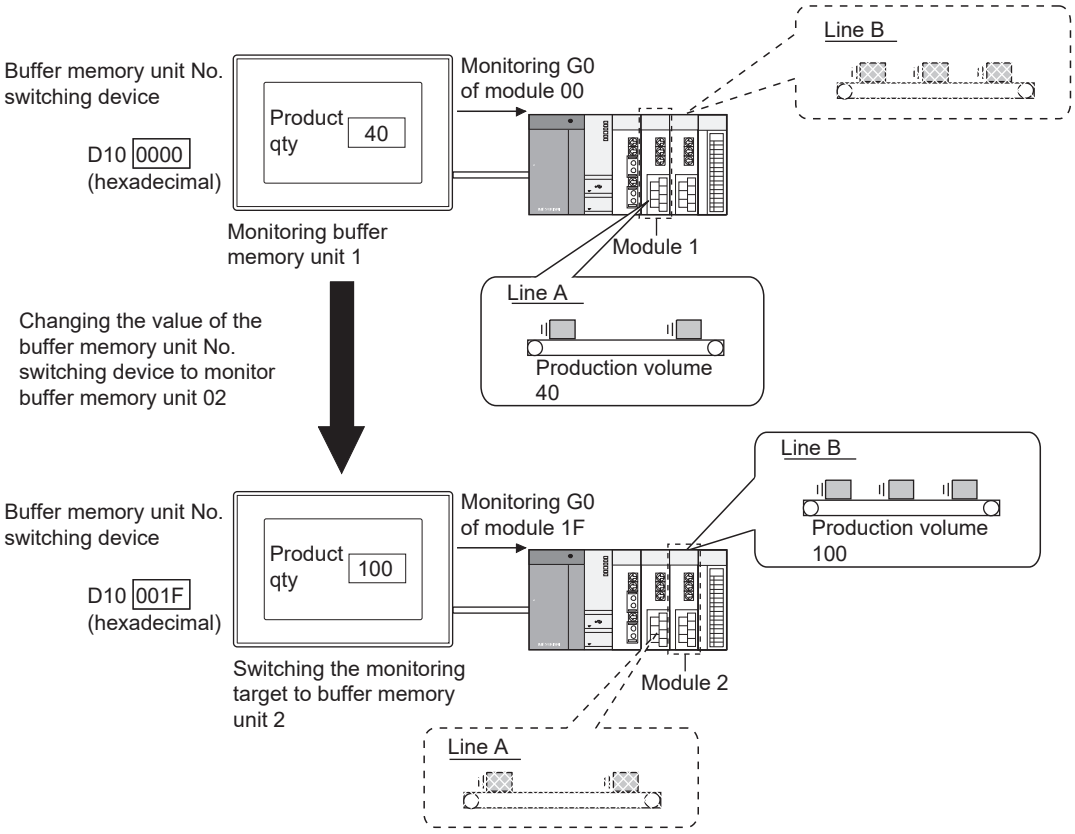
Function	Setting item
Setting whether to execute the station number switching or not for each screen	Select [Switch Station No.] from in the [Basic] tab

14.5 Configuring the settings for switching the monitoring target buffer memory unit number

GT37 SoftGOT3000

☞ Page 756 Specifications of buffer memory unit number switching
☞ Page 758 How to switch buffer memory unit numbers
☞ Page 759 How to configure the settings for buffer memory unit number switching
☞ Page 760 [Buffer Memory Unit No. Switching]
☞ Page 761 Relevant settings

Buffer memory unit number switching can be used to switch the buffer memory unit number of the monitored unit.
When multiple devices executing the same control are connected on the network, the devices can be monitored on a single monitor screen.
Since the number of objects to be set can be reduced, you can save the built-in memory of the GOT.
Buffer memory unit number switching is performed by changing the value of the buffer memory unit number switching device.



Switch between buffer memory unit numbers within the monitoring range of the GOT.

14.5.1 Specifications of buffer memory unit number switching

☞ Page 756 Target for buffer memory unit number switching
☞ Page 756 Functions supporting buffer memory unit number switching
☞ Page 757 Effect of buffer memory unit number switching

Target for buffer memory unit number switching

Buffer memory unit number switching can be performed when one of the following is selected for [Controller Type] in the [Controller Setting] window, and the buffer memory is set as the device to be monitored by objects or others.

- [MELSEC MX Controller]
- [MELSEC iQ-R, RnMT/NC/RT, CR800-D]
- [MELSEC iQ-L]
- [MELSEC iQ-F]
- [MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700]
- [MELSEC-L]
- [MELSEC-A]
- [MELIPC]

Functions supporting buffer memory unit number switching

○: Supported, ×: Not supported

Function name	Switching	Remarks
Touch switch	○	Indirect devices are also subject to buffer memory unit number switching. The following devices are not subject to buffer memory unit number switching. • Go To Screen switch: A device to specify the screen to be switched to • Change Station No. switch: A device to specify the station number to be switched to
Lamp	○	—
Numerical display Numerical input	○	—
Text display Text input	○	—
Date display Time display	×	—
Comment display	○	—
Parts display	○	—
Frame animation	○	—
Historical data list display	○	Logging devices are not subject to buffer memory unit number switching.
Alarm monitoring	×	—
Alarm popup display	×	—
Alarm display	○	—
Recipe	×	—
Recipe display (record list)	○	—
Line graph	○	—
Trend graph	○	—
Bar graph	○	—
Band graph Pie graph	○	—
Scatter graph	○	Buffer memory unit number switching cannot be executed when the memory storage is used.
Historical trend graph	○	Logging devices are not subject to buffer memory unit number switching.
Graphical meter	○	—
Level	○	—
Panel meter	○	—
Slider	○	—

Function name	Switching	Remarks
Document display	○	—
Digital image display	×	—
Project script	×	—
Screen script	○	—
Object script	○	—
Script parts	○	—
Operation log	×	—
Logging	×	—
Device data transfer	×	—
Trigger action (project)	×	—
Trigger action (screen)	○	Devices set on the destination screen are not subject to the buffer memory unit number switching.
Time action	×	—
Screen switching	×	—
Language switching	×	—
System language switching	×	—
System information	×	—

Effect of buffer memory unit number switching

■Redrawing of objects

All the objects on the screen will be redrawn when the buffer memory unit number is switched.

14.5.2 How to switch buffer memory unit numbers

Buffer memory unit number switching is executed by storing a value indicating the switching destination in the buffer memory unit number switching device.

Precautions

■If the buffer memory unit number is not switched

In the following cases, buffer memory unit number switching is not executed. The buffer memory unit number set for each object will be monitored.

If the buffer memory unit number is not switched	Remarks
The buffer memory unit number of the switching destination is other than 0x00 to 0xFF.	—
The device cannot be monitored due to a communication error such as disconnection.	During GOT operation, if a communication error occurs due to a disconnection or other reasons, the buffer memory unit number monitored before the error will be monitored.

■Buffer memory unit number switching while a dialog window is displayed

The dialog window operates according to the value of the buffer memory unit number switching device which is set when the dialog window is displayed.

Even if the value of the buffer memory unit number switching device is changed while the dialog window is displayed, the display and operation of the objects on the dialog window will not change.

Judgment of communication status

When you attempt to switch the buffer memory unit number to a nonexistent one, the switching is not executed and the buffer memory unit number switching device stores -1.

This enables you to judge the communication status (normal or abnormal) of the buffer memory unit.

When you monitor a buffer memory that always stores a value other than -1, if the buffer memory stores -1, the communication status is abnormal.

When a value other than -1 is stored, the communication status is normal.

Ex.

For G0 (the unit setting for basic parameter 1) of RD75, the device ranges from 0 to 3. If G0 stores -1, the communication status is abnormal.

14.5.3 How to configure the settings for buffer memory unit number switching

The following settings are required to perform buffer memory unit number switching.

Setting	Description
Screen properties	Settings need to be configured in the screen property for the screen where buffer memory unit number switching is performed.
[Controller Setting] window	Set the buffer memory unit number switching device for each project or screen type.

Operating procedure

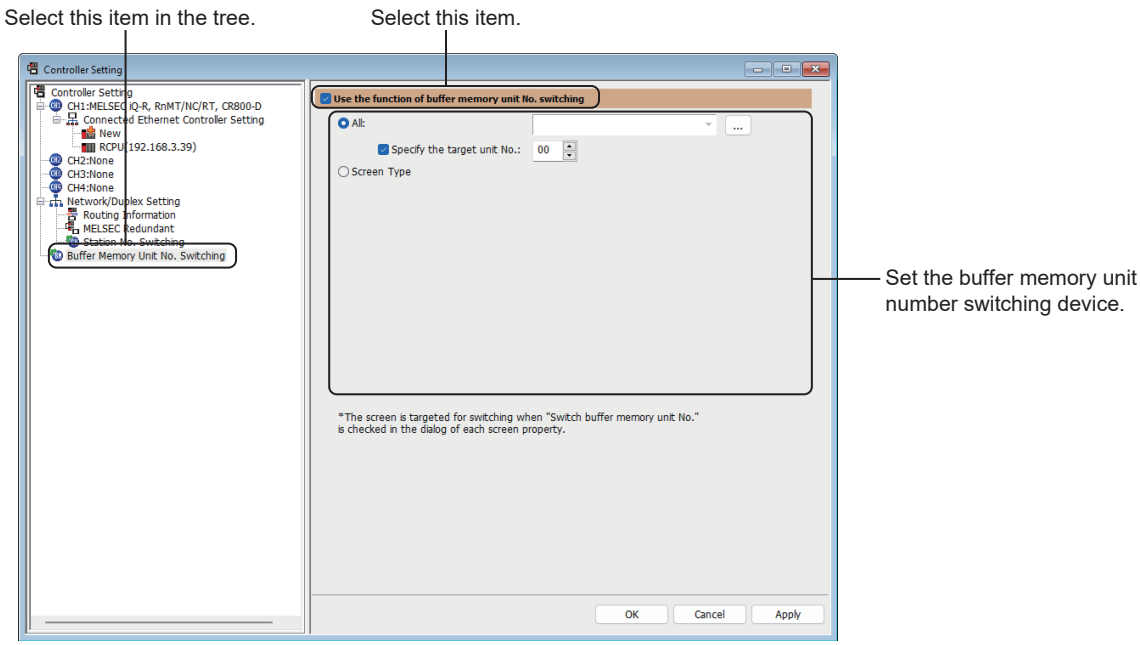
1. Select [Switch buffer memory unit No.] in the screen property for each screen where buffer memory unit number switching is performed.

Screen type	Reference
Base screen properties	☞ Page 314 [Basic] tab
Window screen properties	☞ Page 323 [Basic] tab

2. Select [Common] → [Controller Setting] from the menu to display the [Controller Setting] window.

3. Select the [Buffer Memory Unit No. Switching] menu from the controller setting tree.

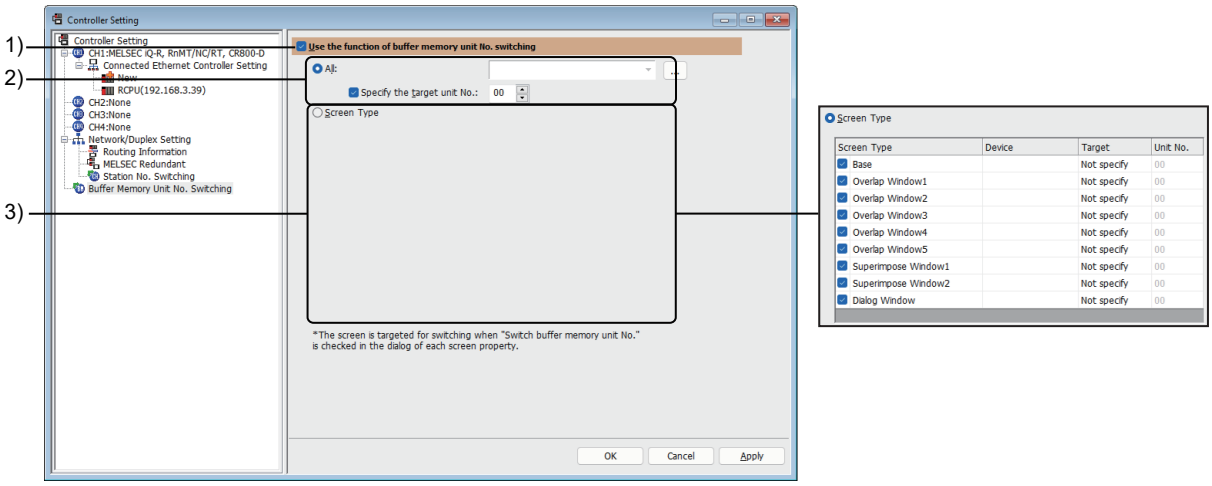
Select [Use the function of buffer memory unit No. switching], and then set the buffer memory unit number switching device.
☞ Page 760 [Buffer Memory Unit No. Switching]



14.5.4 [Buffer Memory Unit No. Switching]

GT37 SoftGOT3000

Set the buffer memory unit number switching device.



Item			Description
1)	[Use the function of buffer memory unit No. switching]		Enables the buffer memory unit number switching. Select this item to configure each setting in [Buffer Memory Unit No. Switching].
2)	[All]	—	Buffer memory unit number switching is executed across the whole project. Select this item, and then set the buffer memory unit number switching device (word device). The bit device cannot be specified as the word device. Data type: Unsigned 16-bit binary ☞ Page 834 How to set devices, labels, and tags
		[Specify the target unit No.]	Set the buffer memory unit number to be switched. Only the specified buffer memory unit number is subject to switching. Example) When [00] is set to [Specify the target unit No.] Only the devices with unit numbers set to [00] are subject to buffer memory unit number switching. Value of the buffer memory unit number switching device: 0000 → 001F Monitor device of numerical display: AU00-G100 → U1F-G100 Monitor device of numerical display: BU01-G100 → U01-G100
3)	[Screen Type]	—	Enables buffer memory unit number switching by screen type. Select this item, then select the screen type for which buffer memory unit number switching is performed, and then set the buffer memory unit number switching device and others.
		[Screen Type]	Select a screen in which the buffer memory unit number switching is performed.
		[Device]	Set the buffer memory unit number switching device (word device). The bit device cannot be specified as the word device. Data type: Unsigned 16-bit binary ☞ Page 834 How to set devices, labels, and tags
		[Target]	Set whether to specify the selected screen as the switching target. Select this item, and then set the buffer memory unit number to be switched to [Unit No.]. Example) When [00] is set to [Unit No.] Only the devices with unit numbers set to [00] are subject to buffer memory unit number switching. Value of the buffer memory unit number switching device: 0000 → 001F Monitor device of numerical display: AU00-G100 → U1F-G100 Monitor device of numerical display: BU01-G100 → U01-G100

14.5.5 Relevant settings

Configure the relevant settings other than the specific settings for the buffer memory unit number switching function as required.
The following shows the functions that are available by configuring the relevant settings.

Screen properties

Select the screen editor on which settings are configured, and select [Screen] → [Screen Property] from the menu to display the screen properties.

Screen type	Reference
Base screen properties	☞ Page 314 [Basic] tab
Window screen properties	☞ Page 323 [Basic] tab

The following shows the settings relevant to buffer memory unit number switching.

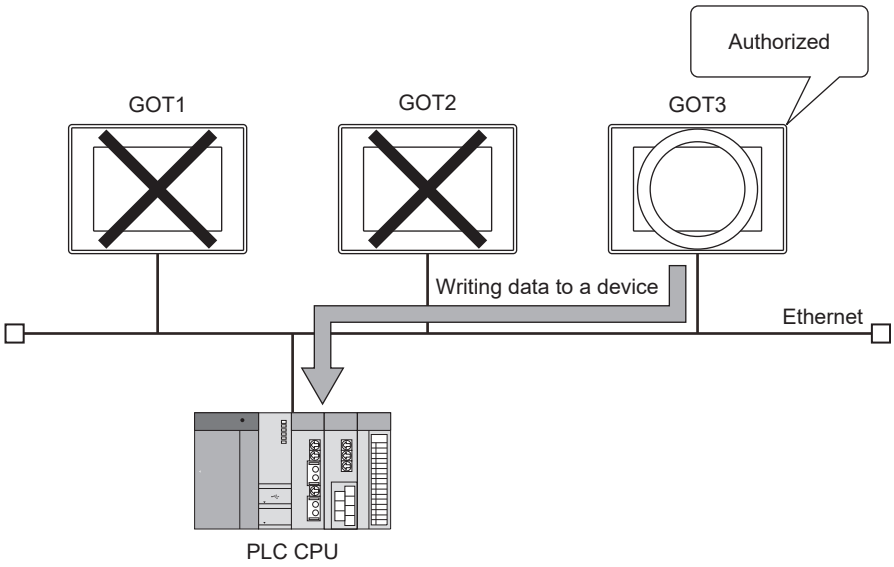
Function	Setting item
Setting whether to execute the buffer memory unit number switching by screen	[Switch buffer memory unit No.] on the [Basic] tab

15 Setting the interaction function for equipment on Ethernet ([GOT Network Interaction])

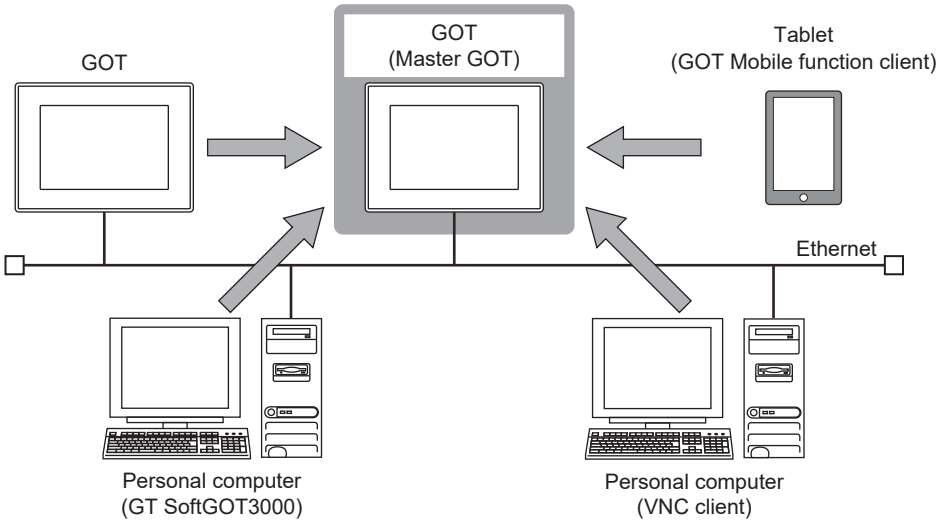
GT37 SoftGOT3000

☞ Page 763 Specifications of the GOT network interaction function
☞ Page 766 How to use the GOT network interaction function
☞ Page 771 Precautions
☞ Page 772 [GOT Network Interaction] dialog

The GOT network interaction function controls authorization (to give the operation right) among devices on the same network to prevent simultaneous operations.



In the group of devices, a GOT is specified as the master GOT to control the operation right.
The other devices in the group communicate with the master GOT to obtain the operation right.



15.1 Specifications of the GOT network interaction function

GT37 SoftGOT3000

☞ Page 763 Target equipment
☞ Page 763 Authorization control scope
☞ Page 764 Target screens
☞ Page 764 Influences on other functions
☞ Page 765 Required system application (add-on function)

Target equipment

The following two equipment types are applicable for authorization control using the GOT network interaction function.

- Master GOT: Equipment that controls the operation right.
- Operator device: Equipment that requests and obtains the operation right from the master GOT.

The recommended number of operator devices is as follows.

- When the master GOT is a GOT: Up to 7 operator devices per 1 master GOT
- When the master GOT is GT SoftGOT3000: Up to 15 operator devices per 1 master GOT

The following shows the applicable equipment types.

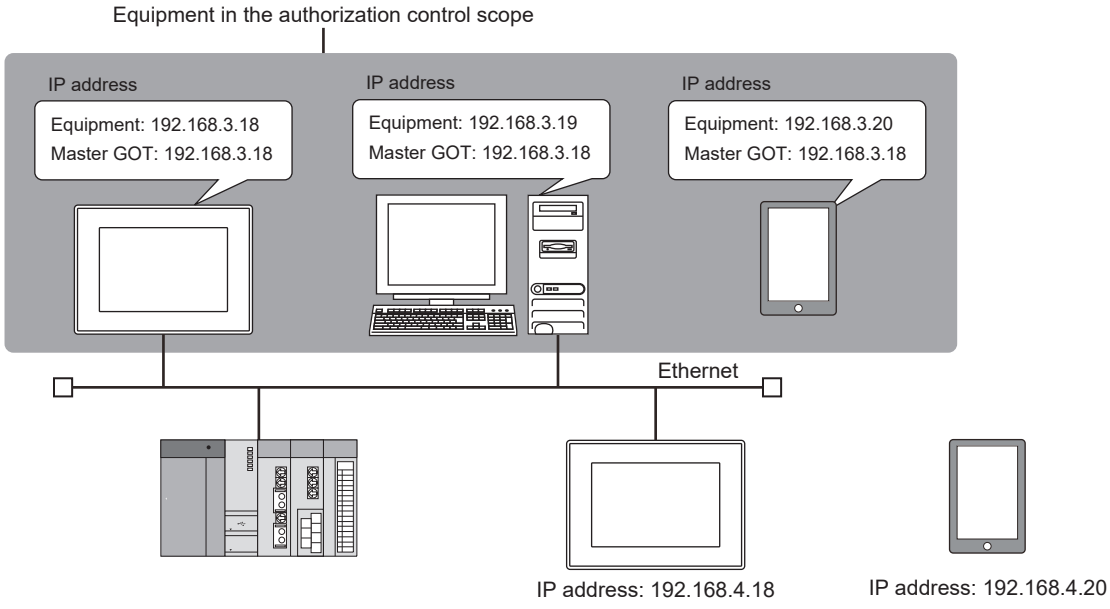
○: Applicable, —: Not applicable

GOT	Operator device	Master GOT
GT37	○	○
GT SoftGOT3000	○	○
GT SoftGOT3000 (when the SoftGOT-GOT link function is used)	○	—
VNC client (VNC server function)	○	—
Client (GOT Mobile function)	○	—

Authorization control scope

Authorization control is enabled for the devices that satisfy the following conditions.

- Same subnet
- Same master GOT



Target screens

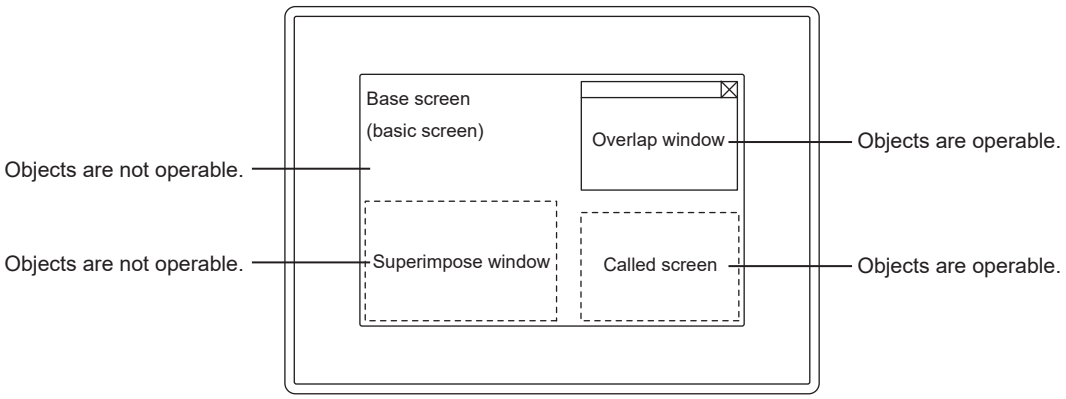
Whether the operation right is required to operate objects is set on a screen-by-screen basis.
The following shows the target screens for authorization control.

- Base screen
- Window screen (when displayed as a superimpose window or overlap window)
- Mobile screen

When authorization control is enabled on a screen, objects on the screen can be operated only when the operation right is obtained.
Otherwise, the screen is displayed, but the objects on the screen are not operable.
Screens for which authorization control is disabled or utility call keys can be displayed and operated regardless of the operation right status.
If authorization control is enabled on some screens and disabled on others, the operation right settings vary for each screen.

Ex.
Availability of operation when the operation right is not obtained

- Base screen (Basic screen of the set overlay screen function): Authorization control is enabled.
- Superimpose window: Authorization control is enabled.
- Overlap window: Authorization control is disabled.
- Called screen (Screen called from the base screen): Authorization control is disabled.



Influences on other functions

Enabling the GOT network interaction function influences other functions as follows.

Function	Influence
SoftGOT-GOT link function	Authorization control of the SoftGOT-GOT link function becomes disabled, and authorization control of the GOT network interaction function becomes enabled. Multiple GT SoftGOT3000 modules are connectable to one GOT. However, only one GT SoftGOT3000 module can be connected to the same GOT from one personal computer. The popup display on the screen will be changed to the popup display of the GOT network interaction function. GT SoftGOT3000 User's Manual
VNC server function	Even though the GOT network interaction function is enabled, authorization control of the VNC server function remains active. To operate a screen with authorization control enabled on the VNC server or VNC client, both the operation rights for the GOT network interaction function and the VNC server function are required. (When you perform operations on the VNC client, the VNC server obtains the operation right for the GOT network interaction function.) The popup display on the screen of the VNC server or VNC client will be changed to the popup display of the GOT network interaction function. ☞ Page 2638 Viewing the GOT from a personal computer (VNC server function)
GOT Mobile function	To operate a screen with authorization control enabled on the client, the operation right for the GOT network interaction function is required. ☞ 82 Monitoring a controller from tablets or other devices (GOT Mobile function)

Required system application (add-on function)

Not available for GT SoftGOT3000.

To use the GOT network interaction function, [GOT Network Interaction] must be selected from the system applications (add-on functions).

Selecting [Use GOT network interaction function] in the [GOT Network Interaction] dialog incorporates the application into package data automatically.

☞ Page 772 [GOT Network Interaction] dialog

15.2 How to use the GOT network interaction function

GT37 SoftGOT3000

☞ Page 766 Settings in GT Designer3
☞ Page 766 Settings in GT SoftGOT3000
☞ Page 766 Operation on target equipment
☞ Page 769 Control and status notification with devices

Settings in GT Designer3

Configure the following setting in all the projects of the GOTs that are under control of the GOT network interaction function.

1. Select [Common] → [GOT Network Interaction] from the menu to display the [GOT Network Interaction] dialog.

☞ Page 772 [GOT Network Interaction] dialog

2. Set the following items, and click the [OK] button.

- Select [Use GOT network interaction function].
- Set the IP address of the master GOT in [IP address].

Set the following items if necessary.

- [Port No.]
- [Guaranteed time of operational authority after the last operation]
- [Specify the home screen No.]

3. To enable authorization control for a screen, select [Target for exclusive control of operational authority] in the [Basic] tab in the [Screen Property] dialog.

☞ Page 313 Changing screen property

To collectively enable or disable authorization control for all the base screens and window screens, configure the setting in the [GOT Network Interaction] dialog.

To collectively enable or disable authorization control for all the mobile screens, configure the setting in [Exclusive Control of Operational Authority] in the [GOT Mobile Setting] window.

Settings in GT SoftGOT3000

To use GT SoftGOT3000 as the master GOT, configure the following settings in GT SoftGOT3000.

1. Select [Online] → [Communication Setup] from the menu.

2. In the [GOT Network Interaction Function] tab in the [Communication Setup] dialog, configure the following settings.

Select [Control authorization using GT SoftGOT3000 (this module)].

[IP address]: Set the IP address of GT SoftGOT3000 (master GOT).

[Port No.]: Set the port number of GT SoftGOT3000 (master GOT).

For details, refer to the following.

GT SoftGOT3000 User's Manual

Operation on target equipment

When switching a screen on target equipment to another screen with authorization control enabled, the equipment will obtain the operation right automatically and display a popup display.

On the popup display, you can check the operation right status, and manually obtain or release the operation right.

For details on operations and the differences by equipment, refer to the following.

☞ Page 767 Obtaining the operation right
☞ Page 767 Releasing the operation right
☞ Page 768 Operation on the popup display

The operation right status of the target equipment can be checked using GOT internal devices as well.
GOT internal devices can also be used to prevent the equipment from obtaining the operation right.
☞ Page 769 Control and status notification with devices

■Obtaining the operation right

When switching a screen to another screen with authorization control enabled, the equipment will obtain the operation right automatically.
The screen is switched regardless of whether the equipment obtains the operation right.
To manually obtain the operation right, touch the status icon on the popup display.
To obtain the operation right for the VNC server function on the VNC server or VNC client, touch the message display area on the popup display.
☞ Page 768 Operation on the popup display
When the set overlay screen function is used, the behavior differs depending on the setting of the destination basic screen.

Setting of the destination basic screen	Acquisition of the operation right
Authorization control is enabled.	The applicable equipment obtains the operation right at screen switching. Automatic acquisition of the operation right can be disabled. ☞ Page 770 Control with devices
Authorization control is disabled.	The applicable equipment does not obtain the operation right at screen switching.

For details on the set overlay screen function, refer to the following.
☞ Page 1865 Placing a screen on another screen

■Releasing the operation right

When switching to a screen with authorization control disabled while holding the operation right, the equipment automatically releases the operation right. (Note that the operation right is not released when the destination screen contains a called screen with authorization control enabled such as for the set overlay screen function.)
When another equipment tries to obtain the operation right, the operation right will be released even if the equipment is displaying a screen with authorization control enabled.
However, if the authorization guarantee time is set, the operation right is not released until the set time elapses from the last operation.
To manually release the operation right, perform the operation on the popup display.
☞ Page 768 Operation on the popup display

On the master GOT, you can also release the operation right from the equipment using GOT internal devices.
☞ Page 770 Control with devices

The operation right is not released even if the GOT transitions to the screen saver state.

■Operation on the popup display

On the target equipment, you can check the operation right status, and manually obtain or release the operation on the popup display.

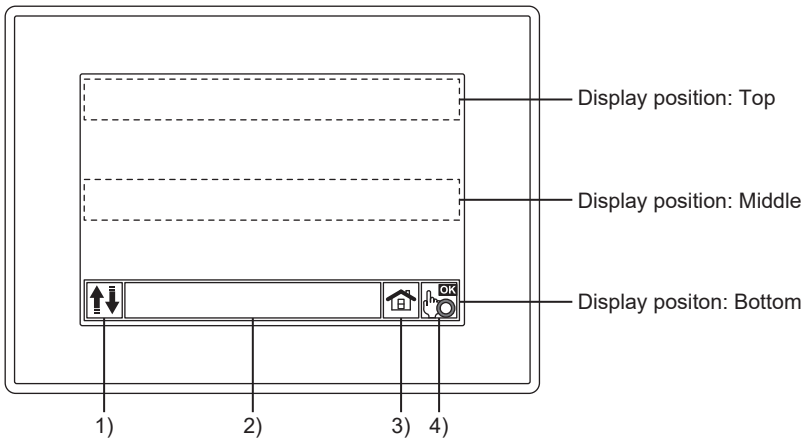
The conditions for the popup display to appear differ depending on the target equipment.

Target equipment	Display condition
GT37 (other than the VNC server)	The popup display appears when a screen is switched to another screen with authorization control enabled.
GT SoftGOT3000	
GOT Mobile function client	
GOT (VNC server)	• When authorization control of the VNC server function is enabled The popup display always appears on the screen. For the VNC client started with the exclusive password for monitoring, the popup display appears when a screen is switched to another screen with authorization control enabled. • When authorization control of the VNC server function is disabled The popup display appears when a screen is switched to another screen with authorization control enabled.
VNC client	

The operation right is not required to perform operations on the popup display.

Ex.

Popup display on the GOT



1) Display position switching button

Switches the position of the popup display. (Top, middle, bottom)

2) Message display area

Displays information including the operation right status.

On the VNC server or VNC client, touching the message display area obtains the operation right for the VNC server function. If you do so on the screen with authorization control enabled, the operation right for the GOT network interaction function is obtained together with the one for the VNC server function.

The format of the IP address displayed in the message differs according to the equipment type.

Type	Format	Example
GT37	(IP address):g(GOT ID)	192.168.3.18:g1
GT SoftGOT3000	(IP address):s(Module No.)	192.168.3.19:s1
VNC client*1	(IP address):v1	192.168.3.20:v1
GOT Mobile function client	(IP address):m(Client No.)	192.168.3.21:m1

*1 The IP address of the VNC server is displayed.

3) Home screen button

Switches to the home screen.

The home screen differs depending on the target equipment.

Equipment other than the GOT Mobile function client

Base screen specified in [Specify the home screen No.] in the [GOT Network Interaction] dialog

GOT Mobile function client

Mobile screen specified in [Specify the home screen No.] of [Exclusive Control of Operational Authority] in the [GOT Mobile Setting] window

If no screen is set as the home screen, touching this button displays the lowest numbered screen.

4) Status icon

Indicates the status of the target equipment.

Touching a status icon obtains or releases the authorization.

This action is not available if the GOT Mobile function client is authenticated by using a guest operator account.

The type of the target equipment determines the icon to be displayed.

Equipment	When displaying a screen with authorization control disabled	When displaying a screen with authorization control enabled		
		Operation right not obtained	Operation right obtained	Operation right being obtained
Equipment other than the VNC server and VNC client	-			
VNC server, VNC client (Authorization control for the VNC server function is disabled.)*1				
VNC server, VNC client (Authorization control for the VNC server function is enabled and the VNC server has the operation right.)				
VNC server, VNC client (Authorization control for the VNC server function is enabled and the VNC client has the operation right.)				

*1 For the VNC client started with the exclusive password for monitoring, the icon when authorization control for the VNC server function is disabled appears.

Control and status notification with devices

When using the devices for control and notification of the GOT network interaction function, you can prevent equipment from obtaining the operation right and check the operation right status.

The type of the target equipment determines the devices to be used.

Target equipment	Devices for control and status notification
GOT	GOT internal devices ☞ Page 3581 GOT special register (GS)
GOT Mobile function client	Devices that are set in [Operational Authority Status Control Device] and [Operational Authority Status Notification Device] of [Exclusive Control of Operational Authority] in the [GOT Mobile Setting] window ☞ Page 2817 [GOT Mobile Setting] window

■Control with devices

The following shows how to control the operation of the GOT network interaction function with devices.

Target equipment	Control details	Operation	
		Equipment other than the GOT Mobile function client	GOT Mobile function client
All	Disables automatic acquisition of the operation right when switching to a screen with authorization control enabled.	Turn on GS1795.b0.	Turn on b0 of [Operational Authority Status Control Device].
Master GOT	Prevents devices except the master GOT from obtaining the operation right.	Turn on GS1796.b0.	-
	Disables the authorization guarantee time.	Turn on GS1796.b1.	-
	Prevents all devices including the master GOT from obtaining the operation right.	Turn on GS1796.b2.	-

To ignore the authorization guarantee time and forcibly release the operation right from the target device, perform the following operation on the master GOT: Turn on GS1796.b1 to disable the authorization guarantee time, and then turn on GS1796.b0 or GS1796.b2.

■Status notification with devices

The following shows how to check the status of the GOT network interaction function with devices.

Target equipment	Notification details	Operation	
		Equipment other than the GOT Mobile function client	GOT Mobile function client
All	Notifies that the equipment obtains the operation right.	GS1460.b0 turns on.	The b0 of [Operational Authority Status Notification Device] turns on.
	Notifies that a screen requiring the operation right is being displayed.	GS1460.b1 turns on.	The b1 of [Operational Authority Status Notification Device] turns on.
Equipment other than the GOT Mobile function client	Notifies the IP address of the master GOT when the equipment obtains the operation right.	GS1461 and GS1462 store the data.	-
	Notifies the time (second) elapsed since the equipment obtained the operation right.	GS1463 stores the data.	-
	Notifies the remaining authorization guarantee time (second).	GS1464 stores the data.	-
Master GOT	Notifies that certain equipment holds the operation right.	GS1465.b0 turns on.	-
	Notifies that equipment except the master GOT is prevented from obtaining the operation right (GS1796.b0 is on).	GS1465.b1 turns on.	-
	Notifies that obtaining the operation right is prohibited (GS1796.b2 is on).	GS1465.b2 turns on.	-
	Notifies the IP address of the equipment that holds the operation right.	GS1466 and GS1467 store the data.	-
	Notifies the type of the equipment that holds the operation right.	GS1468 stores the data. • 0: GOT • 1: GT SoftGOT3000 • 2: GOT Mobile function client	-
	Notifies the identification information on the equipment that holds the operation right.	GS1469 stores the data. • GOT: GOT ID number • GT SoftGOT3000: Module number • GOT Mobile function client: Client number	-
	Notifies the time (second) elapsed since the equipment obtained the operation right.	GS1470 stores the data.	-

15.3 Precautions

GT37 SoftGOT3000

Precautions for drawing

■Specifying the master GOT

Set the same master GOT IP address in the projects of the GOTs that are in the same authorization control group.

If you set different IP addresses, the exclusive authorization control is not available.

■Setting the home screen

When setting a screen as the home screen, make sure that authorization control is disabled in the screen.

This avoids a state where the operation right cannot be obtained, which would result in the equipment being inoperable.

Precautions for use

■Master GOT startup timing

Start the master GOT earlier than other equipment.

No equipment can obtain the operation right before the master GOT is started.

■Restrictions on the alarm popup display

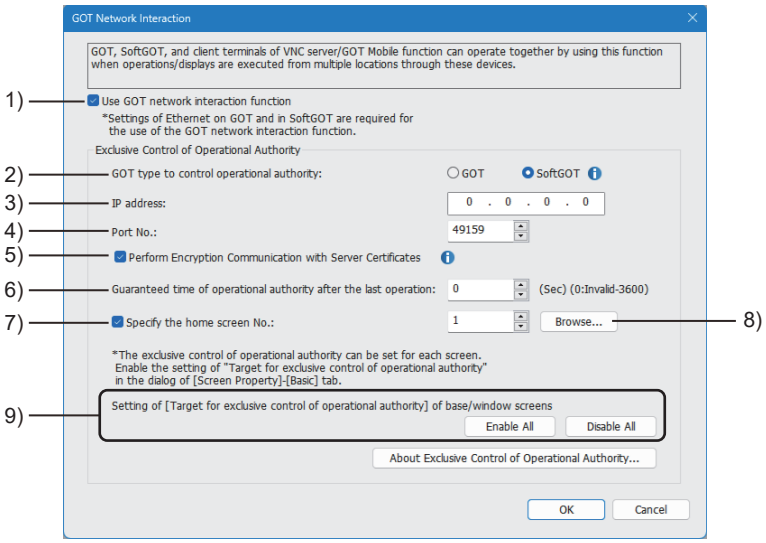
While the popup display of the GOT network interaction function is being displayed, the alarm popup display is disabled.

PART 5

15.4 [GOT Network Interaction] dialog

GT37 SoftGOT3000

In the [GOT Network Interaction] dialog, configure the settings for the GOT network interaction function.
Select [Common] → [GOT Network Interaction] from the menu to display this dialog.



Item		Description
1)	[Use GOT network interaction function]	Enables the GOT network interaction function.
2)	[GOT type to control operational authority]	Set the type of the master GOT. When selecting [SoftGOT], configure the settings for the GOT network interaction function in GT SoftGOT3000. For details, refer to the following. GT SoftGOT3000 User's Manual
3)	[IP address]	Set the IP address of the master GOT.
4)	[Port No.]	Set the port number of the master GOT. The setting range depends on the model set for [GOT type to control operational authority]. • [GOT]: Fixed to 49159 (49201 when encrypted communication is set) • [SoftGOT]: [1024] to [65534]
5)	[Perform Encryption Communication with Server Certificates]	Enable the encrypted communication with a server certificate. For details, refer to the following. ☞ Page 3078 [Certificate]
6)	[Guaranteed time of operational authority after the last operation]	Set a period of time to retain the operation right after certain equipment obtains the operation right and then the equipment is operated. The setting range is [0] (Invalid), or [1] to [3600] seconds. This setting is disabled when GS1796.b1 is turned on.
7)	[Specify the home screen No.]	Set a base screen as the home screen. On the popup display of the GOT network interaction function, touching the home screen button displays the set base screen. Make sure that the authorization control is disabled in the set base screen.
8)	[Browse] button	Displays the [Image List] dialog. ☞ Page 3683 [Image List] dialog (screen)
9)	[Setting of [Target for exclusive control of operational authority] of base/window screens]	• [Enable All] button: Selects [Target for exclusive control of operational authority] for all the base screens and window screens. • [Disable All] button: Clears [Target for exclusive control of operational authority] for all the base screens and window screens.

16 Checking the interface settings of the GOT ([I/F Communication Setting])

GT37 SoftGOT3000

☞ Page 773 How to use the I/F communication setting
☞ Page 774 [I/F Communication Setting] dialog

In the [I/F Communication Setting] dialog, check or edit the settings related to the communication interface of the GOT.

16.1 How to use the I/F communication setting

Operating procedure

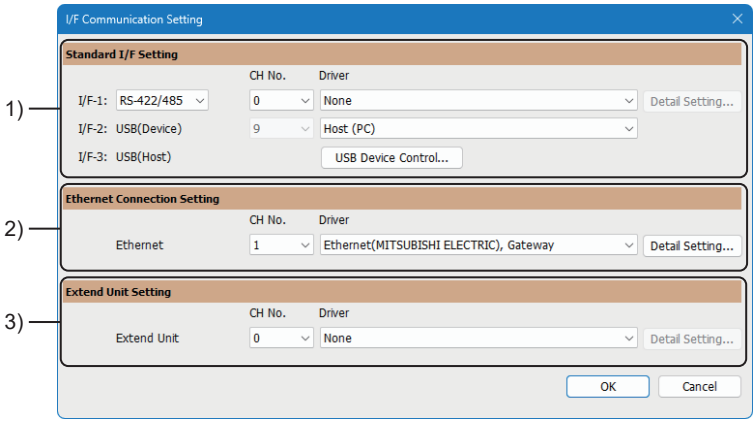
Select [Common] → [I/F Communication Setting] from the menu to display the [I/F Communication Setting] dialog.
Check or edit the settings related to each communication interface.

☞ Page 774 [I/F Communication Setting] dialog

16.2 [I/F Communication Setting] dialog

GT37 SoftGOT3000

Check or edit the settings related to the communication interface of the GOT that have been configured on other screens.



Item			Description
1)	[Standard I/F Setting]	—	Indicates the use status of the RS-232, RS-422/485, and USB communication interfaces of the GOT.
		[I/F-1]	Indicates the use status of the RS-232 or RS-422/485 interfaces. The interface type (RS-232 or RS-422/485) can be changed.
		[I/F-2]	Indicates the use status of the USB (device) interface.
		[I/F-3]	Clicking the [USB Device Control] button displays the [USB Device Control] dialog. You can check the settings of the device using the USB (host) in the dialog.
		[CH No.]	The channel number assigned to each interface. • [0]: Not used • [1] to [4]: Used for communications with the controllers set to channel numbers 1 to 4 in the [Controller Setting] window. • [5] to [8]: Used for the barcode function and the RFID function. • [9]: Used for data transfer to/from the host (personal computer).
		[Driver]	The communication driver set for each interface. The required communication driver differs depending on the controller and connection type. 📖GOT3000 Series User's Manual (Connection)
		[Detail Setting] button	Displays the [Detail Setting] dialog. Set the connection details, such as the number of retries and the communication timeout period. ☞ Page 775 [Detail Setting] dialog
2)	[Ethernet Connection Setting]	—	Indicates the use status of the Ethernet interface.
		[CH No.]	The channel number assigned to the Ethernet interface. • [0]: Not used • [1] to [4]: Used for communications with the controllers set to channel numbers 1 to 4 in the [Controller Setting] window. • [9]: Used for data transfer to/from the personal computer. • [A]: Used for the gateway function. • [Multi]: Used for communications with multiple devices.
		[Driver]	The communication driver set for the Ethernet interface. The required communication driver differs depending on the controller and connection type. 📖GOT3000 Series User's Manual (Connection)
		[Detail Setting] button	Displays the [Detail Setting] dialog when [Ch No.] is [1] to [4]. Set the connection details, such as the number of retries and the communication timeout period. ☞ Page 775 [Detail Setting] dialog
			Displays the [Ethernet Multi Connection] dialog when [CH No.] is [Multi]. Set the communication driver for each channel.

Item			Description
3)	[Extend Unit Setting]	—	Indicates the use status of the extension unit.
		[CH No.]	The channel number assigned to each interface. • [0]: Not used • [1] to [4]: Used for communications with the controllers set to channel numbers 1 to 4 in the [Controller Setting] window. • [5] to [8]: Used for the barcode function and the RFID function. • [A]: Used for the external I/O function and the operation panel function.
		[Driver]	The communication driver set for each interface. The required communication driver differs depending on the controller and connection type. 📖GOT3000 Series User's Manual (Connection)
		[Detail Setting] button	Displays the [Detail Setting] dialog. Set the connection details, such as the number of retries and the communication timeout period. ☞ Page 775 [Detail Setting] dialog

16.2.1 [Detail Setting] dialog

GT37 SoftGOT3000

The settings in this dialog vary depending on the controller type, communication interface, communication driver, and other setting items.

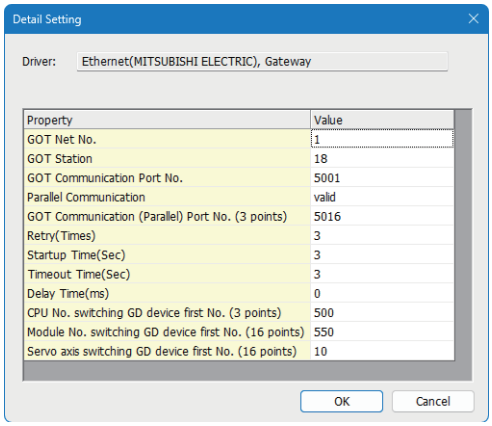
The settings need to be configured according to the connection type between the GOT and the controller.

For details on the settings for each connection type, refer to the following.

📖GOT3000 Series User's Manual (Connection)

Ex.

When [Driver] is set to [Ethernet(MITSUBISHI ELECTRIC), Gateway]



PART 5

17 Comment setting ([Comment])

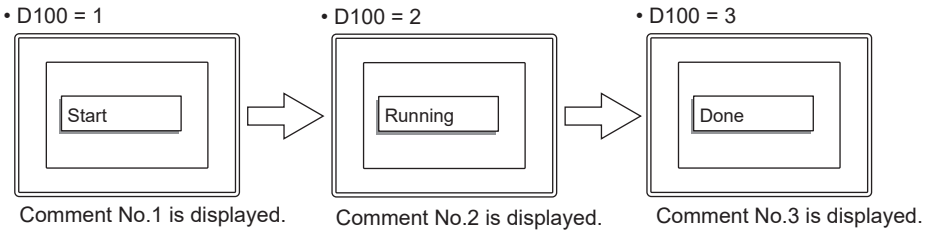
GT37 SoftGOT3000

Comments are the character strings registered to the project by a user.
Comments can be used for displaying the character strings with each object.
Comments are used for displaying the same character string with multiple objects or for displaying messages which are changed by the device value.
Comments supporting multiple languages can be displayed with the language switching device.

Ex.
Changing the message that appears on a comment display object according to the value of D100.

Comment group No.1

Comment No.	Column No.1
1	Start
2	Running
3	Done
⋮	⋮



☞ Page 777 Specifications of comments
☞ Page 780 How to use comment
☞ Page 788 Setting comments

17.1 Specifications of comments

GT37 SoftGOT3000

☞ Page 777 Number of comments
☞ Page 777 Number of characters
☞ Page 777 Applicable functions
☞ Page 778 Applicable font
☞ Page 779 Display attributes
☞ Page 779 Files that can be imported or exported

17.1.1 Number of comments

Item	Description
Maximum number of comment groups for a project	500
Maximum number of comments for a comment group	32767
Maximum number of comment columns for a comment group	30

17.1.2 Number of characters

Item	Description
Comment group title	Up to 32 characters
Comment	Up to 1024 characters

17.1.3 Applicable functions

- Touch switch
- Lamp
- Comment display
- Historical data list display
- Alarm display (user)
- Simple alarm display (Windows fonts not supported)
- Alarm popup display
- Recipe display (record list) (Windows fonts not supported)
- Graphical meter
- Document display
- Hyperlink

17.1.4 Applicable font

For information on comment compatible fonts and KANJI regions, refer to the following.

☞ Page 74 Specifications of displayable characters

Precautions

■Project data size

When comments in Windows fonts are registered to comment groups, the project data size becomes large.

To reduce the project data size, configure the following settings.

- Separate comment groups into two types: group with the Windows font setting and group without the Windows font setting.
- Set the same font size for the objects that display the same comment.
- Set the same text style for the objects that display the same comment.

■Comment exceeding the display range in length

If a Windows font is used for a comment exceeding the display range, the comment may not be displayed correctly.

Set the comment within the display range.

■Display for a comment group of more than 128 MB

If the data size of a comment group exceeds 128 MB, some comments in Windows fonts are not displayed properly.

Make sure that the data size of a comment group is 128 MB or less.

17.1.5 Display attributes

The display attributes are settable for each comment.

The display attributes valid for displaying a comment vary with the object.

Object name	Text color	Blink	Character effect	Shadow color	Inversion
Touch switch	Selectable	Nonexistent	Selectable	Selectable	Nonexistent
Lamp	Selectable	Nonexistent	Selectable	Selectable	Nonexistent
Comment display	Selectable	Selectable	Selectable	Selectable	Selectable
Historical data list display	Object setting	Nonexistent	Object setting	Object setting	Nonexistent
Alarm display (user), simple alarm display	Object setting	Nonexistent	Object setting	Object setting	Nonexistent
Alarm popup display	Varying with the condition	Nonexistent	Object setting	Object setting	Nonexistent
Recipe display (record list)	Object setting	Nonexistent	Object setting	Object setting	Nonexistent
Graphical meter	Selectable	Nonexistent	Object setting	Object setting	Nonexistent
Document display	Nonexistent	Nonexistent	Nonexistent	Nonexistent	Nonexistent
Hyperlink	Selectable	Nonexistent	Selectable	Selectable	Nonexistent

The following explains the details of each display attribute shown in the above table.

Selectable

You can select the display attribute in the object setting or the one in the comment group setting.

To use the display attribute in the object setting, select [Change Attribute of Comment Setting] in the object setting.

To use the display attribute in the comment group setting, deselect this item.

Nonexistent

The relevant display attribute is nonexistent for the object.

Accordingly, the display attribute in the comment group setting is invalid.

Object setting

The display attribute in the object setting is used.

Accordingly, the display attribute in the comment group setting is invalid.

Varying with the condition

When [Comment Color (System Alarm: Fixed)] is selected for [Switching Type] in [Alarm Text Color Switching] in the object setting, the display attribute in the comment group setting is used.

☞ Page 2118 [Alarm Popup Display] dialog

When any other item is selected for [Switching Type], the display attribute in the object setting is used.

17.1.6 Files that can be imported or exported

Unicode text files and CSV files can be used.

17.2 How to use comment

GT37 SoftGOT3000

Register comments to a comment group.
Create comment groups according to the usage of the comments and register the comments.
If you set multiple comment columns in a comment group, the comments prepared in multiple languages can be switched with language switching devices.
Device comments created in GX Works3, GX Works2, GX Developer and MT Developer2 can also be registered in comment groups.
For information on how to register comments to a comment group, refer to the following.
☞ Page 959 [Device Comment / Device Definition List] dialog

17.2.1 Using comments

The following shows how to use comments.

1. Create a comment group according to the usage of the comments.
☞ Page 797 Creating a new comment group

2. Open the comment group and register comments.
☞ Page 789 Opening comment groups
☞ Page 799 Creating a new row
☞ Page 800 Inserting a row
☞ Page 801 Inserting a column

3. Set the comments for each object.
☞ Page 1191 Placing a touch switch
☞ Page 1276 Placing a lamp
☞ Page 1386 Placing a comment display
☞ Page 1495 Placing a historical data list display
☞ Page 1518 Placing an alarm display
☞ Page 1519 Placing a simple alarm display

17.2.2 Comment group

A comment group is a group of comments.

To register the comments, create a comment group in a project.

Multiple comment groups can be created in a project.

If multiple comment groups are created, the comment groups can be used according to the purpose.

Ex.

Specify a comment group number with a device then change the type of comment to be displayed.

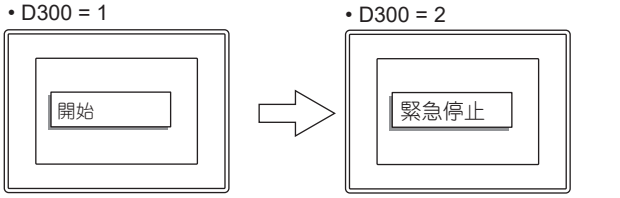
Comment group No.1: Comment for normal messages

Comment No.	Column No.1	Column No.2
1	開始	Start
2	実行中	Running
3	完了	Done
⋮	⋮	⋮

Comment group No.2: Comment for error messages

Comment No.	Column No.1	Column No.2
1	緊急停止	Emergency stop
2	通信エラー	Communication error
3	異物混入	Contamination
⋮	⋮	⋮

Comment group No.: Specified with D300



Comment for normal messages (Comment group No.1) is displayed.

Comment for error messages (Comment group No.2) is displayed.

PART 5

17.2.3 Displaying multi-language comments (Language switching device)

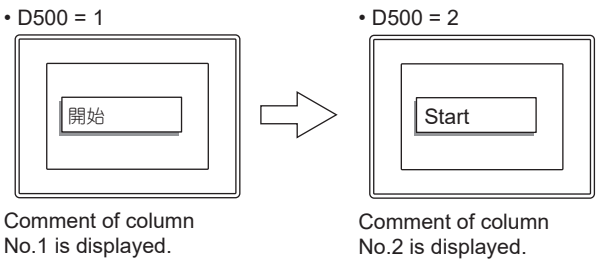
If you set multiple comment columns in a comment group, the comments can be registered in multiple languages for one comment number.
The comments registered in multiple languages can be switched by switching the comment column to be displayed with the language switching devices.

Ex.
Switching comments with the language switching device.

Comment group No.1

Comment No.	Column No.1	Column No.2
1	開始	Start
2	実行中	Running
3	完了	Done
⋮	⋮	⋮

Comment No. to be displayed: 1
Language switching device: D500



Comment group which does not operate with language switching devices

If a comment group which does not operate with a language switching device is required, configure the following settings in the language switching device settings.

- Select [Display] for [Alternative Display (when the language switching device value is out of the range (1-30) or comment column No. does not exist)].
- Set [1] for [Comment Column No.].

When the above settings are configured, the comment for column No.1 is always displayed regardless of the value of the language switching device if the comment group only contains column No.1.

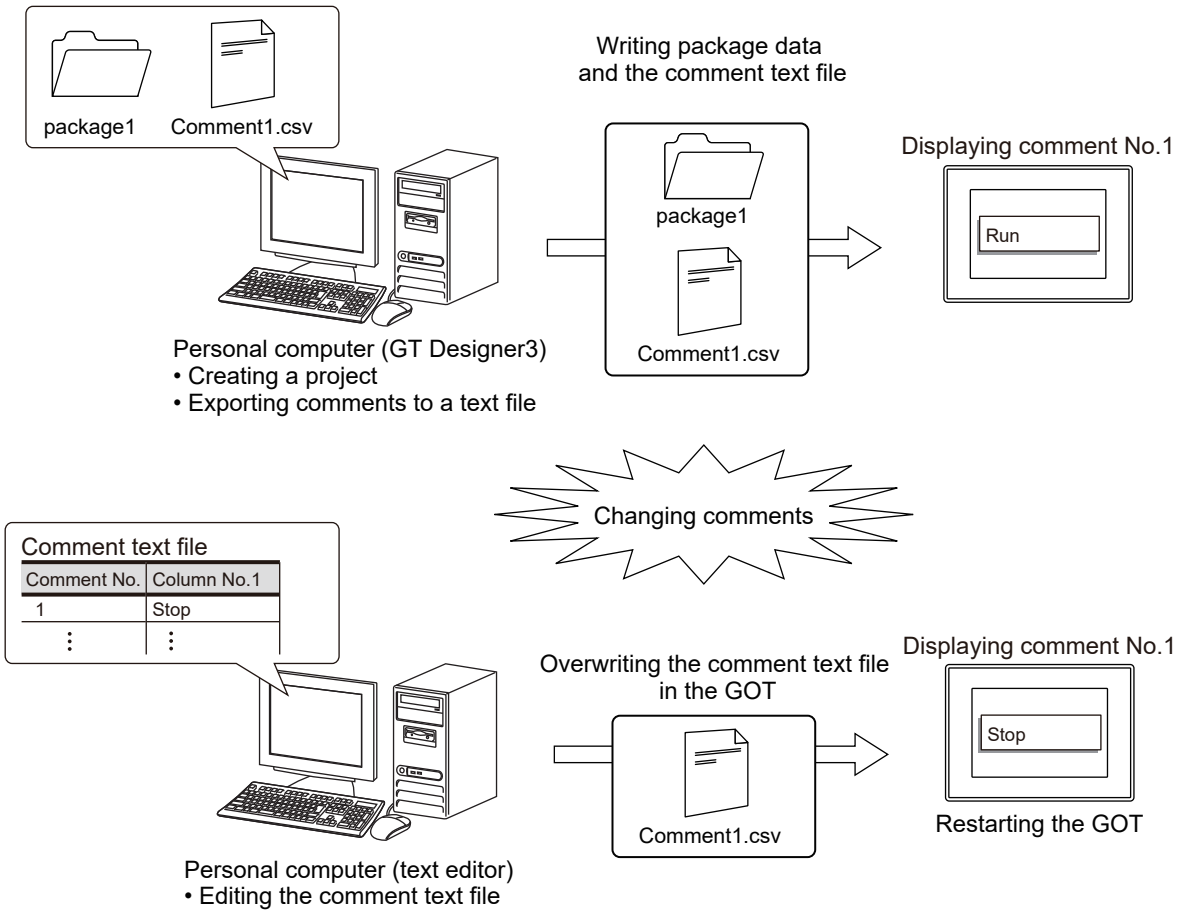
☞ Page 546 Setting for switching the language displayed on the GOT ([Language Switching])

Font restrictions

If a Windows font is not specified in the [Comment Group Property] dialog and a Windows font is set on the object side, comments are displayed in the UDP font.

17.2.4 Displaying the comments of a text file

The GOT can display comments by reading a comment text file from the installed data storage.
After you change a comment, overwrite the comment text file in the data storage and restart the GOT to display the new comment.



To display the comments of a text file, configure the relevant settings in the project.
Configure the settings by comment group.

Procedure for displaying the comments of a text file

Configure the following settings for a comment group from which comments are exported to a text file.

Operating procedure

1. In the [Comment Group Property] dialog, configure the settings as shown below.

- Select [Read comment data from the memory card].
- Click the [File Access] button to display the [File Access] dialog, and set the save destination and file name of a text file.

☞ Page 797 [Comment Group Property] dialog

2. Export a target comment group to the text file.

Set the [File name] in the [Save As] dialog as the same [File name] set in the [Destination] dialog.

☞ Page 804 Exporting comments

3. Save the text file exported in step 2 to the folder specified in the [Destination] dialog.
4. Write package data to the GOT.

For the communication method between the personal computer and the GOT, refer to the following.

☞ Page 437 Writing data to the GOT

If the text file is saved after package data has been written to the GOT, restart the GOT.

Procedure for reflecting comment changes

Operating procedure

1. Edit a comment text file with a text editor, and overwrite the text file in the data storage with the edited one.
2. Restart the GOT.

Font restrictions

Windows fonts are not supported.

Even if a Windows font is specified in the object setting dialog, comments are displayed in UDP Gothic on the GOT.

If the UDP Gothic font data does not exist, comments are displayed in UDP Mincho.

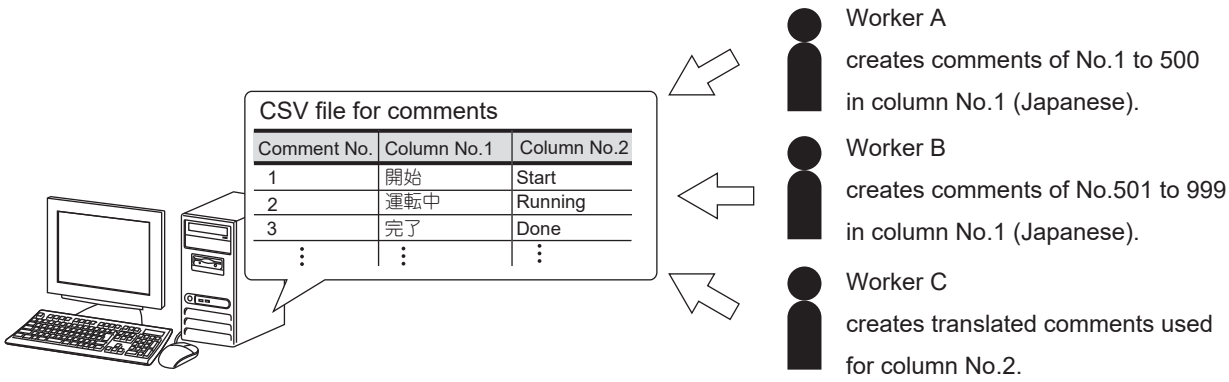
Influence on the GOT startup time

When this function is used, the GOT reads a comment text file at startup, resulting in a longer startup time.

To minimize the increase of the startup time, enable this function only for the comment group in which comments may be changed.

17.2.5 Import/Export

Comments can be imported or exported with a personal computer.
Available text files are Unicode text file and CSV file.
If you need to set a large amount of comments, working hours required to create the comments can be shortened by importing the text files for comments created by multiple persons.
To create a new text file for comments, using a text file exported from a comment group is recommended.
For the precautions for using a Unicode text file or CSV file, refer to the following.
☞ Page 3668 Precautions for using CSV file
☞ Page 3669 Precautions for using Unicode text file



The format of the text files for comments is common for both Unicode text files and CSV files.
However, use the following delimiters for each item.

- Unicode text file: Tab (\t)
- CSV file: Comma (,)

Point

Files exported from GT Designer3 (GOT2000) can also be imported.

Precautions

■Importing the exported comments to GT Designer3 whose display language is different

If you export comments to a file with a GT Designer3 module, the file cannot be imported to another GT Designer3 module that uses a different display language.

■Overwriting comments when importing a text file for comments

When a text file for comments is imported, comments in the file are used to overwrite the comment group in the import destination.
Before importing comments, check the comment group in the import destination and comments in the text file to be imported.
For details, refer to the following.
☞ Page 802 Importing comments

■Exporting multi-language comments

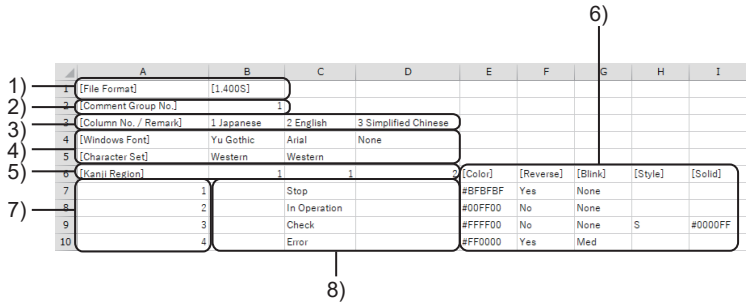
A comment group for which multiple languages including Chinese are used may not be saved in a CSV file properly.
Export a comment group including multiple languages in the Unicode text file format.

17.2.6 Formatting an exported file

The format of the exported file is shown below.

Ex.

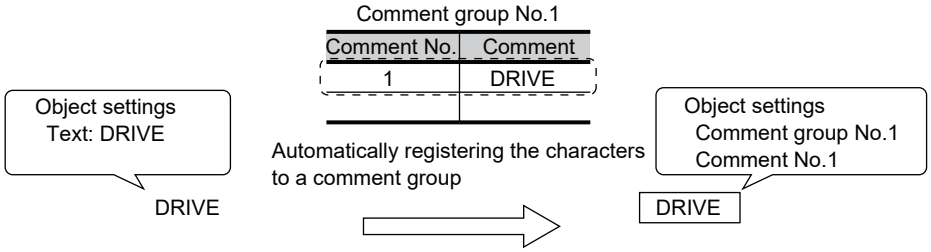
Example of a CSV file



Item			Description
1)	[File Format]		The format version of the exported files.
2)	[Comment Group No.]		Set a comment group number. The setting range is 1 to 500.
3)	[Column No. / Remark]		Set the column numbers and remarks for the comment column. Separate the column numbers and remarks with a one-byte space. The setting range of the column numbers is 1 to 30. Up to 32 characters can be set as remarks.
4)	[Windows Font], [Character Set]		Displays the Windows fonts that are selected in the [Comment Group Property] dialog. Displays the character sets that are specified for the selected Windows fonts. For details on the setting, refer to the following. ☞ Page 797 [Comment Group Property] dialog Even if Windows fonts are set for the comments of a text file, the GOT displays the comments in standard fonts.
5)	[Kanji Region]		Set a KANJI region for each comment column. The target comment column of the KANJI region is the comment column specified under these items. The following shows the settings for each KANJI region. • 1: Japan • 2: China(GB)-Mincho • 3: China(Big5)-Gothic
6)	Character property	—	Set character properties for each comment. Input a property name to the first row, then input each setting in the subsequent rows.
		[Color]	Set the comment text color with a hexadecimal color code. The setting range is #000000 to #FFFFFF.
		[Reverse]	Set whether to reverse the characters or not. The following shows the setting range. • Yes: Reversed • No: Not reversed
		[Blink]	Set a blink style of characters. The following shows the setting range. • None: Not blinking • Low: Blinking at a low speed • Med: Blinking at a medium speed • High: Blinking at a high speed
		[Style]	Set the text style. The following shows the setting range. • Blank: Standard • B: Bold • S: Shadow • R: Embossed
		[Solid]	Set the color of the shade when the character effect is shadow or engrave. The setting range is the same as the character colors.
7)	Comment number		Set a comment number for the comment. The setting range is 1 to 32767 (decimal) or 0x0001 to 0x7FFF (hexadecimal).
8)	Comment		Input text for the comment. Up to 1024 characters can be set.

17.2.7 Comment registration using the characters of the text figure

In the text figure setting, you can register the characters entered in the [Text] field to a comment group, and convert the text figure to a simple comment display object.



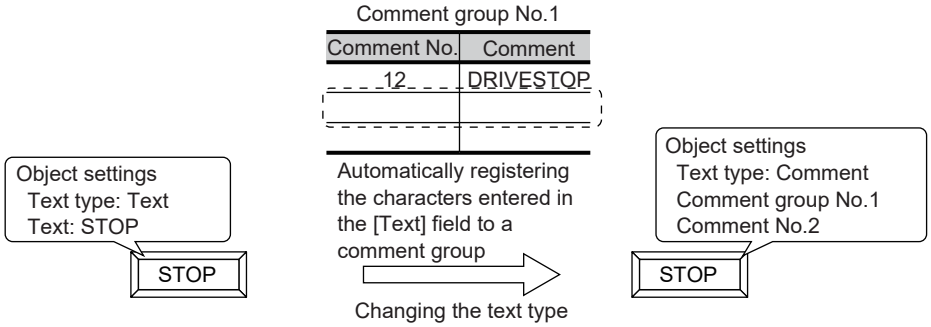
Converting the text figure to a simple comment display object

For the registration method, refer to the following.

☞ Page 810 Registering the characters of a text figure to a comment group

17.2.8 Comment registration using the text type [Text]

In the object setting, you can register the characters entered in the [Text] field to a comment group by changing the text type from [Text] to [Comment].



Changing the text type

For the registration method, refer to the following.

☞ Page 811 Registering the characters in the [Text] field to a comment group

17.3 Setting comments

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☞ Page 789 Opening comment groups
☞ Page 797 Creating a new comment group
☞ Page 799 Creating a new row
☞ Page 800 Inserting a row
☞ Page 801 Inserting a column
☞ Page 802 Importing comments
☞ Page 804 Exporting comments
☞ Page 806 Comment searching
☞ Page 806 Jumping to the specified comment
☞ Page 807 Changing properties
☞ Page 809 Displaying/hiding attributes
☞ Page 810 Registering characters of a text figure, touch switch, or other attribute to a comment group

17.3.1 Opening comment groups

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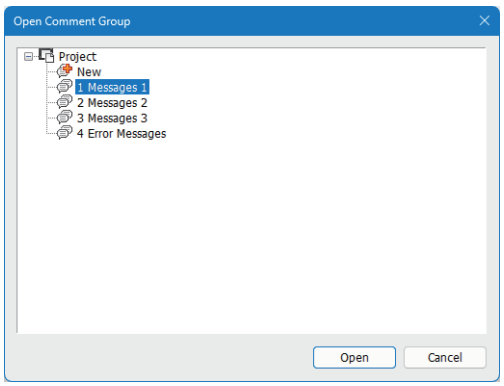
Opening comment groups from the menu

The following shows the procedure to open existing comment groups.

Operating procedure

1. Select [Common] → [Comment] → [Open] from the menu to open the [Open Comment Group] dialog.

☞ Page 790 [Open Comment Group] dialog



2. Select the target comment group and click the [Open] button.

☞ Page 791 [Comment List] window

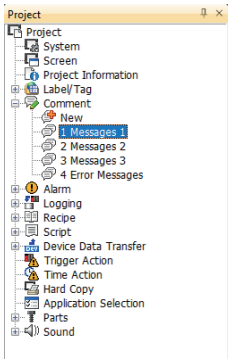
Opening comment groups from the project tree

The following shows a procedure to open existing comment groups in the project tree.

Operating procedure

1. Open [Comment] in the project tree.

☞ Page 116 [Project] window



2. Open comment groups using either of the following operations.

- Double-click a comment group.
- Right-click a comment group then select [Open].

☞ Page 791 [Comment List] window

[Open Comment Group] dialog

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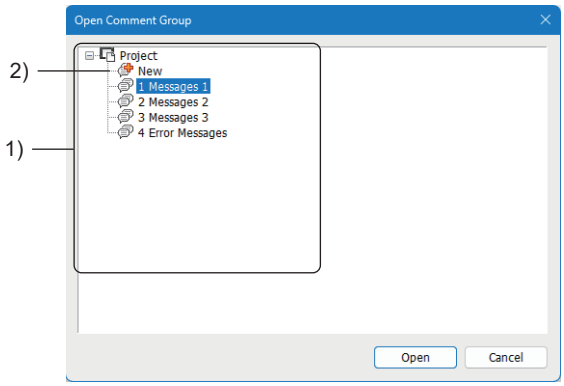
The [Open Comment Group] dialog lists all the comment groups registered in the project.
In this dialog, you can create new comment groups and edit existing comment groups.
Select [Common] → [Comment] → [Open] from the menu to display the dialog.



Item		Description
1)	Comment group list	The list of comment groups registered to the project. Double-click a comment group or select a comment group then click the [Open] button to display the [Comment List] window. To open the [Comment List] window of multiple comment groups with a single operation, click the [Open] button while selecting multiple comment groups (up to 10). ☞ Page 791 [Comment List] window
2)	[New]	Creates a new comment group. After clicking the [New] button, create a new comment group in the displayed dialog. ☞ Page 797 [Comment Group Property] dialog Up to 10 [Comment List] windows can be displayed simultaneously. When the 11th window opens, the first-edited (oldest in the edit history) [Comment List] window closes automatically.

[Comment List] window

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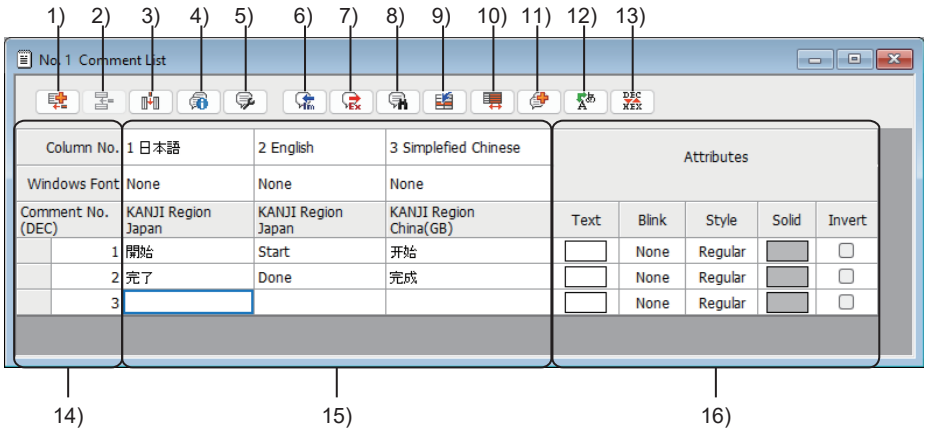
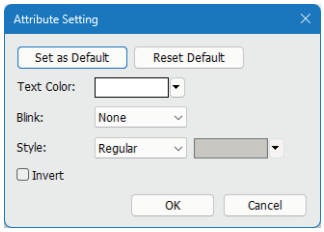
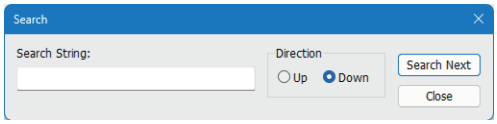
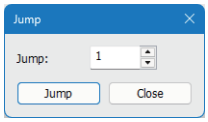
The [Comment List] window displays the list of the comments registered to a comment group.

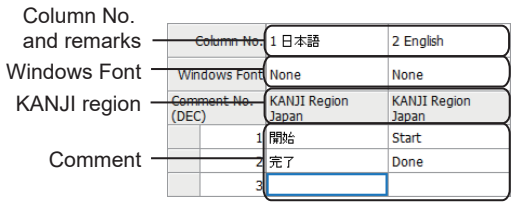
☞ Page 791 Setting items in the [Comment List] window
☞ Page 795 Items in the right-click menu
☞ Page 796 Mouse and keyboard operations

■Setting items in the [Comment List] window



Item		Description
1)	[New] button	Creates a new comment. A new comment is added to below the bottom row of the comment list. ☞ Page 797 Creating a new comment group
2)	[Insert Row] button	Inserts a row in the comment list. If multiple rows are selected in the comment list, the same number of new rows are inserted above the selected ones. When a row is inserted between consecutive comment numbers, all rows after the inserted row are renumbered. ☞ Page 800 Inserting a row
3)	[Insert Column] button	Inserts a column in the comment column. If multiple columns are selected in the comment list, the same number of new columns are inserted to the left of the selected ones. When a column is inserted between consecutive column numbers, all columns to the right of the inserted column are renumbered. ☞ Page 801 Inserting a column
4)	[Comment Group Property] button	Check or change the detail of the comment group including the comment name and KANJI region. ☞ Page 797 [Comment Group Property] dialog

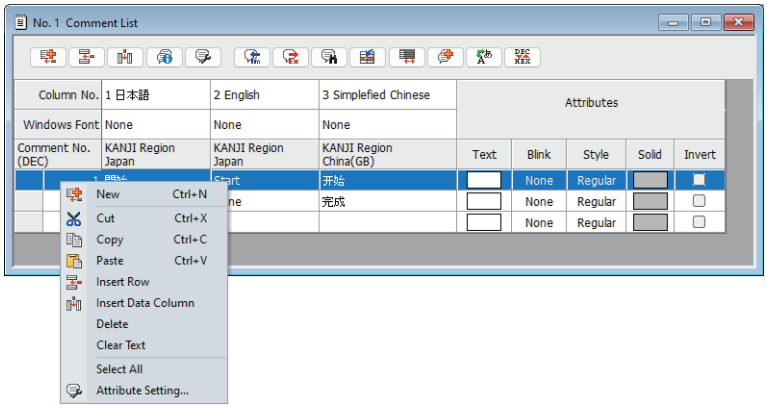
Item		Description
5)	[Attribute Setting] button	Set the character property of comments. ☞ Page 807 Changing properties  • [Text Color] Set the character color. • [Blink] Set the blinking speed of characters. The following shows selectable items. • [None] • [Low] • [Medium] • [High] • [Style] Select a character effect. The following shows selectable items. • [Standard] • [Bold] • [Solid] • [Raised] • [Solid Color] Select the shadow color of characters when [Solid] or [Raised] is selected for [Style]. • [Invert] Highlights characters. This item can be selected only when [Regular] is selected for [Style].
6)	[Import] button	Imports comments from a Unicode text file or a CSV file. After clicking the button, select a file to import in the displayed dialog. ☞ Page 802 Importing comments
7)	[Export] button	Exports a comment group into a Unicode text file or a CSV file. After clicking the button, select a file to export in the displayed dialog. ☞ Page 804 Exporting comments
8)	[Search] button	Searches a comment. ☞ Page 806 Comment searching  • [Search String] Input a character string to search information. • [Direction] Select the search direction. • [Search Next] button Searches the next option. • [Close] button Closes the [Search] dialog.
9)	[Jump] button	Jumps to the specified comment number. ☞ Page 806 Jumping to the specified comment  • [Jump] Set a target comment number. • [Jump] button Displays the comment number which is specified in [Jump]. • [Close] button Closes the [Jump] dialog.
10)	[Display/Hide Attribute] button	Displays/hides the character property setting field. ☞ Page 809 Displaying/hiding attributes

Item			Description
11)	[New Group] button		Creates a new comment group. ☞ Page 797 [Comment Group Property] dialog
12)	[Language Switching] button		Configures the language switching settings. After clicking the button, configure the language switching settings in the [Environmental Setting] window. ☞ Page 546 Setting for switching the language displayed on the GOT ([Language Switching])
13)	[Comment No. Notation Switching] button		Switches the comment number notation of the comment No. field between decimal and hexadecimal.
14)	Comment No. field		The field to display and change the comment numbers. Comment numbers are always displayed in ascending order. Comment numbers are assigned automatically when a new comment is created. The comment numbers can be changed by double-clicking a comment number cell. Clicking a cell to the left of a comment number selects the row. To select multiple rows, perform one of the following operations. • Hold down the [Ctrl] key and click a target cell. To deselect a selected row, perform the same operation. • Select the first row in the range, hold down the [Shift] key, and click a target cell to select the last row in the range. • Click the first cell and drag to the last cell in the range.
15)	Comment field	—	The field to display and edit text of comments. 
		Column No. and remarks	Column number and remarks of a comment column. Click a target cell to edit its contents.
		Windows Font	This item is displayed when [Read comment data from the memory card] is deselected in the [Comment Group Property] dialog. Displays the Windows fonts that are selected in the [Comment Group Property] dialog. Click a Windows font cell to select the column. To select multiple columns, perform one of the following operations. • Click a Windows font cell to select the first column in the range, hold down the [Shift] key, and click another Windows font cell to select the last column in the range. • Click a Windows font cell and drag to the last cell in the range. To change the set Windows fonts, double-click a Windows font cell to display the [Comment Group Property] dialog. ☞ Page 797 [Comment Group Property] dialog
		KANJI region	KANJI region of a comment column The KANJI region is changeable in the [Comment Group Property] dialog. ☞ Page 797 [Comment Group Property] dialog Click a KANJI region cell to select the column. To select multiple columns, perform one of the following operations. • Click a KANJI region cell to select the first column in the range, hold down the [Shift] key, and click another KANJI region cell to select the last column in the range. • Click a KANJI region cell and drag to the last cell in the range.
		Comment	Set the comment corresponding to a comment number. Double-click a target cell to edit its comment.

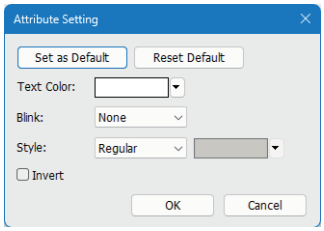
Item			Description
16)	Character property setting field	—	The field to display and set the character property of comments. Available character properties differ depending on the object types. For the difference among the object types, refer to the following. ☞ Page 779 Display attributes
		Text color	Set the character color. Select a color from the color palette.
		Blink	Set the blinking speed of characters. The following shows selectable items. • [None] • [Low] • [Medium] • [High]
		Character effect	Select a character effect. The following shows selectable items. • [Standard] • [Bold] • [Solid] • [Raised]
		Shadow color	Select the shadow color of characters when [Solid] or [Raised] is selected for [Style]. Select a color from the color palette.
		Inversion	Select this item to highlight the characters. This item can be selected only when [Regular] is selected for [Style].

■Items in the right-click menu

The [Comment List] window can be edited with the right-click menu.



Item	Description
[New Row]	Creates a new comment. A new comment is added to below the bottom row of the comment list.
[Cut]	Cuts a selected row, column, or cell.
[Copy]	Copies a selected row, column, or cell.
[Paste]	• When the copy source is the comment list: Pastes rows, columns, and cells cut and copied from the comment list. • When the copy source is Excel: Pastes columns and cells cut and copied from Excel. If the number of columns to be pasted exceeds the number of columns in the comment list, new columns are added to the comment list.
[Insert Row]	Inserts a row in the comment list. If multiple rows are selected in the comment list, the same number of new rows are inserted above the selected ones. When a row is inserted between consecutive comment numbers, all rows after the inserted row are renumbered.
[Insert Column]	Inserts a column in the comment list. If multiple columns are selected in the comment list, the same number of new columns are inserted to the left of the selected ones. When a column is inserted between consecutive column numbers, all columns to the right of the inserted column are renumbered.
[Delete]	Deletes a selected row, column, or cell.
[Clear Text]	Deletes the character strings set in a selected row or column.
[Select All]	Selects all the comments in the comment list.

Item	Description
[Attribute Setting]	Set the character property of comments.  • [Text Color] Set the character color. • [Blink] Set the blinking speed of characters. The following shows selectable items. • [None] • [Low] • [Medium] • [High] • [Style] Select a character effect. The following shows selectable items. • [Standard] • [Bold] • [Solid] • [Raised] • [Solid Color] Select the shadow color of characters when [Solid] or [Raised] is selected for [Style]. • [Invert] Highlights characters. This item can be set only when [Regular] is selected for [Style].

■Mouse and keyboard operations

The following shows how to manipulate the cells in the [Comment List] window with a mouse and keyboard.

You can select, copy, cut, or paste the cells in the comment No. field and the comment field.

Operation	Action
Arrow (Up/Down/Left/Right)	Move the cell pointer.
[Shift] + Arrow (Up/Down/Left/Right)	Extend the selection of cells. Select the first cell, hold down the [Shift] key and press an arrow key to extend the selection.
[Shift] + Click	Select a range of cells. Select the first cell in the range, hold down the [Shift] key and click the last cell in the range.
[Ctrl] + [C]	Copy the contents of a selected cell. When multiple cells are selected, the contents of all the selected cells are copied.
[Ctrl] + [X]	Cut the contents of a selected cell.
[Ctrl] + [V]	Paste the contents of the clipboard to a selected cell.

17.3.2 Creating a new comment group

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The following shows how to create a comment group.

Operating procedure

1. Open the [Comment Group Property] dialog by either of the following operations.

- Select [Common] → [Comment] → [Open] from the menu to open the [Open Comment Group] dialog and double-click the [New] button.

☞ Page 790 [Open Comment Group] dialog

- Double-click the [New] button under [Comment] in the project tree in the [Project] window.

☞ Page 116 [Project] window

- Right-click [Comment] of the project tree and selecting [New Comment Group] from the menu.

☞ Page 116 [Project] window

2. Set the created comment group in the [Comment Group Property] dialog.

☞ Page 797 [Comment Group Property] dialog

[Comment Group Property] dialog

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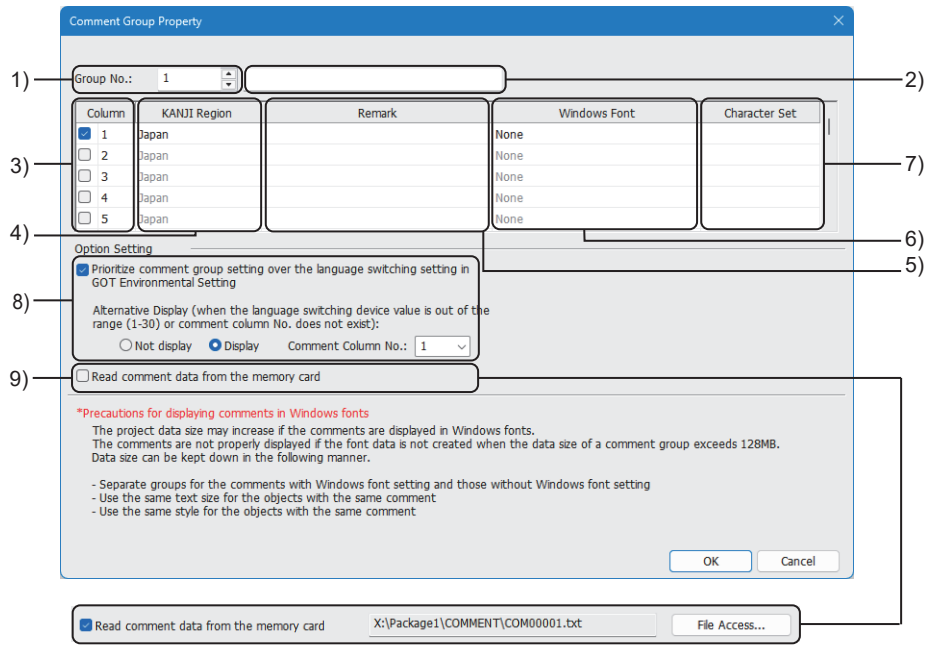
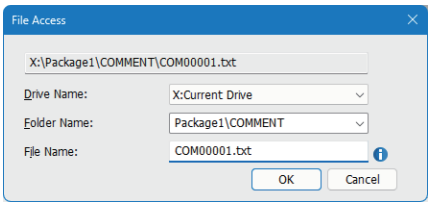
Create a new comment group in the [Comment Group Property] dialog.

Select [Common] → [Comment] → [New Comment Group] from the menu to display the dialog.



Item		Description
1)	[Group No.]	Set a comment group number.
2)	Title	Set a title of the comment group. Up to 32 characters can be set.
3)	[Column]	Set column numbers to be used in the comment group. Select column numbers to be used.
4)	[KANJI Region]	Set a KANJI region for each comment column. The following shows selectable items. • [Japan] • [China(GB)-Mincho] • [China(Big5)-Gothic]

PART 5

Item			Description
5)	[Remark]		Set remarks for each comment column. Up to 32 characters can be set.
6)	[Windows Font]		This item is displayed when [Read comment data from the memory card] is deselected. Select a Windows font for each comment column.
7)	[Character Set]		This item is displayed when [Read comment data from the memory card] is deselected. Select a character set for each selected Windows font. The selectable character sets vary with the selected Windows font.
8)	[Prioritize comment group setting over the language switching setting in GOT Environmental Setting]	—	Set whether to prioritize the setting in this dialog over the settings of the language switching of the GOT environmental settings. This item can be set only when the language switching device is set in the GOT environmental settings.
		[Alternative Display (when the language switching device value is out of the range (1-30) or comment column No. does not exist)]	Set the display method of the comment columns for when the column number of the comment column specified by the language switching device does not exist. The following shows selectable items. • [Not display] Comments are not displayed. • [Display] The comment of the specified column number is displayed. After selecting this item, set the column number of the column to be displayed. When [Read comment data from the memory card] is selected, the comment column number specified in [Language Switching] in the GOT environmental settings is applied.
9)	[Read comment data from the memory card]		Displays comments by reading a comment text file from the data storage installed on the GOT. Click the [File Access] button to display the [File Access] dialog.  Set the save destination and file name of a text file. • [Drive Name] Select a drive to which the text file is saved. The following shows selectable items. • [A:Standard SD Card] • [B:USB Drive] • [E:USB Drive] • [F:USB Drive] • [G:USB Drive] • [X:Current Drive] For the available drives by GOT model, refer to the following. ☞ Page 81 Drive configuration and capacity of the GOT • [Folder Name] Specify the name of the folder to which the text file is saved. For the restrictions on the folder name used on the GOT, refer to the following. ☞ Page 84 Restrictions for folder names and file names used in GOT • [File Name] Specify the name of the text file to be saved. The text file can be saved as a Unicode text (*.TXT) or CSV (*.CSV) file. For the restrictions of the file name used in the GOT, refer to the following. ☞ Page 84 Restrictions for folder names and file names used in GOT

17.3.3 Creating a new row

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Create a new comment row in the [Comment List] window or the project tree.

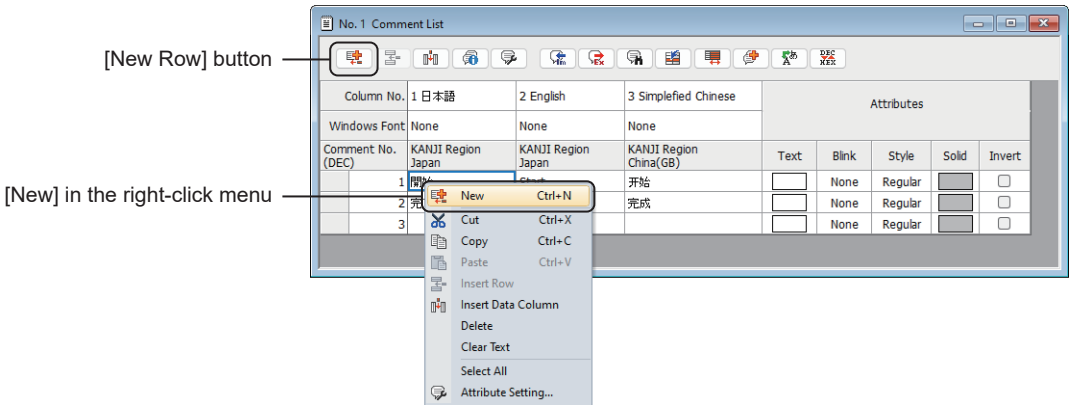
The number which is one plus the largest comment number in the comment groups is assigned to the comment number of a new comment.

The largest settable comment number is 32767 (or 7FFF in hexadecimal).

If 32767 (or 7FFF in hexadecimal) is already used, the smallest unused number in the comment group is assigned to the new comment.

1. Create a new comment row using either of the following operations.

• In the [Comment List] window, click the [New Row] button or select [New] from the right-click menu.



• In the project tree, select a comment group and select [Add Comment Row] in the right-click menu.

A new row is created in the comment list.

17.3.4 Inserting a row

GT37 SoftGOT3000

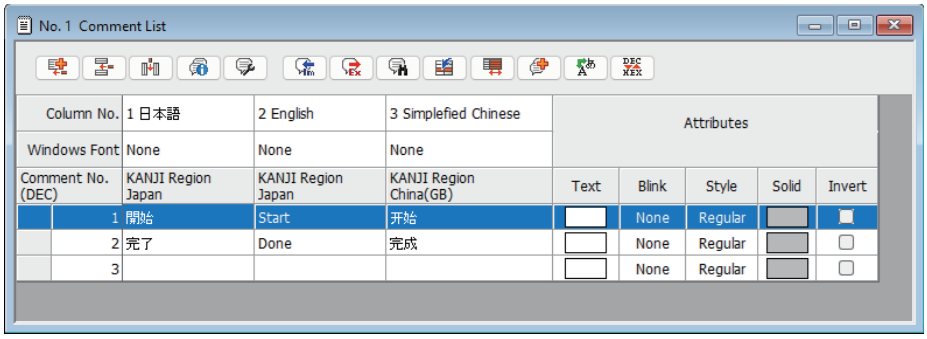
Insert a row in the [Comment List] window.

If multiple rows are selected in the comment list, the same number of new rows are inserted above the selected ones.

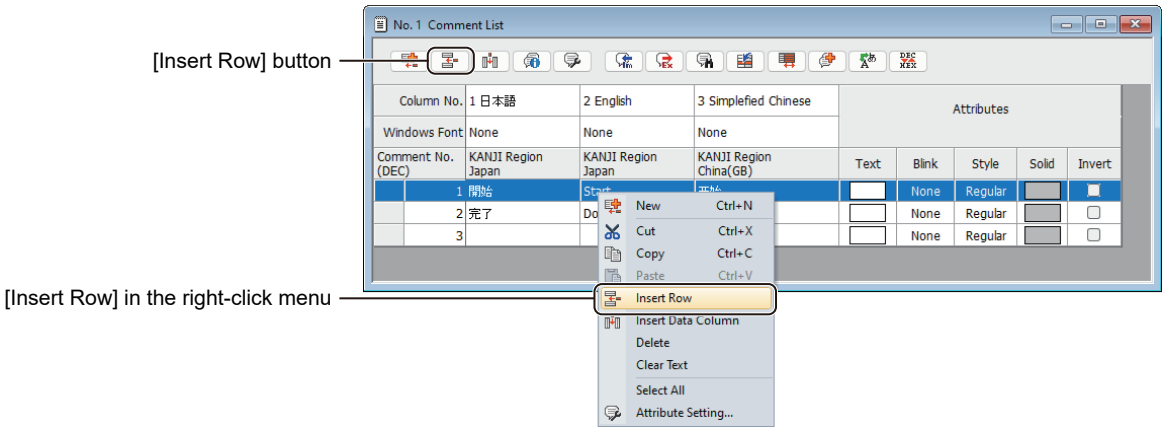
When a row is inserted between consecutive comment numbers, all rows after the inserted row are renumbered.

Operating procedure

1. Select a place to insert a row in the [Comment List] window.



2. Click the [Insert Row] button, or select [Insert Row] from the right-click menu.



3. A row is inserted above the selected row.

17.3.5 Inserting a column

GT37 SoftGOT3000

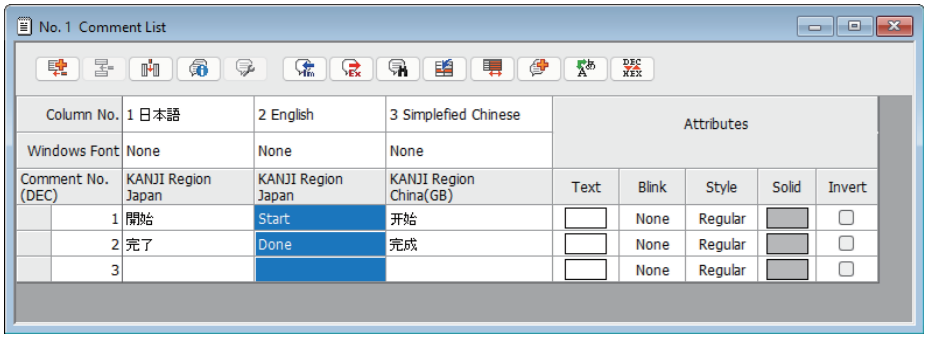
Insert a column in the [Comment List] window.

If multiple columns are selected in the comment list, the same number of new columns are inserted to the left of the selected ones.

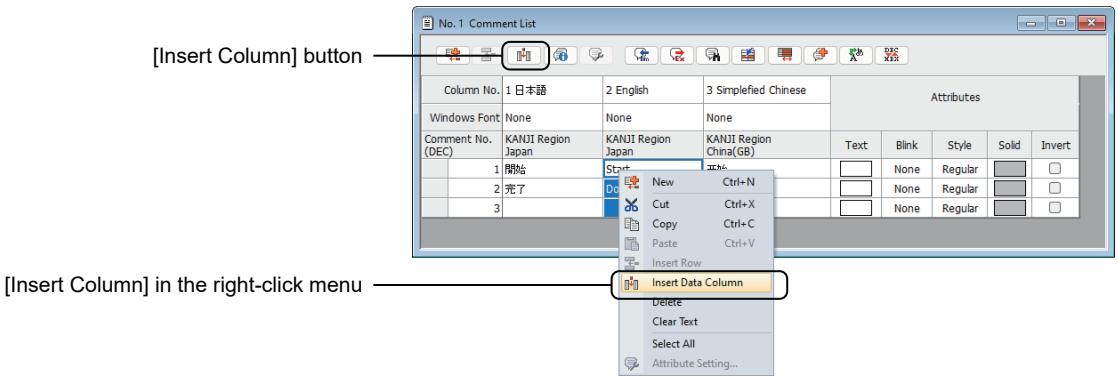
When a column is inserted between consecutive column numbers, all columns to the right of the inserted column are renumbered.

Operating procedure

1. Select a place to insert a column in the [Comment List] window.



2. Click the [Insert Column] button, or select [Insert Column] from the right-click menu.



3. A column is inserted to the left side of the selected column.

17.3.6 Importing comments

GT37 SoftGOT3000

Comments in a comment group can be set in the dialog. Also, comments can be registered or changed by importing a user-created comment text file.

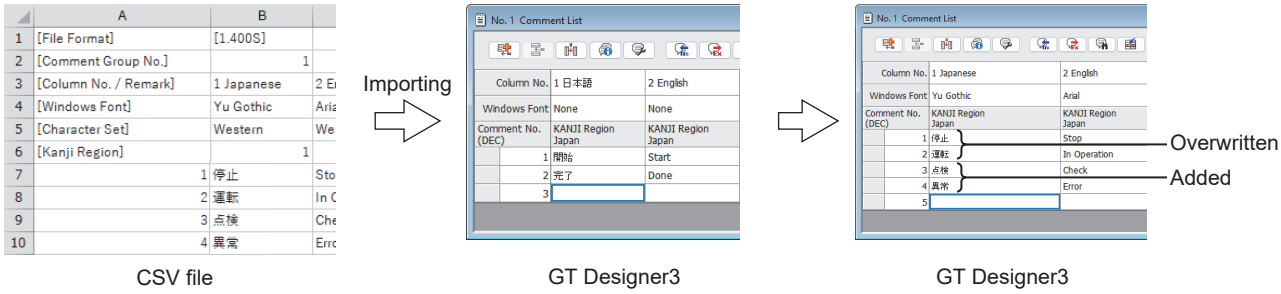
For information on how to create a comment text file and its format, refer to the following.

☞ Page 785 Import/Export

Adding or overwriting comments when importing comments from a file

The comment numbers of the comments in the file to be imported and the comment numbers of the registered comments are compared.

- If the comment numbers are different each other, the comments in the file are added to the registered comments.
- If the comment numbers are the same, the registered comments are overwritten with the comments in the file.



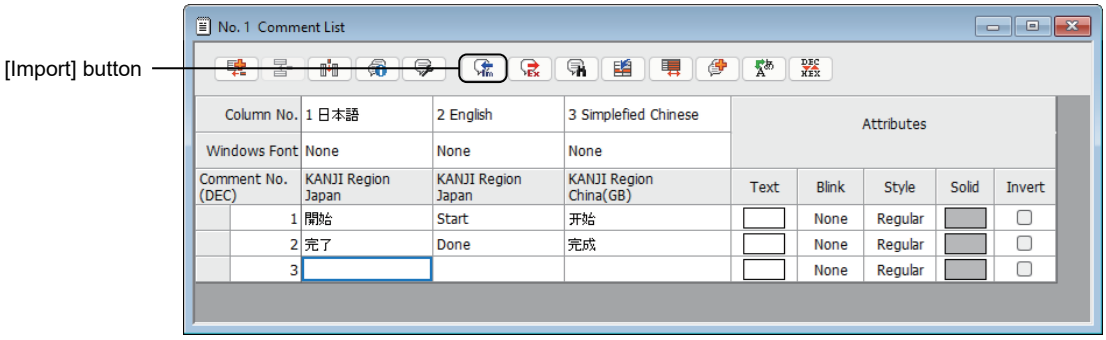
CSV file GT Designer3 GT Designer3

Setting procedure

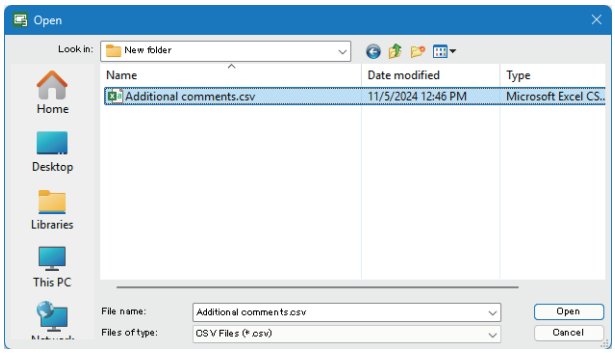
Import comments in the [Comment List] window.

Operating procedure

1. Click the [Import] button, or select [Common] → [Comment] → [Import] from the menu.

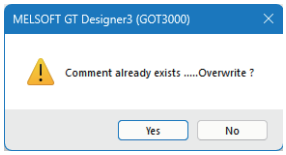


2. Select a file to be imported.



3. The following dialog appears.

Click the [Yes] button to import the comments in a text file.



17.3.7 Exporting comments

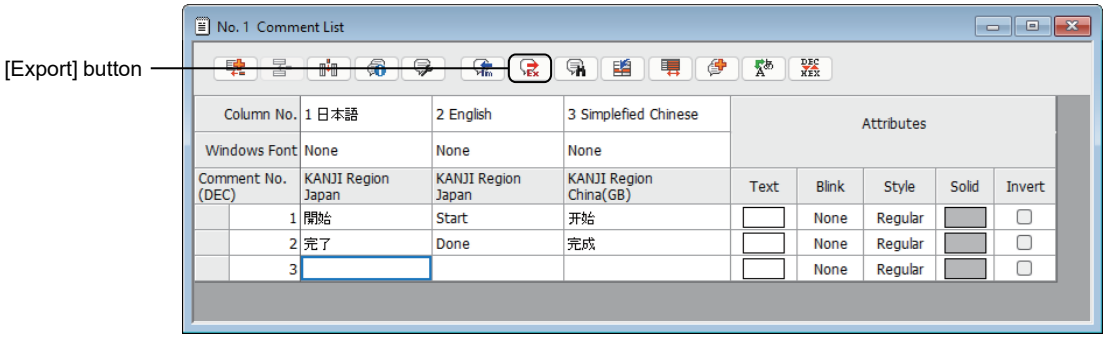
GT37 SoftGOT3000

The registered comments in a comment group can be exported as a Unicode text file (*.TXT) or a CSV file (*.CSV).
You can view or edit the exported file with the text editor, spreadsheet software, or other tools.
To export comments, open the [Comment List] window and export comments, or export comments in the project tree.
For the format of text files for comments, refer to the following.
☞ Page 785 Import/Export

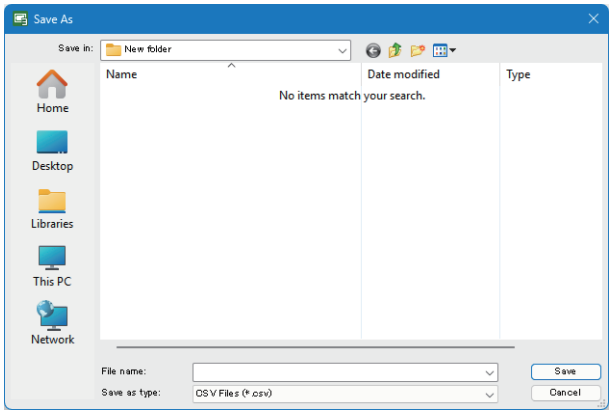
Exporting comments from the [Comment List] window

Operating procedure

1. Click the [Export] button, or select [Common] → [Comment] → [Export] from the menu.



2. Set [File name] and [Save as type] to save the file.



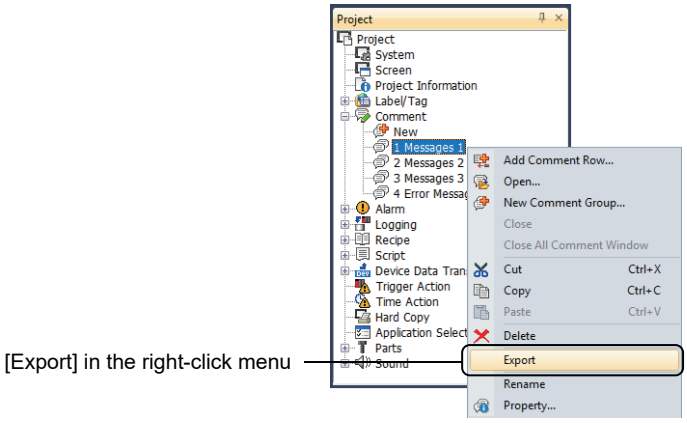
3. The comment group is exported.

Exporting from the project tree

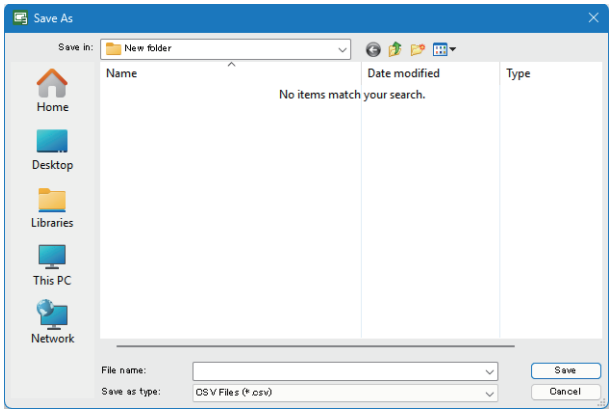
Operating procedure

1. Select a comment group in the project tree and select [Export] in the right-click menu.

☞ Page 116 [Project] window



2. Set [File name] and [Save as type] to save the file.



3. The comment group is exported.

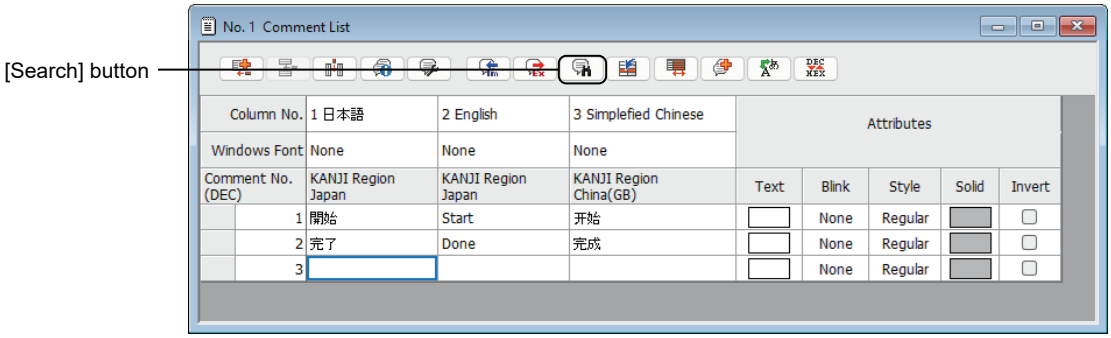
17.3.8 Comment searching

GT37 SoftGOT3000

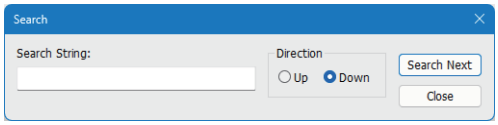
Search for a comment in the [Comment List] window.

Operating procedure

1. Click the [Search] button.



2. Search for a comment in the [Search] dialog.



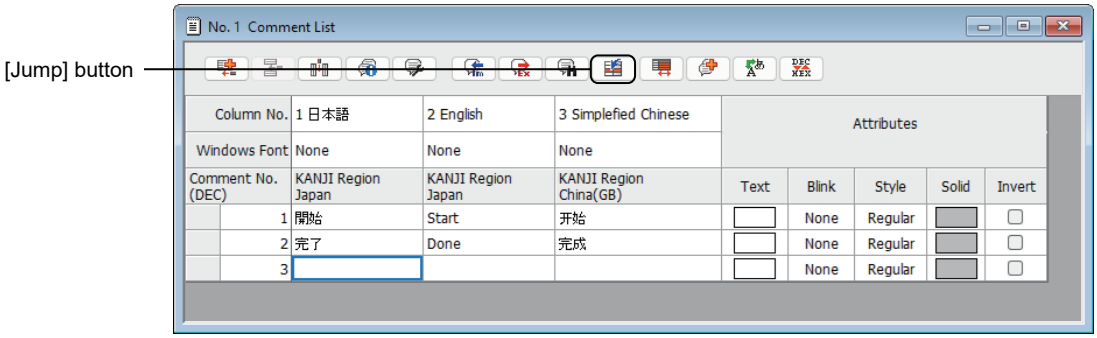
17.3.9 Jumping to the specified comment

GT37 SoftGOT3000

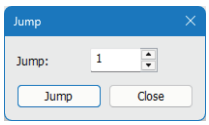
Jump to the specified comment from the [Comment List] window.

Operating procedure

1. Click the [Jump] button.



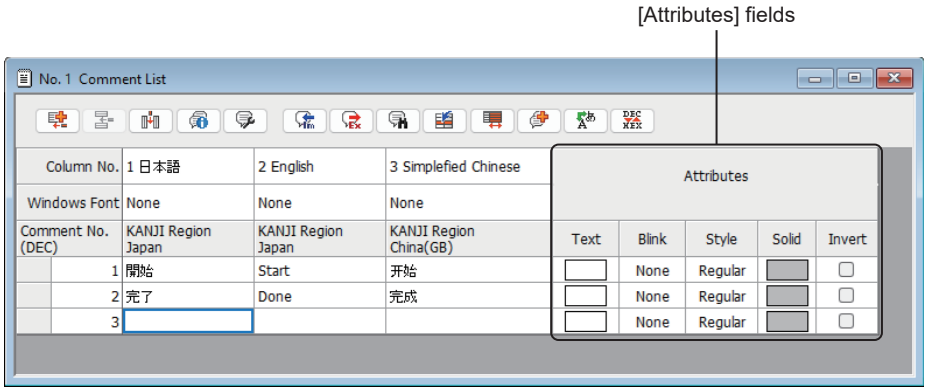
2. Set a target to jump in the [Jump] dialog and click the [Jump] button.



17.3.10 Changing properties

GT37 SoftGOT3000

Change the character property of a comment in the [Comment List] window.
Edit the character property in the [Character Property] field.



The following shows the methods of the batch editing for the character property of multiple comments.

- Changing the character property of an entire column in the [Comment List] window

☞ Page 807 Changing the character property of an entire column in the [Comment List] window

- Using the [Attribute Setting] dialog

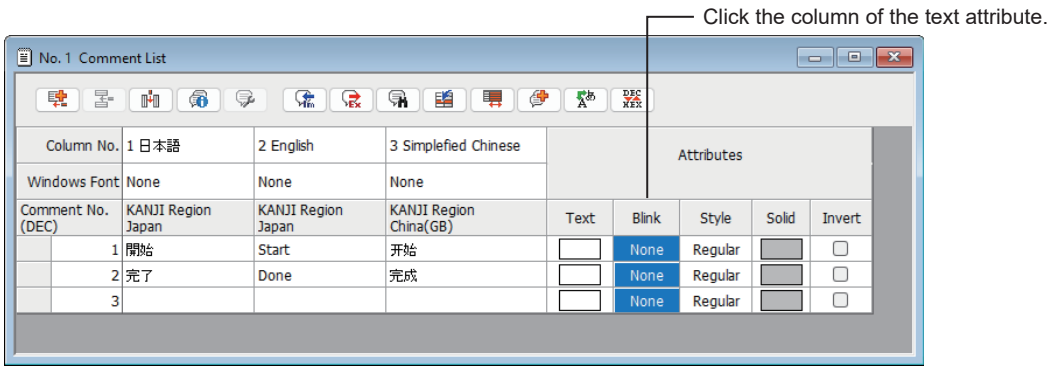
☞ Page 808 Using the [Attribute Setting] dialog

Changing the character property of an entire column in the [Comment List] window

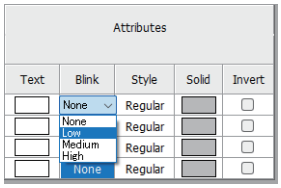
GT37 SoftGOT3000

Operating procedure

1. Click an entire column of the character property to be changed.



2. Click an option of the property to edit the character property in batch.



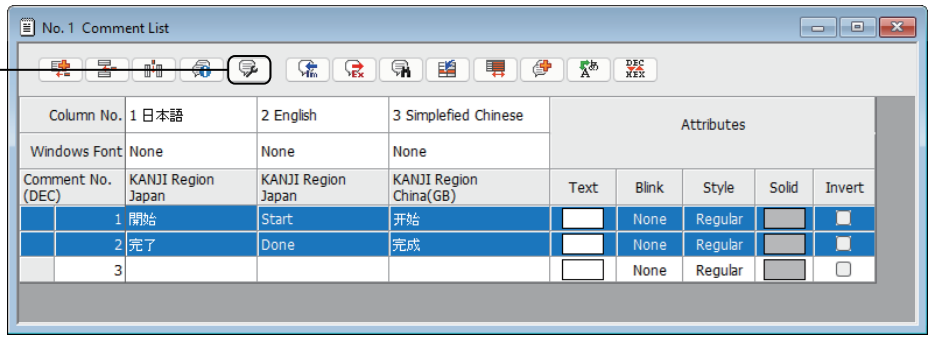
Using the [Attribute Setting] dialog

GT37 SoftGOT3000

Operating procedure

1. Select a comment to change the character property in the [Comment List] window then click the [Attribute Setting] button.

[Attribute Setting] button



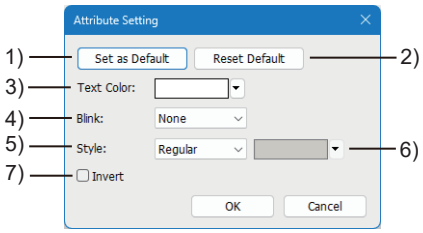
2. Change the character property of the comment in the [Attribute Setting] dialog.

☞ Page 808 [Attribute Setting] dialog

[Attribute Setting] dialog

GT37 SoftGOT3000

Change the character property of the comment in the [Attribute Setting] dialog.



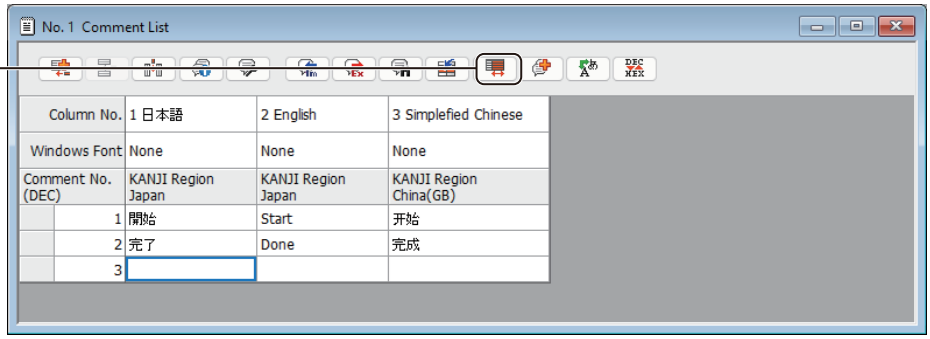
Item		Description
1)	[Set as Default] button	Sets the input setting in this dialog as the default value. ☞ Page 203 Customizing the default value
2)	[Reset Default] button	Resets the input setting in this dialog to the initial value.
3)	[Text Color]	Set the character color.
4)	[Blink]	Set the blinking speed of characters. The following shows selectable items. • [None] • [Low] • [Medium] • [High]
5)	[Style]	Select a character effect. The following shows selectable items. • [Standard] • [Bold] • [Solid] • [Raised]
6)	[Solid Color]	Select the shadow color of characters when [Solid] or [Raised] is selected for [Style].
7)	[Invert]	Highlights characters. This item can be selected only when [Regular] is selected for [Style].

17.3.11 Displaying/hiding attributes

GT37 SoftGOT3000

Text attributes can be displayed or hidden in the [Comment List] window.
Display or hide text attributes using the [Display/Hide Attribute] button.

[Display/Hide Attribute] button



PART 5

17.3.12 Registering characters of a text figure, touch switch, or other attribute to a comment group

GT37 SoftGOT3000

☞ Page 810 Registering the characters of a text figure to a comment group
☞ Page 811 Registering the characters in the [Text] field to a comment group

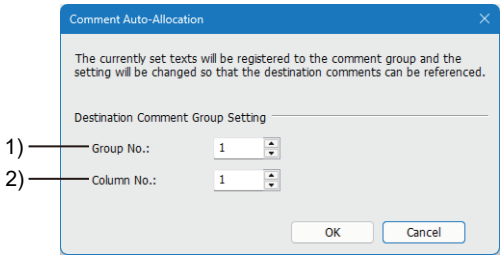
Registering the characters of a text figure to a comment group

In the text figure setting, you can register the characters entered in the [Text] field to a comment group, and convert the text figure to a simple comment display object.

Operating procedure

1. Open the text figure setting dialog, and click the [Convert to Comment Display] button.

2. In the [Comment Auto-Allocation] dialog,
set [Group No.] and [Column No.] of the comment group.
Characters cannot be registered to a comment group where identical characters already exist.



Item		Description
1)	[Group No.]	Set the number of the comment group where the characters are to be registered.
2)	[Column No.]	Set the column number of the comment group where the characters are to be registered.

3. Click the [OK] button to register the characters to the comment group and covert the text figure to a simple comment display object.

In the [Simple Comment Display] dialog, click the [OK] button to execute the conversion, or the [Cancel] button to cancel the conversion. However, registering the characters to the comment group is not canceled.

Registering the characters in the [Text] field to a comment group

For the following objects, when entering characters in the [Text] field, you can register the characters to a comment group by changing the text type from [Text] to [Comment], and enable the registered comment to be referred.

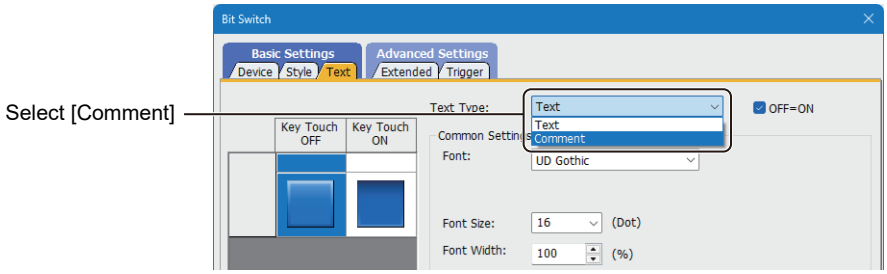
- Touch switch
- Lamp

The following shows the registration procedure for a bit switch as an example.

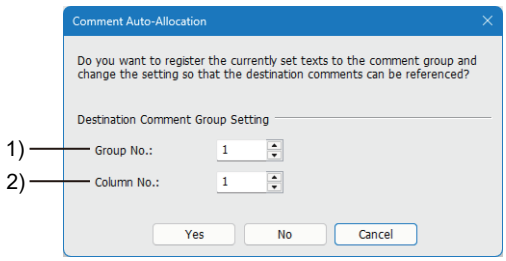
Operating procedure

1. Open the object setting dialog, and select the [Text] tab.

2. Select [Text] in [Text Type].



3. In the [Comment Auto-Allocation] dialog,
set [Group No.] and [Column No.] of the comment group.
Characters cannot be registered to a comment group where identical characters already exist.



Item		Description
1)	[Group No.]	Set the number of the comment group where the characters are to be registered.
2)	[Column No.]	Set the column number of the comment group where the characters are to be registered.

4. To register the characters to the comment group, click [Yes] button.
To not to register the characters to the comment group, click [No] button.
To cancel converting the text type to [Comment], click [Cancel] button.

18 Registering parts ([Parts])

GT37 SoftGOT3000

☞ Page 812 Outline of parts
☞ Page 814 Specifications of parts
☞ Page 816 How to use parts ([Parts])
☞ Page 830 [Parts Image List] window
☞ Page 831 [Parts Setting] dialog

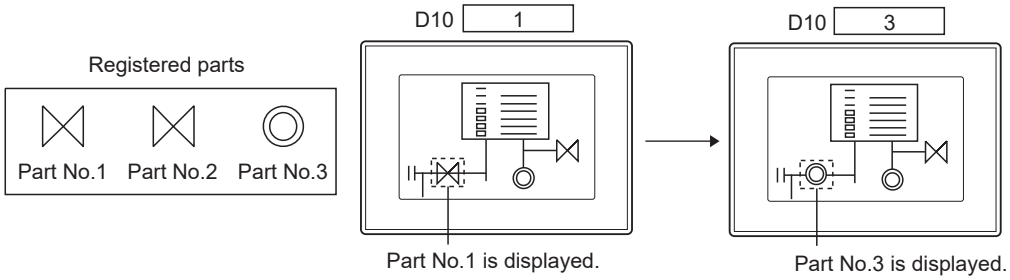
18.1 Outline of parts

GT37 SoftGOT3000

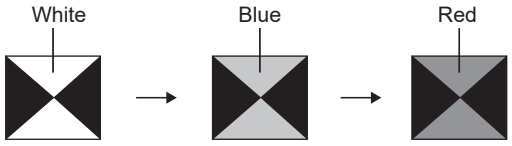
Groups of figures can be registered as parts.
Each of the registered parts can be set as a shape to each object.
The parts can also be placed directly on the screen as a figure.
Objects for which parts can be used depends on the figures registered as parts.

18.1.1 Displaying parts using a parts display object

By setting parts to a parts display object, you can switch displayed parts or display the movements of parts.



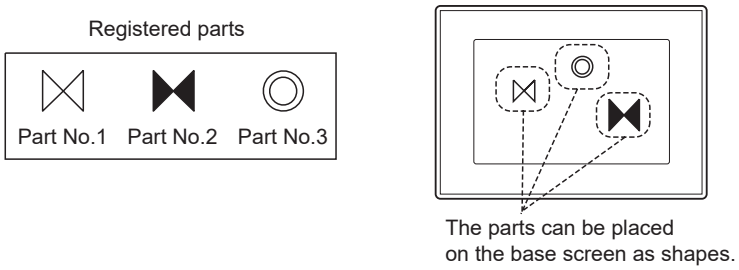
If displaying a part as a mark, you can change the white-colored area of the part to other colors.



The display color of the white space can be changed.

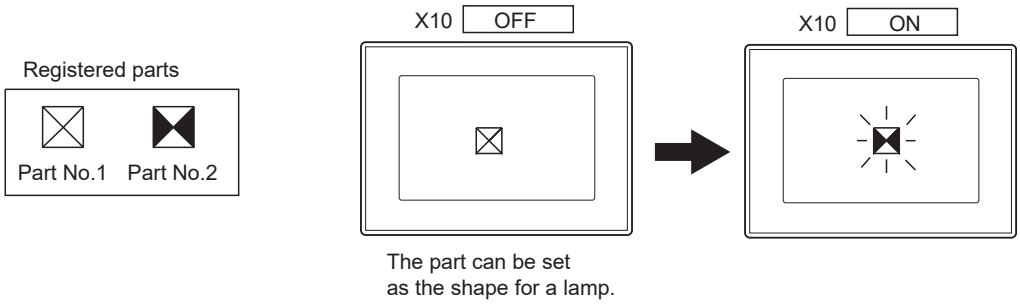
18.1.2 Using a part as a figure

Parts can be placed on the screen as they are.



18.1.3 Using a part as the shapes for objects

Parts can be set as the shapes for objects including switches or lamps.



18.2 Specifications of parts

GT37 SoftGOT3000

18.2.1 Number of registerable parts per project

Up to 32767 parts can be registered per project.

18.2.2 Figures placeable per part

Up to 10000 figures can be placed per part.

The volume of the data used for the part is the total volume of the data of the figures placed to the part.

The following figures can be placed to a part.

- Basic figure: Line, freeform line, rectangle, polygon, circle, arc, sector, scale, piping, and paint

☞ Page 1141 Drawing a Line
☞ Page 1145 Drawing a Line Freeform
☞ Page 1149 Drawing a Rectangle
☞ Page 1153 Drawing a Polygon
☞ Page 1157 Drawing a Circle
☞ Page 1161 Drawing an Arc or a Sector
☞ Page 1167 Drawing a Scale
☞ Page 1169 Drawing a Piping
☞ Page 1173 Filling the framed area of the figure

- Character string: Text and logo text

☞ Page 1132 Drawing a text figure
☞ Page 1135 Drawing a logo text figure

- Image: BMP file, JPEG file, and PNG file

☞ Page 1177 Pasting an image file

18.2.3 Size of figures that can be registered as parts

Figures up to 6000 dots × 6000 dots can be registered as parts.

Figures that have a horizontal or vertical size exceeding the size stated above cannot be registered.

Precautions

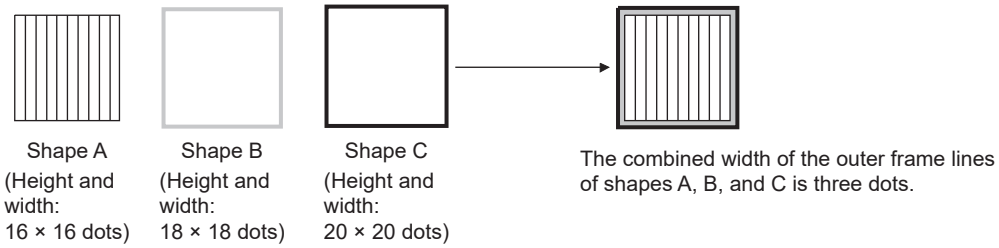
■Line width of outer frame

Draw the external frame of the figure with one dot of the line width to register as a part.

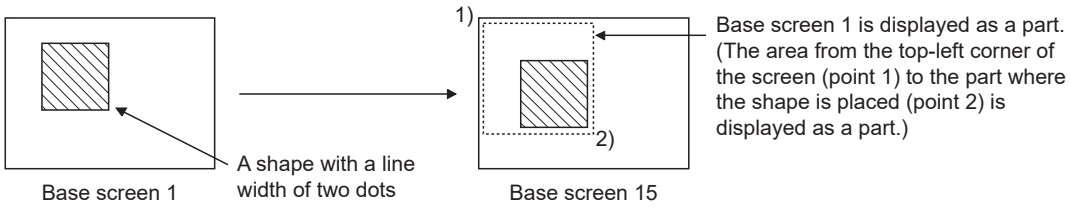
The outer frame line with the width of two or more dots may not be displayed correctly.

To display the outer frame line with the width of two or more dots, perform either of the following operations.

- Drawing the outer frame line in combination with figures that have one-dot line width



- Setting a figure with an outer frame of two or more dots on the unused base screen and displaying the base screen as a part in the parts display object

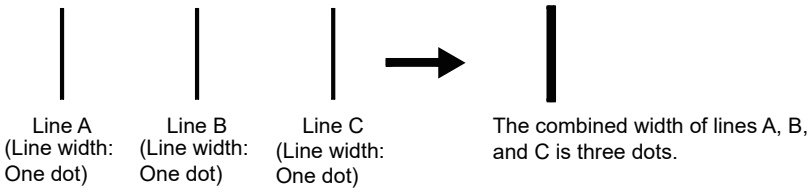


■Line width of line (excluding slant lines)

A line (excluding slant lines) that has the width of two to seven dots and has been registered as a part may not be displayed correctly.

To display the line with the width of two or more dots, perform either of the following operations.

- Draw a line using a rectangle (color filled).
- Draw a line by combining other lines that have a width of one dot.



18.3 How to use parts ([Parts])

GT37 SoftGOT3000

☞ Page 817 Registering parts
☞ Page 820 Copying parts
☞ Page 822 Deleting parts
☞ Page 824 Editing parts
☞ Page 826 Changing part names and numbers
☞ Page 827 Using the image file stored in the data storage as a part

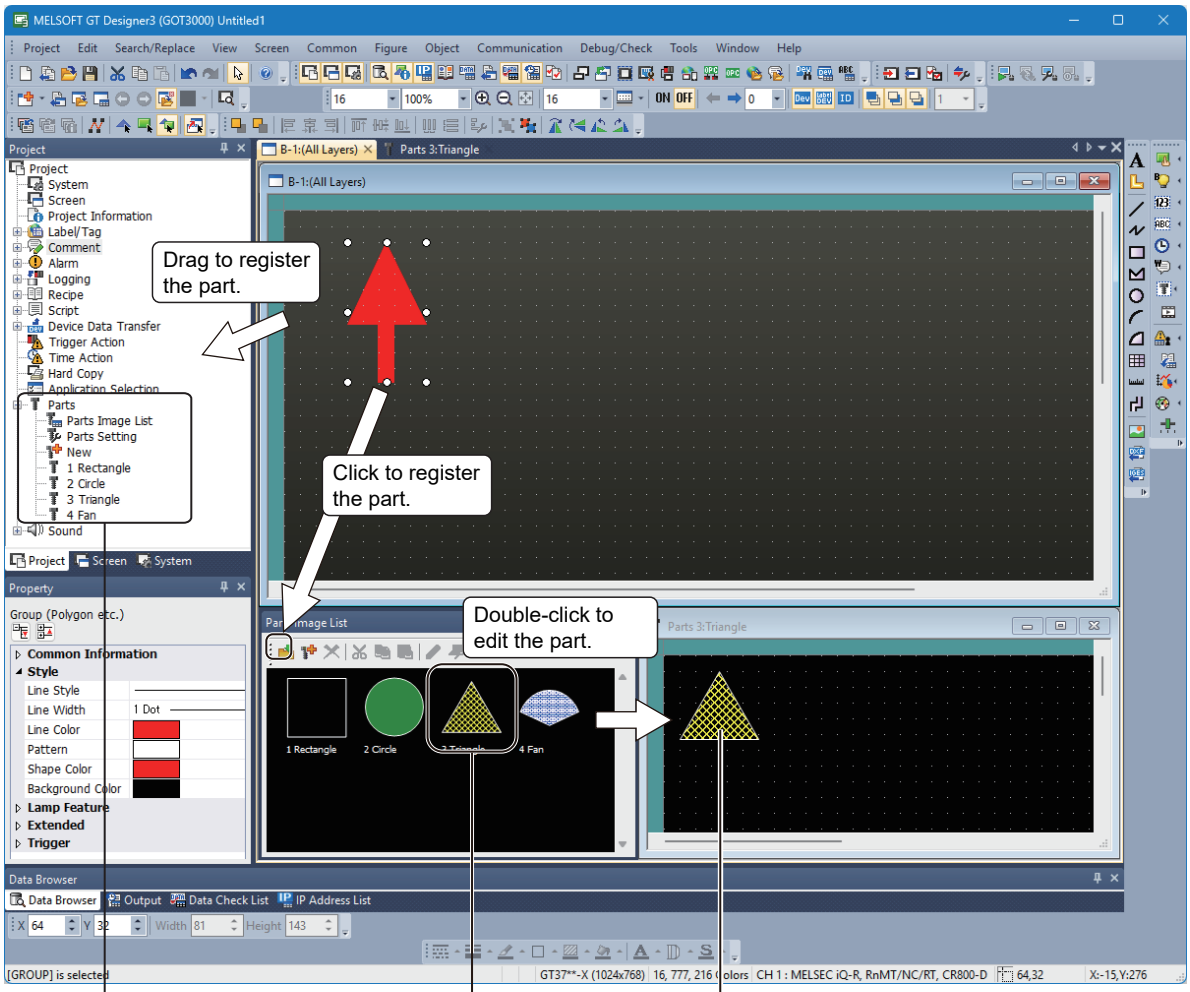
Select a part in the [Parts Image List] window or in the project tree to create, edit, or delete a part or change the property of a part.

For information on how to and display the [Parts Image List] window, refer to the following.

☞ Page 830 [Parts Image List] window

For information on how to display the project tree, refer to the following.

☞ Page 116 [Project] window



18.3.1 Registering parts

GT37 SoftGOT3000

Parts can be registered in either of the following two methods: You can register a figure on the screen editor or you can newly create a part to register it.

☞ Page 817 Registering a figure on the screen editor
☞ Page 818 Creating a new part

Registering a figure on the screen editor

GT37 SoftGOT3000

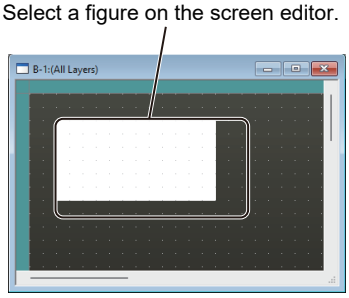
■Registering a figure in the [Parts Image List] window

Operating procedure

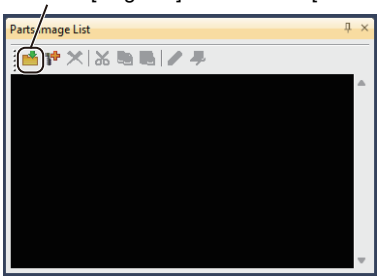
1. To register a figure on the screen editor as a part, select the figure and perform either of the following operations.

- Click the [Register] button in the [Parts Image List] window.
- Select [Register] then right-click to display [Register to Parts] from the menu.

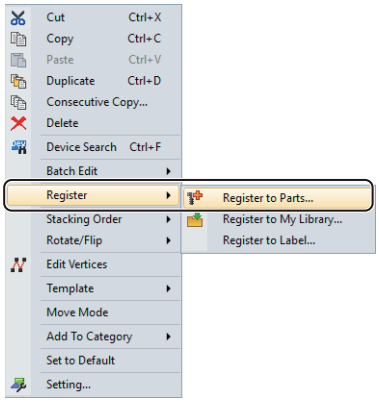
Select a figure on the screen editor.



Click the [Register] button in the [Parts Image List] window.



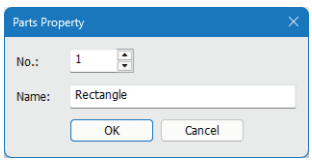
Select [Register to Parts] in the right-click menu.



2. The [Parts Property] dialog appears.

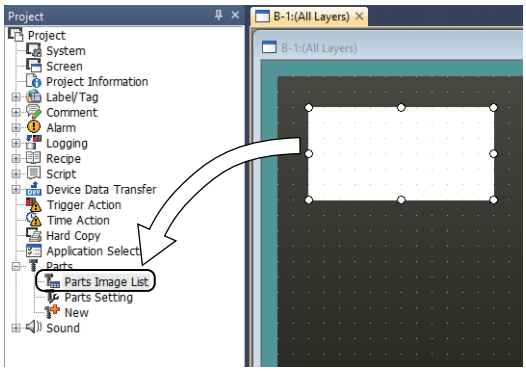
Set [Number] and [Name] then click the [OK] button.

The part is registered in the project data.



■Registering a figure as a part from the project tree

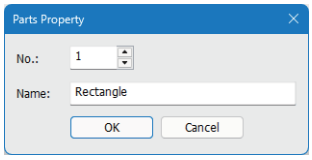
1. Drag the figure to be registered as a part onto the project tree.



2. The [Parts Property] dialog appears.

Set [Number] and [Name] then click the [OK] button.

The part is registered in the project data.



Creating a new part

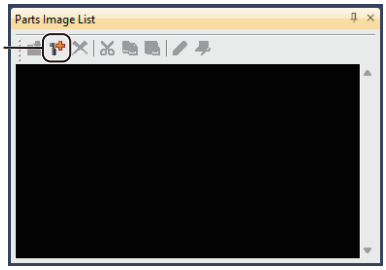
GT37 SoftGOT3000

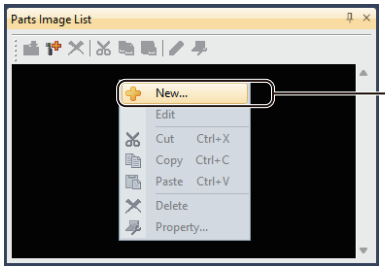
Operating procedure

1. Select [Common] → [Parts] → [New] from the menu or perform either of the following operations in the [Parts Image List] window.

- Click the [New] button.
- Select [New] in the right-click menu.

Click the [New] button.



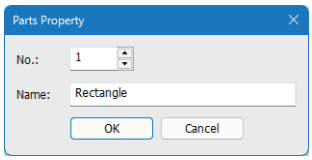


Select [New] in the right-click menu.

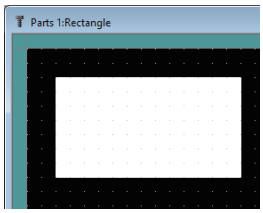
2. The [Parts Property] dialog appears.

Set [Number] and [Name] then click the [OK] button.

The part is registered in the project data.



3. Draw a figure to be registered as a part on the parts editor.
After drawing the figure, close the parts editor.



Precautions

When registering parts that are registered as symbols, note the following.

- Do not use a BMP, JPEG, or PNG files as the color of the figure cannot be changed.
- Draw the parts of the figure, of which the color can be changed, in white.

18.3.2 Copying parts

GT37 SoftGOT3000

Copying parts in the [Parts Image List] window

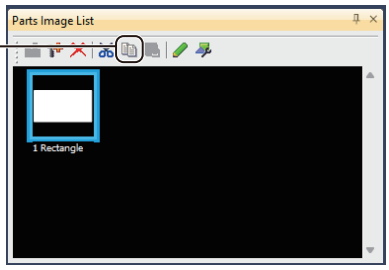
Operating procedure

1. Select a part to be copied in the [Parts Image List] window.

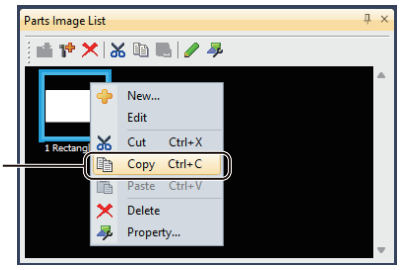
After selecting the part, perform either of the following operations.

- Click the [Copy] button.
- Select [Copy] in the right-click menu.

Click the [Copy] button.



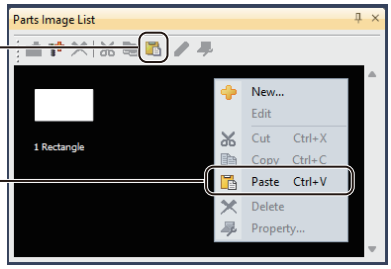
Select [Copy] in the right-click menu.



2. Click the [Paste] button or right-click a part to select [Paste] from the menu.

Click the [Paste] button.

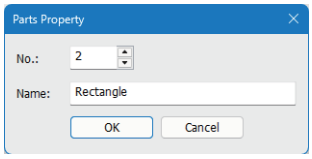
Select [Paste] in the right-click menu.



3. The [Parts Property] dialog appears.

Set [Number] and [Name] then click the [OK] button.

The part is registered in the project data.

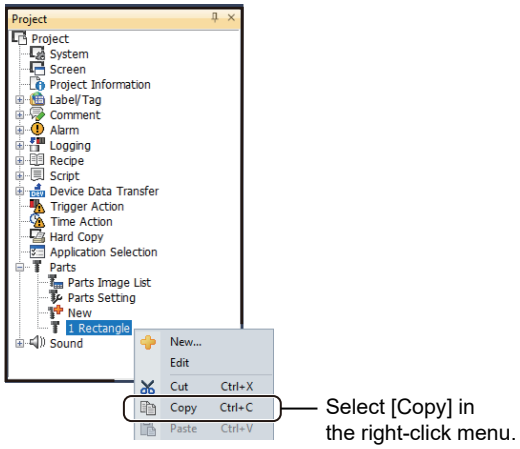


Copying a part in the project tree

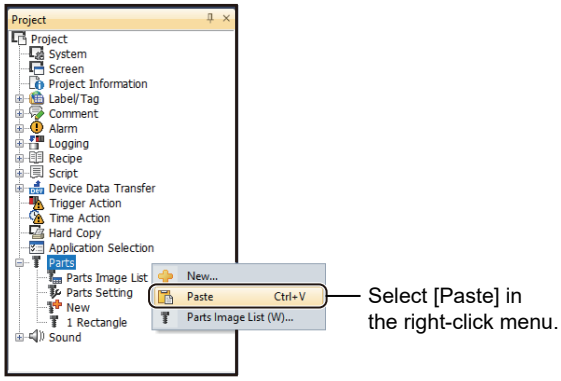
Operating procedure

1. Select a part to be copied in the project tree.

Right-click the selected part to select [Copy] from the menu.



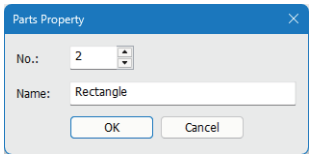
2. Right-click [Parts] to select [Paste].



3. The [Parts Property] dialog appears.

Set [Number] and [Name] then click the [OK] button.

The part is registered in the project data.



18.3.3 Deleting parts

GT37 SoftGOT3000

Deleting parts in the [Parts Image List] window

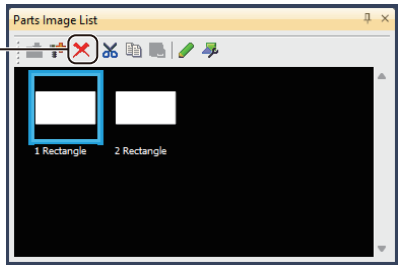
Operating procedure

1. Select a part to be deleted in the [Parts Image List] window.

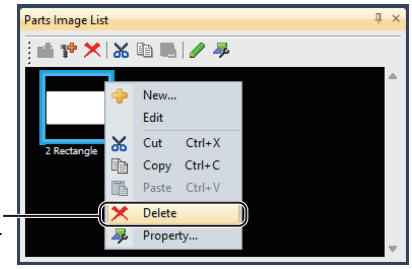
After selecting the part, perform either of the following operations.

- Click the [Delete] button.
- Select [Delete] in the right-click menu.

Click the [Delete] button.



Select [Delete] in the right-click menu.



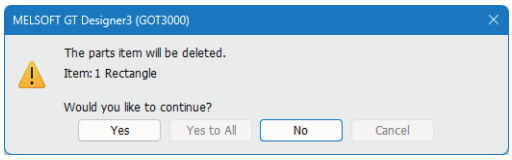
2. The confirmation dialog appears.

Click the [Yes] button to delete the part displayed on the confirmation dialog.

Click the [Delete All] button to delete all the selected parts.

Click the [No] button to cancel the deletion of the part displayed on the confirmation dialog.

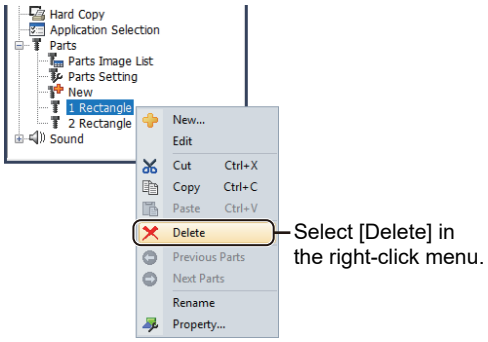
Click the [Cancel] button to cancel the deletion of all the selected parts.



Deleting a part in the project tree

1. Select a part to be deleted in the project tree.

Right-click the selected part to select [Delete] from the menu.



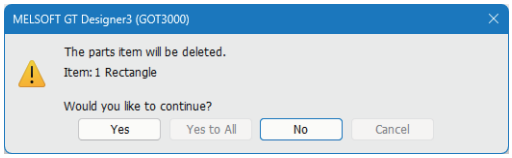
2. The confirmation dialog appears.

Click the [Yes] button to delete the part displayed on the confirmation dialog.

Click the [Delete All] button to delete all the selected parts.

Click the [No] button to cancel the deletion of the part displayed on the confirmation dialog.

Click the [Cancel] button to cancel the deletion of all the selected parts.



PART 5

18.3.4 Editing parts

GT37 SoftGOT3000

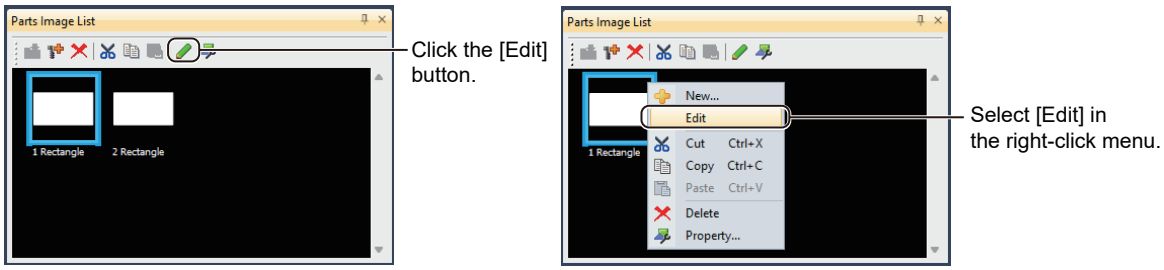
Editing parts from the [Parts Image List] window

Operating procedure

1. Select a part to be edited in the [Parts Image List] window.

After selecting the part, perform either of the following operations.

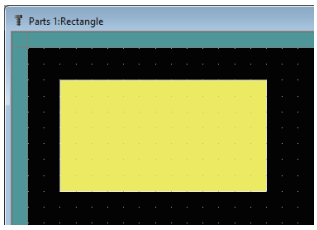
- Click the [Edit] button.
- Select [Edit] in the right-click menu.



2. The parts editor appears.

Edit the selected part.

After editing the part, close the parts editor.

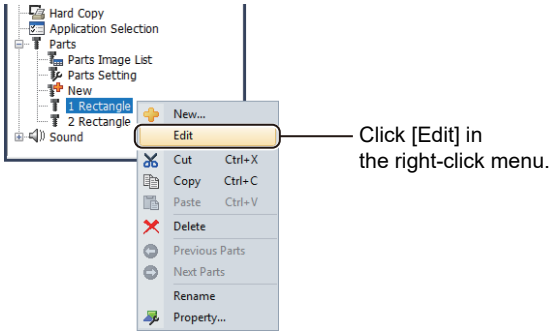


Editing a part from the project tree

Operating procedure

1. Select a part to be edited in the project tree.

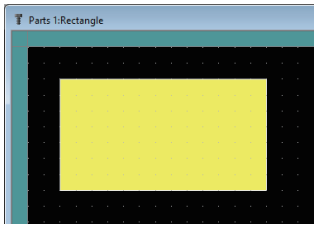
Right-click the selected part to select [Edit] from the menu.



2. The parts editor appears.

Edit the selected part.

After editing the part, close the parts editor.



PART 5

18.3.5 Changing part names and numbers

GT37 SoftGOT3000

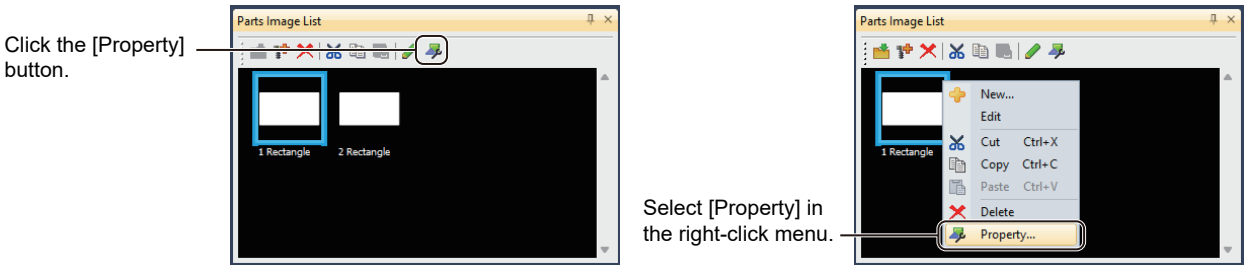
Changing part names and numbers from the [Parts Image List] window

Operating procedure

1. Select a part whose number or name is to be changed in the [Parts Image List] window.

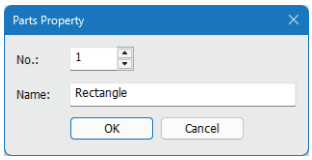
After selecting the part, perform either of the following operations.

- Click the [Property] button.
- Select [Property] in the right-click menu.



2. The [Parts Property] dialog appears.

After changing [Number] or [Name], click the [OK] button to apply the change.

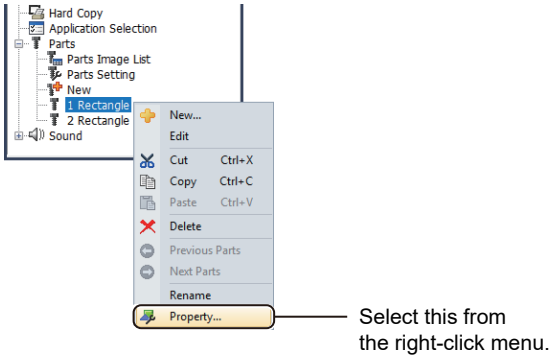


Changing part names and numbers in the project tree

Operating procedure

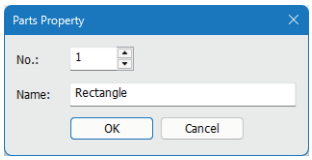
1. Select a part whose number or name is to be changed in the project tree.

Right-click the selected part to select [Property] from the menu.



2. The [Parts Property] dialog appears.

After changing [Number] or [Name], click the [OK] button to apply the change.

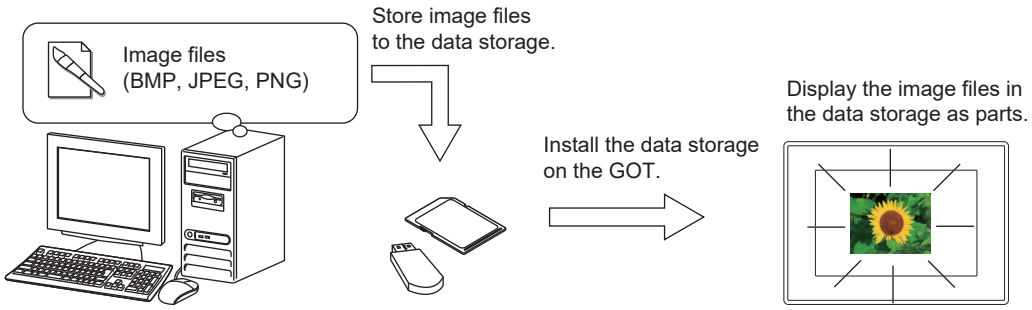


18.3.6 Using the image file stored in the data storage as a part

GT37 SoftGOT3000

The image file stored in the data storage can be used to display parts.

Storing parts in the data storage reduces the size of the project data.



The following two methods are provided to use an image file in the data storage as a part.

☞ Page 828 Specifying an image file from an object

☞ Page 829 Specifying an image file in the project

Precautions

The image of the parts displayed on the GOT will be displayed as the same size as the image on the data storage.

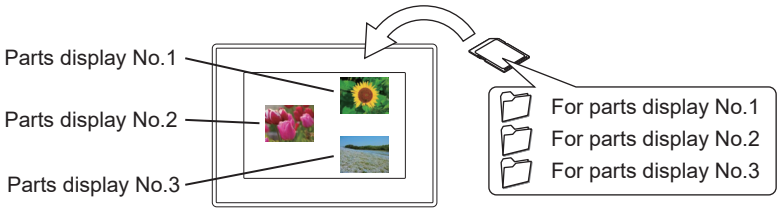
Images larger than the GOT display cannot be displayed.

Store part image files on the data storage as image sizes that are the same or smaller than the GOT display.

Specifying an image file from an object

Select the part image files on the data storage and set them in the parts display object settings.

Prepare one folder for each object to save image files separately per object.



Item	Description
Folder name	Specified in the settings of the parts display object.
File name	Specified in the settings of the parts display object.
Available drives	Drive A, drive B, drive E, drive F, drive G, and drive X (current drive)
Setting range	Object units
Maximum number of parts	Max. 65536 parts

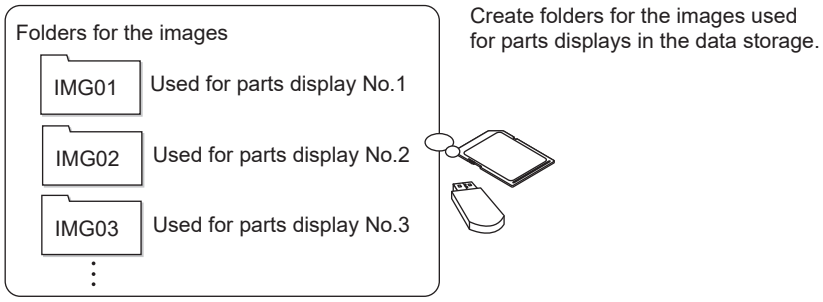
The following shows the procedure to register image files.

Operating procedure

1. Create a folder in the data storage to store image files.

Create one folder per parts display object.

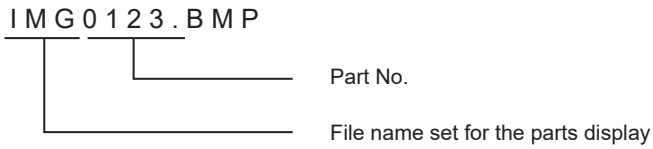
The folder name must be the same as the name set for the parts display object.



2. Store an image file to be used as a part to the created folder.

The file name must be the same as the name set for the parts display object.

Example) File name: IMG, parts number.: 0123, number of digits: 4



Parts number is assigned according to [Digits] set for the parts display object.

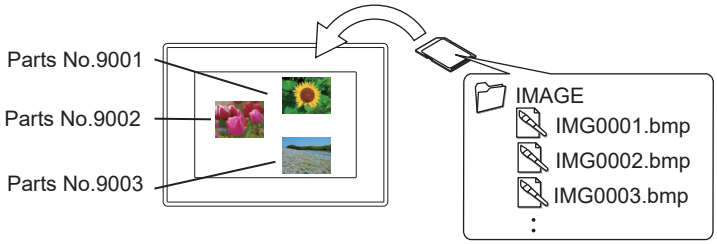
- Five digits: 00001 to 65535
- Four digits: 0001 to 9999
- Three digits: 001 to 999
- Two digits: 01 to 99
- One digit: 1 to 9

Specifying an image file in the project

Use parts number 9001 or later number as the numbers dedicated for image-file parts.

In this case, store image files in one folder.

The file name and the folder name are fixed.



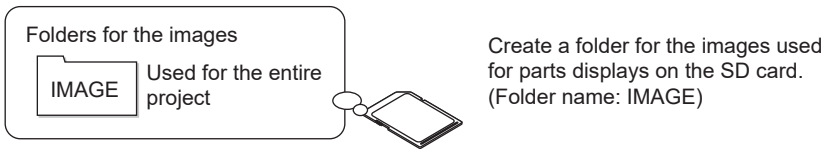
Item	Description
Folder name	IMAGE (fixed)
File name	IMG + 0 + rightmost three digits of the parts number
Available drives	Drive A
Setting range	By project
Maximum number of parts	Max. 999 parts

The following shows the procedure to register image files.

Operating procedure

1. Create a folder name it as IMAGE in the SD-card.

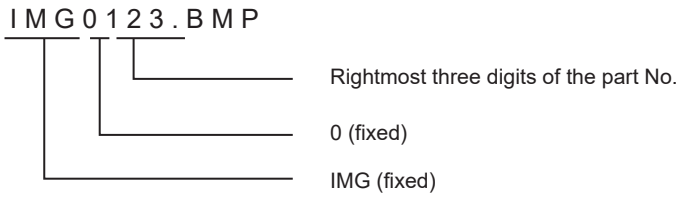
If any name other than IMAGE is used for the folder, the image cannot be displayed using the parts display object.



2. Store image files to be used as parts in the IMAGE folder in the SD-card.

Set each file name as follows.

Example) Parts number: 9123



PART 5

18.4 [Parts Image List] window

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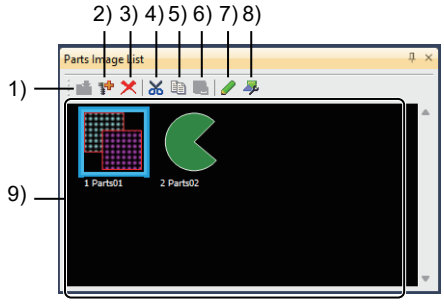
Displays the list of parts registered in GT Designer3. You can register, edit, or delete parts in the [Parts Image List] window.
Select [Common] → [Parts] → [Parts Image List] from the menu to display this dialog.



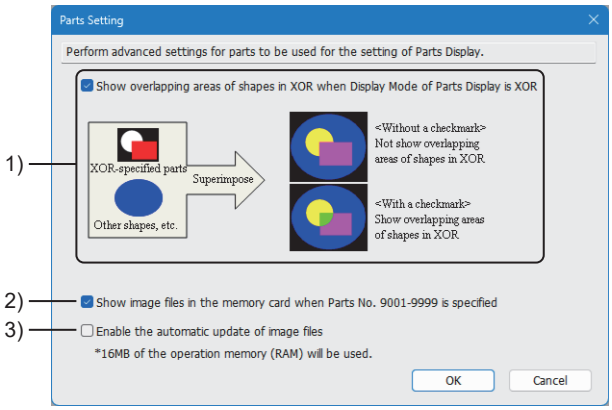
Item		Description
1)	[Register] button	Registers a selected figure as a part.
2)	[New Register] button	Registers a new part.
3)	[Delete] button	Deletes a selected part.
4)	[Cut] button	Cuts a selected part.
5)	[Copy] button	Copies a selected part.
6)	[Paste] button	Pastes a copied or cut part to a selected area.
7)	[Edit] button	Edits a selected part on the parts editor.
8)	[Property] button	Changes the number or name of a selected part.
9)	Parts image list	Displays the list of the thumbnails, numbers, and names of the registered parts.

18.5 [Parts Setting] dialog

GT37 SoftGOT3000

Set the display method of the parts using the parts display object.

Select [Common] → [Parts] → [Parts Setting] from the menu to display the [Parts Setting] dialog.



Item		Description
1)	[Show overlapping areas of shapes in XOR when Display Mode of Parts Display is XOR]	When the display mode of the parts display object (excluding fixed parts) is set to [XOR], XOR synthesis is performed on all grouped figures at once. This item appears when [Enable the antialiasing] is deselected in [Basic Setting] in the [Type Setting] dialog. ☞ Page 519 [Basic Setting]
2)	[Show image files in the memory card when Parts No. 9001-9999 is specified]	Specify a BMP file, JPEG file, or PNG file stored on the data storage to display the image as a part using a parts display object.
3)	[Enable the automatic update of image files]	Select the checkbox to update the image file automatically.

PART 6 Basic settings and edits

19 Device, label, and tag settings

20 Trigger type settings

21 Color settings

19 Device, label, and tag settings

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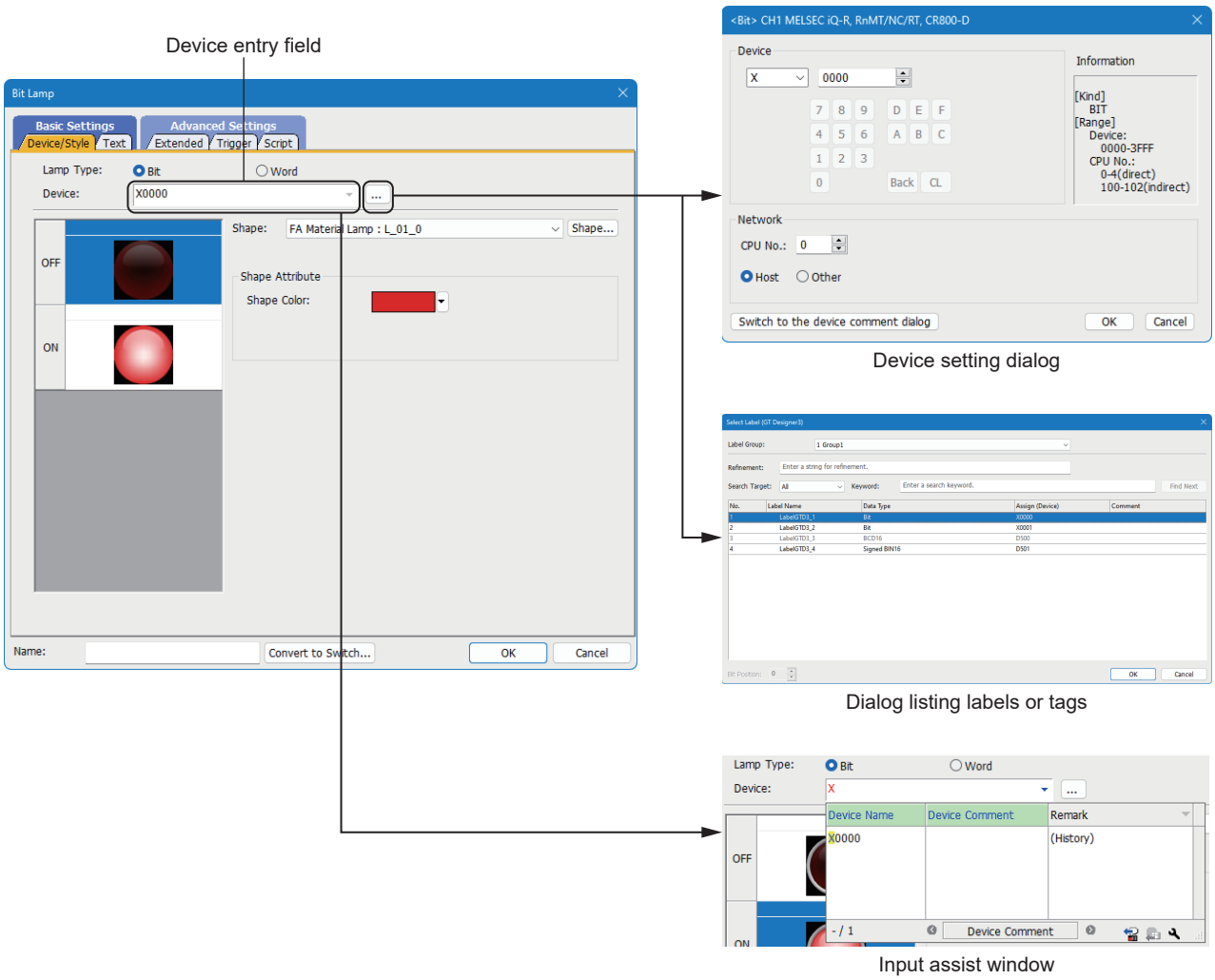
☞ Page 834 How to set devices, labels, and tags
☞ Page 854 Settable devices in GT Designer3
☞ Page 858 Labels and Tags Usable in GT Designer3
☞ Page 867 How to set labels (GT Designer3)
☞ Page 896 How to set global labels
☞ Page 936 How to set AB native tags
☞ Page 954 How to Set Device Comments or Device Definitions
☞ Page 963 Offset

19.1 How to set devices, labels, and tags

GT37 SoftGOT3000

This section describes how to set a device, label, or tag in the device entry field in the setting dialog.

Ex.
Setting a monitor device for a bit lamp



○: Available, —: Not available

Setting method	Setting target		Description
	Device	Label Tag	
Setting a device in the device setting dialog	○	—	Set a device in the device setting dialog that appears when the [...] button in the dialog is clicked. A device name and a device number can be set directly. ☞ Page 835 Setting a device in the device setting dialog
Selecting a label or tag from the list	—	○	Set a label or tag by selecting it in the dialog that lists registered labels and tags. The dialog that lists the labels and tags differs depending on the tag type or label type. ☞ Page 837 Selecting a label or tag from the list
Selecting from utilizable data (input assist)	○	○	Enter characters in the device entry field in the setting dialog to display utilizable data in the input assist window. You can set a device, label, or tag simply by selecting it from the utilizable data. ☞ Page 843 Selecting from utilizable data (input assist)
Directly entering data in the device entry field	○	○	Enter a device, label, or tag in the device entry field directly in the setting dialog. The entry must be performed according to the specified format. ☞ Page 849 Directly entering data in the device entry field

19.1.1 Setting a device in the device setting dialog

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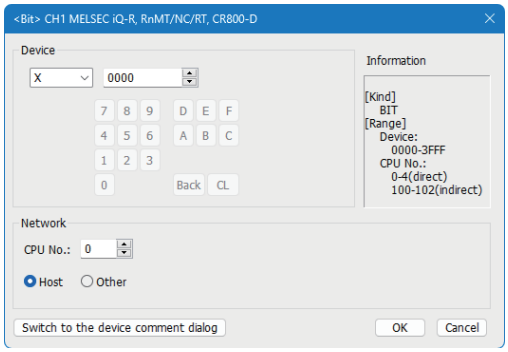
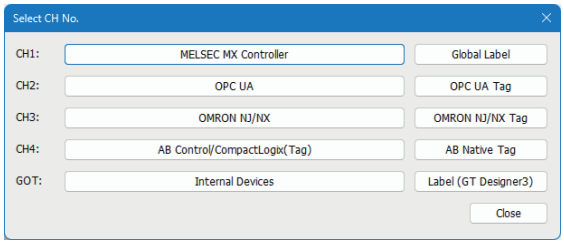
Display the device setting dialog from the setting dialog of an object, and set a device.
The following shows an example of setting a monitor device for bit lamp.

1. In the [Bit Lamp] dialog, click the [...] button for [Device] in the [Device/Style] tab.
Either of the following dialogs appears.



Device setting dialog



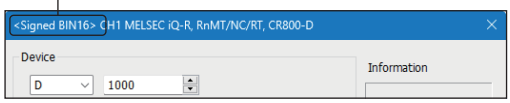
[Select CH No.] dialog

Dialog	Description
Device setting dialog	Appears in the following cases. • When using only one channel for connection between the GOT and controllers • When editing a device that has been set
[Select CH No.] dialog	Appears when all the following conditions are satisfied. • Multiple channels are used in the [Controller Setting] window. • No device is set. To edit the device that has been set, display this dialog by holding down the Shift key and clicking the [...] button. Select a channel of the controller whose device is to be set. ☞ Page 836 [Select CH No.] dialog When a channel is selected, the device setting dialog appears.

Point

The behavior when a device is set can be set with [CH No. Selection Dialog Display Setting] in the [Option] dialog ([Edit] tab).
☞ Page 199 [Options] dialog ([Edit] tab)

2. Set a device in the device setting dialog.
The following shows the displayed device setting dialog and settable devices.

Item		Description
Device setting dialog		Depends on the selection for [Controller Type] in the [Controller Setting] window.
Settable device	Device range	For the device setting dialog and settable device range for each controller, refer to the following. ☞ Page 3577 GOT internal devices ☞ Page 3128 Device range and settings of Mitsubishi Electric equipment ☞ Page 3487 Device range and settings of each controller
	Data type	Set a device supported by the data type. The data type is displayed in the title bar of the device setting dialog. Example) When the data type is [Signed BIN16] Data type  For the devices supported by each data type, refer to the following. ☞ Page 857 Data type of devices

PART 6

Point

For the monitoring targets when "0" or "FF" is set to the network number and station number for network connection, refer to the following.

☞ Page 852 Device setting for network connection

3. Click the [OK] button in the device setting dialog.

The dialog closes, and the set device is entered in the device entry field in the [Device/Style] tab.

4. Click the [OK] button in the [Bit Lamp] dialog.

The device setting is completed.

Point

Once set, the device is displayed in the input assist window as a history.

☞ Page 843 Selecting from utilizable data (input assist)

[Select CH No.] dialog

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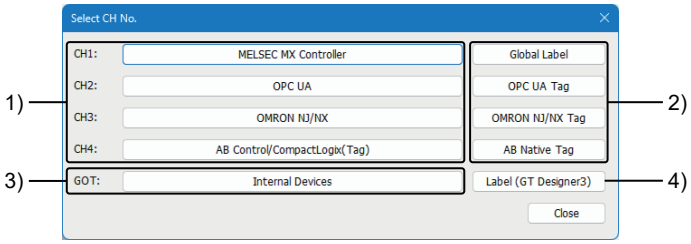


Item		Description
1)	Controller device setting	Select a channel of the controller whose device is to be set. Each channel button displays [Controller Type] selected in the [Controller Setting] window. Clicking each channel button displays the corresponding device setting dialog.
2)	Label/tag button	This is enabled when you configure the settings to enable labels or tags for each channel and import data. Clicking the label/tag button for each channel displays the corresponding setting dialog. ☞ Page 839 [Select Global Label] dialog ☞ Page 840 [Select OMRON NJ/NX Tag] dialog ☞ Page 841 [Select AB Native Tag] dialog ☞ Page 842 [Select OPC UA Tag] dialog
3)	GOT internal device setting	Set a GOT internal device. Clicking the [Internal Devices] button displays the device setting dialog.
4)	[Label (GT Designer3)] button	Set a label (GT Designer3). Clicking this button displays the [Select Label (GT Designer3)] dialog. ☞ Page 838 [Select Label (GT Designer3)] dialog

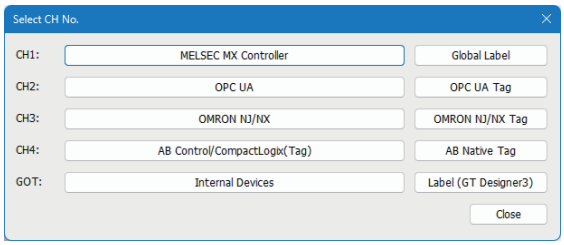
19.1.2 Selecting a label or tag from the list

GT37 SoftGOT3000

Set a label or tag by selecting it in the dialog that lists registered labels and tags.
The following shows an example of setting a monitor device for bit lamp.

1. In the [Bit Lamp] dialog, hold down the Shift key and click the [...] button for [Device] in the [Device/Style] tab to display the [Select CH No.] dialog.

☞ Page 836 [Select CH No.] dialog



Point

The behavior when a device is set can be set with [CH No. Selection Dialog Display Setting] in the [Option] dialog ([Edit] tab).

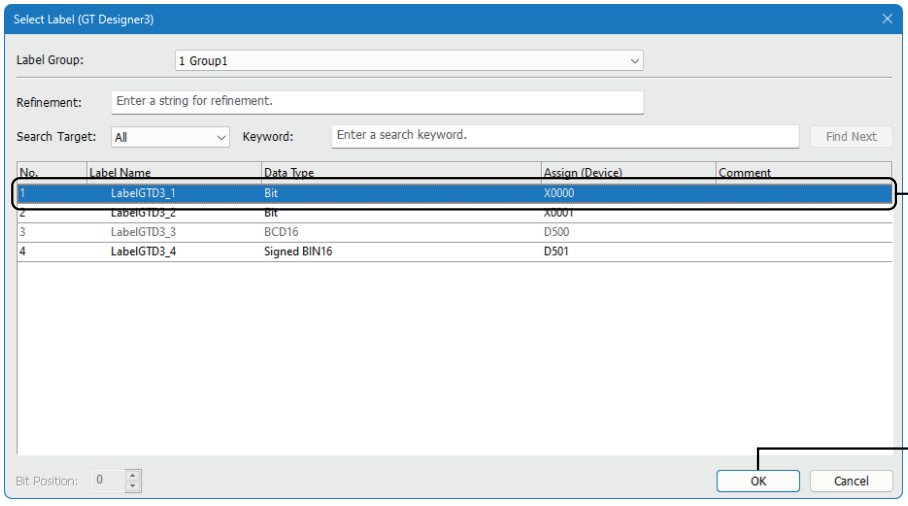
☞ Page 199 [Options] dialog ([Edit] tab)

2. Click the button of the label or tag to be specified in the device setting to display the label or tag selection dialog.

Button	Displayed dialog
[Label (GT Designer3)] button	☞ Page 838 [Select Label (GT Designer3)] dialog
[Global Label] button	☞ Page 839 [Select Global Label] dialog
[OMRON NJ/NX Tag] button	☞ Page 840 [Select OMRON NJ/NX Tag] dialog
[AB Native Tag] button	☞ Page 841 [Select AB Native Tag] dialog
[OPC UA Tag] button	☞ Page 842 [Select OPC UA Tag] dialog

3. Select a label or tag in the displayed dialog and click the [OK] button to set the label or tag for [Device].

Example) When specifying a label (GT Designer3)



Select a label (GT Designer3).

Click the button.

4. Click the [OK] button to close the label or tag selection dialog, and the set label or tag is entered in the device entry field in the [Device/Style] tab.

PART 6

5. Click the [OK] button in the [Bit Lamp] dialog.

The device setting is completed.

Point

Once set, the label or tag is displayed in the input assist window as a history.

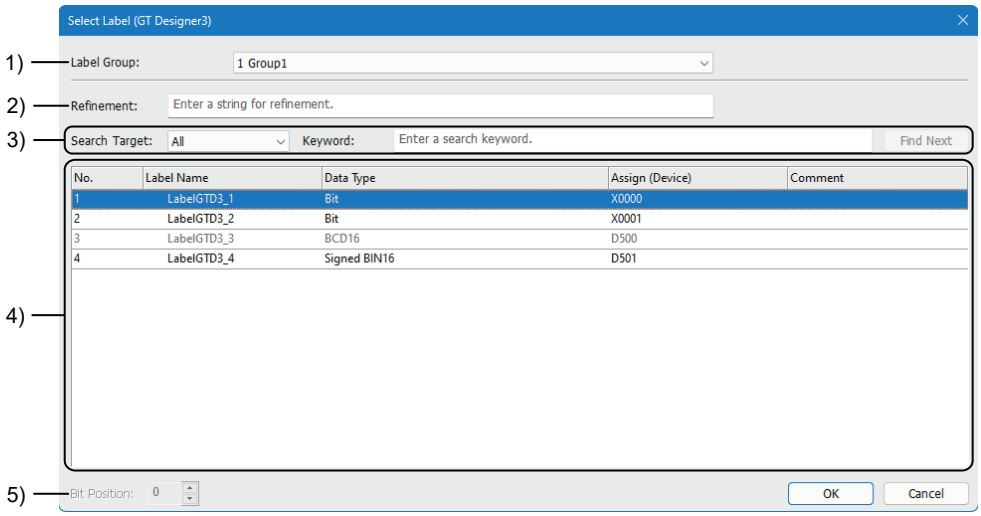
☞ Page 843 Selecting from utilizable data (input assist)

[Select Label (GT Designer3)] dialog

GT37 SoftGOT3000

You can select a label (GT Designer3) from the label list and set the label in the device setting of an object or others.

To display this dialog, click the [Label (GT Designer3)] button in the [Select CH No.] dialog.



Item			Description
1)	[Label Group]		Select a label group to be displayed in the label (GT Designer3) list.
2)	[Refinement]		Enter characters to narrow down the labels (GT Designer3) in the label list. Only the labels (GT Designer3) narrowed down by the entered characters are displayed in the label list. Up to 32 characters can be set. The entered characters are case-insensitive.
3)	Search		Search the label (GT Designer3) list for a label by the specified keyword. Set [Search Target] and enter a search keyword in [Keyword]. Click the [Find Next] button to search for a label (GT Designer3) by the search keyword. Up to 32 characters can be set in [Keyword]. The entered characters are case-insensitive.
4)	Label (GT Designer3) list	—	Lists the labels (GT Designer3) of the label group selected in [Label Group]. Select a label (GT Designer3) from the list and click the [OK] button to set the label for [Device]. The data type of an object or others automatically changes according to the data type of the label (GT Designer3) that is set.
		[No.]	Number of a label (GT Designer3).
		[Label Name]	Name of the label (GT Designer3).
		[Data Type]	Data type of a label (GT Designer3).
		[Assign (Device)]	Device assigned to the label (GT Designer3).
		[Comment]	Comment set for a label (GT Designer3).
5)	[Bit Position]		Set the bit position of a label (GT Designer3). The setting range is [0] to [15]. If you use the [Device List] window or the [Edit Script (script name)] dialog to display the [Select Label (GT Designer3)] dialog, [Bit Position] is not settable.

[Select Global Label] dialog

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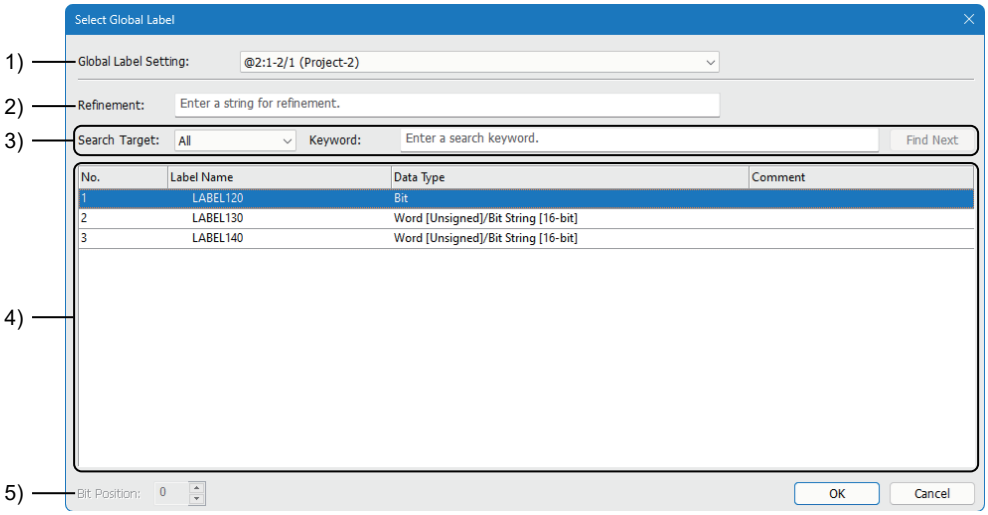
You can select a global label from the label list and set the label in the device setting of an object or others in the [Select Global Label] dialog.

To display this dialog, click the [Global Label] button in the [Select CH No.] dialog.



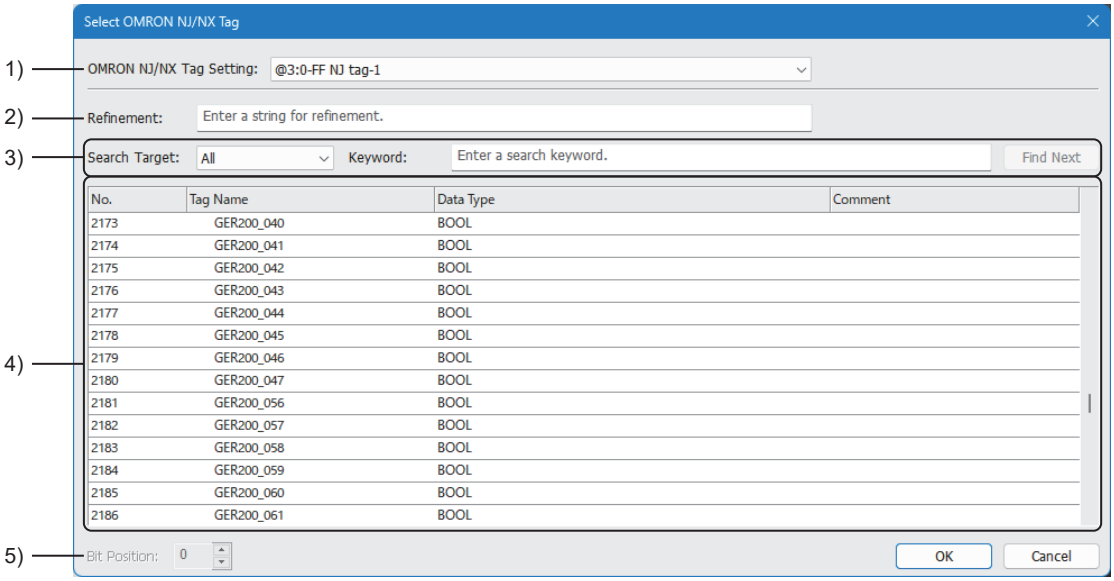
Item			Description
1)	[Global Label Setting]		Select a combination of the channel number, network setting, module number, and data name of the imported global labels.
2)	[Refinement]		Enter characters to narrow down the global labels in the label list. Only the global labels narrowed down by the entered characters are displayed in the label list. Up to 32 characters can be set. The entered characters are case-insensitive.
3)	Search		Search the global label list for a label by the specified keyword. Set [Search Target] and enter a search keyword in [Keyword]. Click the [Find Next] button to search for a global label by the search keyword. Up to 32 characters can be set in [Keyword]. The entered characters are case-insensitive.
4)	Global label list	—	Lists global labels. Select a global label from the list and click the [OK] button to set the label for [Device]. The [OK] button is enabled only when a global label corresponding to the data type of the setting target item is selected.
		[No.]	Number of a global label
		[Label Name]	Name of a global label
		[Data Type]	Data type of a global label
		[Comment]	Comment set for a global label
5)	[Bit Position]		Set the bit position of a global label. The setting range is [0] to [15]. If you use the [Device List] window to display the [Select Global Label] dialog, [Bit Position] is not settable.

[Select OMRON NJ/NX Tag] dialog

GT37 SoftGOT3000

In the [Select OMRON NJ/NX Tag] dialog, select an OMRON NJ/NX tag from the tag list to set the tag in the device setting of an object or others.

To display this dialog, click the [OMRON NJ/NX Tag] button in the [Select CH No.] dialog.

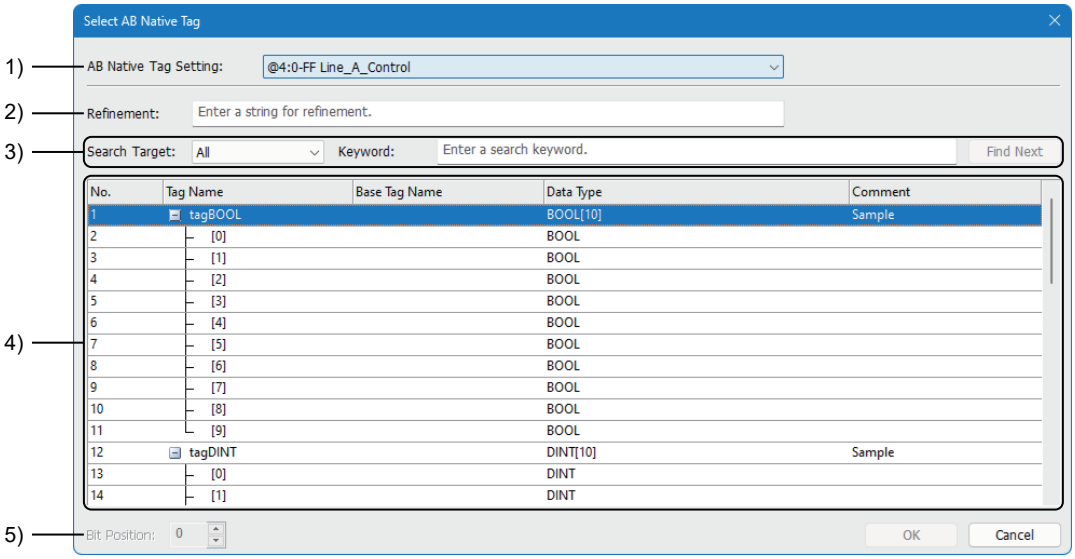


Item			Description
1)	[OMRON NJ/NX Tag Setting]		Select a combination of the channel number, network setting, and data name of the imported OMRON NJ/NX tags.
2)	[Refinement]		Enter characters to narrow down the OMRON NJ/NX tags in the tag list. Only the OMRON NJ/NX tags narrowed down by the entered characters are displayed in the tag list. Up to 32 characters can be set. The entered characters are case-insensitive.
3)	Search		Search the OMRON NJ/NX tag list for a tag by the specified keyword. Set [Search Target] and enter a search keyword in [Keyword]. Click the [Find Next] button to search for the next occurrence of the keyword. Up to 32 characters can be set in [Keyword]. The entered characters are case-insensitive.
4)	OMRON NJ/NX tag list	—	Lists the OMRON NJ/NX tags. Select an OMRON NJ/NX tag from the tag list and click the [OK] button to set the tag in [Device].
		[No.]	Number of an OMRON NJ/NX tag
		[Tag Name]	Name of an OMRON NJ/NX tag
		[Data Type]	Data type of an OMRON NJ/NX tag
		[Comment]	Comment set for an OMRON NJ/NX tag
5)	[Bit Position]		Set the bit position of an OMRON NJ/NX tag. The setting range is [0] to [15]. If the [Select OMRON NJ/NX Tag] dialog has been brought up from the [Device List] dialog, [Bit Position] is not settable.

[Select AB Native Tag] dialog

GT37 SoftGOT3000

Select an AB native tag from the list to set the tag in the device setting of an object or others.
To display this dialog, click the [AB Native Tag] button in the [Select CH No.] dialog.



Item			Description
1)	[AB Native Tag Setting]		Select a combination of the channel number, network setting, and data name of the imported AB native tags.
2)	[Refinement]		Enter characters to narrow down the AB native tags in the tag list. Only the AB native tags narrowed down by the entered characters are displayed in the tag list. Up to 32 characters can be set. The entered characters are case-insensitive.
3)	Search		Search the AB native tag list for a tag by the specified keyword. Set [Search Target] and enter a search keyword in [Keyword]. Click the [Find Next] button to search for the next occurrence of the keyword. Up to 32 characters can be set in [Keyword]. The entered characters are case-insensitive.
4)	AB native tag list	[No.]	AB native tags are listed. Select an AB native tag from the list and click the [OK] button to set the tag for [Device]. Number of an AB native tag. The [OK] button is enabled only when an AB native tag corresponding to the data type of the setting target item is selected.
		[Tag Name]	Name of an AB native tag
		[Base Tag Name]	Base tag name of an AB native tag
		[Data Type]	Data type of an AB native tag
		[Comment]	Comment set for an AB native tag
5)	[Bit Position]		Set the bit position of an AB native tag. The setting range varies with the data type. • Word type: [0] to [15] • Double-word type: [0] to [31] If the [Select AB Native Tag] dialog has been brought up from the [Device List] dialog, [Bit Position] is not settable.

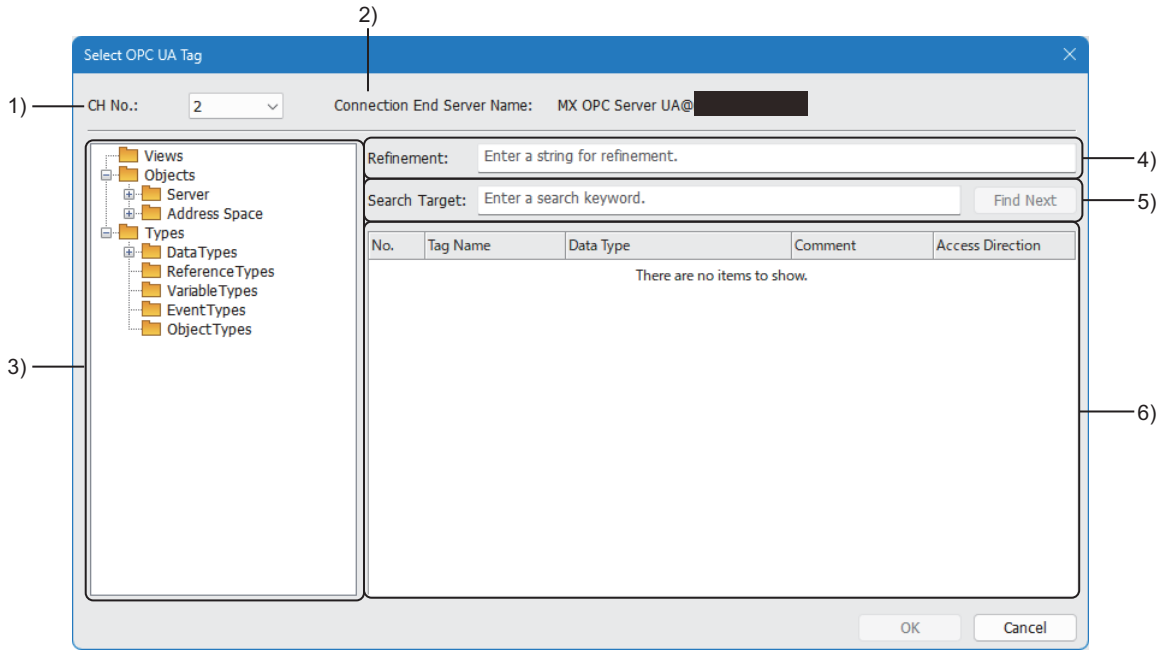
[Select OPC UA Tag] dialog

GT37 SoftGOT3000

Select an OPC UA tag from the list to set the tag in the device setting of an object or others.

To display this dialog, click the [OPC UA Tag] button in the [Select CH No.] dialog.

When OPC UA is set on multiple channels, the OPC UA tag selection dialog can be displayed from each channel.



Item		Description
1)	[CH No.]	Select a channel for connecting to an OPC UA server.
2)	[Connection End Server Name]	Displays the name of the OPC UA server corresponding to the channel selected for [CH No.].
3)	Tag information tree	Displays the tag information corresponding to the channel selected for [CH No.].
4)	[Refinement]	Enter a string to display tags with names containing the entered string in the OPC UA tag list. Tags are narrowed down as a string is entered. [Tag Name], [Data Type], [Comment], and [Access Direction] are searched. Up to 64 characters can be entered. The entered characters are case-insensitive.
5)	[Search Target]	Enter a keyword and click the [Find Next] button to search for the OPC UA tags containing the keyword. You can perform a search in the list after tags are narrowed down with [Refinement]. Up to 64 characters can be entered. The entered characters are case-insensitive.
6)	OPC UA tag list	OPC UA tags in the folder (group or structure) selected in the tag information tree. Select an OPC UA tag and click the [OK] button to set the tag as a device.

19.1.3 Selecting from utilizable data (input assist)

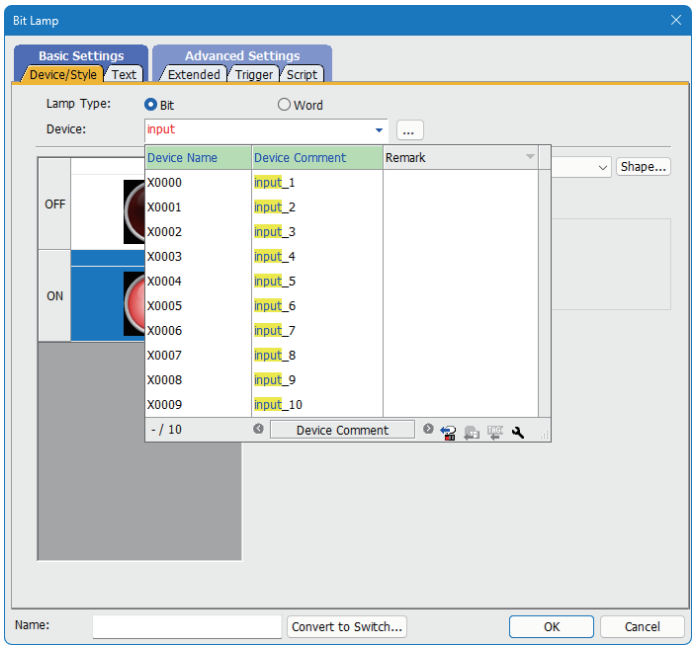
GT37 SoftGOT3000

☞ Page 844 Specifications of the input assist
☞ Page 845 Preparations for the input assist
☞ Page 845 Selecting a device or label from utilizable data
☞ Page 846 Input assist window

When you enter a keyword in the device entry field, utilizable data searched from device comments and label names is displayed.

Select a device or label from the data.

By using certain keywords in device comments and label names, you can display intended devices and labels as utilizable data.



Specifications of the input assist

GT37 SoftGOT3000

■Display target items of the input assist and preparations for display

The input assist displays utilizable data for the following items.

Search target	Description	Preparation to display utilizable data
Device	The device names and the device numbers are searched. Device representation may be different between the GOT and controllers. Use device representation of the GOT for a search. ☞ Page 3128 Device range and settings of Mitsubishi Electric equipment ☞ Page 3487 Device range and settings of each controller	Not required
Device comment	The device comments are searched.	Import device comments. ☞ Page 954 How to Set Device Comments or Device Definitions
Device definition	The following device definitions are searched. • Device definitions of the GOT special registers (GS) • Device definitions of the MITSUBISHI ELECTRIC PLCs (special relays and special registers) • Device definitions of the MITSUBISHI ELECTRIC servo amplifiers • Device definitions of the MITSUBISHI ELECTRIC inverters For device definitions of the GOT special registers (GS), refer to the following. ☞ Page 3581 GOT special register (GS)	The device definitions of the host station (0-FF) are automatically imported according to the setting for [Controller Type] in the [Controller Setting] window. To display the device definitions of the specified station as utilizable data, import the device definitions. ☞ Page 954 How to Set Device Comments or Device Definitions
Label (GT Designer3)	The labels (GT Designer3) are searched.	Register labels (GT Designer3). ☞ Page 867 How to set labels (GT Designer3)
Global label	The global labels are searched. Only the global labels corresponding to the data type of the setting target item are displayed as utilizable data.	Import global labels. ☞ Page 896 How to set global labels
OMRON NJ/NX tag	The OMRON NJ/NX tags are searched.	Import OMRON NJ/NX tags. ☞ Page 921 How to set OMRON NJ/NX tags
AB native tag	The AB native tags are searched. Only the AB native tags corresponding to the data type of the setting target item are displayed as utilizable data.	Import AB native tags. ☞ Page 936 How to set AB native tags
OPC UA tag	The OPC UA tags are searched.	Import OPC UA tags. ☞ Page 944 How to set OPC UA tags

■Search symbols

The following shows the symbols that enable special searches when the symbols are used with keywords.

Search symbol	Remarks
@	Specify a channel number in the form of @n. ("n" represents a number.) You can search the devices of the specified channel. Example) @2 represents channel number 2.
One-byte space	Enables a search with multiple keywords by delimiting the keywords with one-byte spaces.
"	Enables a search with keywords containing @ or one-byte spaces by enclosing the keywords. Example) Inputting "@" enables a search for device comments containing @.

Preparations for the input assist

GT37 SoftGOT3000

For preparation for displaying utilizable data, refer to the following.

☞ Page 844 Display target items of the input assist and preparations for display

Selecting a device or label from utilizable data

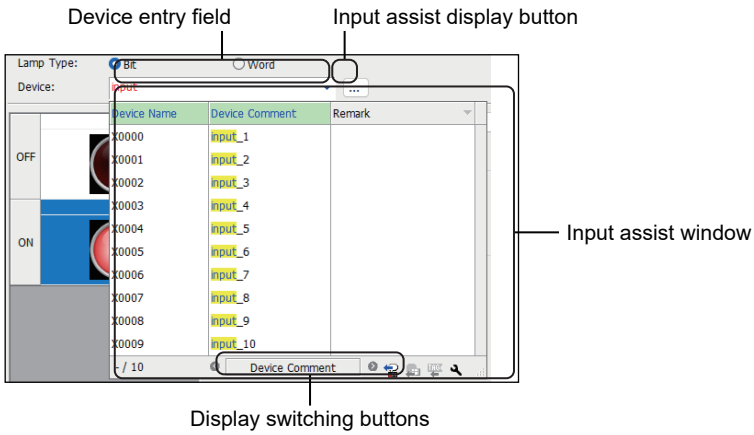
GT37 SoftGOT3000

1. Open the setting dialog of an object or others and perform either of the following operations in the device entry field to display the input assist window.

- Entering a search keyword in the device entry field
- Clicking the input assist display button in the device entry field

The items (device comments, labels, or others) displayed in the input assist window can be switched with the display switching button.

☞ Page 846 Input assist window



Limiting the items displayed in the input assist window or sorting by multiple criteria can be performed in the [Input Assist Setting] dialog.

☞ Page 848 [Input Assist Setting] dialog

2. Perform either of the following operations to set a device in the device entry field.

- Clicking the device to be set
- Selecting the device to be set with up and down arrow keys on the keyboard, and pressing the Enter key or the Tab key

Point

Using @ or one-byte spaces enables a search for a device with a channel specified or a search with multiple keywords.

☞ Page 844 Search symbols

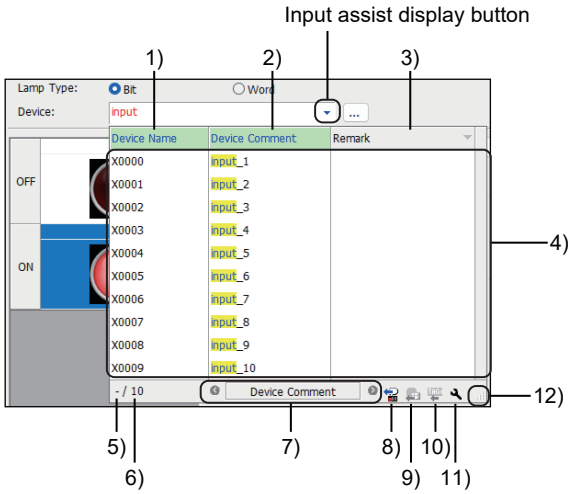
Input assist window

GT37 SoftGOT3000

Select a device or label from utilizable data.

This dialog is displayed by either of the following operations.

- Entering a search keyword in the device entry field
- Clicking the input assist display button in the device entry field



Item		Description
1)	[Device Name] [Label Name] [Tag Name]	Switch the ascending order, descending order, no sort in order every clicking the mouse. The name changes according to the contents of the displayed item.
2)	[Device Comment] [Device Definition] [Comment]	Switch the ascending order, descending order, no sort in order every clicking the mouse. The name changes according to the contents of the displayed item. The items are not displayed when [Show the device comment/definition settings] is deselected in the [Input Assist Setting] dialog.
3)	[Remark]	Switch the ascending order, descending order, no sort in order every clicking the mouse. [(History)] is displayed in the devices saved in the setting history.
4)	Utilizable data list	Searched devices. Select a row to select the device. The displayed contents can be scrolled with a mouse or keyboard. The column width can be changed with a mouse.
5)	Selected device	Position (row) of the device with the cursor in the utilizable data list. The device is displayed during cursor operation with a keyboard.
6)	Number of utilizable data items	Number of utilizable data items displayed in the utilizable data list. The number of utilizable data items changes when the utilizable data list is scrolled.
7)	Display switching buttons	Switches the items displayed in the utilizable data list. The text on the center button indicates the type of the data displayed in the utilizable data list. Switching is performed also by using the Ctrl + ← keys or Ctrl + → keys of the keyboard.
8)	[Device Comment / Device Definition List] button	The [Device Comment / Device Definition List] dialog appears. Import the device comment and the device definition. ☞ Page 959 [Device Comment / Device Definition List] dialog
9)	[Global Label List] button	Displays the [Label/Tag/Ethernet Setting List] dialog. Import global labels. ☞ Page 860 [Label/Tag/Ethernet Setting List] dialog
10)	Tag list button	The button name varies depending on the tag displayed in the utilizable data list. Displays the [Label/Tag/Ethernet Setting List] dialog. • [OMRON NJ/NX Tag List] button: Imports OMRON NJ/NX tags. • [AB Native Tag List] button: Imports AB native tags. • [OPC UA Tag List] button: Imports OPC UA tags. ☞ Page 860 [Label/Tag/Ethernet Setting List] dialog
11)	[Input Assist Setting] button	Displays the [Input Assist Setting] dialog. Enable or disable the input assist or select the search target. ☞ Page 848 [Input Assist Setting] dialog

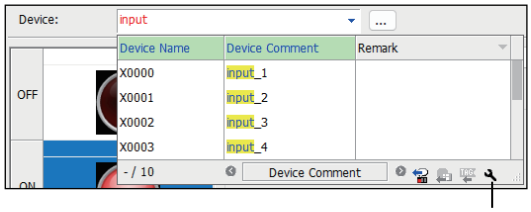
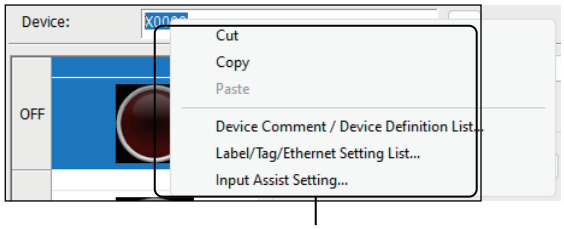
Item		Description
12)	Resizing a figure or object	To change the size of the input assist window, move the mouse pointer to the lower right corner of the window where the pointer becomes a double-headed arrow, and drag the pointer.

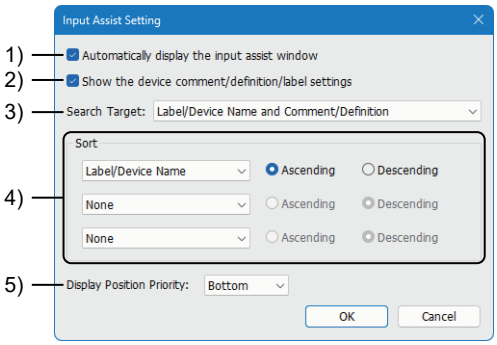
■[Input Assist Setting] dialog

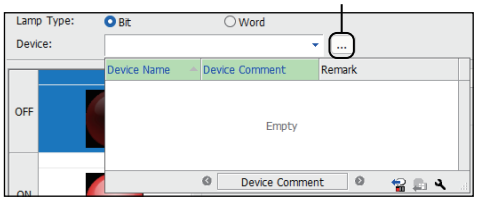
GT37 SoftGOT3000

Set the items to be displayed in the input assist window and sorting order of utilizable data.

This dialog is displayed by either of the following operations.

Operation method	Operation screen
Clicking the [Input Assist Setting] button in the input assist window	 [Input Assist Setting] button
Right-clicking the device entry field, and selecting [Input Assist Setting] from the menu	 Right-click menu



Item		Description
1)	[Automatically display the input assist window]	Automatically displays the input assist window when a keyword is entered in the device entry field in the object setting dialog and others. Even though this item is deselected, you can display the input assist window by the following operation. Click 
2)	[Show the device comment/definition/label settings] [Show the device comment/definition/label/tag settings]	Displays the device comments, device definitions, and others as utilizable data in the input assist window. Deselect this item to display only the device setting history in the input assist window.
3)	[Search Target]	Select a search target.
4)	[Sort]	Set the sorting order of the utilizable data list of the input assist window. Up to three conditions for sorting order can be set and their priority is high from the top. Select [Ascending] and [Descending] for each condition.
5)	[Display Position Priority]	Select the display position of the input assist window against the device entry field.

19.1.4 Directly entering data in the device entry field

GT37 SoftGOT3000

☞ Page 849 Formats of devices, labels, and tags
☞ Page 852 Device setting for network connection

Directly enter a device, label, or tag in the device entry field.
Entry must be performed according to the specified format.

Formats of devices, labels, and tags

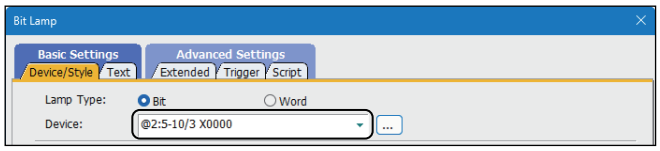
The following shows how to format devices, labels, and tags in setting dialogs and scripts.

☞ Page 849 Formats in setting dialogs
☞ Page 851 Formats in scripts

■Formats in setting dialogs

The following shows the formats in the setting dialog of an object or others.

Ex.
Channel number 2, network number 5, station number 10, CPU number 3, and device X0000



Device, label, or tag	Format
Device	(Channel):(Network setting) (Device)
Label (GT Designer3)	$(Group name):(Label name)
Global label	For setting the global labels imported with GX Works3 or MT Developer2 (Channel):(Network setting)::(Label name)
	For setting the global labels imported with Motion Control Setting Function (Channel):(Network setting)::U (Module No.)-(Label name)
OMRON NJ/NX tag	(Channel):(Network setting)::(Tag name)
AB native tag	(Channel):(Network setting)::(Tag name)
OPC UA tag	(Channel)&(Tag name)

The formats in [Device] include the following elements.

Element	Description	
Channel	Format	@(Channel No.)
	Example	Example) Channel number 2 @2
	Description	Channel for communicating with a controller. To specify channel number 1, "@1:" can be omitted. If no network setting exists, the colon (:) after "(Channel)" is not required.

Element	Description		
Network setting	Format	(Network No.)-(Station No.)/(CPU No.)-(Redundant system)	
	Example	Example) Network No. 5, station No. 10, CPU No. 3, and standby system 5-10/3-S	
	Description	Setting for specifying a network-connected controller. Enter the following elements as necessary.	
		Network No., station No.	To specify the host station or all stations, "(Network No.)-(Station No.)" can be omitted. However, enter 0-0 to specify all stations for monitoring MODBUS salve equipment. If no network number and station number exist, "(Network No.)-(Station No.)" is not required. For the monitoring targets when "0" or "FF" is set to the network number and station number for network connection, refer to the following. ☞ Page 852 Device setting for network connection
		CPU No.	To specify a CPU number, "(Network No.)-(Station No.)" cannot be omitted. If no CPU number exists or you specify CPU number 0, "/(CPU No.)" is not required.
		Redundant system	To monitor the standby system in a redundant system, enter S. To monitor the control system in a redundant system or monitor a non-redundant system, "-(Redundant system)" is not required.
			If you deselect [Use the function of MELSEC Redundant] in the [Controller Setting] window ([MELSEC Redundant]), the specified device is still marked with [-S] that identifies the standby system. ☞ Page 746 [MELSEC Redundant] To perform batch deletion of [-S], use the [Network Batch Edit] dialog or other methods. ☞ Page 159 [Network Batch Edit] dialog
Group name	Format	$(Group name)	
	Example	Example) Group name: LG1 $LG1	
	Description	Label group of labels (GT Designer3)	
Module number	Format	U(Module No.)	
	Example	Example) Module number: A1 UA1	
	Description	Set this element to import global labels with Motion Control Setting Function.	
Device	Format	(Device name)(Device No.).b(Bit position)	
	Example	Example) Bit 15 of D1000 D1000.b15	
	Description	Device name and device number. When inserting "(Device)" immediately after "(Network setting)", add a one-byte space between them. To specify a bit of a word device, enter ".b(Bit position)". Some devices require other elements. For the formats of such devices, refer to the following. ☞ Page 3128 Device range and settings of Mitsubishi Electric equipment ☞ Page 3487 Device range and settings of each controller	
Label name Tag name	Format	(Label name or tag name).b(Bit position)	
	Example	Example) Bit 15 of a global label named global_label_001 global_label_001.b15	
	Description	Label name or tag name. To specify a bit of a word device, enter ".b(Bit position)". The format varies according to the types of labels or tags. For details, refer to the following. ☞ Page 867 How to set labels (GT Designer3) ☞ Page 896 How to set global labels ☞ Page 921 How to set OMRON NJ/NX tags ☞ Page 936 How to set AB native tags ☞ Page 944 How to set OPC UA tags	

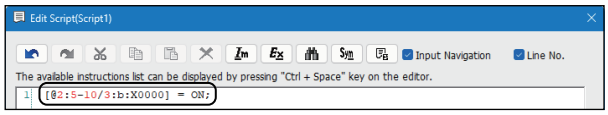
■Formats in scripts

The formats in setting dialogs and scripts are different.

The following shows the formats in scripts.

Ex.

Channel number 2, network number 5, station number 10, CPU number 3, and device X0000



Device, label, or tag	Format
Device	[(Channel):(Network setting):(Data type):(Device)]
Label (GT Designer3)	[<$:(Group name):(Label name)>]
Global label	For setting the global labels imported with GX Works3 or MT Developer2 [(Channel):(Network setting):(Data type)::(Label name)]
	For setting the global labels imported with Motion Control Setting Function [(Channel):(Network setting):(Data type)::U (Module No.)-(Label name)]
OMRON NJ/NX tag	[(Channel):(Network setting):(Data type)::(Tag name)]
AB native tag	[(Channel):(Network setting):(Data type)::(Tag name)]
OPC UA tag	[(Channel):(Data type)::&(Tag name)]

The formats of channel, network setting, module number, device, label name, and tag name are the same as the formats of the elements in [Device] in setting dialogs.

☞ Page 849 Formats in setting dialogs

"(Data type)" is required in scripts.

For its format, refer to the following.

☞ Page 2353 Available devices and how to express the devices

Device setting for network connection

The following shows the monitored stations when "0" or "FF" is specified for the network number and station number of the device.

■MELSECNET/H connection

Specified value		Monitored station		Remarks
Network No.	Station No.	Network No.	Station No.	
0 (Own network)	0	Own network	Control station	-
	FF (host station)	Own network	Host station (GOT)	Link devices and GOT internal devices can be monitored but the others (transient devices) cannot be monitored.
	Same as the GOT	Monitoring unavailable	Monitoring unavailable	-
	Other than the above	Own network	As specified	-
Same as the GOT	0	As specified	Control station	-
	FF (host station)	Monitoring unavailable	Monitoring unavailable	-
	Same as the GOT	Monitoring unavailable	Monitoring unavailable	-
	Other than the above	As specified	As specified	-
Other than the above (Other network)	0	As specified	Control station	-
	FF (host station)	Monitoring unavailable	Monitoring unavailable	-
	Other than the above	As specified	As specified	-

■CC-Link IE TSN connection

Specified value		Monitored station		Remarks
Network No.	Station No.	Network No.	Station No.	
0 (Own network)	0	Monitoring unavailable	Monitoring unavailable	—
	FF	Own network	Host station (GOT)	Link devices can be monitored but the others (transient devices) cannot be monitored.
	Same as the GOT	Monitoring unavailable	Monitoring unavailable	—
	Other than the above	Monitoring unavailable	Monitoring unavailable	—
Same as the GOT	0	As specified	Master station	—
	FF	Monitoring unavailable	Monitoring unavailable	—
	Same as the GOT	Monitoring unavailable	Monitoring unavailable	—
	Other than the above	As specified	As specified	—
Other than the above (Other network)	0	As specified	Master station	—
	FF	Monitoring unavailable	Monitoring unavailable	—
	Other than the above	As specified	As specified	—

■CC-Link IE Controller Network connection

Specified value		Monitored station		Remarks
Network No.	Station No.	Network No.	Station No.	
0 (Own network)	0	Own network	Control station	-
	FF (host station)	Own network	Host station (GOT)	Link devices and GOT internal devices can be monitored but the others (transient devices) cannot be monitored.
	Same as the GOT	Monitoring unavailable	Monitoring unavailable	-
	Other than the above	Own network	As specified	-
Same as the GOT	0	As specified	Control station	-
	FF (host station)	Monitoring unavailable	Monitoring unavailable	-
	Same as the GOT	Monitoring unavailable	Monitoring unavailable	-
	Other than the above	As specified	As specified	-
Other than the above (Other network)	0	As specified	Control station	-
	FF (host station)	Monitoring unavailable	Monitoring unavailable	-
	Other than the above	As specified	As specified	-

■CC-Link IE Field Network connection

Specified value		Monitored station		Remarks
Network No.	Station No.	Network No.	Station No.	
0 (Own network)	0	Own network	Master station	—
	FF (host station)	Own network	Host station (GOT)	Link devices and GOT internal devices can be monitored but the others (transient devices) cannot be monitored.
	Same as the GOT	Monitoring unavailable	Monitoring unavailable	—
	Other than the above	Own network	As specified	—
Same as the GOT	0	As specified	Master station	—
	FF (host station)	Monitoring unavailable	Monitoring unavailable	—
	Same as the GOT	Monitoring unavailable	Monitoring unavailable	—
	Other than the above	As specified	As specified	—
Other than the above (Other network)	0	As specified	Master station	—
	FF (host station)	Monitoring unavailable	Monitoring unavailable	—
	Other than the above	As specified	As specified	—

19.2 Settable devices in GT Designer3

GT37 SoftGOT3000

☞ Page 854 Available devices and setting ranges
☞ Page 857 Data type of devices

19.2.1 Available devices and setting ranges

The following shows the devices that can be set in GT Designer3.

☞ Page 854 GOT internal devices (GB, GD, and GS)
☞ Page 855 SoftGOT3000 internal devices (SGB and SGD)
☞ Page 855 GOT Mobile devices (VGB, VGD)
☞ Page 856 Controller device

Point

Labels or tags can be set in the device setting in GT Designer3.
Labels and tags are used to manage devices by label names or tag names. This is enabled by assigning labels or tags with usage names or function names to the devices.
For labels and tags usable in GT Designer3, refer to the following.
☞ Page 858 Labels and Tags Usable in GT Designer3

GOT internal devices (GB, GD, and GS)

GT37 SoftGOT3000

GOT internal devices refer to the devices that the GOT has in itself.
These devices are usable for any connection type, but they cannot be controlled by the sequence program of a controller.
If the GOT is powered off or reset, the GOT internal devices store 0.
The GOT internal device includes the GOT bit register, GOT data register, and GOT special register.

Device	Setting range	Device number representation	Description
GOT bit register (GB)	GB0 to GB65535	Decimal	Can be used as bit devices. This device is usable without connection through a controller as shown below. • Work area for the script function • Barcode storage area This device cannot be used as a 64-bit device.
GOT data register (GD)	GD0 to GD65535		Can be used as word devices. This device is usable without connection through a controller as shown below. • Screen switching device • Work area for the script function • Barcode storage area This device cannot be used as an 8-bit device.
GOT special register (GS)	GS0 to GS3071		Special register that the GOT has in itself The registers store internal information, communication status, and error information of the GOT. Monitoring the GOT special registers allows you to check the GOT information and control the GOT. This device cannot be used as an 8-bit or a 64-bit device.

The GOT internal devices have the area where functions are assigned or use prohibited areas used by the system.
For details on the device functions and use-prohibited devices, refer to the following.
☞ Page 3577 GOT internal devices

SoftGOT3000 internal devices (SGB and SGD)

GT37 SoftGOT3000

SoftGOT3000 internal devices refer to data storage areas used by GT SoftGOT3000.
SoftGOT3000 internal devices are usable for any connection type, but they cannot be controlled by the sequence program of a controller.
When you exit GT SoftGOT3000, these devices are reset to 0.
The SoftGOT3000 internal devices are classified into two types: SoftGOT bit registers and SoftGOT data registers.

Device	Setting range	Device number representation	Description
SoftGOT bit register (SGB)	SGB0 to SGB65535	Decimal	Can be used as bit devices. This device is usable without connection through a controller as shown below. • Screen switching device • Work area for the script function • Barcode storage area
SoftGOT data register (SGD)	SGD0 to SGD65535		Can be used as word devices. This device is usable without connection through a controller as shown below. • Screen switching device • Work area for the script function • Barcode storage area

The SoftGOT3000 internal devices are also usable to monitor the data collected by the data collector of Edgecross.
To monitor the collected data, assign the data to SoftGOT3000 internal devices in the Edgecross interaction function setting in GT SoftGOT3000.
For the Edgecross interaction function setting, refer to the following.
GT SoftGOT3000 Operating Manual

GOT Mobile devices (VGB, VGD)

GT37 SoftGOT3000

The GOT Mobile devices are virtual devices usable for a client.
Assign GOT internal devices (GB and GD) to GOT Mobile devices for a client. The GOT Mobile devices are used as internal devices for the client.
Multiple clients are controllable individually by assigning different GOT internal devices for each client.
The virtual devices are not initialized at the start of monitoring a mobile screen. Therefore, the devices hold the values that are stored immediately before the monitoring.

Device	Setting range	Device number representation
GOT Mobile bit register (VGB)	VGB0 to VGB32767	Decimal
GOT Mobile data register (VGD)	VGD0 to VGD32767	

Controller device

GT37 SoftGOT3000

The controller device refers to the data storage area in a controller.
The GOT can monitor the controller devices.
The setting range and device number representation vary with the controller.
☞ Page 3128 Device range and settings of Mitsubishi Electric equipment
☞ Page 3487 Device range and settings of each controller

Precautions

The range of the devices that the GOT can monitor and the range of the devices that the controller has may be different.
GT Designer3 does not automatically check if a device set in the settings of an object or others exists in the controller being monitored.
To check if such device exists in the controller being monitored by the GOT, use one of the following methods.

Method	Description
Checking when setting the controllers	For the types and the ranges of the devices available for the controllers, refer to the following. GOT3000 Series User's Manual (Connection)
Checking when drawing	For the types and the ranges of the devices that can be set in GT Designer3 projects, refer to the following. ☞ Page 3128 Device range and settings of Mitsubishi Electric equipment ☞ Page 3487 Device range and settings of each controller
Monitoring with the GOT	When you attempt to monitor devices that the controller does not have, system alarm 322 occurs. You can check the system alarm by placing a system alarm display object on the screen or by using the utility. ☞ Page 1542 Placing a system alarm display ☞ Page 2132 Viewing alarm events (Alarm display) GOT3000 Series User's Manual (Utility & Maintenance Functions)

19.2.2 Data type of devices

The following data types are supported.

Each data type supports different data range and different devices.

Data type	Data length	Data range	Supported device
Bit	1 bit	0, 1	• Bit device • Bit-specified word device
Signed 8-bit binary	8-bit	-128 to 127	• Byte device • Byte-specified bit device
Unsigned 8-bit binary	8-bit	0 to 255	
Signed 16-bit binary	16-bit	-32768 to 32767	• Word device • Word-specified bit devices
Unsigned 16-bit binary	16-bit	0 to 65535	
Signed 32-bit binary	32-bit	-2147483648 to 2147483647	• Double-word device • Double-word-specified bit device • Double-word-specified word device
Unsigned 32-bit binary	32-bit	0 to 4294967295	
Signed 64-bit binary	64-bit	-9223372036854775808 to 9223372036854775807	Quad-word-specified word device
Unsigned 64-bit binary	64-bit	0 to 18446744073709551615	
16-bit binary-coded decimal	16-bit	0 to 9999	• Word device • Word-specified bit devices
32-bit binary-coded decimal	32-bit	0 to 99999999	• Double-word device • Double-word-specified bit device • Double-word-specified word device
64-bit binary-coded decimal	64-bit	0 to 9999999999999999	Quad-word-specified word device
Real number (32-bit)*1	32-bit	±(0, 1.17550E-38 to 3.40282E+38) Real number precision: 6 digits	• Double-word device • Double-word-specified bit device • Double-word-specified word device
Real number (64-bit)*1	64-bit	±(0, 2.2250738585073e-308 to 1.7976931348623e+308) Real number precision: 14 digits	Quad-word-specified word device

*1 When a value exceeding the number of digits to which a real number is accurate is set, the set value and the operating value differ. For a real number, set the number of digits not exceeding the number of digits to which the real number is accurate.

19.3 Labels and Tags Usable in GT Designer3

GT37 SoftGOT3000

☞ Page 858 Types of labels and tags usable in GT Designer3
☞ Page 860 [Label/Tag/Ethernet Setting List] dialog

Labels and tags are used to manage devices by label names or tag names. This is enabled by assigning labels or tags with usage names or function names to the devices.

You can set labels or tags to in the device setting in GT Designer3.

19.3.1 Types of labels and tags usable in GT Designer3

GT37 SoftGOT3000

In GT Designer3, you can create labels used in GT Designer3 projects, or import labels or tags of controllers and set them in the device setting.

The following shows the labels and tags usable in GT Designer3.

Labels or tags created in GT Designer3

Type	Description	Model
Label (GT Designer3)	This label is used only in GT Designer3 projects without sharing label information with controllers. ☞ Page 867 How to set labels (GT Designer3)	GT37 SoftGOT3000
OPC UA tag	Tags that the OPC UA server (GOT) has. The OPC UA client can access the controllers to which the GOT is connected through the OPC UA tag of the OPC UA server (GOT). ☞ Page 2839 Monitoring controllers through the GOT (OPC UA server function)	GT37 SoftGOT3000

Labels or tags created in the controller

Type	Software used for setting	Description	Model
Global label	GX Works3 MT Developer2 Motion Control Setting Function	Labels to be set with the software of the controller. You can import global labels and set them in the device setting in GT Designer3. Even if you change the devices assigned to the global labels in the controller, the GOT obtains the information from the controller and monitors the new devices. ☞ Page 896 How to set global labels	GT37 SoftGOT3000
OMRON NJ/NX tag	OMRON programming software	Tags to be set with the OMRON programming software. You can import OMRON NJ/NX tags and set them in the device setting in GT Designer3. ☞ Page 921 How to set OMRON NJ/NX tags	GT37 SoftGOT3000
RSLogix 5000 tag	ALLEN-BRADLEY programming software	Tags to be set with the ALLEN-BRADLEY programming software. You can import RSLogix 5000 tags and set them in the device setting in GT Designer3. ☞ Page 931 Using RSLogix 5000 tags	GT37 SoftGOT3000
AB native tag	ALLEN-BRADLEY programming software	Tags to be set with the ALLEN-BRADLEY programming software. You can import AB native tags and set them in the device setting in GT Designer3. ☞ Page 936 How to set AB native tags	GT37 SoftGOT3000
OPC UA tag	OPC UA server	Tags to be set with the OPC UA server function. You can import OPC UA tags and set them in the device setting in GT Designer3. ☞ Page 944 How to set OPC UA tags	GT37 SoftGOT3000

19.3.2 [Label/Tag/Ethernet Setting List] dialog

GT37 SoftGOT3000

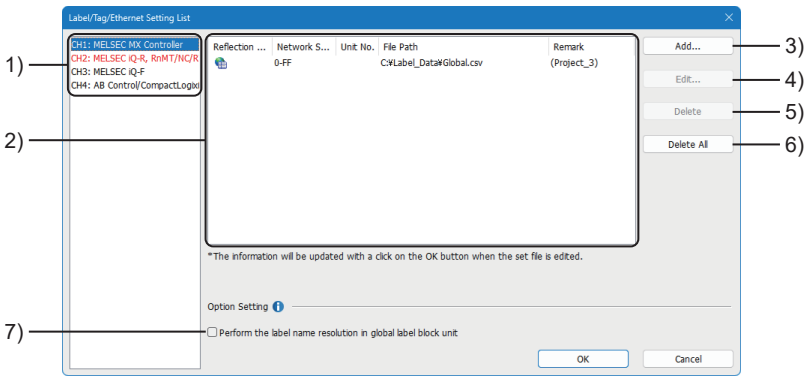
This dialog is used to import or delete the following items.

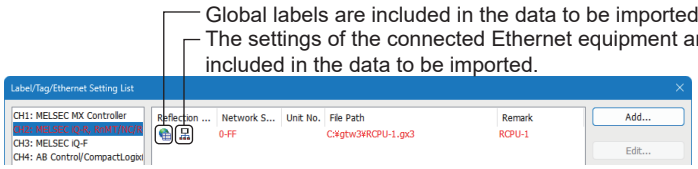
Item	Description
Label Tag	Import the labels or tags created in the controller. For labels and tags that can be imported or deleted, refer to the following. ☞ Page 859 Labels or tags created in the controller
Ethernet settings	Import the Ethernet settings from a GX Works3 project and applies them in [Connected Ethernet Controller Setting].

Window

This dialog is displayed by either of the following operations.

- Select [Project] → [Import Other Data] → [Label/Tag/Ethernet Setting] from the menu.
- Double-click [Import/Setting] under [Label/Tag] in the [Project] window.



Item		Description
1)	Channel list	List of each channel and the communication setting that has been set. When you select a channel, the contents displayed in the label/tag/Ethernet setting list will change according to the settings of the selected channel. When this dialog is opened, if any label, tag, or Ethernet setting requires updating due to changes such as updates to the previously imported file, the text of the corresponding channel turns red.
2)	Label/tag/Ethernet setting list	In the channel list, when you select a channel for which communication setting relevant to labels or tags are configured, the import settings of the labels or tags are displayed. When this dialog is opened, if there is no previously imported file in the specified path, the text of the corresponding row turns red. When a global label is set, the type of the imported settings is displayed as an icon in the [Reflection Function] column. 

Item		Description	
3)	[Add] button	Imports labels or tags. The displayed dialog depends on the communication setting of the selected channel.	
		When selecting a channel that supports global labels or Ethernet settings	When one of the following is selected for [Controller Type] in the [Controller Setting] window, and a channel whose [Driver] is [Ethernet(MITSUBISHI ELECTRIC), Gateway] is selected in the channel list, the [Add Global Label/Ethernet Setting] dialog appears. • [MELSEC MX Controller] • [MELSEC iQ-R, RnMT/NC/RT, CR800-D] • [MELSEC iQ-L] • [MELSEC iQ-F] • [MELIPC] ☞ Page 862 [Add Global Label/Ethernet Setting] dialog or [Edit Global Label/Ethernet Setting] dialog Up to 500 files can be imported.
		When selecting a channel that supports the following tags • OMRON NJ/NX tag • RSLogix 5000 tag • AB native tag • OPC UA tag	When a channel is selected in the channel list, with the following selected for [Controller Type] in the [Controller Setting] window, the dialog for adding the tag corresponding to the selected channel appears. • [OMRON NJ/NX] ☞ Page 864 [Add OMRON NJ/NX Tag] dialog or [Edit OMRON NJ/NX Tag] dialog • [AB Control/CompactLogix] ☞ Page 865 [Add RSLogix 5000 Tag] dialog or [Edit RSLogix 5000 Tag] dialog • [AB Control/CompactLogix(Tag)] ☞ Page 865 [Add AB Native Tag] dialog or [Edit AB Native Tag] dialog • [OPC UA] ☞ Page 866 [Add OPC UA Tag] dialog or [Edit OPC UA Tag] dialog Up to 128 files can be imported.
4)	[Edit] button	Edit the import settings of the label or tag selected in the label/tag/Ethernet setting list. The displayed dialog depends on the communication setting of the selected channel.	
		When selecting a channel that supports global labels or Ethernet settings	When one of the following is selected for [Controller Type] in the [Controller Setting] window, and a channel whose [Driver] is [Ethernet(MITSUBISHI ELECTRIC), Gateway] is selected in the channel list, the [Edit Global Label/Ethernet Setting] dialog appears. • [MELSEC MX Controller] • [MELSEC iQ-R, RnMT/NC/RT, CR800-D] • [MELSEC iQ-L] • [MELSEC iQ-F] • [MELIPC] ☞ Page 862 [Add Global Label/Ethernet Setting] dialog or [Edit Global Label/Ethernet Setting] dialog
		When selecting a channel that supports the following tags • OMRON NJ/NX tag • RSLogix 5000 tag • AB native tag • OPC UA tag	When a channel is selected in the channel list, with the following selected for [Controller Type] in the [Controller Setting] window, the dialog for editing the tag corresponding to the selected channel appears. • [OMRON NJ/NX] ☞ Page 864 [Add OMRON NJ/NX Tag] dialog or [Edit OMRON NJ/NX Tag] dialog • [AB Control/CompactLogix] ☞ Page 865 [Add RSLogix 5000 Tag] dialog or [Edit RSLogix 5000 Tag] dialog • [AB Control/CompactLogix(Tag)] ☞ Page 865 [Add AB Native Tag] dialog or [Edit AB Native Tag] dialog • [OPC UA] ☞ Page 866 [Add OPC UA Tag] dialog or [Edit OPC UA Tag] dialog
5)	[Delete] button	Deletes the settings selected in the label/tag/Ethernet setting list. When the imported setting is deleted and the [OK] button is clicked in a channel that supports global labels or Ethernet settings, related data is treated as follows: • The global labels imported from the deleted setting are deleted as well. • The connected Ethernet controller settings imported from the deleted setting are retained.	
6)	[Delete All] button	Deletes all the settings displayed in the label/tag/Ethernet setting list. When the imported setting is deleted and the [OK] button is clicked in a channel that supports global labels or Ethernet settings, related data is treated as follows: • The global labels imported from the deleted setting are deleted as well. • The connected Ethernet controller settings imported from the deleted setting are retained.	
7)	[Perform the label name resolution in global label block unit]	This item is enabled when you select a channel that uses global labels in the channel list. Perform the label name resolution by the split method. The label name resolution is performed only on the global label block containing an updated label. For details, refer to the following. ☞ Page 909 Obtaining label information from the controller during GOT operation (label name resolution)	

[Add Global Label/Ethernet Setting] dialog or [Edit Global Label/Ethernet Setting] dialog

GT37 SoftGOT3000

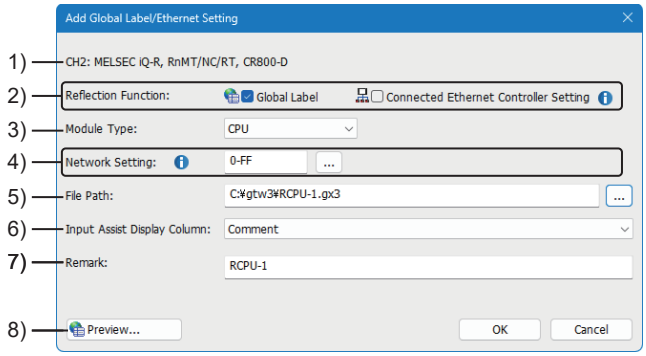
This dialog is used to import or delete the following items.

Item	Description
Global label	Import the settings of the controller that uses global labels from the specified file. For the importable file formats and required version of GX Works3, refer to the following. ☞ Page 898 Importable files in GT Designer3
Ethernet settings	Import the Ethernet settings from a GX Works3 project (*.gx3) and apply them in [Connected Ethernet Controller Setting]. GX Works3 Ver.101F or later is required for import. Only *.gx3 files can be imported.

The dialog name varies by how to display the dialog.

Use one of the following methods to display this dialog.

- In the [Label/Tag/Ethernet Setting List], select a channel that supports global labels and click the [Add] or [Edit] button.
- Click the [Global Label] button in the [Controller Setting] window.
- Click the [Import from GX Works3 Project] button in the [Controller Setting] window.



Item		Description
1)	Communication setting	Channel number and the communication setting

Item			Description
2)	[Reflection Function]	—	Select the settings to be imported.
		[Global Label]	This item is enabled for the channel for which one of the following items is selected for [Controller Type] in the [Controller Setting] window. • [MELSEC MX Controller] • [MELSEC iQ-R, RnMT/NC/RT, CR800-D] • [MELSEC iQ-L] • [MELIPC] Selecting this item enables the following setting items. • [Module Type] • [Network Setting] • [Input Assist Display Column] • [Data Name] • [Preview] button (when the path to a GX Works3 project (*.gx3) is specified in [File Path]) Import global labels from the specified file. If the [OK] button is clicked after the import with this item cleared, the imported global labels are deleted.
		[Connected Ethernet Controller Setting]	This item is enabled when one of the following is selected for [Controller Type] in the [Controller Setting] window, and a channel whose [Driver] is [Ethernet(MITSUBISHI ELECTRIC), Gateway] is selected in the channel list. • [MELSEC iQ-R, RnMT/NC/RT, CR800-D] • [MELSEC iQ-F] Import the Ethernet settings from a GX Works3 project and applies them in [Connected Ethernet Controller Setting]. ☞ Page 731 [Connected Ethernet Controller Setting] If the [OK] button is clicked after the import with this item cleared, the connected Ethernet controller settings imported are retained. The following module parameter settings are imported from the GX Works3 project. • [IP Address] • [Network No.] • [Station No.] • [External Device Configuration] (the setting of [MELSOFT Connection Module] for [Model Name] in the detailed settings) When [Communications by Network No./Station No.] is set to [Disable] in the GX Works3 project, only the IP address is imported. [Unit Type] in [Connected Ethernet Controller Setting] is set according to the GX Works3 project. If the module configuration diagram is not set, the GX Works3 project cannot be imported. Import attempts fail.
3)	[Module Type]		This item is enabled for the channel for which [Connected Ethernet Controller Setting] is deselected and one of the following items is selected for [Controller Type] in the [Controller Setting] window. • [MELSEC MX Controller] • [MELSEC iQ-R, RnMT/NC/RT, CR800-D] • [MELIPC] When specifying a project or a CSV file exported with GX Works3 or MT Developer2 in [File Path]: Select [CPU]. When specifying a CSV file exported with Motion Control Setting Function in [File Path]: Select [Motion Module].
4)	[Network Setting]	—	This item is enabled for the channel for which one of the following items is selected for [Controller Type] in the [Controller Setting] window. • [MELSEC MX Controller] • [MELSEC iQ-R, RnMT/NC/RT, CR800-D] • [MELSEC iQ-L] • [MELIPC] Set the network setting for the PLC having the global label setting.
		[Unit No.]	This item appears when [Motion Module] is selected for [Module Type]. Set this item when specifying a CSV file exported with Motion Control Setting Function in [File Path]. Set the second and third values of the start I/O number of the connected Motion module. Example) When the start I/O number is 0FE0, set FE to [Unit No.].
5)	[File Path]		Specify the path to the file to be imported. If GX Works3 project data with security settings configured is specified, user or project authentication may be required. Enter the user name and password in the displayed dialog to perform authentication.

Item		Description
6)	[Input Assist Display Column]	This item is enabled for the channel for which one of the following items is selected for [Controller Type] in the [Controller Setting] window. • [MELSEC MX Controller] • [MELSEC iQ-R, RnMT/NC/RT, CR800-D] • [MELSEC iQ-L] • [MELIPC] For the comment set in the global label, specify the column of the comment to be displayed in the input assist. If a project is specified in [File Path], the settable comments are fixed.
7)	[Data Name]	This item is enabled for the channel for which one of the following items is selected for [Controller Type] in the [Controller Setting] window. • [MELSEC MX Controller] • [MELSEC iQ-R, RnMT/NC/RT, CR800-D] • [MELSEC iQ-L] • [MELIPC] Set the data name to be displayed in the [Label/Tag/Ethernet Setting List] dialog.
8)	[Preview] button	This item is enabled for the channel for which [CPU] is selected for [Module Type] and one of the following items is selected for [Controller Type] in the [Controller Setting] window. • [MELSEC MX Controller] • [MELSEC iQ-R, RnMT/NC/RT, CR800-D] • [MELSEC iQ-L] • [MELIPC] This item appears only when a project is specified in [File Path]. Displays the [Global Label Preview] dialog showing the details of target global labels. The global label that cannot be imported is highlighted in gray. The displayed project is not editable.

■Updating global labels and Ethernet settings

When any of the imported global labels or Ethernet settings is updated, an icon appears in the status bar to notify you of the update.

☞ Page 907 Updating the imported global labels

[Add OMRON NJ/NX Tag] dialog or [Edit OMRON NJ/NX Tag] dialog

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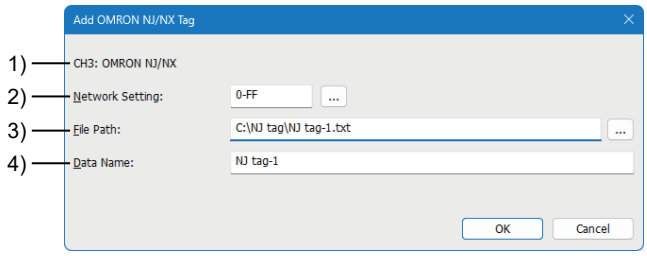
Configure the settings for the controller that uses OMRON NJ/NX tags or specify a file to be imported.

The dialog name varies by how to display the dialog.

Use one of the following methods to display this dialog.

- In the [Label/Tag/Ethernet Setting List] dialog, select a channel that supports OMRON NJ/NX tags and click the [Add] or [Edit] button.
- Click the [AB Native Tag] button in the [Controller Setting] window.



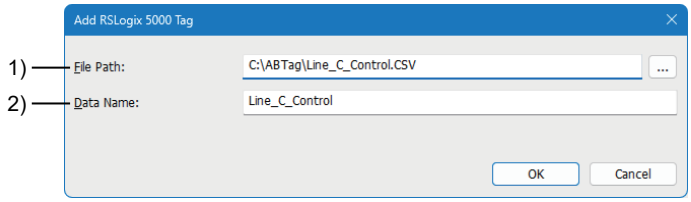
Item		Description
1)	Communication setting	Channel number and the communication setting
2)	[Network Setting]	Specify the network of the PLC having the OMRON NJ/NX tag setting.
3)	[File Path]	Specify the path to a Unicode text file of OMRON NJ/NX tags.
4)	[Data Name]	Set the data name to be displayed in the [OMRON NJ/NX Tag List] dialog. If this field is left blank, the file name specified with the file path is automatically entered.

[Add RSLogix 5000 Tag] dialog or [Edit RSLogix 5000 Tag] dialog

GT37 SoftGOT3000

Specify the file path and data name of the RSLogix 5000 tag to be used.
The dialog name varies by how to display the dialog.
Use one of the following methods to display this dialog.

- In the [Label/Tag/Ethernet Setting List] dialog, select a channel that supports RSLogix 5000 tags and click the [Add] or [Edit] button.
- Click the [RSLogix 5000 Tag] button in the [Controller Setting] window.



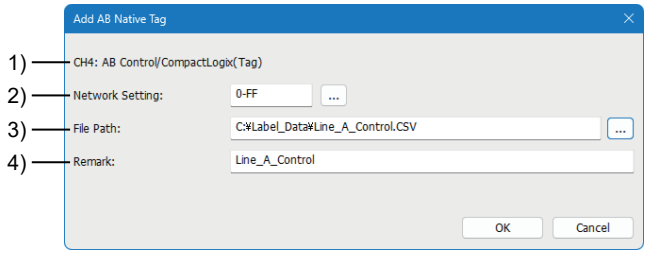
Item		Description
1)	[File Path]	Set the path of the RSLogix 5000 tag file to be added.
2)	[Data Name]	Set the data name of the RSLogix 5000 tag file to be added. The setting cannot be changed in the [Edit RSLogix 5000 Tag] dialog.

[Add AB Native Tag] dialog or [Edit AB Native Tag] dialog

GT37 SoftGOT3000

Configure the settings for the controller that uses AB native tags or specify a file to be imported.
The dialog name varies by how to display the dialog.
Use one of the following methods to display this dialog.

- In the [Label/Tag/Ethernet Setting List], select a channel that supports AB native tags and click the [Add] or [Edit] button.
- Click the [AB Native Tag] button in the [Controller Setting] window.



Item		Description
1)	Communication setting	Channel number and the communication setting
2)	[Network Setting]	Specify the network for the PLC that uses AB native tags.
3)	[File Path]	Specify the path to the file to be imported.
4)	[Data Name]	Set the data name to be displayed in GT Designer3. The setting cannot be changed in the [Edit AB Native Tag] dialog.

[Add OPC UA Tag] dialog or [Edit OPC UA Tag] dialog

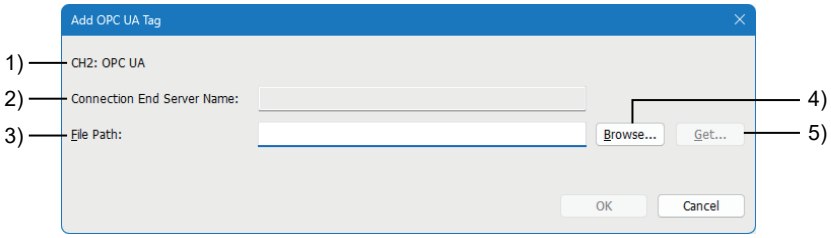
GT37 SoftGOT3000

Configure the settings for the controller that uses OPC UA tags or specify a file to be imported.

The dialog name varies by how to display the dialog.

Use one of the following methods to display this dialog.

- In the [Label/Tag/Ethernet Setting List] dialog, select a channel that supports OPC UA tags and click the [Add] or [Edit] button.
- Click the [OPC UA Tag] button in the [Controller Setting] window.



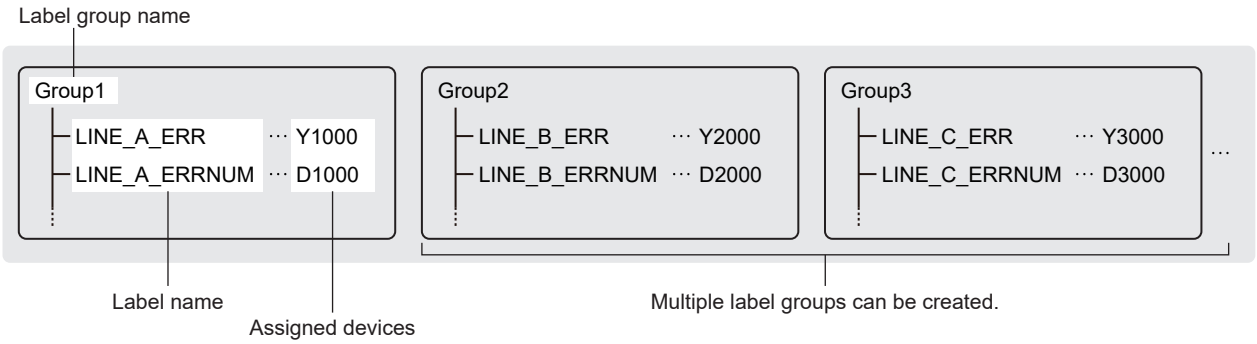
Item		Description
1)	Communication setting	Channel number and the communication setting
2)	[Connection End Server Name]	Displays the name of the OPC UA server to be connected when a tag information file is selected.
3)	[File Path]	Displays the path to the tag information file to be imported.
4)	[Browse] button	Displays the [Browse] dialog. Select a tag information file to be imported.
5)	[Get] button	Starts GT OPC UA Client and obtains tag information from an OPC UA server. The manual of the OPC UA client used

19.4 How to set labels (GT Designer3)

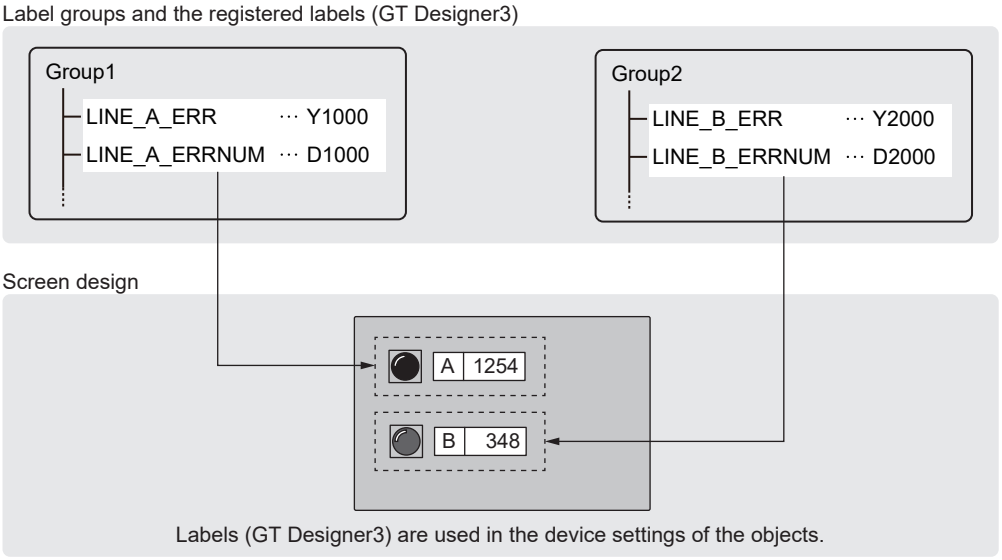
GT37 SoftGOT3000

☞ Page 868 Specifications of the label (GT Designer3)
☞ Page 872 Procedure to use the label (GT Designer3)
☞ Page 873 Registering or editing the label (GT Designer3)
☞ Page 874 Importing the label (GT Designer3)
☞ Page 881 Setting a label (GT Designer3) in the device setting
☞ Page 883 Checking for errors in the label (GT Designer3)
☞ Page 885 [Label Group List] dialog
☞ Page 887 [Label Group] window
☞ Page 892 [Register to Label] dialog
☞ Page 893 [Project Specification] dialog

A label (GT Designer3) is a character string with a device assigned and usable only in GT Designer3 projects.
The label (GT Designer3) enables you to create project without paying attention to the actual devices.
To use labels (GT Designer3), a label group must be created in advance.
For the created label group, register the label names of the labels (GT Designer3) and the devices to be assigned.



When you set a registered label (GT Designer3) in the device setting of an object or others, the GOT monitors the value of the device assigned to the label (GT Designer3).



19.4.1 Specifications of the label (GT Designer3)

GT37 SoftGOT3000

☞ Page 868 Assignable devices
☞ Page 868 Using different types of labels or tags together
☞ Page 868 Label group
☞ Page 868 Number of registrable labels
☞ Page 868 Label name
☞ Page 869 Data type of the label (GT Designer3)
☞ Page 869 Array-type label (GT Designer3)
☞ Page 869 Export and import specifications

Assignable devices

You can assign devices of the following controllers to the labels (GT Designer3).

- Devices of Mitsubishi Electric products
- Devices of non-Mitsubishi Electric products
- GOT internal devices

You can set the labels (GT Designer3) without devices assigned on GT Designer3. However, if you write a project having such settings to the GOT, the GOT does not operate correctly.

For details on the controller devices, refer to the following.

☞ Page 3577 GOT internal devices
☞ Page 3128 Device range and settings of Mitsubishi Electric equipment
☞ Page 3487 Device range and settings of each controller

Using different types of labels or tags together

The label (GT Designer3) can be used together with other labels and tags.

Label group

A label group is used to classify labels (GT Designer3).

All labels (GT Designer3) are registered in label groups.

Up to 200 label groups can be set for one project.

The numbers or names of the label groups cannot overlap each other.

Set a unique number and name to all label groups.

Number of registrable labels

Up to 20480 labels (GT Designer3) can be registered in one project.

Up to 10000 labels (GT Designer3) can be registered in one label group.

Label name

A label name must satisfy the following requirements.

Otherwise, the label (GT Designer3) cannot be set in GT Designer3.

- A label group contains no labels with the same names.
- Up to 256 characters are used for a label name.
- The following one-byte symbols are not used.

/ \ * ? < > | " : [ ] ; , = + % ' ^ @ { } . ! # $ & ~ ` ( ) -

Data type of the label (GT Designer3)

The following data types are settable for the label (GT Designer3).

Data type of the label (GT Designer3)	Bit-specified word device	Remarks
[Bit]	Not applicable	—
[Signed BIN16]	Applicable	The bit specification is not available when a device incapable of being bit-specified is assigned to the label (GT Designer3).
[Unsigned BIN16]	Applicable	
[Signed BIN32]	Not applicable	—
[Unsigned BIN32]	Not applicable	—
[Signed BIN64]	Not applicable	—
[Unsigned BIN64]	Not applicable	—
[Signed BIN8]	Not applicable	—
[Unsigned BIN8]	Not applicable	—
[BCD16]	Not applicable	—
[BCD32]	Not applicable	—
[BCD64]	Not applicable	—
[Real(32bit)]	Not applicable	—
[Real(64bit)]	Not applicable	—

Array-type label (GT Designer3)

The array must satisfy the following requirements.

- One-, two-, or three-dimensional array
- (Number of elements in the first dimension) × (Number of elements in the second dimension) × (Number of elements in the third dimension) is 2147483648 or less.

Export and import specifications

☞ Page 869 Importable labels as the label (GT Designer3)
☞ Page 869 Supported file format
☞ Page 870 Structure of the exported file of a label group

■Importable labels as the label (GT Designer3)

The following labels can be imported as the label (GT Designer3).

- Label (GT Designer3)
- Global labels created with GX Works3, GX Works2, or MT Developer2 (except structure-type global labels)

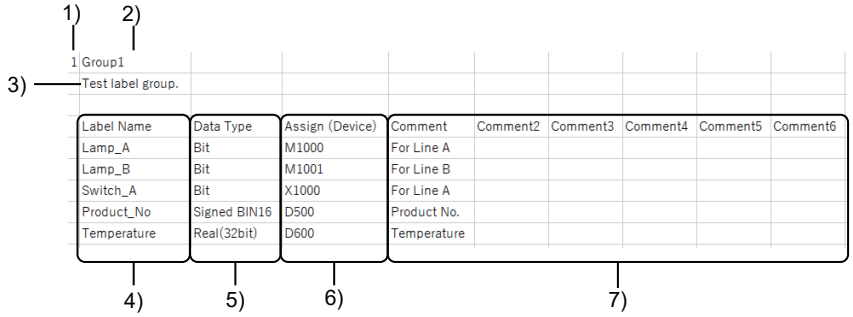
■Supported file format

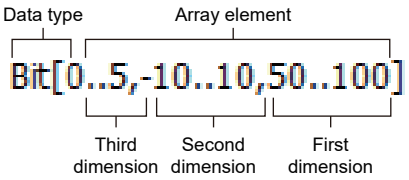
The label (GT Designer3) supports export and import of files in the following formats.

Operation type	File format	Remarks
Export	• CSV file • Unicode text file	For the configuration of the exported file, refer to the following. ☞ Page 870 Structure of the exported file of a label group
Import	• CSV file • Unicode text file • GX Works3 project (*.gx3)	To import a GX Works3 project (*.gx3), GX Works3 is required on the personal computer. The required GX Works3 version depends on the setting of the project to be imported. • Uncompressed project: Version 1.040S or later • Compressed project: Version 1.050C or later • Project data with security version 2: Version 1.096A or later 📖GX Works3 Operating Manual

■Structure of the exported file of a label group

The following shows the exported file configuration of a label group.



Item		Description
1)	Label group number	Group number of the label group. The setting range is [1] to [200].
2)	Label group name	Name of the label group. Up to 32 characters can be set.
3)	Detailed description	Detailed description of the label group. Up to 512 characters can be set. A line feed is counted as two characters.
4)	[Label Name]	Name of the label (GT Designer3). Up to 256 characters can be set.
5)	[Data Type]	Data type of the label (GT Designer3), and array elements The array elements are displayed only when the array setting is configured. Example) When the data type is bit and array elements are set in three dimensions  The following shows selectable items for the data type. • [Bit] • [Signed BIN16] • [Unsigned BIN16] • [Signed BIN32] • [Unsigned BIN32] • [Signed BIN64] • [Unsigned BIN64] • [Signed BIN8] • [Unsigned BIN8] • [BCD16] • [BCD32] • [BCD64] • [Real(32bit)] • [Real(64bit)] The setting range of array elements is [-2147483648] to [2147483647]. (Number of elements in the first dimension) × (Number of elements in the second dimension) × (Number of elements in the third dimension) must be 2147483648 or less.
6)	[Assign (Device)]	Device assigned to the label (GT Designer3). An invalid device is displayed as [??].
7)	Comment	Comment set for a label (GT Designer3). There are 16 columns. Up to 1024 characters can be set.

Influences of the label (GT Designer3) on operations

■Specifications for data transfer to the GOT

When you set the label (GT Designer3) in the package data and write the data to the GOT, [Write Mode] is not selectable in the [Write Option] dialog.

In this case, [Write Mode] is fixed to [Synchronize].

☞ Page 467 [Write Option] dialog

■Consecutive copy of an object with a label (GT Designer3) set

When you perform the consecutive copy of an object with the array-type label (GT Designer3) set, the array subscripts are incremented.

When you perform the consecutive copy of the label other than the array-type label (GT Designer3), the same label (GT Designer3) is set.

19.4.2 Procedure to use the label (GT Designer3)

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The following shows the procedure from registering a label (GT Designer3) to setting it in the device setting in GT Designer3.

1. Create a label group to which the label (GT Designer3) is registered.

☞ Page 873 Creating a label group

2. Register labels (GT Designer3) to the label group.

☞ Page 873 Registering or editing the label (GT Designer3)

Labels (GT Designer3) can be imported from a file that is exported from a different project.

☞ Page 875 Exporting or importing a label group

3. Set a registered label (GT Designer3) in the device setting of an object or others.

☞ Page 881 Setting a label (GT Designer3) in the device setting

The label (GT Designer3) setting is completed.

Point

For information on the specifications of assignable devices or others, refer to the following.

☞ Page 868 Specifications of the label (GT Designer3)

To check for any errors in the setting of the label (GT Designer3), refer to the following.

☞ Page 883 Checking for errors in the label (GT Designer3)

19.4.3 Registering or editing the label (GT Designer3)

GT37 SoftGOT3000

Register labels (GT Designer3) in a label group.

Create a label group in advance, and register the labels (GT Designer3).

Creating a label group

The following shows the procedure for creating a label group.

1. Perform one of the following operations to open the [Label Group Property] dialog.

Operation method	Description
Operating with the menu	Select [Common] → [Label] → [Open] from the menu to display the [Label Group List] dialog, and click the [New] button. ☞ Page 885 [Label Group List] dialog
Operating with the tree in the [Project] window	Double-click [New] under [Label (GT Designer3)]. ☞ Page 116 [Project] window
	Select [New Label Group] from the right-click context menu of the label (GT Designer3). ☞ Page 116 [Project] window

2. In the [Label Group Property] dialog, set the label group.

☞ Page 886 [Label Group Property] dialog

3. Click the [OK] button. The label group is created and the [Label Group] window appears.

The label group creation is completed.

☞ Page 873 Registering or editing the label (GT Designer3)

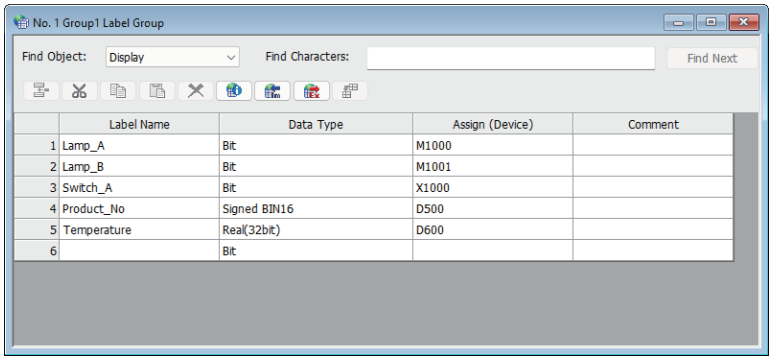
Registering or editing the label (GT Designer3)

1. Open the [Label Group] window using either of the following methods.

Operation method	Description
Operating with the menu	Select [Common] → [Label] → [Open] from the menu to display the [Label Group List] dialog, select the target label group, and click the [Edit] button. ☞ Page 885 [Label Group List] dialog
Operating with the tree in the [Project] window	Right-click the label group to be edited from the label groups displayed under [Label (GT Designer3)], and select [Open] from the menu. ☞ Page 116 [Project] window

2. Register, edit, or delete the label (GT Designer3) in the [Label Group] window.

☞ Page 887 [Label Group] window



For information on how to use imported labels (GT Designer3) for device settings, refer to the following.

☞ Page 881 Setting a label (GT Designer3) in the device setting

PART 6

19.4.4 Importing the label (GT Designer3)

GT37 SoftGOT3000

The label (GT Designer3) can be imported from a different project or others.

Import method	Description
Exporting or importing the label (GT Designer3)	Created labels (GT Designer3) can be exported. You can use the label (GT Designer3) in a different project by using an exported file or by importing a GX Works3 project. ☞ Page 875 Exporting or importing a label group
Utilizing the label (GT Designer3) from a different project	When a screen is created by utilizing screen data from a different project, the label groups set in the source screen are selectable. For information on how to create a screen by utilizing screen data from a different project, refer to the following. ☞ Page 226 Utilizing other project data
Register the label (GT Designer3) from a template	When pasting a template with the label (GT Designer3) set from the library or others, you can register the label (GT Designer3) set in the template to the destination project. ☞ Page 876 Register the label (GT Designer3) from a template
Registering the label (GT Designer3) from an object	When starting multiple GT Designer3 modules and copying an object between projects, you can register the label (GT Designer3) set to the object to the destination project. ☞ Page 877 Registering the (GT Designer3) from a copied object
Registering the labels (GT Designer3) from profile data	Register the labels (GT Designer3) created from the profile (CSP+) data that is stored in the personal computer. As label groups and labels (GT Designer3) are created automatically in the registration process, you do not need to perform these tasks manually. ☞ Page 878 Registering the labels (GT Designer3) from profile data

Exporting or importing a label group

GT37 SoftGOT3000

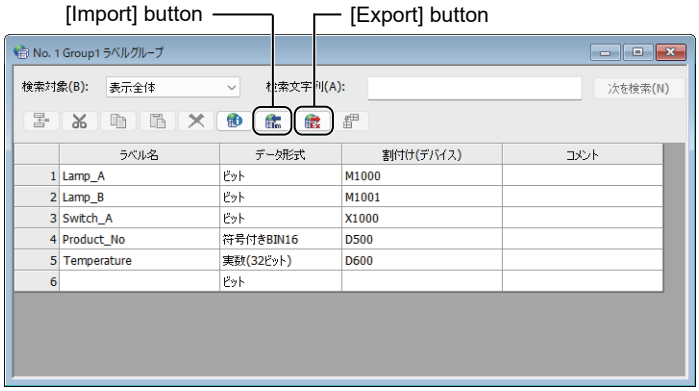
For the specifications and conditions of the files that support export and import of the label (GT Designer3), refer to the following.

☞ Page 869 Export and import specifications

1. Open the [Label Group] window using either of the following methods.

Operation method	Description
Operating with the menu	Select [Common] → [Label] → [Open] from the menu to display the [Label Group List] dialog, select the target label group, and click the [Edit] button. ☞ Page 885 [Label Group List] dialog
Operating with the tree in the [Project] window	Right-click the label group to be edited from the label groups displayed under [Label (GT Designer3)], and select [Open] from the menu. ☞ Page 116 [Project] window

2. Click the [Export] or [Import] button depending on your intention.



3. In the displayed dialog, perform import or export operation.

Operation type	Operation	Remarks	
Export	In the [Save As] dialog, set [Save in], [File Name], and [Save as type], and click the [Save] button.	—	
Import	Select the file to be imported in the [Import Label] dialog, and click the [OK] button. ☞ Page 890 [Import Label] dialog	If [Access from External Device] is enabled for the global labels to be imported, a confirmation dialog appears upon clicking the [OK] button in the [Add Global Label/Ethernet Setting] dialog. The following shows each behavior when each button is clicked in the confirmation dialog.	
		[Yes] button	Disables [Access from External Device] and performs import operation.
		[No] button	Displays the [Label/Tag/Ethernet Setting List] dialog. The access from external devices remains enabled, and you cannot import the labels as the labels (GT Designer3). To import the labels as global labels, perform the operation in the [Label/Tag/Ethernet Setting List] dialog. ☞ Page 860 [Label/Tag/Ethernet Setting List] dialog
		[Cancel] button	Returns to the [Label Group] window.

For information on how to use imported labels (GT Designer3) for device settings, refer to the following.

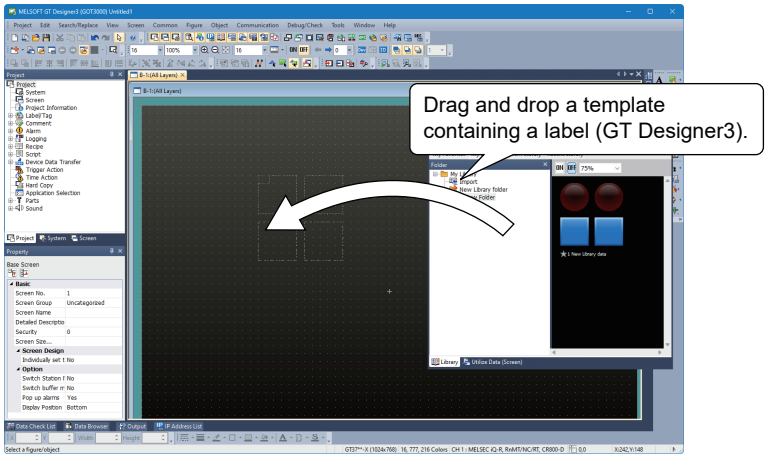
☞ Page 881 Setting a label (GT Designer3) in the device setting

Register the label (GT Designer3) from a template

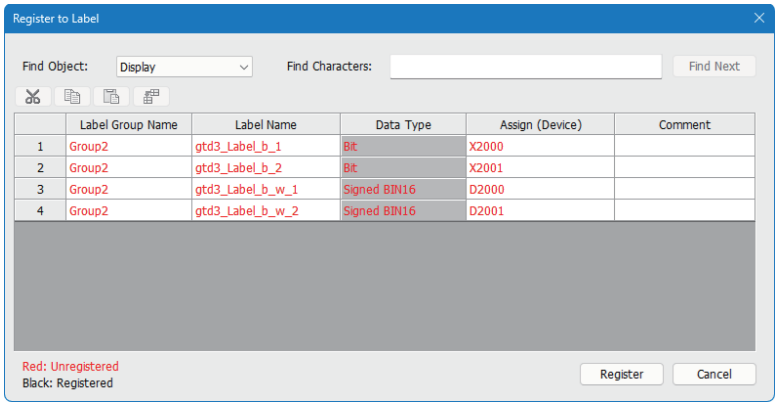
GT37 SoftGOT3000

When pasting a template with the label (GT Designer3) set from the library or others, you can register the label (GT Designer3) set in the template to the destination project.

1. Drag and drop a template containing a label (GT Designer3) from the library or others to the screen editor.



2. When the template is pasted, the [Register to Label] dialog appears.
Register the label (GT Designer3).
☞ Page 892 [Register to Label] dialog



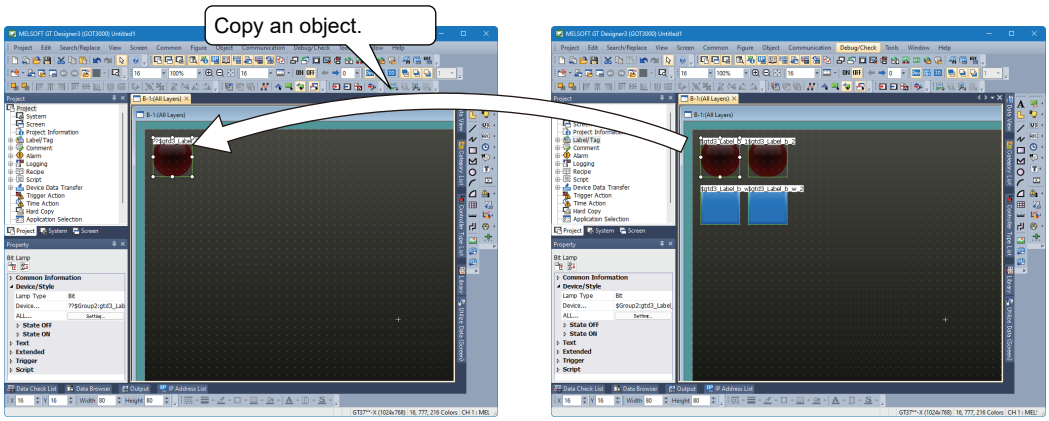
If a label (GT Designer3) registered in the copy destination project has the same label group and label name, but has a different assigned device and comment, the following occurs.
Another label is registered under the same label name with a consecutive number appended.

Registering the (GT Designer3) from a copied object

GT37 SoftGOT3000

When starting multiple GT Designer3 modules and copying an object between projects, you can register the label (GT Designer3) set to the object to the destination project.

1. Open a copy source project and a copy destination project on different GT Designer3 modules.
2. Copy an object with a label set in the source project, and paste the object in the destination project.



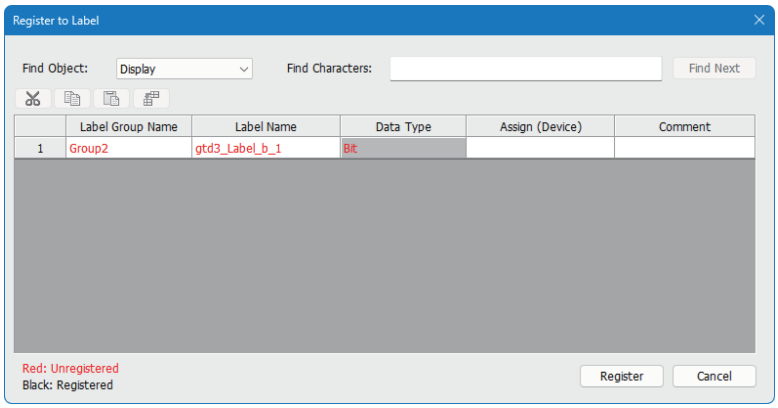
Copy destination project

Copy source project

When some labels (GT Designer3) listed have the same label group name and label name, but have different assigned devices and comments in the copy destination project, registration is not made. The labels are handled as the existing labels. (The rest of the procedure is unnecessary.)

3. Select the pasted object and select [Register] → [Register to Label] from the right-click menu.
4. Register the label (GT Designer3) in the [Register to Label] dialog.

☞ Page 892 [Register to Label] dialog



Registering the labels (GT Designer3) from profile data

GT37 SoftGOT3000

Register the labels (GT Designer3) created from the profile (CSP+) data that is stored in the personal computer.
As label groups and labels (GT Designer3) are created automatically in the registration process, you do not need to perform these tasks manually.

☞ Page 878 Conditions to register the labels (GT Designer3) created from profile data
☞ Page 878 Specifications of the labels (GT Designer3) created from profile data
☞ Page 879 Registering the labels (GT Designer3) from profile data

■Conditions to register the labels (GT Designer3) created from profile data

The labels (GT Designer3) created from profile data is registrable if all the following conditions are satisfied.

Item		Condition
GX Works3	GX Works3 version	GX Works3 version 1.045X or later is installed.
	Profile registration	The personal computer has the profile data from which labels (GT Designer3) are created. For information on how to register a profile, refer to the following. 📖Help for MELSOFT Navigator 📖GX Works3 Operating Manual
	Profile language	The profile language is English or the same as the language version of GT Designer3.
	Network of the project	The CC-Link IE Field Network is specified in the target GX Works3 project.
GT Designer3	Controller setting	In the [Controller Setting] window, [Controller Type] is set to one of the following items. • [MELSEC MX Controller] • [MELSEC iQ-R, RnMT/NC/RT, CR800-D] • [MELIPC]

■Specifications of the labels (GT Designer3) created from profile data

For the basic specifications of labels (GT Designer3), refer to the following.

☞ Page 868 Specifications of the label (GT Designer3)

Item	Specifications
Label group number	Label groups are numbered in descending order, starting from 200. If any label group number already exists, the number is skipped.
Label group name	A label group is named using the equipment name selected in the list of network-connected equipment. ☞ Page 895 [I/O Information Specification] If a same-name label group already exists, an underscore character (_) and a number will be appended. The following characters will be deleted from the equipment name to be a label group name. • Numbers prefixed to the equipment name • Symbols unavailable for a label name • Excess characters when the maximum length of a label group name is exceeded
Data types to be registered	☞ Page 879 Data types to be registered

■Data types to be registered

The following shows the correspondences between the data types used in profile data and the ones of labels (GT Designer3) to be registered.

Data type used in profile data	Data type of the label (GT Designer3)
BOOL BIN1	Bit
BIN2 to BIN16	Unsigned 16-bit binary
BIN32	Unsigned 32-bit binary
BYTE WORD BIT_STRING2 to BIT_STRING15	Unsigned 16-bit binary
DWORD	Unsigned 32-bit binary
INT2 to 16	Signed 16-bit binary
INT32	Signed 32-bit binary
UINT2 to 16	Unsigned 16-bit binary
UINT32	Unsigned 32-bit binary
BCD4 8-bit binary-coded decimal BCD12 16-bit binary-coded decimal	16-bit binary-coded decimal
32-bit binary-coded decimal	32-bit binary-coded decimal
STRUCT	Unsigned 16-bit binary

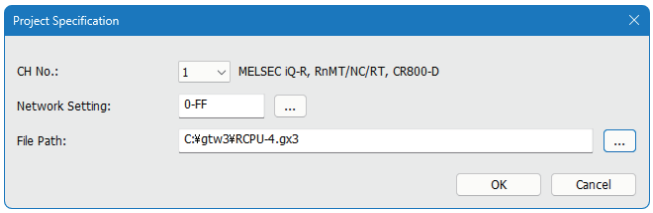
■Registering the labels (GT Designer3) from profile data

GT37 SoftGOT3000

1. Select [Project] → [Import Other Data] → [Profile (CSP+)] → [Label (GT Designer3) Auto Registration] from the menu to display the [Project Specification] dialog.

Specify the path to an applicable GX Works3 project.

☞ Page 893 [Project Specification] dialog

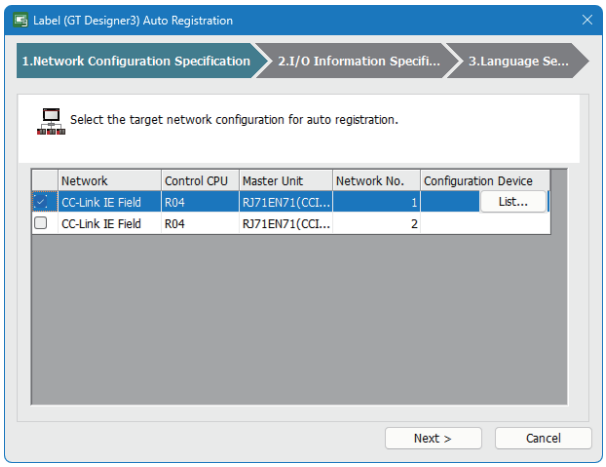


2. Click the [OK] button to display the [Label (GT Designer3) Auto Registration] dialog.

☞ Page 894 [Label (GT Designer3) Auto Registration] dialog

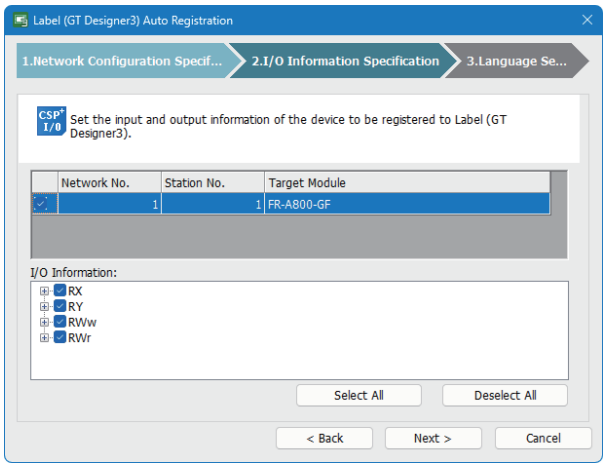
3. Select a target network, and click the [Next] button.

☞ Page 894 [Network Configuration Specification]



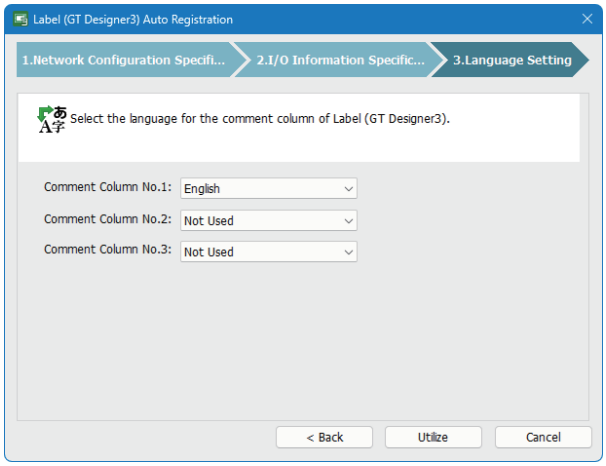
4. Select the link devices that labels (GT Designer3) are based on, and click the [Next] button.

☞ Page 895 [I/O Information Specification]



5. Select a language for the comments to be used for labels (GT Designer3), and click the [Utilize] button to register labels (GT Designer3).

☞ Page 895 [Language Setting]



19.4.5 Setting a label (GT Designer3) in the device setting

GT37 SoftGOT3000

The following entry methods are available.

Entry method	Description
Directly entering a label name	☞ Page 881 Directly entering a label name
Selecting from the list	Display the [Select Label (GT Designer3)] dialog, and select one of the registered labels (GT Designer3) from the list. ☞ Page 837 Selecting a label or tag from the list
Selecting from utilizable data (input assist)	Enter characters in the device entry field in the setting dialog to display utilizable data in the input assist window. You can set a device, label, or tag simply by selecting it from the utilizable data. ☞ Page 843 Selecting from utilizable data (input assist)

For precautions when setting a label (GT Designer3) in the device setting, refer to the following.

☞ Page 882 Precautions when setting a label (GT Designer3)

Point

When you set the label (GT Designer3) in the device setting of an object or others, the data type of the object or others automatically changes according to the data type of the label (GT Designer3).

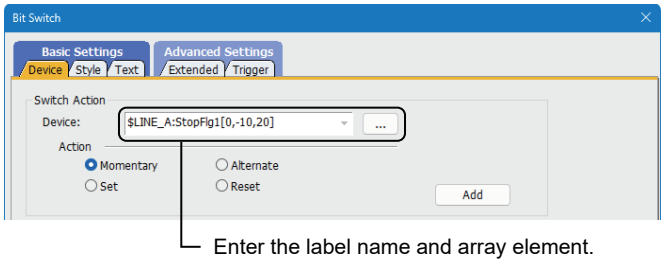
You can enable or disable automatic change by selecting or deselecting [Reflect the data type of label] in the [Options] dialog ([Edit] tab).

☞ Page 199 Customizing the settings related to editing operations

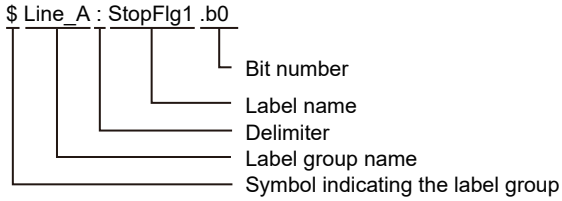
Directly entering a label name

In the setting dialog of an object or others, enter the name of a label (GT Designer3) directly in the text box of [Device].

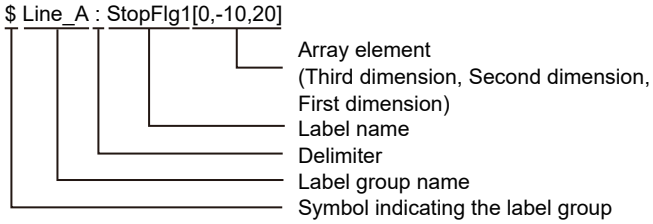
- At the beginning of the name, enter a symbol "$" indicating the label group.
- Between the label group name and the label name, enter a delimiter ":".
- To specify a bit of the label (GT Designer3) to which a word device is assigned, append a bit number (b0 to b15) to the label name.
- To enter an array element, enclose the subscripts of the element in a square bracket ([]).
- For a multidimensional array, enter a comma (,) to separate the subscripts in each dimension.



• Label name



• Array



Precautions when setting a label (GT Designer3)

■Checking the data type of the label (GT Designer3)

After setting a label (GT Designer3) in the device setting of an object or others, performing one of the following changes results in data type inconsistency.

- Changing the data type of the label (GT Designer3)
- Manually changing the data type of an object or others

If you perform one of the above, ensure that the data types are consistent between the label (GT Designer3) and an object or others.

To check the data types, it is recommended to compare the exported CSV file of a label group with the CSV file exported from [Device List].

☞ Page 136 Listing devices (Device list)
☞ Page 875 Exporting or importing a label group

■When setting an unregistered label (GT Designer3) in the device setting

When you set an unregistered label (GT Designer3) in the device setting for an object, after registering the label in the [Label Group] window, close the screen on which the object is placed.

If you edit the label name and the label group name without closing the screen after the registration, the changes are not reflected to the object.

■When using a label (GT Designer3) to specify consecutive devices

When you use a label (GT Designer3) to specify consecutive devices, the consecutive devices, beginning with the device assigned to the label, must be within the device range.

Otherwise, you cannot set the label (GT Designer3) to specify the consecutive devices in the device setting.

You also cannot use an unregistered label (GT Designer3) to specify consecutive devices.

19.4.6 Checking for errors in the label (GT Designer3)

GT37 SoftGOT3000

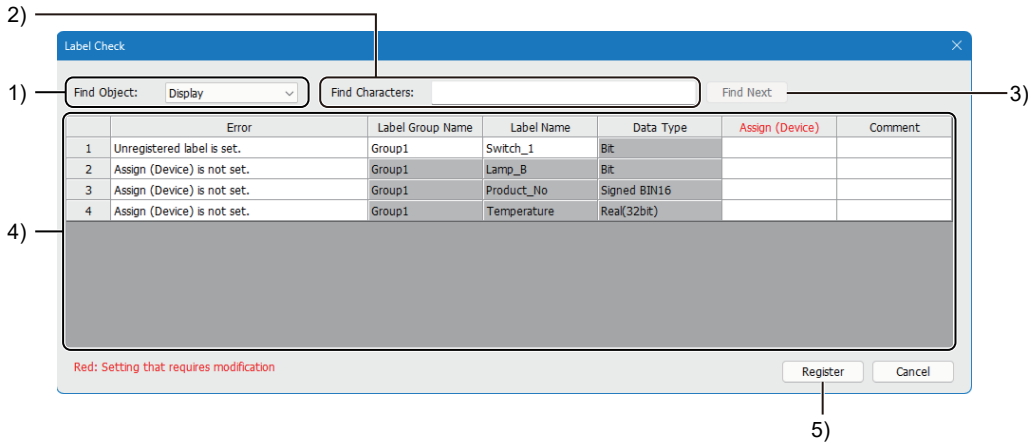
The label check function checks for errors in the set labels (GT Designer3) and corrects the errors.

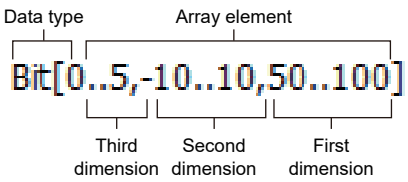
Perform one of the following operations to execute the label check.

Operation method	Description
Operating with the menu	Select [Debug/Check] → [Label Check] from the menu.
Operating with the tree in the [Project] window	Double-click [Label Check] under [Label (GT Designer3)]. ☞ Page 116 [Project] window

If there is an error, the [Label Check] dialog appears.

In the [Label Check] dialog, correct the errors.



Item			Description
1)	[Find Object]		Select the target to be searched in the label check error list.
2)	[Find Characters]		Set a character string to be searched for. The search string is case-insensitive.
3)	[Find Next]		Searches the list by the settings of [Find Object] and [Find Characters].
4)	Label check error list	—	Lists errors detected by the label check. You can correct each item in the list.
		[Error]	Description of the detected error. ☞ Page 884 Error messages, causes, and corrective actions
		[Label Group Name]	Name of the label group to which the label (GT Designer3) belongs.
		[Label Name]	Name of the label (GT Designer3). Up to 256 characters can be set.
		[Data Type]	Data type of the label (GT Designer3), and array elements The array elements are displayed only when the array setting is configured. Example) When the data type is bit and array elements are set in three dimensions 
		[Assign (Device)]	Device assigned to the label (GT Designer3). An invalid device is displayed as [??].
		[Comment]	Comment set for the label (GT Designer3) where an error occurs. The comment is displayed according to the setting of [Input Assist Display] in the [Label Group Property] dialog. ☞ Page 886 [Label Group Property] dialog Up to 1024 characters can be set.
5)	[Register] button		Registers the label (GT Designer3) in the label group.

Error messages, causes, and corrective actions

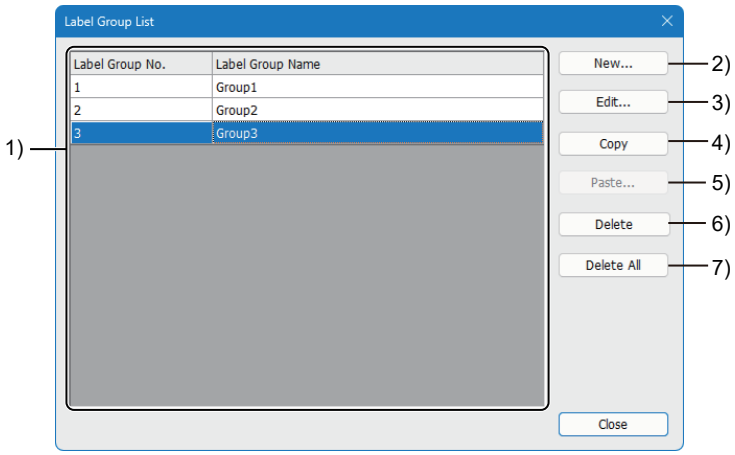
The following lists messages, causes, and corrective actions for errors detected by the label check.

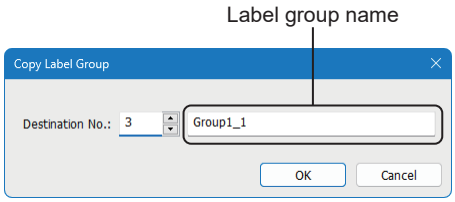
Error message	Cause	Corrective action
Unregistered label is set.	A label (GT Designer3) unregistered in the label group is set.	Resister the label (GT Designer3) in the label group.
		Delete the label (GT Designer3) if unnecessary. ☞ Page 887 [Label Group] window
The array element count is invalid. Register the label as a new label or check the setting on the Device List, etc. and change the setting.	After an array-type label (GT Designer3) was set for an object or others, the array setting of the label was changed in the label list.	Register the relevant label (GT Designer3) in the label group as a new one.
		Correct the array setting of the relevant label (GT Designer3).
		Delete the label (GT Designer3) if unnecessary. ☞ Page 887 [Label Group] window
Assign (Device) is not set.	A label (GT Designer3) without a device assigned is set.	Assign a device to the label (GT Designer3). ☞ Page 887 [Label Group] window
Data Type or Assign (Device) is invalid.	A device of a channel No. that cannot be set is assigned to a label (GT Designer3).	Assign a valid device to the label (GT Designer3). ☞ Page 887 [Label Group] window
	A device that cannot be monitored by the GOT is assigned to a label (GT Designer3).	

19.4.7 [Label Group List] dialog

GT37 SoftGOT3000

Create, edit, or delete a label group.



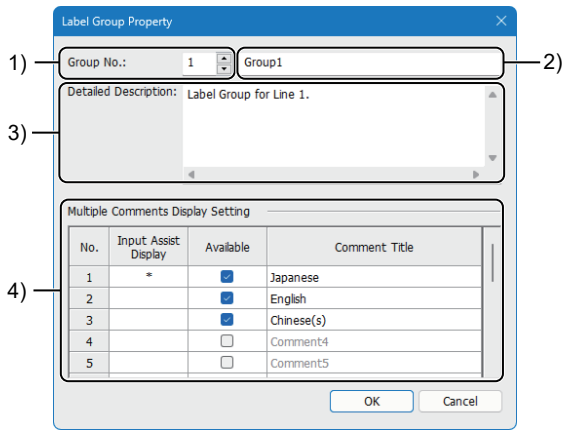
Item		Description
1)	Label group list	Lists label groups registered in the project.
2)	[New] button	Displays the [Label Group Property] dialog to create a label group. ☞ Page 886 [Label Group Property] dialog
3)	[Edit] button	Displays the [Label Group] window to edit the label group setting and labels (GT Designer3). ☞ Page 887 [Label Group] window
4)	[Copy] button	Copies the selected label group.
5)	[Paste] button	Pastes a copied label group in the label group list.  • [Destination No.]: Set the number of the label group to be pasted. • Label group name: Set the name of the label group to be pasted.
6)	[Delete] button	Deletes the selected label group.
7)	[Delete All] button	Deletes all the label groups in the label group list.

PART 6

[Label Group Property] dialog

GT37 SoftGOT3000

Create or delete a label group.

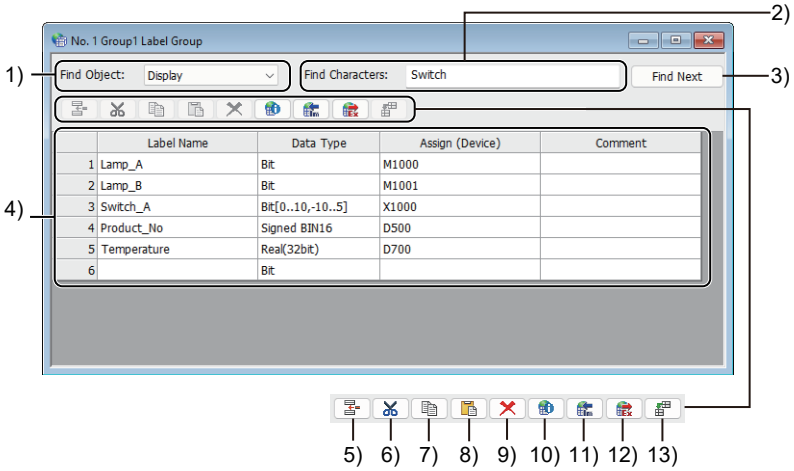


Item			Description
1)	[Group No.]		Set the group number of the label group. The setting range is [1] to [200].
2)	Label group name		Set the name of the label group. Up to 32 characters can be set.
			If you change the label group name, the change is not reflected to the script text containing the label (GT Designer3). When using a label (GT Designer3) in the script text, also check the script text when changing the label (GT Designer3) settings.
3)	[Detailed Description]		Set the detailed description of the label group. Up to 512 characters can be set. A line feed is counted as two characters.
4)	[Multiple Comments Display Setting]	[Input Assist Display]	Set comments for the label group. Up to 16 comments can be set. The set comments can be used for the input assist. Select comments to be displayed in the input assist.
		[Available]	Enables the comment title input.
		[Comment Title]	Set remarks for the comment. Up to 32 characters can be set.

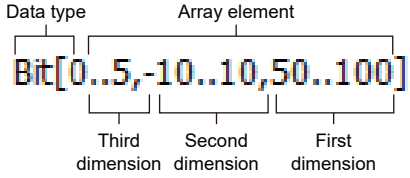
19.4.8 [Label Group] window

GT37 SoftGOT3000

Create, edit, or delete a label (GT Designer3) in a label group.
The label group setting is also changeable.

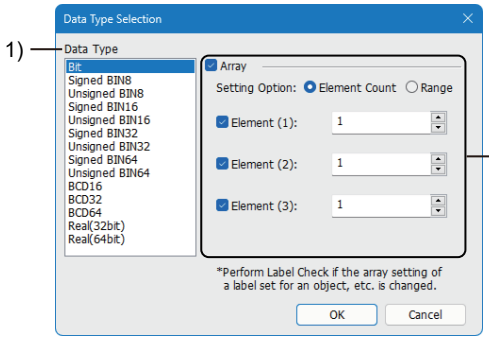


Item		Description
1)	[Find Object]	Select the target to be searched in the label (GT Designer3) list.
2)	[Find Characters]	Set a character string to be searched for. The search string is case-insensitive.
3)	[Find Next] button	Searches the list by the settings of [Find Object] and [Find Characters].

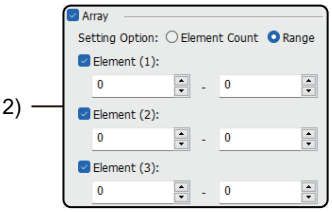
Item			Description
4)	Label (GT Designer3) list	—	Lists labels (GT Designer3) that belong to the label group.
		[Label Name]	Name of the label (GT Designer3). Up to 256 characters can be set. Click [Label Name] to select the column. To select multiple cells in the same column, perform one of the following operations. • Drag the target cells. • Select the first cell in the range, hold down the Shift key and click the last cell in the range. • Select the first cell, hold down the Shift key and press an arrow key to extend the selection.
			If you change the label name, the change is not reflected to the script text containing the label (GT Designer3). When using a label (GT Designer3) in the script text, also check the script text when changing the label (GT Designer3) settings.
		[Data Type]	Data type of the label (GT Designer3), and array elements Click a target cell and then click the [...] button to display the [Data Type Selection] dialog. ☞ Page 889 [Data Type Selection] dialog The array elements are displayed only when the array setting is configured. Example) When the data type is bit and array elements are set in three dimensions 
		[Assign (Device)]	Device assigned to the label (GT Designer3). An invalid device is displayed as [??]. Click [Assign (Device)] to select the column. To select multiple cells in the same column, perform one of the following operations. • Drag the target cells. • Select the first cell in the range, hold down the Shift key and click the last cell in the range. • Select the first cell, hold down the Shift key and press an arrow key to extend the selection.
		[Comment] [Comment2] to [Comment16]	Comment for the label (GT Designer3). Up to 1024 characters can be set. Click [Comment] or [Comment2] to [Comment16] to select the corresponding column. To select multiple cells in the same column, perform one of the following operations. • Drag the target cells. • Select the first cell in the range, hold down the Shift key and click the last cell in the range. • Select the first cell, hold down the Shift key and press an arrow key to extend the selection.
5)	[Insert Row] button		Inserts a row above the selected row in the label (GT Designer3) list.
6)	[Cut] button		Cuts the row, column, or cell selected in the label (GT Designer3) list. Note that a cell in the [Data Type] column cannot be cut alone. You can paste the cut data on another text editing application (such as Microsoft Excel and Notepad).
7)	[Copy] button		Copies the row, column, or cell selected in the label (GT Designer3) list. You can paste the copied data on another text editing application (such as Microsoft Excel and Notepad).
8)	[Paste] button		Pastes the copied row, column, or cell to the location specified in the label (GT Designer3) list. You can also copy or cut data that is created with a text editing application (such as Microsoft Excel and Notepad), and paste the data to the label (GT Designer3) list. However, you cannot paste data to multiple columns at once.
9)	[Delete] button		Deletes the row, column, or cell selected in the label (GT Designer3) list. Note that a cell in the [Data Type] column cannot be deleted alone.
10)	[Label Group Property] button		Displays the [Label Group Property] dialog to change the label group setting. ☞ Page 886 [Label Group Property] dialog
11)	[Import] button		Imports labels (GT Designer3) in the label group being edited. Set the file to be imported in the [Import Label] dialog. ☞ Page 890 [Import Label] dialog
12)	[Export] button		Exports labels (GT Designer3) registered in the label group being edited. Set the file to be exported in the [Save As] dialog.
13)	[Batch Edit] button		Displays the [Batch Edit] dialog to collectively change the label group, channel, or network settings of rows selected in the label (GT Designer3) list. ☞ Page 891 [Batch Edit] dialog (label (GT Designer3))

[Data Type Selection] dialog

GT37 SoftGOT3000



When [Setting Option] is set to [Element Count]

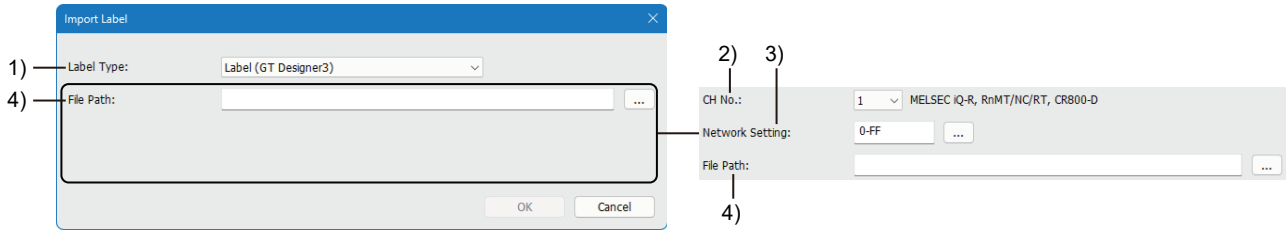


When [Setting Option] is set to [Range]

Item			Description
1)	[Data Type]		Select the data type of the label (GT Designer3). For the available data types, refer to the following. ☞ Page 869 Data type of the label (GT Designer3)
2)	[Array]	—	Set the array for the label (GT Designer3).
		[Setting Option]	Select the method of specifying the array.
		[Element (1)] [Element (2)] [Element (3)]	When [Element Count] is selected for [Setting Option], the number of array elements in each dimension is settable. (The smallest subscript for each dimensions is always 0.) The setting range is [1] to [2147483648]. (Number of elements in the first dimension) × (Number of elements in the second dimension) × (Number of elements in the third dimension) must be 2147483648 or less.
		[Element (1)] [Element (2)] [Element (3)]	When [Range] is selected for [Setting Option], the lower and upper bounds of each dimension are settable. The setting range is [-2147483648] to [2147483647]. (Number of elements in the first dimension) × (Number of elements in the second dimension) × (Number of elements in the third dimension) must be 2147483648 or less.

[Import Label] dialog

GT37 SoftGOT3000



When [Label Type] is set to [Label (GT Designer3)]

When [Label Type] is set to [Global Label (GX Works2)], [Global Label (GX Works3)], or [Label (MT Developer2)]

Item		Description
1)	[Label Type]	Select the type of labels to be imported. The setting of [Controller Type] in the [Controller Setting] window determines the selectable items. ☞ Page 890 Selectable items for [Label Type]
2)	[CH No.]	This item is settable when [Label Type] is set to [Global Label (GX Works2)], [Global Label (GX Works3)], or [Label (MT Developer2)]. Select the channel number of the controller that uses labels (GT Designer3) or global labels.
3)	[Network Setting]	This item is settable when [Label Type] is set to [Global Label (GX Works2)], [Global Label (GX Works3)], or [Label (MT Developer2)]. Set the network for the controller that uses labels (GT Designer3) or global labels.
4)	[File Path]	Specify the path to a CSV file, Unicode text file, or GX Works3 project.

■Selectable items for [Label Type]

The setting of [Controller Type] in the [Controller Setting] window determines the selectable items.

○: Selectable ×: Not selectable

[Controller Type]	[Label Type]			
	[Label (GT Designer3)]	[Global Label (GX Works2)]	[Global Label (GX Works3)]	[Label (MT Developer2)]
[MELSEC MX Controller]	○	×	○	×
[MELSEC iQ-R, RnMT/NC/RT, CR800-D]	○	×	○	○
[MELSEC iQ-L]	○	×	○	×
[MELSEC iQ-F]	○	×	○	×
[MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700]	○	○	×	○
[MELSEC-L]	○	○	×	×
[MELSEC-A]	○	○	×	×
[MELSEC-FX]	○	○	×	×
[MELIPC]	○	×	○	○

[Batch Edit] dialog (label (GT Designer3))

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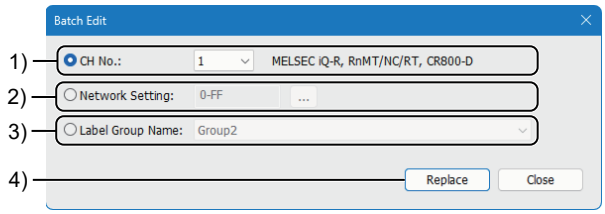
Collectively change the settings of the labels (GT Designer3) selected in the label (GT Designer3) list in the [Label Group] window or the [Register to Label] dialog.

For details on the batch edit dialog for OPC UA tags in the [OPC UA Tag Setting] window, refer to the following.

☞ Page 2865 [Batch Edit] dialog (OPC UA tag)



Item		Description
1)	[CH No.]	This item cannot be set in the following cases. • No devices are assigned to all the selected labels (GT Designer3). • GOT internal devices are assigned to all the selected labels (GT Designer3). The channel numbers of the labels (GT Designer3) are changed collectively. Select the channel number to be changed to.
2)	[Network Setting]	This item cannot be set in the following cases. • Devices of different controllers are assigned to the selected labels (GT Designer3). • No devices are assigned to all the selected labels (GT Designer3). • GOT internal devices are assigned to all the selected labels (GT Designer3). The network settings of the labels (GT Designer3) are changed collectively. Click [...] and configure the network setting in the [Network Setting] dialog. The settings differ depending on the controller. Refer to the descriptions of the device setting dialog for each controller. ☞ Page 3128 Device range and settings of Mitsubishi Electric equipment ☞ Page 3487 Device range and settings of each controller
3)	[Label Group Name]	This item can be set only when this dialog is opened in the [Register to Label] dialog. The label group names of the labels (GT Designer3) are changed collectively. Select a label group name.
4)	[Replace] button	Collectively reflects the setting changes made in this dialog to the labels (GT Designer3) selected in the [Label Group] window or the [Register to Label] dialog.

19.4.9 [Register to Label] dialog

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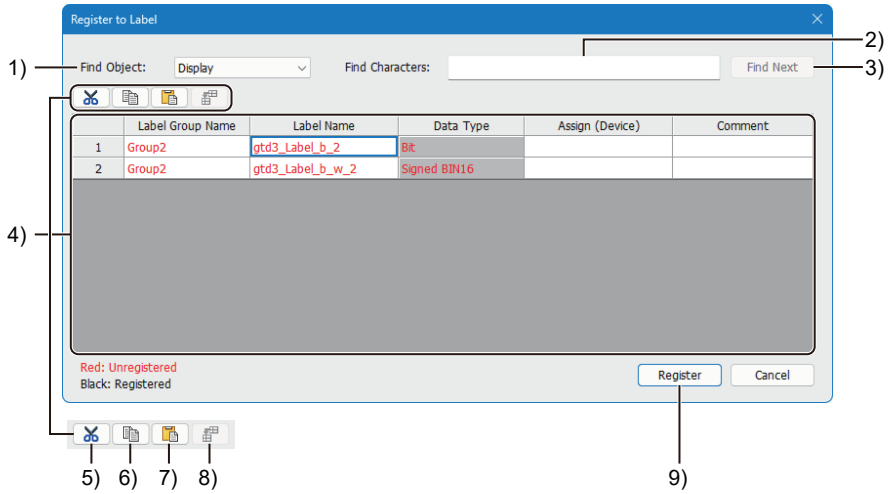
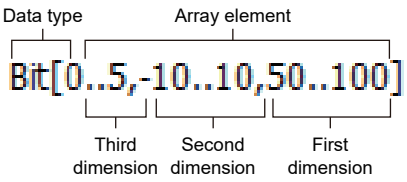
The labels (GT Designer3) set for an object and others are listed. Register unregistered labels (GT Designer3) in label groups.



Item			Description
1)	[Find Object]		Select the target to be searched in the label (GT Designer3) list.
2)	[Find Characters]		Set a character string to be searched for. The search string is case-insensitive.
3)	[Find Next]		Searches the list by the settings of [Find Object] and [Find Characters].
4)	Label (GT Designer3) list	—	Lists the labels (GT Designer3) set in the project. The names of labels (GT Designer3) unregistered in label groups are shown in red.
		[Label Group Name]	Name of the label group. Up to 32 characters can be set.
		[Label Name]	Name of the label (GT Designer3). Up to 256 characters can be set.
		[Data Type]	Data type of the label (GT Designer3), and array elements The array elements are displayed only when the array setting is configured. Example) When the data type is bit and array elements are set in three dimensions 
		[Assign (Device)]	Device assigned to the label (GT Designer3). An invalid device is displayed as [??].
		[Comment]	Comment for the label (GT Designer3). The comment is displayed according to the setting of [Input Assist Display] in the [Label Group Property] dialog. ☞ Page 886 [Label Group Property] dialog Up to 1024 characters can be set.
5)	[Cut] button		Cuts the row selected in the label (GT Designer3) list.
6)	[Copy] button		Copies the row selected in the label (GT Designer3) list.
7)	[Paste] button		Pastes a copied row in the label (GT Designer3) list.
8)	[Batch Edit] button		Displays the [Batch Edit] dialog to collectively change the label group, channel, or network settings of rows selected in the label (GT Designer3) list. ☞ Page 891 [Batch Edit] dialog (label (GT Designer3))
9)	[Register] button		Registers the label (GT Designer3) in the label group.

19.4.10 [Project Specification] dialog

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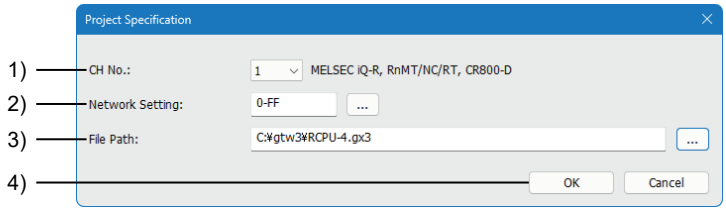
Select a GX Works3 project that uses profile data and register the label (GT Designer3).

Select [Project] → [Import Other Data] → [Profile (CSP+)] → [Label (GT Designer3) Auto Registration] from the menu to display the [Project Specification] dialog.



Item		Description
1)	[CH No.]	Select a channel number used to connect the controller that is specified in the target GX Works3 project. Channels are selectable if one of the following controller types is selected in the [Controller Setting] window. • [MELSEC MX Controller] • [MELSEC iQ-R, RnMT/NC/RT, CR800-D] • [MELIPC]
2)	[Network Setting]	Specify the network of the controller that is set in the target GX Works3 project.
3)	[File Path]	Specify the path to the target GX Works3 project.
4)	[OK] button	Confirms the entries, and displays the [Label (GT Designer3) Auto Registration] dialog. ☞ Page 894 [Label (GT Designer3) Auto Registration] dialog

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[Label (GT Designer3) Auto Registration] dialog

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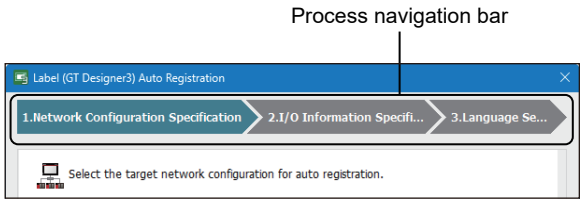
In the [Project Specification] dialog, click the [OK] button to display the [Label (GT Designer3) Auto Registration] dialog. Configure the settings to register labels (GT Designer3).



In the process navigation bar, the color of each step represents the status of the step.

Display image	Status
2.I/O Information Specification	Active
2.I/O Information Specific...	Done
2.I/O Information Specifi...	Undone

☞ Page 894 [Network Configuration Specification]
☞ Page 895 [I/O Information Specification]
☞ Page 895 [Language Setting]

■[Network Configuration Specification]

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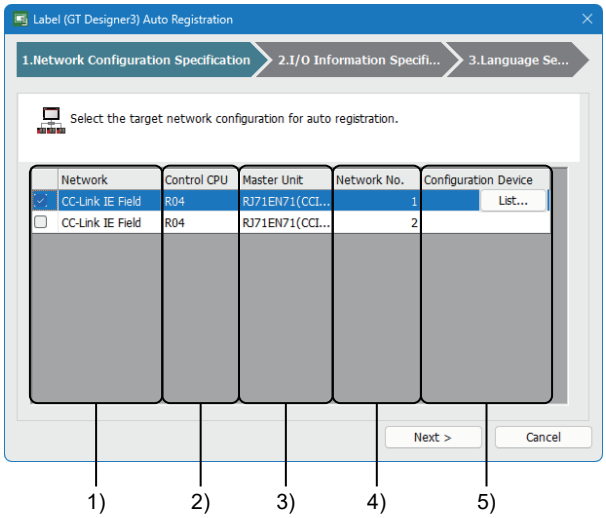
Select a target network from the list.



Item		Description
1)	[Network]	Type of a network. Each row displays a network configuration. Select a target network.
2)	[Control CPU]	Model of the PLC CPU on the master station.
3)	[Master Unit]	Model of a module on the master station.
4)	[Network No.]	Number of a network.
5)	[Configuration Device]	Select a row to display the [List] button. Click the [List] button to display the [Configuration Device List] dialog where you can check the equipment on the relevant network.

■[I/O Information Specification]

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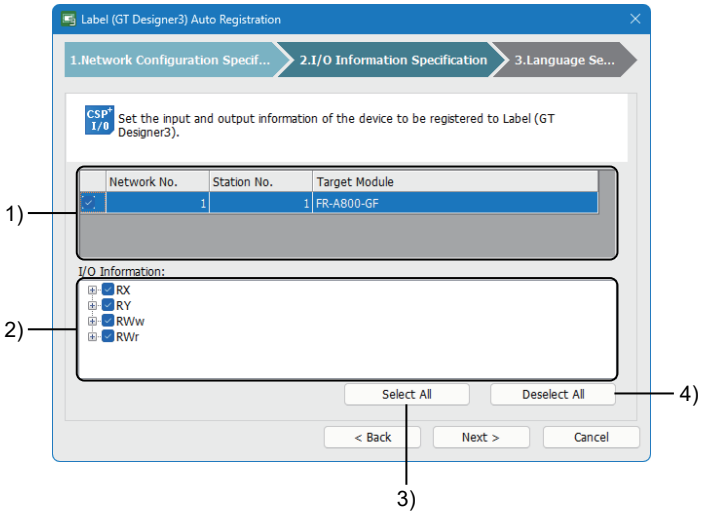
Select the link devices that labels (GT Designer3) are based on.



Item		Description
1)	List of network-connected equipment	Lists the equipment on the network that has been selected in [Network Configuration Specification]. Equipment with its profile unregistered is not listed. Select equipment to display its link devices in [I/O Information].
2)	[I/O Information]	Link devices set for the selected equipment. Select the link devices that labels (GT Designer3) are based on.
3)	[Select All] button	Selects all items in [I/O Information].
4)	[Deselect All] button	Deselects all items in [I/O Information].

■[Language Setting]

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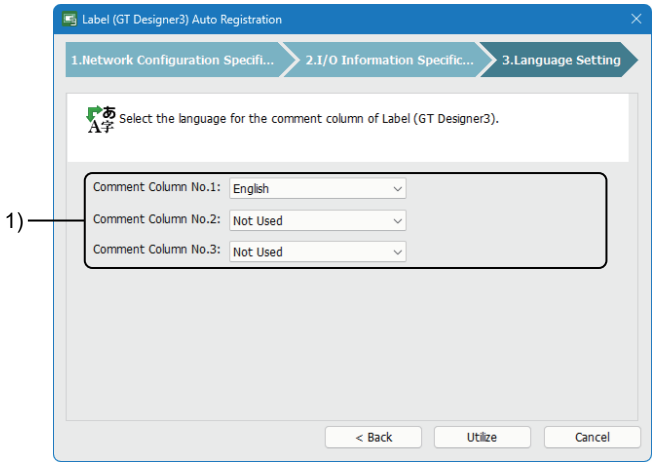
Select a language for the comments to be used for labels (GT Designer3).



Item		Description
1)	[Comment Column No.1] [Comment Column No.2] [Comment Column No.3]	Select a language for the comments to be used. The comments are used from the profile data in the selected language. If you select the language of an unregistered profile or [Not Used], the relevant comment column will be blank.

19.5 How to set global labels

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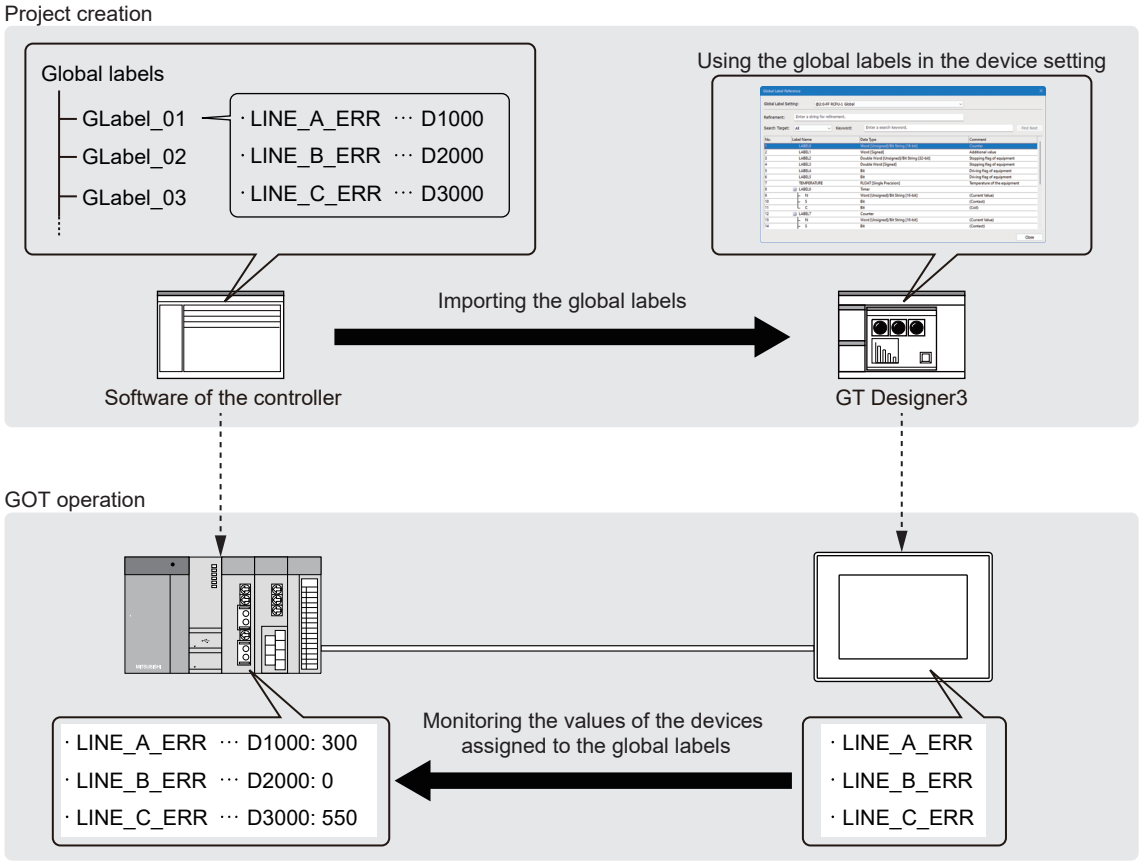
☞ Page 898 Specifications of global labels usable in GT Designer3
☞ Page 902 Procedure to use global labels in GT Designer3
☞ Page 903 Importing global labels
☞ Page 904 Setting a global label in the device setting
☞ Page 907 Updating the imported global labels
☞ Page 909 Obtaining label information from the controller during GOT operation (label name resolution)
☞ Page 920 [Global Label Reference] dialog

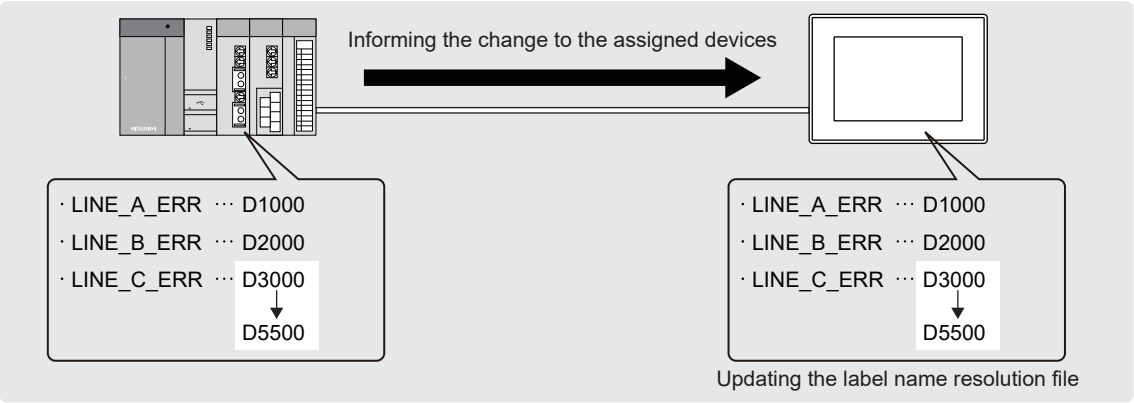
You can set global labels in the device setting of an object or others by importing the global labels set with GX Works3 or Motion Control Setting Function in GT Designer3.

Using global labels enables you to create project without paying attention to the actual devices.

The GOT monitors the values of the devices assigned to the global labels.



When the package data in which global labels are used is written, the GOT holds information (label name resolution file) that correlates global label names with device names used in the controller.
At startup or upon detecting the label update in the controller, the GOT obtains information from the controller and updates the label name resolution file.
This function is referred to as the label name resolution.
☞ Page 909 Obtaining label information from the controller during GOT operation (label name resolution)



19.5.1 Specifications of global labels usable in GT Designer3

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☞ Page 898 Importable files in GT Designer3
☞ Page 899 Global labels usable in GT Designer3
☞ Page 901 Specifications of the offset setting for global labels
☞ Page 901 Functions not supporting global labels
☞ Page 901 Specifications for data transfer to the GOT

Importable files in GT Designer3

You can set the global labels that are set in the following controllers in the device setting in GT Designer3.

Equipment	Remarks
RCPU	The GOT cannot monitor the global labels of R00CPU, R01CPU, and R02CPU that do not support the settings to permit access their labels from external devices.
Motion CPU (MELSEC iQ-R series)	—
Motion module	—
LHCPU	—

The following shows the software products used to set global labels and file formats of the files importable in GT Designer3.

Software	Extension	Remarks
GX Works3	*.gx3	To import a GX Works3 project (*.gx3), GX Works3 is required on the personal computer. The required GX Works3 version depends on the setting of the project to be imported. • Uncompressed project: Version 1.040S or later • Compressed project: Version 1.050C or later • Project data with security version 2: Version 1.096A or later 📖GX Works3 Operating Manual
	*.csv	CSV file to which label data is exported with GX Works3. 📖GX Works3 Operating Manual Save CSV files of structure-type global labels to the same folder.
MT Developer2	*.csv	CSV file to which label data is exported with MT Developer2. 📖MT Developer2 Help Save CSV files of structure-type global labels to the same folder.
Motion Control Setting Function	*.csv	CSV file to which label data is exported with Motion Control Setting Function. Use Motion Control Setting Function version 1.005F or later. 📖Motion Control Setting Function Save CSV files of structure-type global labels to the same folder.

Global labels usable in GT Designer3

The following shows the conditions for global labels settable in the device setting in GT Designer3.

☞ Page 899 Setting for access from external devices
☞ Page 899 Class
☞ Page 899 Global label name
☞ Page 900 Data type of global label
☞ Page 900 Array-type global label
☞ Page 900 Global label handled as a special structure

■Setting for access from external devices

Among the global labels set with the software of the controller, the ones with [Access from External Device] selected are usable in GT Designer3.

All the global labels set with Motion Control Setting Function are usable because the software has no settings to control access from external devices.

■Class

Global labels of the following classes are usable.

- VAR_GLOBAL
- VAR_GLOBAL_RETAIN

■Global label name

You can use global labels whose label names satisfy the following conditions.

Item	Description
Number of characters	Up to 256 characters. Up to 300 characters can be used for the label name of a structure.
First character	Begins with a character or an underscore (_). The label name of a structure can begin with a number.
Line terminator	No ASCII line terminator is used. • LF(\n, line feed) • CR(\r, carriage return) • CR followed immediately by LF (\r\n)
Invalid symbol	The following space symbols are not used. • ASCII code: SP (space), VT (\v, vertical tabulation), HT (\t, horizontal tabulation), and FF (\f, form feed) • Unicode: two-byte space (\u3000)
	The following one-byte symbols are not used. / \ * ? < > | " : [ ] ; , = + % ' ^ @ { } . ! # $ & ~ ` ( ) -
Invalid character string	No device name, identifier of files, or instruction of sequence programs is used as a global label name. 📖GX Works3 Operating Manual
	No reserved character is used. 📖GX Works3 Operating Manual

■Data type of global label

The following shows the usable primitive data type global labels.

○: Available, —: Not available

Data type of the controller's software			Data type or device type in GT Designer3	Bit-specified word device
Bit		BOOL	Bit	—
Word [Signed]		INT	Signed 16-bit binary	○
			16-bit binary-coded decimal	—
Word [Unsigned] Bit string [16-bit]]		WORD	Unsigned 16-bit binary	○
Double-word [Signed]		DINT	Signed 32-bit binary	—
			32-bit binary-coded decimal	—
Double-word [Unsigned] Bit string [32-bit]]		DWORD	Unsigned 32-bit binary	—
Single-precision real number		REAL	Real number (32-bit)	—
Double-precision real number		LREAL	Real number (64-bit)	—
Timer	Contact	TIMER	Bit	—
	Coil	TIMER	Bit	—
	Current value	TIMER	Unsigned 16-bit binary	—
Retentive timer	Contact	RETENTIVETIMER	Bit	—
	Coil	RETENTIVETIMER	Bit	—
	Current value	RETENTIVETIMER	Unsigned 16-bit binary	—
Counter	Contact	COUNTER	Bit	—
	Coil	COUNTER	Bit	—
	Current value	COUNTER	Unsigned 16-bit binary	—
Long timer	Contact	LTIMER	Bit	—
	Coil	LTIMER	Bit	—
	Current value	LTIMER	Unsigned 32-bit binary	—
Long retentive timer	Contact	LRETENTIVETIMER	Bit	—
	Coil	LRETENTIVETIMER	Bit	—
	Current value	LRETENTIVETIMER	Unsigned 32-bit binary	—
Long counter	Contact	LCOUNTER	Bit	—
	Coil	LCOUNTER	Bit	—
	Current value	LCOUNTER	Unsigned 32-bit binary	—
String		STRING	Unsigned 16-bit binary or string	—
String [Unicode]		WSTRING		—

■Array-type global label

You can use array-type global labels that satisfy the following conditions.

- One-, two-, or three-dimensional array
- For the undefined labels: the subscript for each dimension as shown below

Array	Subscript range
One-dimensional array	-2147483648 to 2147483647
Two-dimensional array	-268435456 to 268435455
Three-dimensional array	-262144 to 262143

■Global label handled as a special structure

GT Designer3 handles the following data types of global labels as special structures.

Although GX Works3 or MT Developer2 handles such a label as one, GT Designer3 handles the label as multiple labels.

Data type of global label		Notation in GX Works3 and MT Developer2	Notation in GT Designer3
Timer Counter Retentive timer Long timer Long counter Long retentive timer	Contact	Global label name	Global label name.S
	Coil	Global label name	Global label name.C
	Current value	Global label name	Global label name.N

Specifications of the offset setting for global labels

■Available data types for the offset setting

The following shows the data types of global labels available for the offset setting.

- Bit
- Word [Signed]
- Word [Unsigned]/Bit string [16-bit]]
- Double-word [Signed]
- Double-word [Unsigned]/Bit string [32-bit]]
- Single-precision real number
- Double-precision real number

■Offset setting item

The offset setting is applied to array element numbers.

For an array of structures, the offset setting is not applied to the element numbers.

For an array of members of a structure, the offset setting is applied to the element numbers.

Ex.

Offset setting for a three-dimensional array

When the global label set in GT Works3 is aaa[0..9,0..9,0..9]

- First dimension: The start element number is 0, and the number of elements is 10.
- Second dimension: The start element number is 0, and the number of elements is 10.
- Third dimension: The start element number is 0, and the number of elements is 10.

Global label set for an object or others	Offset device value	Offset result
aaa[0.0.1]	8	aaa[0.0.9]
	12	aaa[0.1.3]
	150	aaa[1.5.1]
	352	aaa[3.5.3]
	1100	A system alarm occurs due to invalid array subscripts.

Ex.

Offset setting for a structure

Global label set for an object or others	Applicability of the offset setting
aaa[0].bbb	The offset setting is not applied to arrays of structures.
aaa.bbb[0]	The offset setting applies to arrays of structure members.

Functions not supporting global labels

Global labels are not available for the following functions.

Functions not supporting global labels	Remarks
Station number switching	Station number switching is not available for the GOT to monitor the station that uses global labels. Do not use global labels for the station requiring station number switching.
Indirect specification of a CPU number	—
Indirect specification of a module number	—

Specifications for data transfer to the GOT

When you set global labels in the package data and write the data to the GOT, [Write Mode] is not selectable in the [Write Option] dialog.

In this case, [Write Mode] is fixed to [Synchronize].

☞ Page 467 [Write Option] dialog

19.5.2 Procedure to use global labels in GT Designer3

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The following shows the procedure from importing global labels to setting them in the device setting in GT Designer3.

1. Prepare a file in GT Designer3 with the software of the controller.

The operation depends on the file to be prepared.

Software	Extension	Operation	Reference
GX Works3	*.gx3	Compile the project in which global labels are set.	📖GX Works3 Operating Manual
	*.csv	Compile the project in which global labels are set, and export the global labels to a CSV file. When using structure-type global labels, export the structures to a CSV file separately from the global labels.	
MT Developer2	*.csv		📖MT Developer2 Help
Motion Control Setting Function	*.csv		📖Motion Control Setting Function

Using the global labels without compilation may cause inconsistency in the global label settings between the GOT and the controller.

2. Import the global labels in GT Designer3.

☞ Page 903 Importing global labels

3. Set the imported global labels in the device setting of an object or others.

☞ Page 904 Setting a global label in the device setting

The global label setting is completed.

Precautions when setting a global label with the software of the controller

■Global label assigned with a device out of the device range

When data is written to the global label that is assigned with a device out of the device range, a system alarm occurs.

Assign a device within the device range to the global label.

■Device assigned to a global label

The monitoring speed may decrease depending on whether data types are consistent between the monitored global label and the device assigned to the label.

For an array-type global label, assigning a device to an element of the array as shown below may improve the monitoring performance.

- When the data type of the global label is bit, assign a bit device to the label.
- When the data type of the global label is not bit, assign a word device to the label.

19.5.3 Importing global labels

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Import global labels from a file.

For the specifications and conditions of the files importable in GT Designer3, refer to the following.

☞ Page 898 Importable files in GT Designer3

1. Perform either of the following operations to display the [Label/Tag/Ethernet Setting List] dialog.

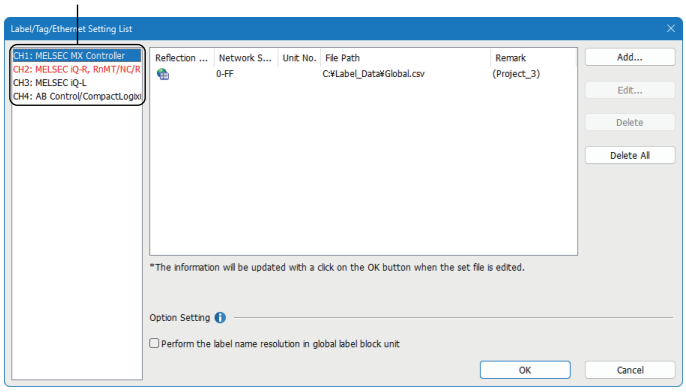
- Select [Project] → [Import Other Data] → [Label/Tag/Ethernet Setting] from the menu.
- In the [Project] window, click [Label/Tag] → [Global Label], and double-click [Import/Setting].

2. Select a channel to establish communication with the controller that uses global labels.

The channel that supports importing global labels is the one in which one of the following items is selected for [Controller Type] in the [Controller Setting] window.

- [MELSEC MX Controller]
- [MELSEC iQ-R, RnMT/NC/RT, CR800-D]
- [MELSEC iQ-L]
- [MELIPC]

Select a channel.



3. Click the [Add] button to display the [Add Global Label/Ethernet Setting] dialog.

☞ Page 862 [Add Global Label/Ethernet Setting] dialog or [Edit Global Label/Ethernet Setting] dialog

4. Set the network setting and the file to be imported, and click the [OK] button.

Global labels are imported in the project.

If GX Works3 project data with security settings configured is specified during the import of global labels, user or project authentication may be required.

Enter the user name and password in the displayed dialog to perform authentication.

Precautions

■Restriction by the project security

Users who are prohibited from editing by project-wide security cannot import global labels.

For the project security, refer to the following.

☞ Page 2972 Protecting a project by registering users (Project security)

19.5.4 Setting a global label in the device setting

GT37 SoftGOT3000

The following entry methods are available.

Entry method	Description
Directly entering a global label name	☞ Page 904 Directly entering a global label name
Selecting from the list	Display the [Select Global Label] dialog, and select one of the registered global labels from the list. ☞ Page 837 Selecting a label or tag from the list
Selecting from utilizable data (input assist)	Enter characters in the device entry field in the setting dialog to display utilizable data in the input assist window. You can set a global label simply by selecting it from the utilizable data. ☞ Page 843 Selecting from utilizable data (input assist)

For precautions when setting a global label in the device setting, refer to the following.

☞ Page 906 Precautions when setting a global label

Directly entering a global label name

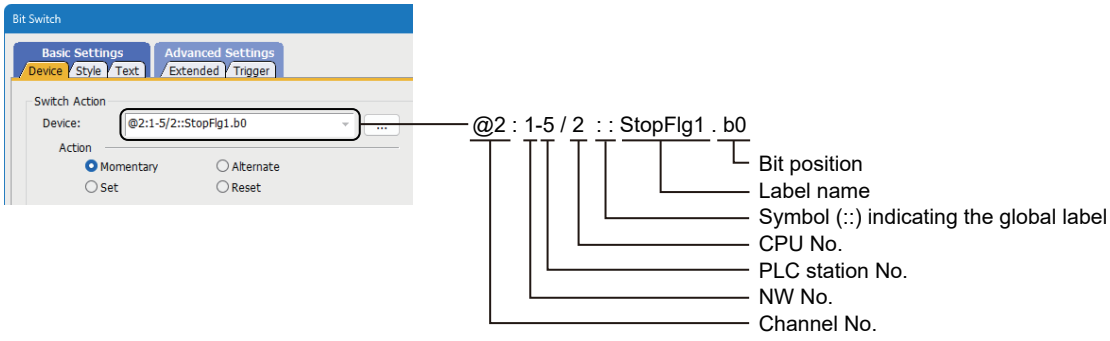
Enter a global label name in the text box of [Device] in the setting dialog.

For the global label formats, refer to the following.

☞ Page 849 Formats in setting dialogs

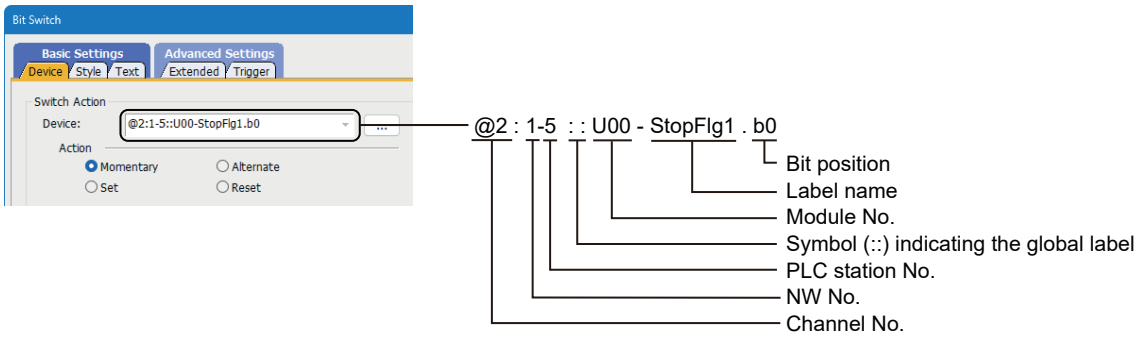
Ex.

When setting a global label of GX Works3 or MT Developer2



Ex.

When setting a global label of Motion Control Setting Function

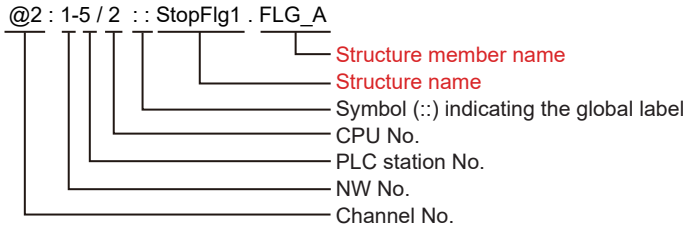


■Directly entering a structure-type global label

For a structure-type global label, add a period (.) and a member name after the structure name.

Ex.

When setting a structure-type global label of GX Works3 or MT Developer2

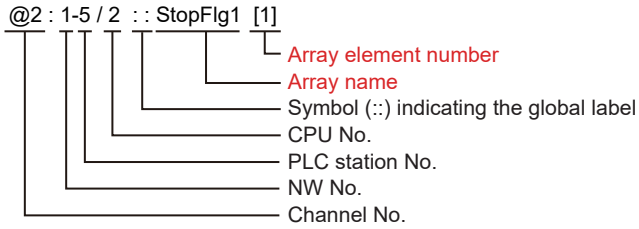


■Directly entering an array-type global label

For an array-type global label, add an element number surrounded by square brackets ([ ]) after the array name.

Ex.

When setting an array-type global label of GX Works3 or MT Developer2



Precautions

Precautions	Description
Data type verification	When you enter the global label name directly, the data type consistency check between the global label and the object or others is not performed automatically. The data types may be inconsistent between the global label and the object or others.
Global label of the string type or Unicode string type	To directly enter a string type or Unicode string type global label name, import the global label in advance. If not, the data type cannot be recognized as string or Unicode string, and a system alarm occurs.

Precautions when setting a global label

■Checking the data type of a global label

After setting a global label in the device setting of an object or others, performing one of the following changes results in data type inconsistency.

- Changing the data type of the global label
- Manually changing the data type of an object or others

If you perform one of the above, ensure that the data types are consistent between the global label and an object or others.
To check the data types, it is recommended to compare the CSV file of global labels with the CSV file exported from [Device List] of GT Designer3.

■Using a global label for the setting that requires multiple devices

To set a global label for the setting that requires consecutive or separate devices, use a global label whose data type is as follows.

- Array
- Bit-specified word device
- String
- String [Unicode]

For the required number of devices, the array-type global label with insufficient number of elements cannot be used.

■Number of characters to be displayed

When you use a global label whose data type is string or Unicode string, set the number of characters to be displayed according to the number of characters set with GX Works3.

■Settings for functions that use global labels

When using string type or Unicode string type global labels, you need to configure settings for some functions.

Function	Data type	Setting	Reference
Text display Text input	String	Deselect [Display in order of High → Low] in the [Extended] tab.	☞ Page 1345 Placing a text display or text input object
	String [Unicode]	Select [Display in order of High → Low] in the [Extended] tab.	
Logging Recipe	String	Select [High → Low] for [Storage Order] in the [Device] tab.	☞ Page 2194 Collecting device data ([Logging]) ☞ Page 2243 Writing or reading values to multiple devices ([Recipe])
	String [Unicode]	Select [Low → High] for [Storage Order] in the [Device] tab.	

■Monitor speed setting

To read or write 235 two-byte characters or more, select [High(Normal)] or [Middle] for [Monitor Speed] in [Detail Setting] in the [Controller Setting] window.
If you select [Low] for [Monitor Speed], a system alarm occurs when the data is read or written.
☞]Page 729 [Controller Setting]

■Global label for a Motion module

If the data type of an array-type global label is specified as bit, a system alarm occurs.
Specify any data type other than bit.

■Data types of global labels and consecutive/random device setting

To monitor a primitive data type global label, use the random device setting.
To use the consecutive device setting, set an array-type global label.

19.5.5 Updating the imported global labels

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GT Designer3 can detect changes to the file that is specified when global labels are imported.
If the project or CSV file has been changed, update the global labels to operate the labels properly.

☞ Page 907 Changes to the file to be detected
☞ Page 907 Timing to check for and notify of changes
☞ Page 908 Change notification and update method

Changes to the file to be detected

GT Designer3 detects the following changes to the imported file.

- Time stamp
- Renaming
- Deletion
- Move

Timing to check for and notify of changes

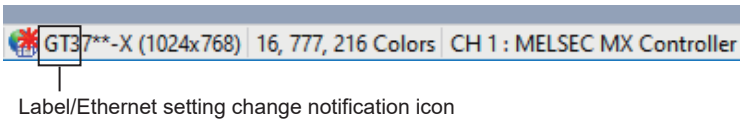
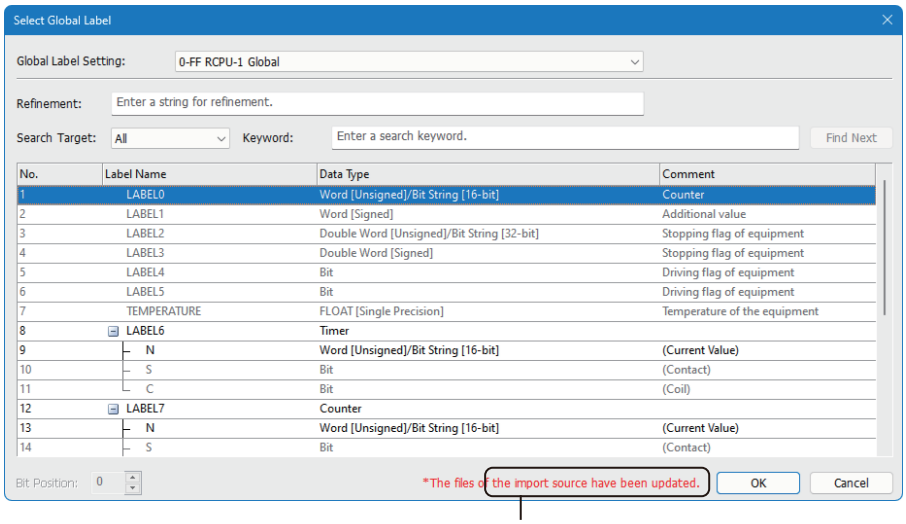
When any of the following operations is performed, changes to the file are checked.

- Opening a project
- Displaying the [Label/Tag/Ethernet Setting List] dialog
- Displaying the [Global Label Reference] dialog
- Displaying the [Select Global Label] dialog
- Clicking the [OK] button in the [Type Setting] dialog
- Clicking the [OK] button or [Apply] button in the [Controller Setting] window
- Clicking the [Finish] button in the [Utilize] dialog to utilize a screen with new controllers
- Selecting [Communication] → [Write to GOT] or [Write to Memory Card] from the menu

When a change to the file is detected, the change is notified.

Change notification and update method

When a change to the file is detected, the change is notified by the following methods.

Location of notification	Description
Status bar	The label/Ethernet setting change notification icon appears in the status bar.  Label/Ethernet setting change notification icon
[Select Global Label] dialog [Global Label Reference] dialog	When the dialog is displayed, the message is displayed at the bottom of the dialog. Example) The [Select Global Label] dialog  Message displayed when there is a change

To update the global labels, open the [Label/Tag/Ethernet Setting List] dialog, and click the [OK] button to close the dialog.

The [Label/Tag/Ethernet Setting List] dialog is opened by one of the following operations.

- Right-click the label/Ethernet setting change notification icon, and click [Update global label/Ethernet setting data].
- Select [Project] → [Import Other Data] → [Label/Tag/Ethernet Setting] from the menu.
- Double-click [Import/Setting] under [Label/Tag] in the [Project] window.

19.5.6 Obtaining label information from the controller during GOT operation (label name resolution)

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The label name resolution obtains the devices assigned to global labels from controllers.

The following changes in the controller require the GOT to update label information.

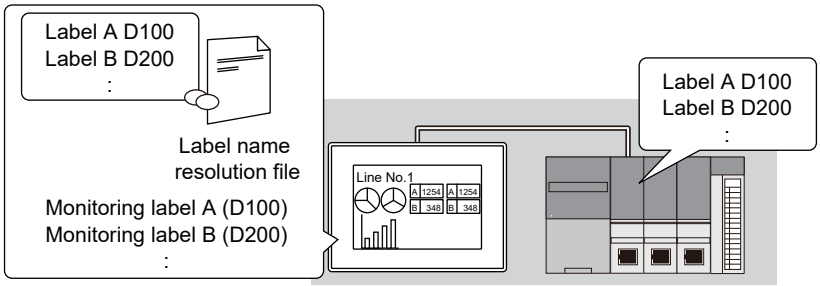
Change in the controller	Required operation in the GOT
A device assigned to a global label is changed.	The GOT performs the label name resolution, obtains the assigned device information, and changes the device to be monitored. The GOT performs the label name resolution at startup or upon detecting global label update in the controller. For the timing of the label name resolution, refer to the following. ☞ Page 914 Execution timing of the label name resolution
A global label is deleted.	Delete the label from the GOT project as well. The corresponding global label can be searched by using the device search or in the device list. ☞ Page 130 Searching for and editing settings of projects Write the changed project to the GOT.
A global label is renamed.	Reflect the renaming to the GOT project. The corresponding global label can be searched by using the device search or in the device list. ☞ Page 130 Searching for and editing settings of projects Write the changed project to the GOT.

The obtained device information is recorded in a label name resolution file.

Point

The label name resolution file is used to correlate global label names used in the project with device names used in the controller.

Referring to the label name resolution file, the GOT identifies the devices assigned to the global labels.



The label name resolution file is created for each channel in the project startup drive at the timing such as the first execution of the label name resolution.

Using the GOT utility, you can delete the label name resolution file.

For the deletion method, refer to the following.

GOT3000 Series User's Manual (Utility & Maintenance Functions)

☞ Page 910 Label name resolution methods
☞ Page 914 Execution timing of the label name resolution
☞ Page 914 Label name resolution performed automatically
☞ Page 916 Manually performing the label name resolution
☞ Page 917 GOT operation during the label name resolution
☞ Page 918 Precautions for the label name resolution

Label name resolution methods

Select one of the following methods to resolve label names.

☞ Page 910 Batch method

☞ Page 912 Split method

To switch between the above methods, set [Perform the label name resolution in global label block unit] in the [Label/Tag/Ethernet Setting List] dialog.

☞ Page 860 [Label/Tag/Ethernet Setting List] dialog

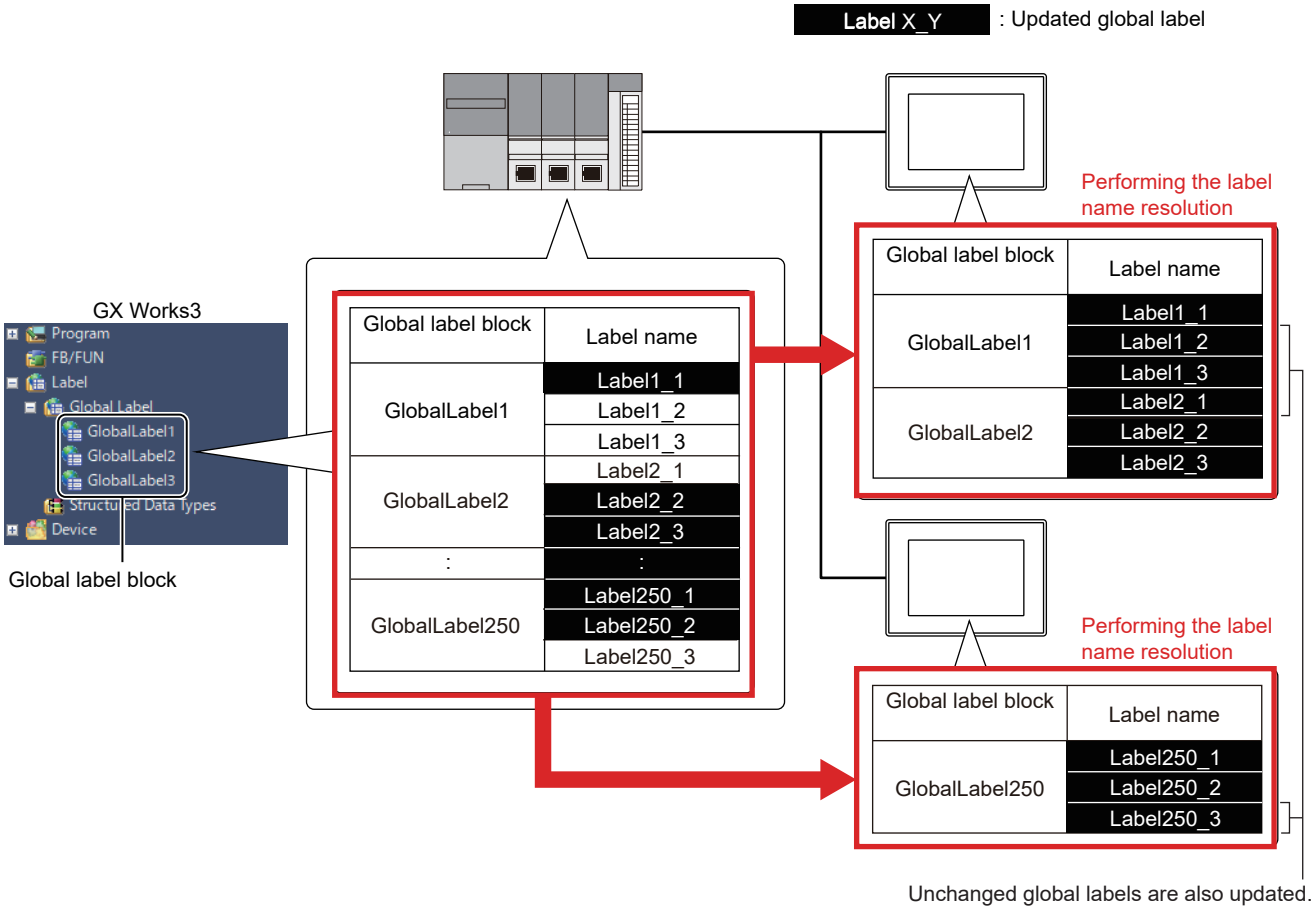
Batch method

When a global label in a GX Works3 project is updated, the GOT performs the label name resolution on all the global labels in the project.

This method is recommended for use when only one global label block exists in the project or many global label blocks are targeted for the label name resolution.

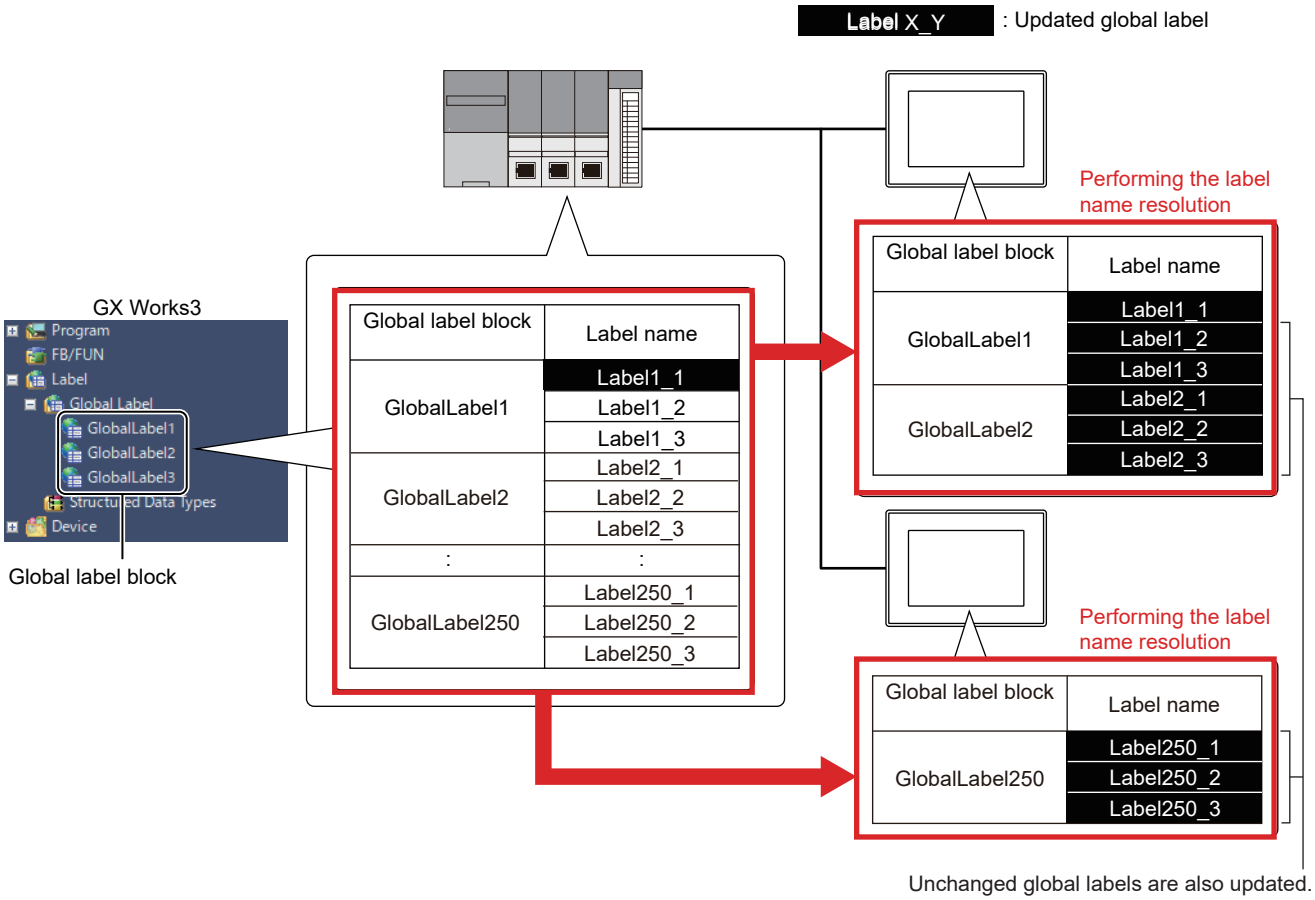
Ex.

When many global label blocks are targeted for the label name resolution, the batch method takes less time to complete the resolution as compared with the split method.



Ex.

When a few global label blocks are targeted for the label name resolution, the batch method takes more time to complete the resolution as compared with the split method.



Split method

When a global label is updated, the GOT performs the label name resolution only on the global label block containing the updated label.

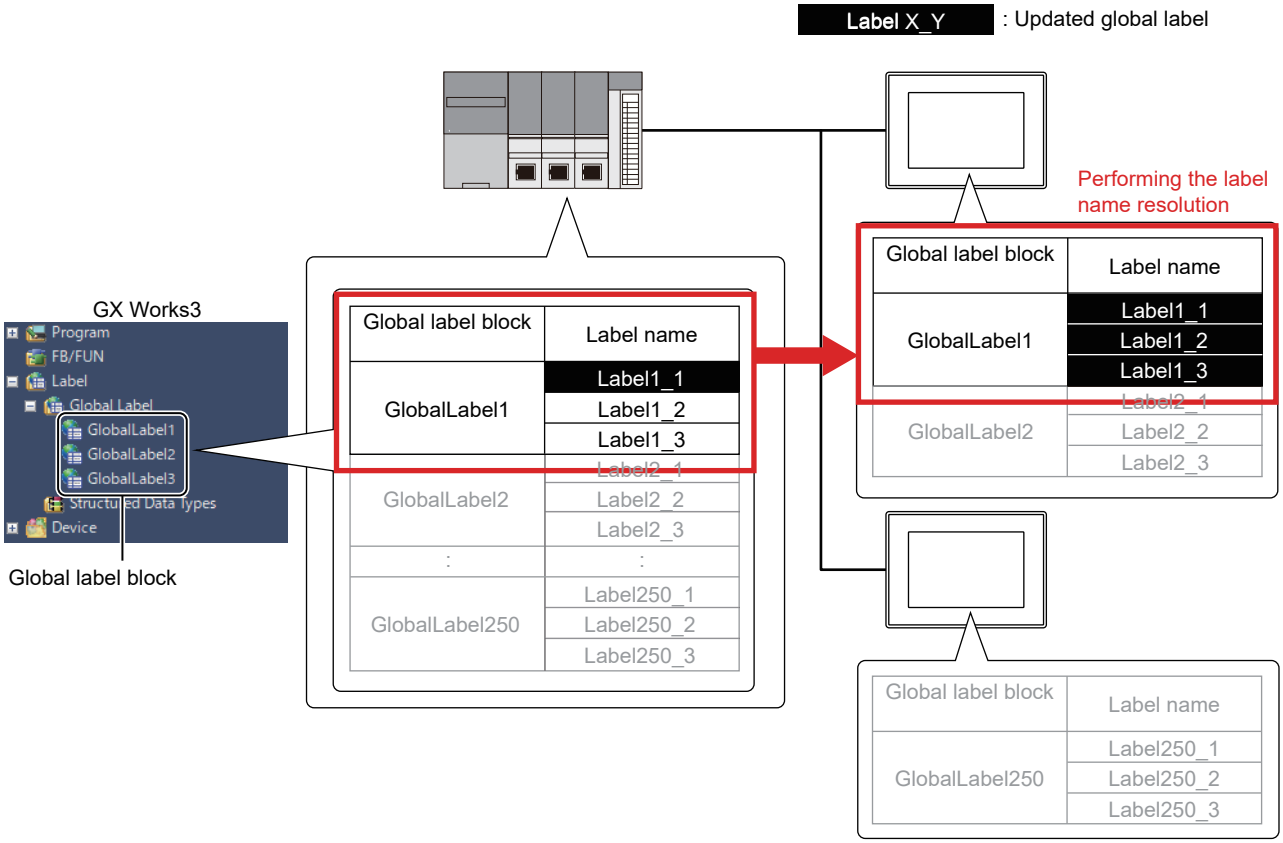
This method is recommended for use when a few global label blocks are targeted for the label name resolution.

☞ Page 912 Operation example of the split method
☞ Page 913 Application criteria for the split method
☞ Page 914 Global labels targeted for the label name resolution

■Operation example of the split method

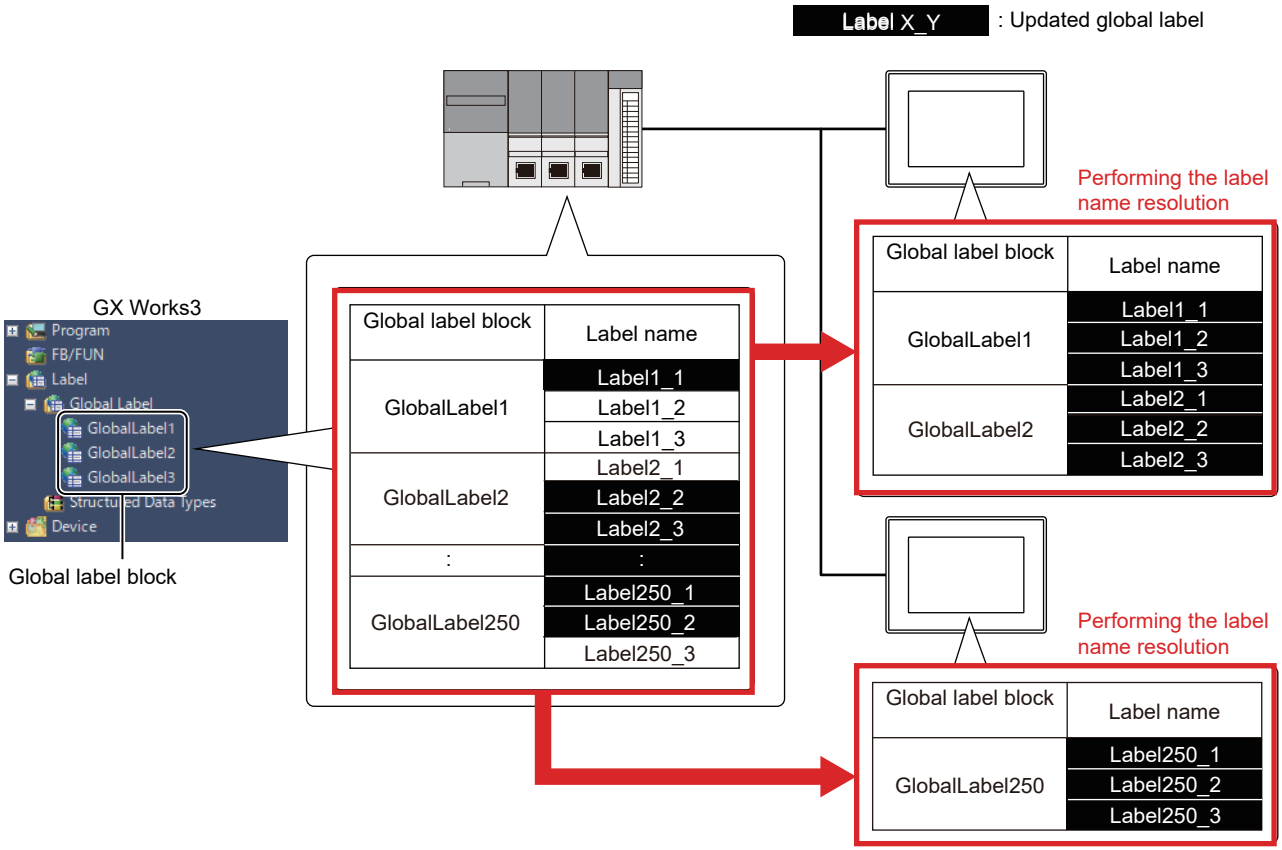
Ex.

When a few global label blocks are targeted for the label name resolution, the split method takes less time to complete the resolution as compared with the batch method.



Ex.

When many global label blocks are targeted for the label name resolution, the split method takes more time to complete the resolution as compared with the batch method.



■Application criteria for the split method

The split method is usable when one of the following PLC CPUs is connected to the GOT.

If the firmware of the connected PLC CPU does not support the split method, regardless of the setting of [Perform the label name resolution in global label block unit], the GOT will perform the label name resolution by the batch method.

Model	Firmware version
R04CPU R08CPU R16CPU R32CPU R120CPU R04ENCPU R08ENCPU R16ENCPU R32ENCPU R120ENCPU	Version 40 or later
R08PCPU R16PCPU R32PCPU R120PCPU	Version 28 or later
R08SFCPU R16SFCPU R32SFCPU R120SFCPU	Version 16 or later
L04HCPU L08HCPU L16HCPU L32HCPU	All versions

■Global labels targeted for the label name resolution

The global labels targeted for the label name resolution vary depending on the conditions under which operations are performed on GX Works3.

If all the following conditions are satisfied, the GOT performs the label name resolution only on the global label block containing the updated label.

Otherwise, the GOT performs the label name resolution on all the global labels in the project.

- The project is kept open between the instant when it is written to a PLC with [Write to PLC] and the instant when it is rewritten to the PLC with [Online Program Change].
- A global label is added to or changed in an existing global label block.

Execution timing of the label name resolution

The label name resolution is automatically or manually performed.

Execution timing		Reference
Automatic	At GOT startup (at GOT powered on, restart by reset, or project rerun)	☞ Page 914 At GOT startup (at GOT powered on, restart by reset, or project rerun)
	When the GOT detects global label update in the controller	☞ Page 915 When the GOT detects global label update in the controller
Manual	When the Start Label Name Resolution signal (GS1880.b1) turns on	☞ Page 916 Manually performing the label name resolution

Label name resolution performed automatically

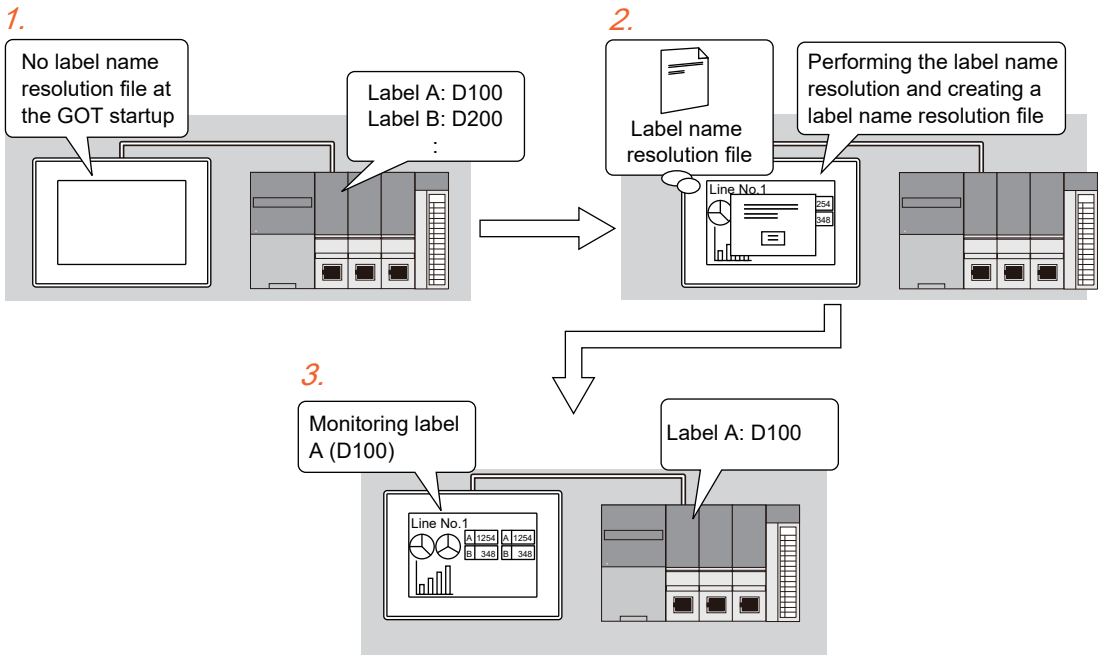
The GOT performs the label name resolution automatically at the following timing.

☞ Page 914 At GOT startup (at GOT powered on, restart by reset, or project rerun)
☞ Page 915 When the GOT detects global label update in the controller

■At GOT startup (at GOT powered on, restart by reset, or project rerun)

Ex.

When no label name resolution file exists at GOT startup



1. The GOT checks if a label name resolution file exists at startup.

2. If no label name resolution file exists, the GOT performs the label name resolution on all the global labels used in the project and creates a label name resolution file.

If a label name resolution file exists, the GOT performs the label name resolution on the unresolved global labels in the file.

3. After the label name resolution ends, the GOT starts device monitoring on all the channels.

The GOT stops device monitoring on the channel where the resolution is canceled or not performed.

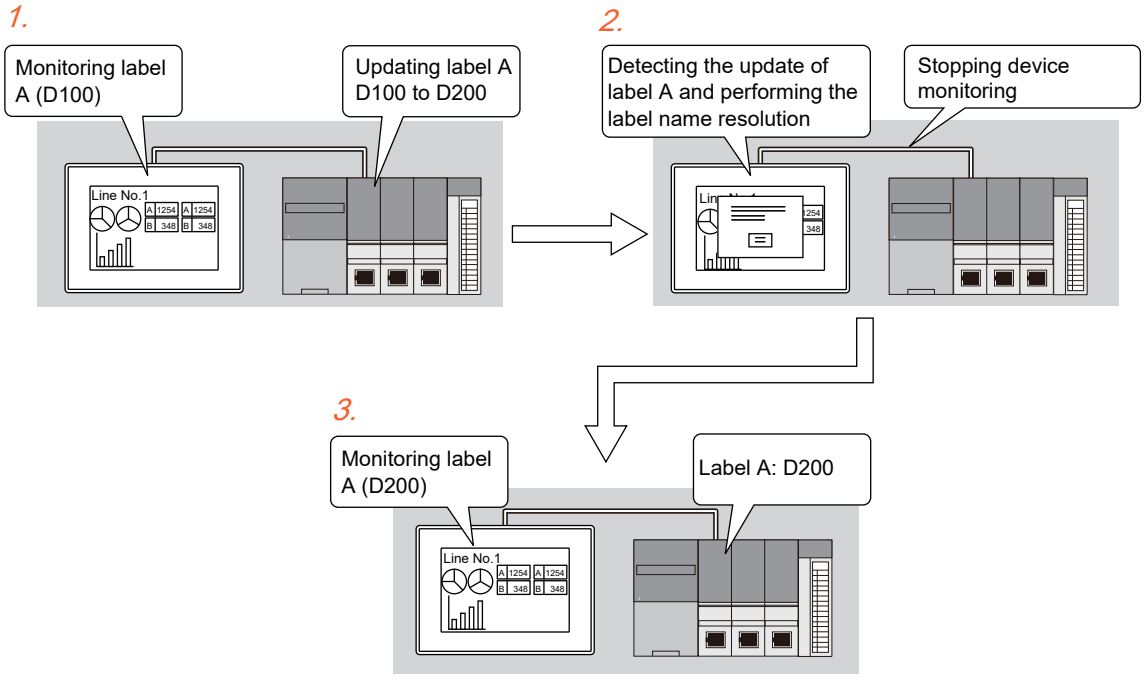
The GOT cannot monitor the global label that has an error occurred during the resolution.

Accordingly, the object that uses this global label cannot appear on the GOT.

For the resolution results, check the Label Name Resolution Status (Common, CH1 to CH4) (GS1080, GS1081 to GS1084).

☞ Page 3615 Label Name Resolution Status (Common, CH1 to CH4) (GS1080, GS1081 to GS1084)

■When the GOT detects global label update in the controller



1. The device assigned to the monitored global label is updated from D100 to D200.

2. Upon detecting the global label update on a station, the GOT stops the device update on the station and displays a system alarm.

After the label update completes on the PLC side, the GOT performs the label name resolution on the station.

3. After the label name resolution ends, the GOT restarts device monitoring.

The GOT cannot monitor the global label that has an error occurred during the resolution.

Accordingly, the object that uses this global label cannot appear on the GOT.

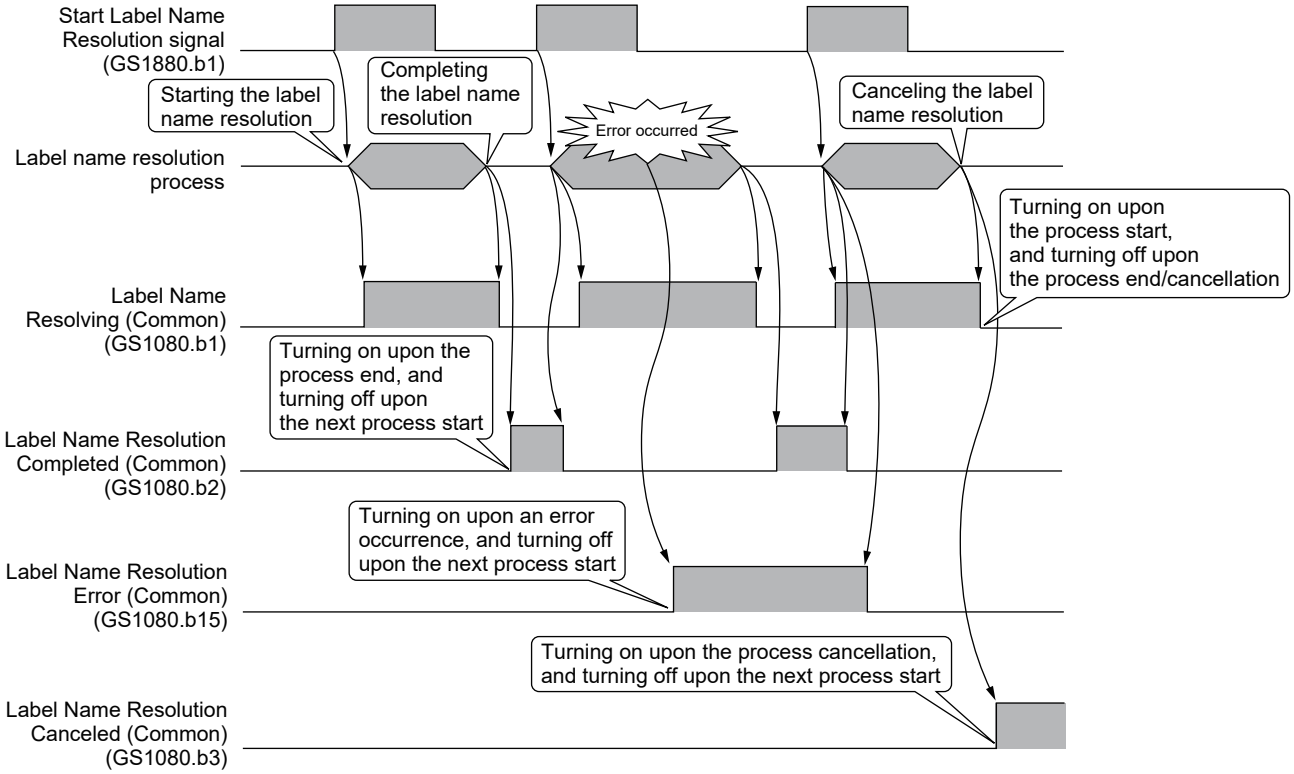
For the resolution results, check the Label Name Resolution Status (Common, CH1 to CH4) (GS1080, GS1081 to GS1084).

☞ Page 3615 Label Name Resolution Status (Common, CH1 to CH4) (GS1080, GS1081 to GS1084)

Manually performing the label name resolution

Turing on the Start Label Name Resolution signal (GS1880.b1) performs the label name resolution.

To monitor the status of the label name resolution, use the Label Name Resolution Status (Common, CH1 to CH4) (GS1080, GS1081 to GS1084) simultaneously.



For details on the Label Name Resolution Control (GS1880) and the Label Name Resolution Status (Common, CH1 to CH4) (GS1080, GS1081 to GS1084), refer to the following.

☞ Page 3615 Label Name Resolution Status (Common, CH1 to CH4) (GS1080, GS1081 to GS1084)

☞ Page 3660 Label Name Resolution Control (GS1880)

GOT operation during the label name resolution

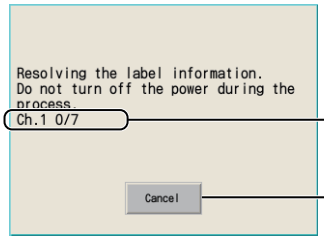
The GOT performs the label name resolution for the global labels monitored on the channel.

The operation differs depending on the timing of the label name resolution.

Execution timing		Operation
Automatic	At GOT startup (at GOT powered on, restart by reset, or project rerun)	Displays the dialog notifying the processing status during the label name resolution. ☞ Page 917 Dialog displayed during the label name resolution at GOT startup Stops the monitoring of the devices on the channel where the label name resolution is to be performed.
	When the GOT detects global label update in the controller	Displays no dialog during the label name resolution. Monitoring of the devices is not canceled.
Manual	When the Start Label Name Resolution signal (GS1880.b1) turns on	Displays no dialog during the label name resolution. Monitoring of the devices is canceled on all channels.

■Dialog displayed during the label name resolution at GOT startup

The following dialog appears during the resolution.



Item		Description
1)	Number of resolved label names Number of errors	The number of resolved label names by channel is displayed. The number of errors is displayed after the number of resolved label names. If an error occurs during the label name resolution, a system alarm occurs after the resolution ends. Check the system alarm for details on the error. 📖GOT3000 Series User's Manual (Utility & Maintenance Functions) The GOT cannot monitor the global label that has an error occurred during the resolution. Accordingly, the object that uses this global label cannot appear on the GOT.
2)	[Cancel] button	Cancels the label name resolution. After the cancellation, monitoring starts on the channels where the label name resolution has ended. (Monitoring is unavailable on stations where label names are unresolved.) When the label name resolution is canceled on a channel, bit 0 of the corresponding Channel Shutdown Control (CH1 to CH4) (GS539, GS549, GS559, GS569) turns on and the GOT stops monitoring. Objects that use global labels that cannot be monitored do not appear on the GOT. To display such objects, the label name resolution must be performed again and completed. Turning off bit 0 of the Channel Shutdown Control (CH1 to CH4) (GS539, GS549, GS559, GS569) restarts the label name resolution on the corresponding channel. ☞ Page 3651 Channel Shutdown Control Information (CH1 to CH4) (GS539, GS549, GS559, GS569)

Precautions for the label name resolution

■Differences of whether a label name resolution file exists

In the following cases, the GOT performs the label name resolution on all global labels.
Therefore, the label name resolution may take longer time to complete.

- The GOT has no label name resolution file.
- The GOT has the label name resolution file in which all label names are unresolved.
- The GOT has the label name resolution file that is not created by using the global labels in the project.

■Size of a label name resolution file

Using the split method results in a larger label name resolution file as compared with using the batch method.
Reserve enough free space to store the file, and then perform the label name resolution.

■Communication timeout during the label name resolution

When the controller communication times out during the label name resolution, the resolution is skipped.
The global labels used for the skipped station are counted as the resolved labels.

■Screen switching during the label name resolution

The GOT stops device monitoring on a channel where the label name resolution is being performed.
Therefore, when you switch the screen during the resolution, objects using the devices of the channel cannot appear on the destination screen.

■Device update during the label name resolution

The GOT stops the device update on a station where the label name resolution is being performed.
When you monitor the station by using object functions, functions running on the GOT background, or others, the latest device values are not reflected until the resolution process ends.

■Global labels using a data type of structure

When a structure-type global label has a structure-type member, if you manually assign devices to the child members of the structure-type member, the GOT will fail to perform the label name resolution on these child members.

System error 328 occurs.

To solve the above problem, take one of the following corrective actions.

- Perform operations so that the devices are automatically assigned to the members.
- Directly set the manually assigned devices as monitor devices.

The following shows an example where the GOT cannot resolve some label names.

Ex.

When ST_B is set as the data type of Struct_B that is a member of ST_A in GT Works3

If devices are manually assigned to the labels in ST_B, the GOT cannot resolve these label names.

Structure A			Structure B			[Device] (Manually assigned)	Availability of the label name resolution
Structure name	[Label Name] (Name of a member)	[Data Type] (Data type of a member)	Structure name	[Label Name] (Name of a member)	[Data Type] (Data type of a member)		
ST_A	LabelA_1	[Word [Signed]]	—	—	—	D10	Available
	LabelA_2	[Word [Signed]]	—	—	—	D20	Available
	Struct_B	ST_B(Structure B)	ST_B	LabelA_1	[Word [Signed]]	D100	Not available
				LabelA_2	[Word [Signed]]	D200	Not available

■Corrective action for unresolved label names

The following shows the conditions resulting in unresolved label names.

- The label name resolution is executed during the PLC initial processing.
- The relevant labels are nonexistent on the PLC side.

In both cases, system alarm 328 occurs.

To identify the exact condition resulting in unresolved label names, turn on GS1880.b2 and GS1880.b1 to execute the label name resolution.

Condition resulting in unresolved label names	Label name resolution result		Corrective action
	When GS1880.b2 is off	When GS1880.b2 is on	
The label name resolution is executed during the PLC initial processing.	Unresolved label names are existent. System error 328 occurs.	The unresolved label names have been resolved. No system alarm occurs.	Change the title display time of the GOT so as to execute the label name resolution after the PLC initial processing. ☞ Page 618 [Display Setting/ Language Setting]
The relevant labels are nonexistent on the PLC side.		Unresolved label names are existent. System error 328 occurs.	Correct the label settings.

19.5.7 [Global Label Reference] dialog

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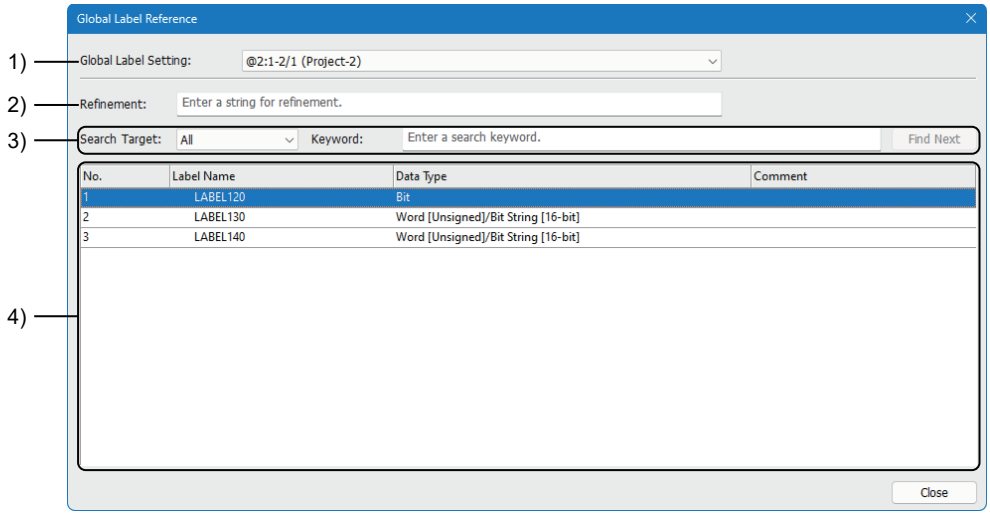
The [Global Label Reference] dialog lists the global labels imported to GT Designer3.

To display this dialog, double-click a target global label, or right-click the label and select [Open] from the right-click context menu in the [Project] window.



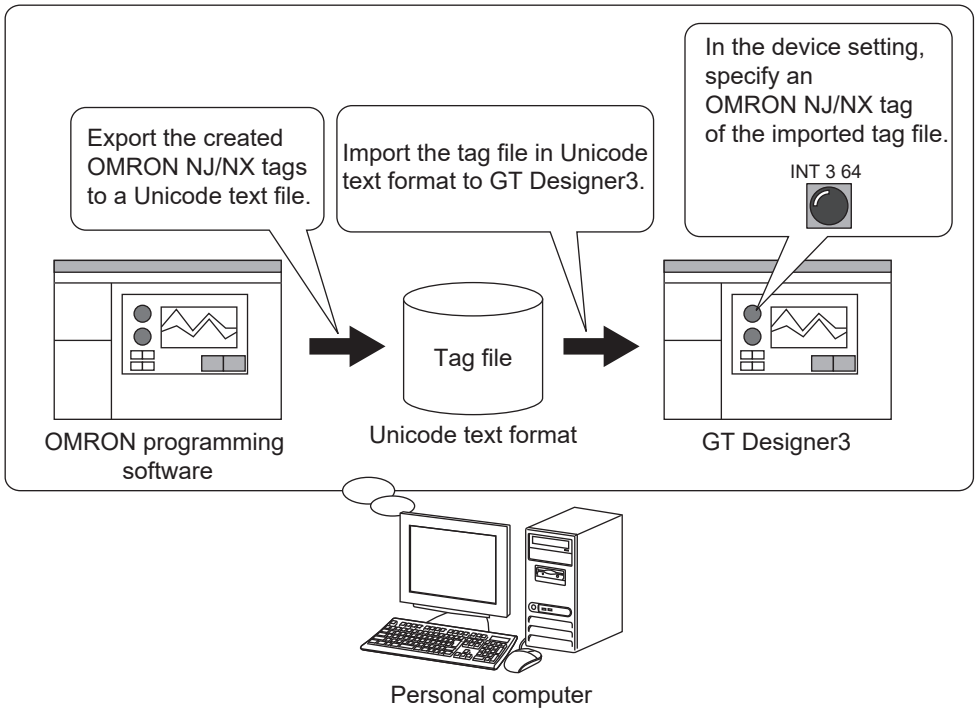
Item			Description
1)	[Global Label Setting]		Select a combination of the channel number, network setting, module number, and data name of the imported global labels.
2)	[Refinement]		Enter characters to narrow down the global labels in the label list. Only the global labels narrowed down by the entered characters are displayed in the label list. Up to 32 characters can be set. The entered characters are case-insensitive.
3)	Search		Search the global label list for a label by the specified keyword. Set [Search Target] and enter a search keyword in [Keyword]. Click the [Find Next] button to search for a global label by the search keyword. Up to 32 characters can be set in [Keyword]. The entered characters are case-insensitive.
4)	Global label list	—	Lists global labels.
		[No.]	Number of a global label
		[Label Name]	Name of a global label
		[Data Type]	Data type of a global label
		[Comment]	Comment set for a global label

19.6 How to set OMRON NJ/NX tags

GT37 SoftGOT3000

☞ Page 922 Usable OMRON NJ/NX tags
☞ Page 923 Requirements for OMRON NJ/NX tags
☞ Page 926 Offset setting for OMRON NJ/NX tags
☞ Page 927 Importing a tag file
☞ Page 928 Setting an OMRON NJ/NX tag
☞ Page 929 Precautions for OMRON NJ/NX tags

You can import the OMRON NJ/NX tags created with OMRON programming software to GT Designer3.
The imported OMRON NJ/NX tags are usable in the device setting.
Using OMRON NJ/NX tags enables you to create project data without paying attention to the actual devices.



PART 6

19.6.1 Usable OMRON NJ/NX tags

GT37 SoftGOT3000

☞ Page 922 Supported PLCs
☞ Page 922 Supported software
☞ Page 922 Tag file format
☞ Page 922 Importable pieces of data

You can import the OMRON NJ/NX tags created with OMRON programming software to GT Designer3.
The imported OMRON NJ/NX tags are usable for the channel whose [Controller Type] is set to [OMRON NJ/NX] in the controller setting.
For the above channel, only OMRON NJ/NX tags and GOT internal devices are usable in the device setting.

Supported PLCs

You can import the tag files created for the following PLCs to GT Designer3.

PLC type		Model
OMRON PLC	NJ series	NJ501-1500, NJ501-1400, NJ501-1300, NJ501-1520, NJ501-1420, NJ501-1320, NJ501-1340, NJ301-1200, NJ301-1100, NJ101-1000, NJ101-9000, NJ101-1020, NJ101-9020
	NX series	NX1P2-1140DT, NX1P2-1140DT1, NX1P2-1040DT, NX1P2-1040DT1, NX1P2-9024DT, NX1P2-9024DT1, NX701-1700, NX701-1600, NX502-1700, NX502-1600, NX502-1500, NX502-1400, NX502-1300, NX102-1200, NX102-1100, NX102-1000, NX102-9000

Supported software

GT Designer3 can import tag files created with the following programming software.

Manufacturer	Software
OMRON Corporation	Sysmac Studio

Tag file format

Create tag files in Unicode text format.
You cannot import the tag files in any other file format to GT Designer3.

Importable pieces of data

Importable pieces of data is 204800 per tag file.

19.6.2 Requirements for OMRON NJ/NX tags

GT37 SoftGOT3000

☞ Page 923 Tag name and structure name
☞ Page 923 Data type
☞ Page 924 Using an OMRON NJ/NX tag for the setting that requires multiple devices
☞ Page 925 Structure-type OMRON NJ/NX tags
☞ Page 925 Union-type OMRON NJ/NX tags
☞ Page 925 Enumeration-type OMRON NJ/NX tags
☞ Page 925 Array-type OMRON NJ/NX tags

Tag name and structure name

A tag name or structure name must satisfy the following requirements.

- A name consists of alphanumeric characters (A to Z, a to z, and 0 to 9), one-byte katakana, multibyte characters, and underscores (_).
- The length of a tag name is 127 bytes or less.
- Up to 300 characters can be set for a structure name.

However, the names containing the following combinations of characters are unusable.

- A name begins with a number (0 to 9).
- A name begins or ends with a space.

Data type

The following shows the usable data types.

○: Available, —: Not available

Data type of OMRON NJ/NX tag	Device data type or device type on GT Designer3	Bit-specified word device
BOOL	Bit	—
BYTE	Signed 8-bit binary	—
	Unsigned 8-bit binary	—
WORD	Signed 16-bit binary	○
	Unsigned 16-bit binary	○
	16-bit binary-coded decimal	—
DWORD	Signed 32-bit binary	—
	Unsigned 32-bit binary	—
	32-bit binary-coded decimal	—
	Real number (32-bit)	—
LWORD	Signed 64-bit binary	—
	Unsigned 64-bit binary	—
	64-bit binary-coded decimal	—
	Real number (64-bit)	—
SINT	Signed 8-bit binary	—
	Unsigned 8-bit binary	—
INT	Signed 16-bit binary	○
	Unsigned 16-bit binary	○
	16-bit binary-coded decimal	—
DINT	Signed 32-bit binary	—
	Unsigned 32-bit binary	—
	32-bit binary-coded decimal	—
	Real number (32-bit)	—

Data type of OMRON NJ/NX tag	Device data type or device type on GT Designer3	Bit-specified word device
LINT	Signed 64-bit binary	—
	Unsigned 64-bit binary	—
	64-bit binary-coded decimal	—
	Real number (64-bit)	—
USINT	Signed 8-bit binary	—
	Unsigned 8-bit binary	—
UINT	Signed 16-bit binary	○
	Unsigned 16-bit binary	○
	16-bit binary-coded decimal	—
UDINT	Signed 32-bit binary	—
	Unsigned 32-bit binary	—
	32-bit binary-coded decimal	—
	Real number (32-bit)	—
ULINT	Signed 64-bit binary	—
	Unsigned 64-bit binary	—
	64-bit binary-coded decimal	—
	Real number (64-bit)	—
REAL	Signed 32-bit binary	—
	Unsigned 32-bit binary	—
	32-bit binary-coded decimal	—
	Real number (32-bit)	—
LREAL	Signed 64-bit binary	—
	Unsigned 64-bit binary	—
	64-bit binary-coded decimal	—
	Real number (64-bit)	—
STRING[*1]	String	—

*1 Available for the following functions.
Text display
Text input
Text print
Logging
Recipe

Using an OMRON NJ/NX tag for the setting that requires multiple devices

To set an OMRON NJ/NX tag for the setting that requires consecutive or separate devices, use an OMRON NJ/NX tag whose data type is as follows.

- Structure
- String
- Array
- Bit-specified word device

Structure-type OMRON NJ/NX tags

Structure-type tags composed of members of the following data types can be used.

- Boolean
- Bit string
- Integer
- Real
- String
- Array specification
- Enumeration

Directly entering an enumeration-type tag name allows you to read the tag value.

Select [Signed BIN32], [Unsigned BIN32], [BCD32], or [Real(32bit)] for the data type and device type.

☞ Page 928 Directly entering a tag name

Union-type OMRON NJ/NX tags

Union-type tags composed of members of the following data types can be used.

- Boolean
- Bit string

Enumeration-type OMRON NJ/NX tags

Directly entering a tag name allows you to read the tag value.

Select [Signed BIN32], [Unsigned BIN32], [BCD32], or [Real(32bit)] for the data type and device type.

☞ Page 928 Directly entering a tag name

Array-type OMRON NJ/NX tags

An array must satisfy the following requirements.

- One-, two-, or three-dimensional array
- Any data type other than string
- For the undefined tags: the subscript for each dimension as shown below

Array	Subscript range
One-dimensional array	0 to 65535
Two-dimensional array	0 to 65535
Three-dimensional array	0 to 65535

19.6.3 Offset setting for OMRON NJ/NX tags

GT37 SoftGOT3000

The offset setting is applied to array element numbers.

Ex.

Offset setting for an OMRON NJ/NX tag in Tag[4,4,4]

OMRON NJ/NX tag set for an object or others	Offset device value	Offset result
Tag[0,1,1]	2	Tag[0,1,3]
	-1	Tag[0,1,0]
	5	Tag[0,2,1] (As the row number of the element tag is changed, a system alarm occurs if Tag[4,4,4] has not been imported.)
	119	A system alarm occurs due to invalid array subscripts.

For the tags of a structure, if the structure is set as an array element, the offset setting is not applied to the tags.

For the array-type tags of a structure, the offset setting is applied to the tags.

Ex.

Offset setting for the OMRON NJ/NX tags of a structure

OMRON NJ/NX tag set for an object or others	Offset result
STRUCT01[1].INT01	The offset setting is not applied to arrays of structures.
STRUCT01.INT02[1]	The offset setting applies to arrays of structure members.

19.6.4 Importing a tag file

GT37 SoftGOT3000

The following shows the procedure for importing a tag file to GT Designer3.

Operating procedure

1. Perform either of the following operations to display the [Label/Tag/Ethernet Setting List] dialog.

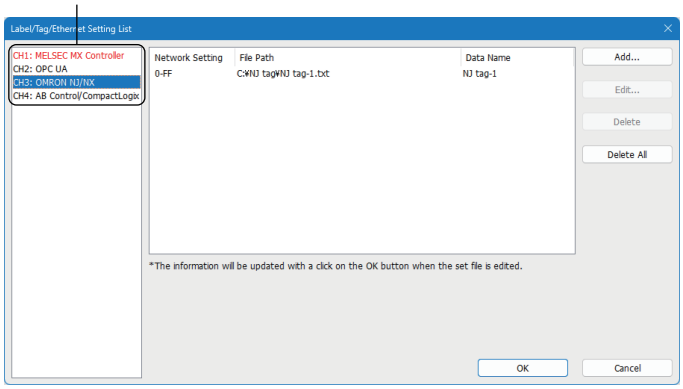
- Select [Project] → [Import Other Data] → [Label/Tag/Ethernet Setting] from the menu.
- Double-click [Import/Setting] under [Label/Tag] → [OMRON NJ/NX Tag] in the [Project] window.

2. Select a channel to establish communication with the controller that uses OMRON NJ/NX tags.

The channel that supports importing OMRON NJ/NX tags is the one in which the following item is selected for [Controller Type] in the [Controller Setting] window.

- [OMRON NJ/NX]

Select a channel.



3. Click the [Add] button to display the [Add OMRON NJ/NX Tag] dialog.

Page 864 [Add OMRON NJ/NX Tag] dialog or [Edit OMRON NJ/NX Tag] dialog

4. Set the network setting and the file to be imported, and click the [OK] button.

OMRON NJ/NX tags are imported to the project.

19.6.5 Setting an OMRON NJ/NX tag

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The following setting methods are available.

Entry method	Description
Directly entering a tag name	☞ Page 928 Directly entering a tag name
Selecting a tag from the tag list	Display the [Select OMRON NJ/NX Tag] dialog, and select one of the registered OMRON NJ/NX tags from the list. ☞ Page 837 Selecting a label or tag from the list
Selecting from utilizable data (input assist)	Enter characters in the device entry field in the setting dialog to display utilizable data in the input assist window. You can set an OMRON NJ/NX tag by selecting it from the utilizable data. ☞ Page 843 Selecting from utilizable data (input assist)

Point

Checking the data type of an OMRON NJ/NX tag

If you change the data type of an object or others, the data types may be inconsistent between the set OMRON NJ/NX tag and the object or others.

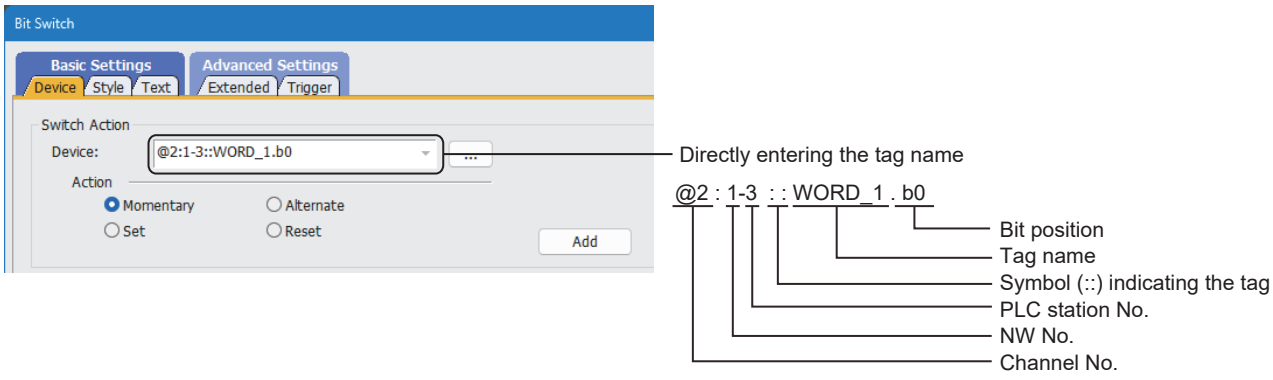
After setting an OMRON NJ/NX tag, check if the data types are consistent between the tag and the object or others.

To check the data type consistency, it is recommended to compare the used tag file with the file exported from [Device List] of GT Designer3.

Directly entering a tag name

Enter an OMRON NJ/NX tag name directly in the textbox of [Device] in the setting dialog of an object or others.

At the beginning of the tag name, add a "::" symbol indicating the tag.



When you enter the tag name directly, the data type consistency check between the OMRON NJ/NX tag and the object or others is not performed automatically.

The data types may be inconsistent between the OMRON NJ/NX tag and the object or others.

19.6.6 Precautions for OMRON NJ/NX tags

GT37 SoftGOT3000

OMRON NJ/NX tag name

When you use multiple OMRON NJ/NX tags whose names are long, the monitoring process may take a longer time.

Tag settings in a project read from the GOT

When a project containing OMRON NJ/NX tags is read from the GOT, check the tags in the [OMRON NJ/NX Tag List] dialog.
If a tag file is displayed in red, import the tag file again.

Directly entering an OMRON NJ/NX tag name

For a string-type OMRON NJ/NX tag, import the tag and enter the tag name to specify it.
If you do not import the tag before setting it, the data type cannot be recognized as string, and a system alarm occurs.

Importing an identically-named OMRON NJ/NX tag of a different data type

After an OMRON NJ/NX tag is set in the project, if you import an identically-named OMRON NJ/NX tag of a different data type, the set tag may be displayed as [??].
If [??] is displayed, set the relevant OMRON NJ/NX tag again.

Setting the object or function that uses an OMRON NJ/NX tag

Configure the following settings for the object or function that uses a string-type OMRON NJ/NX tag.
Text display object, text input object
Select [Display in order of High -> Low] in the [Extended] tab.
Text print object
Select [Display in order of High -> Low].
Recipe function, logging function
Select [Low-->High] for [Storage Order] in the [Device] tab.

Character code

The GOT uses UTF-16 encoding, and the OMRON NJ or NX series uses UTF-8 encoding.
When you use a string-type OMRON NJ/NX tag, perform encoding conversion (between UTF-16 and UTF-8) and then write or read the tag.
The string length in bytes varies with the encoding format.

- UTF-16

One character takes two bytes.

- UTF-8

One character takes one to three bytes.
A null (one byte) is appended to a string.
As the length of a string in UTF-16 differs from that of the string in UTF-8, an OMRON NJ/NX tag may not be written or read properly.
Set the number of characters to be displayed and the number of bytes for a string-type OMRON NJ/NX tag with consideration of the string length difference between UTF-16 and UTF-8.

Startup time setting

If data is written to or read from an OMRON NJ/NX tag immediately after the OMRON NJ or NX series is turned on, a system alarm may occur.

In such a case, specify a longer time after which the GOT start communicating with the OMRON NJ or NX series by setting [Startup Time(Sec)] of the [Detail Setting] dialog in the controller setting.

☞ Page 775 [Detail Setting] dialog

Station No. switching while an OMRON NJ/NX tag is being used

The station No. switching is not available to the station using an OMRON NJ/NX tag.

Do not use an OMRON NJ/NX tag for the station requiring the station No. switching.

Number of characters of the comment set for an OMRON NJ/NX tag

For an OMRON NJ/NX tag, set a comment in 1024 characters or less.

The 1025th and subsequent characters are not displayed in GT Designer3.

Bit specification of a word device assigned to an OMRON NJ/NX tag

The GOT reads the value of the device in word units, then writes a value to the device in bit units.

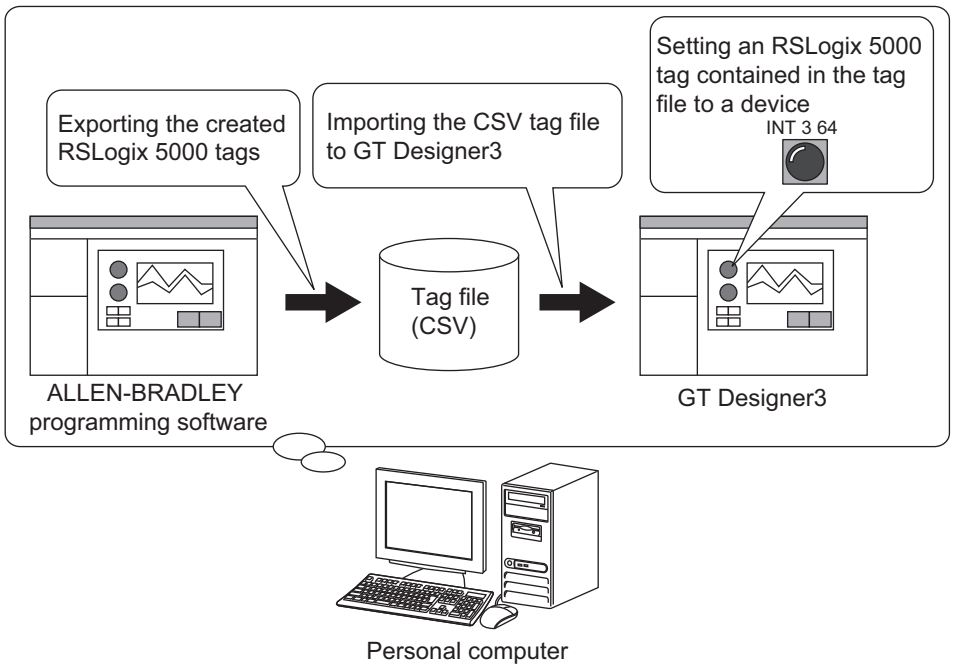
Do not change the device value with a sequence program until the GOT completes writing a value to the device.

19.7 Using RSLogix 5000 tags

GT37 SoftGOT3000

☞ Page 932 Importing a tag file
☞ Page 934 Referring to RSLogix 5000 tags

You can import RSLogix 5000 tags, which are created with ALLEN-BRADLEY programming software, to GT Designer3.
The imported RSLogix 5000 tags are usable in the device setting.



19.7.1 Importing a tag file

GT37 SoftGOT3000

The following shows the procedure for importing a tag file to GT Designer3.

Operating procedure

1. Perform either of the following operations to display the [Label/Tag/Ethernet Setting List] dialog.

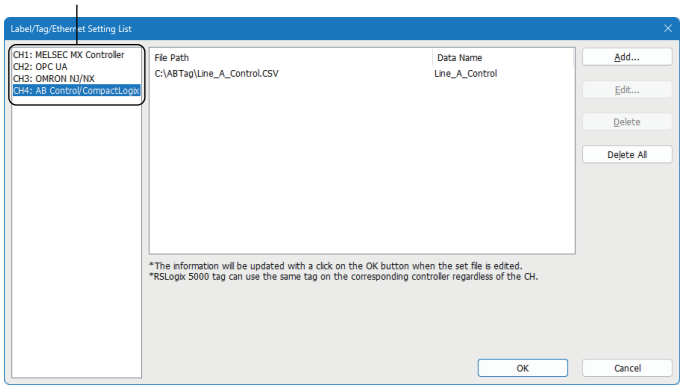
- Select [Project] → [Import Other Data] → [Label/Tag/Ethernet Setting] from the menu.
- Double-click [Import/Setting] under [Label/Tag] → [RSLogix 5000 Tag] in the [Project] window.

2. Select a channel to establish communication with the controller that uses RSLogix 5000 tags.

The channel that supports importing RSLogix 5000 tags is the one in which the following item is selected for [Controller Type] in the [Controller Setting] window.

- [AB Control/CompactLogix]

Select a channel.



3. Click the [Add] button to display the [Add RSLogix 5000 Tag] dialog.

☞ Page 865 [Add RSLogix 5000 Tag] dialog or [Edit RSLogix 5000 Tag] dialog

4. Set the network setting and the file to be imported, and click the [OK] button.

RSLogix 5000 tags are imported to the project.

Specifications of the tag file

■Supported PLCs

GT Designer3 can import tag files created with the following programming software.

PLC type		Model
ALLEN-BRADLEY PLC	ControlLogix series	1756-L, 1756-L1M1, 1756-L1M2, 1756-L1M3, 1756-L61, 1756-L62, 1756-L63, 1756-L64, 1756-L55M12, 1756-L55M13, 1756-L55M14, 1756-L55M16, 1756-L55M22, 1756-L55M23, 1756-L55M24
	CompactLogix series	1769-L31, 1769-L32E, 1769-L32C, 1769-L35E, 1769-L35CR

■Supported software

You can import tag files, which are created with the following programming software, to GT Designer3.

Manufacturer	Software
Rockwell Automation, Inc. (ALLEN-BRADLEY)	RSLogix 5000

■Supported tag

You can import only controller tags with GT Designer3.

Program tags cannot be imported.

Requirements for creating tag files

The following explains the requirements for creating tag files with RSLogix 5000.

■Tag mapping

Map the created RSLogix 5000 tags.

Tags without mapping cannot be set in devices using GT Designer3.

■Tag file format

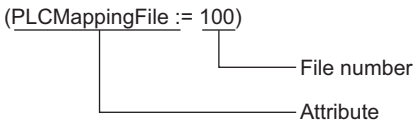
Create tag files in the CSV format.

GT Designer3 cannot import tag files in formats other than the CSV format.

■Composition of tag files

To import tag files to GT Designer3, the following settings are required.

Set the following fields with RSLogix 5000.

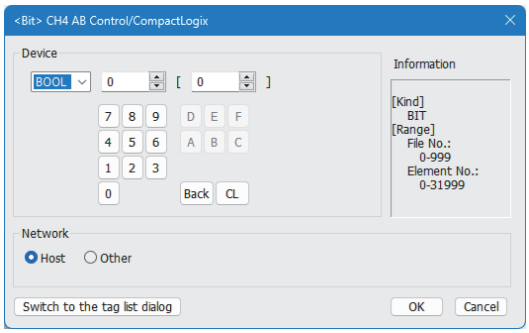
Field	Description	Input example
TYPE	Set the type of the target records. Set the type TAG: the tag type that can be read to GT Designer3 is only the type TAG.	TAG
SCOPE	Leave blank.	-
NAME	Set a tag name. The setting range is 0 to 40 character (s).	tagBOOL
DESCRIPTION	Set the comment of the tag in ASCII characters. The setting range is 0 to 120 character (s).	$0050$004C$0043
DATATYPE	Set the data type and the element number. The setting range of the element number depends on the data type. • INT, DINT, REAL: The setting range is [0] to [1000]. • BOOL: The setting range is [32] to [32000]. The element number must be set in multiples of 32.	BOOL[32]
SPECIFIER	Leave blank.	-
ATTRIBUTES	Set the attribute. RADIX PLCMappingFile or PLC2Mapping can be selected. If this field is PLCMappingFile, set the file number. The setting range of the file number is 0 to 999. 	(PLCMappingFile := 100)

19.7.2 Referring to RSLogix 5000 tags

GT37 SoftGOT3000

The following shows the procedure for setting imported tags into devices.

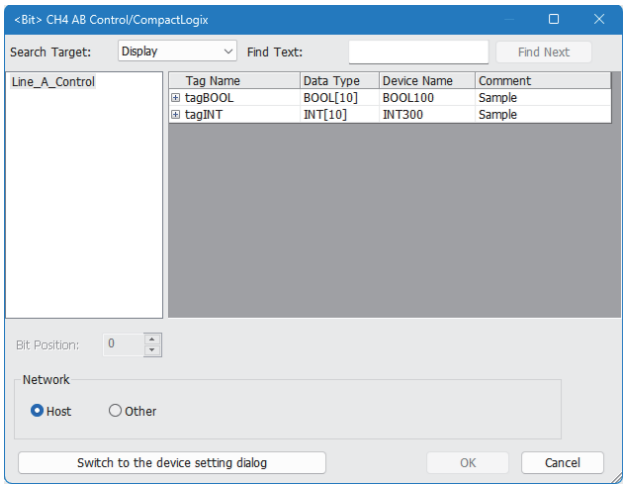
1. Click the [Switch to the tag list dialog] button from the device setting dialog.



2. The tag list dialog (RSLogix 5000 tag) appears.

Set the RSLogix 5000 tag to be used.

☞ Page 935 Tag list dialog (RSLogix 5000 tag)

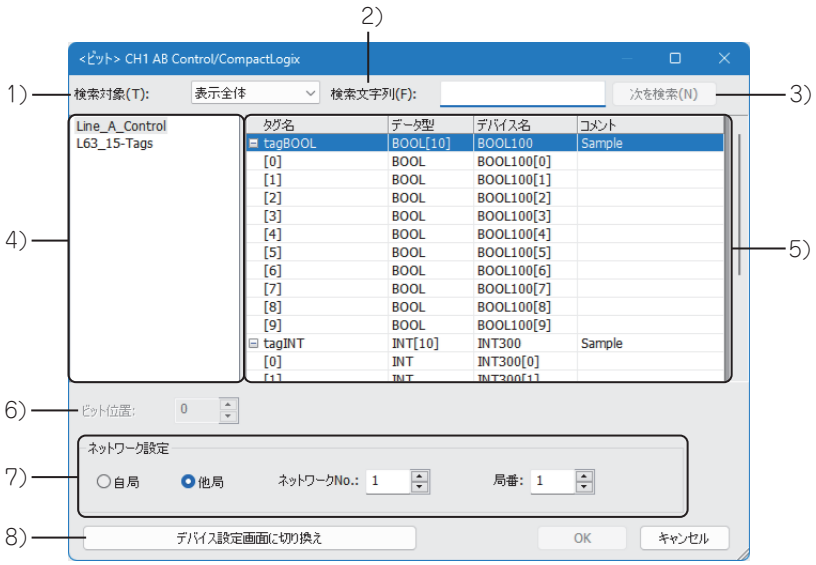


3. Click the [OK] button to complete the RSLogix 5000 tag setting.

19.7.3 Tag list dialog (RSLogix 5000 tag)

GT37 SoftGOT3000

Click the [Switch to the tag list dialog] button in the device setting dialog to display the tag list dialog.



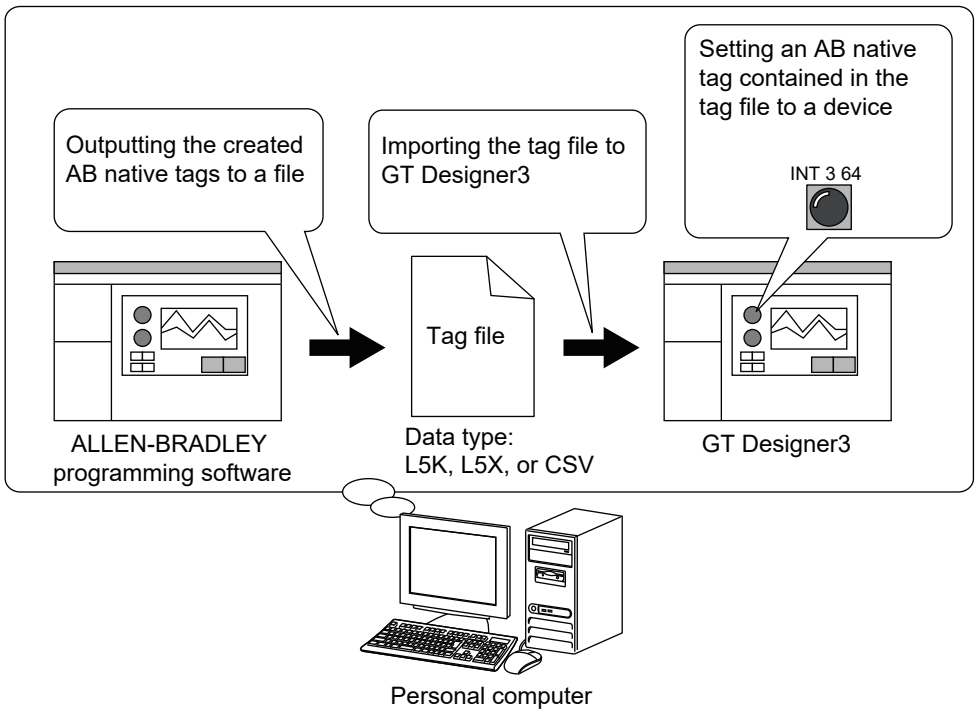
Item		Description
1)	[Find Object]	Select the target item for searching in the tag view.
2)	[Find Characters]	Set a character string to be searched for. The search string is case-insensitive.
3)	[Find Next] button	Searches by the settings in [Search Target] and [Find Text].
4)	Tag file list	The tag files which have been imported to GT Designer3 appear in a list.
5)	Tag list	Displays the contents of the tag file selected in the list.
6)	[Bit Position]	Set a bit position. The setting range is [0] to [15].
7)	[Network Setting]	Set the station No. of the destination controller for monitoring. [Host] or [Other] can be set. When selecting [Other], set [Network No.] and [Station No.].
8)	[Switch to the device setting dialog] button	Switches to the device setting dialog.

19.8 How to set AB native tags

GT37 SoftGOT3000

☞ Page 937 Specifications of AB native tags usable in GT Designer3
☞ Page 940 Procedure to use AB native tags in GT Designer3
☞ Page 941 Importing a tag file
☞ Page 942 Setting an AB native tag in the device setting

You can import AB native tags, which are created with ALLEN-BRADLEY programming software, to GT Designer3.
The imported AB native tags can be set in the device setting.
Using AB native tags enables you to create project without paying attention to the actual devices.



19.8.1 Specifications of AB native tags usable in GT Designer3

GT37 SoftGOT3000

☞ Page 937 Importable files in GT Designer3
☞ Page 937 AB native tags usable in GT Designer3
☞ Page 939 Function unsupported by the AB native tag
☞ Page 939 Specifications for data transfer to the GOT

Importable files in GT Designer3

You can import the tag files created for the following PLCs to GT Designer3.

PLC type		Model
ALLEN-BRADLEY PLC	ControlLogix 5000 series	1756-L, 1756-L1M1, 1756-L1M2, 1756-L1M3, 1756-L55M12, 1756-L55M13, 1756-L55M14, 1756-L55M16, 1756-L55M22, 1756-L55M23, 1756-L55M24, 1756-L61, 1756-L62, 1756-L63, 1756-L64, 1756-L72S, 1794-L33, 1794-L34
	ControlLogix 5000 series	1756-L81E, 1756-L82E, 1756-L83E, 1756-L84E, 1756-L85E
	CompactLogix series	1769-L32E, 1769-L35E

The following shows the software products used to set AB native tags and file formats of the files importable in GT Designer3.

Manufacturer	Software	Extension	Software version
Rockwell Automation, Inc. (ALLEN-BRADLEY)	RSLogix 5000	*.L5K	10, 11, 12, 13, 15, 20, 32
		*.L5X	20, 32
		*.CSV	13 or later

When importing AB native tags that include the following, import a tag file with an extension *.L5K or *.L5X.

- Alias tags that refer to structure-type tags
- Structure-type AB native tags

AB native tags usable in GT Designer3

☞ Page 937 External access
☞ Page 937 Scope
☞ Page 938 Tag name and structure name
☞ Page 938 Tag type
☞ Page 938 Data type
☞ Page 939 Constant value
☞ Page 939 Structure-type AB native tags
☞ Page 939 Array-type AB native tags

■External access

To use AB native tags, select an item other than [None] for the external access.

■Scope

The AB native tags must be defined as follows.

Scope	Description
Controller (global data)	Controller tags. Direct access to the tags is available. The tags are not output to the [SCOPE] column of a CSV file.

PART 6

■Tag name and structure name

A tag name or structure name must satisfy the following requirements.

- A name consists of one-byte alphanumeric characters (A to Z, a to z, 0 to 9) and underscores (_).
- A name begins with a one-byte alphanumeric character (A to Z, a to z) or an underscore (_).
- Up to 40 characters are used for a tag name. (Up to 300 characters can be used for a tag name of a structure.)
- Underscores (_) are not used successively in a name.
- A tag name does not end in an underscore (_).

■Tag type

The following tag types can be used.

- Alias tag
- Base tag
- Produced tag
- Consumed tag

For details, refer to the following.

📖ALLEN-BRADLEY programming software manual

■Data type

The following shows the usable data types.

○: Available, —: Not available

Data type of AB native tag	Device data type or device type on GT Designer3	Bit-specified word device
BOOL	Bit	—
SINT	Signed 8-bit binary	—
	Unsigned 8-bit binary	
INT	Signed 16-bit binary	○
	Unsigned 16-bit binary	
	16-bit binary-coded decimal	—
DINT	Signed 32-bit binary	○
	Unsigned 32-bit binary	
	32-bit binary-coded decimal	—
	Real number (32-bit)	
LINT	Signed 64-bit binary	—
	Unsigned 64-bit binary	
	64-bit binary-coded decimal	
	Real number (64-bit)	
REAL	Signed 32-bit binary	○
	Unsigned 32-bit binary	
	32-bit binary-coded decimal	—
	Real number (32-bit)	
USINT*1	Signed 32-bit binary	—
	Unsigned 32-bit binary	
UINT*1	Signed 16-bit binary	○
	Unsigned 16-bit binary	
	16-bit binary-coded decimal	—
UDINT*1	Signed 32-bit binary	○
	Unsigned 32-bit binary	
	32-bit binary-coded decimal	—
	Real number (32-bit)	
ULINT*1	Signed 64-bit binary	—
	Unsigned 64-bit binary	
	64-bit binary-coded decimal	
	Real number (64-bit)	

Data type of AB native tag	Device data type or device type on GT Designer3	Bit-specified word device
LREAL*1	Signed 64-bit binary	—
	Unsigned 64-bit binary	
	64-bit binary-coded decimal	
	Real number (64-bit)	

*1 Only available to ControlLogix 5580 series.

■Constant value

The AB native tags specified as constants (True) are not usable.

■Structure-type AB native tags

Item	Specifications
Data type	The data type of a structure must be as follows. • String • Predefined data type • Module-defined data type • User-defined data type
Hierarchy of a structure	GT Designer3 supports import of a structure of 15 levels or less. Tag files that contain a structure of 16 levels or more are not imported.
Data type of the structure when it is imported from a CSV file	When a CSV file is imported, the data type of the structure differs depending on the data type name of the structure. • When the data type name contains the word "STRING": String-type structure • When the data type name does not contain the word "STRING": Non-string type structure

■Array-type AB native tags

An array must satisfy the following requirements.

- One-, two-, or three-dimensional array
- For the BOOL data type: One-dimensional array (However, for the BOOL undefined tags, one-, two-, or three-dimensional arrays are usable.)
- For the undefined tags: the subscript for each dimension as shown below

Array	Subscript range
One-dimensional array	0 to 2147483647
Two-dimensional array	0 to 268435455
Three-dimensional array	0 to 262143

Function unsupported by the AB native tag

AB native tags do not support the following functions.

Function unsupported by the AB native tag	Remarks
Station number switching	Station number switching is not available for the GOT to monitor the station that uses AB native tags. Do not use AB native tags for the station requiring station number switching.
Offset	—

Specifications for data transfer to the GOT

When you set AB native tags in the package data and write the data to the GOT, [Write Mode] is not selectable in the [Write Option] dialog.

In this case, [Write Mode] is fixed to [Synchronize].

☞ Page 467 [Write Option] dialog

19.8.2 Procedure to use AB native tags in GT Designer3

GT37 SoftGOT3000

The following shows the procedure from importing AB native tags to setting them in the device setting in GT Designer3.

1. Prepare a file in GT Designer3 with ALLEN-BRADLEY programming software.

For the specifications of the files importable in GT Designer3, refer to the following.

☞ Page 937 Importable files in GT Designer3

For information on how to operate the ALLEN-BRADLEY programming software, refer to the following.

📖ALLEN-BRADLEY programming software manual

2. Import the tag file in GT Designer3.

☞ Page 941 Importing a tag file

3. Set the imported AB native tags in the device setting of an object or others.

☞ Page 942 Setting an AB native tag in the device setting

The AB native tag setting is completed.

Precautions when setting an AB native tag with ALLEN-BRADLEY programming software

■Number of characters of the comment set for an AB native tag

Set the comment in 1024 characters or less for an AB native tag.

The 1025th and subsequent characters are not displayed in GT Designer3.

■AB native tag name

When you use multiple AB native tags whose names are long, the monitoring process may take a longer time.

19.8.3 Importing a tag file

GT37 SoftGOT3000

The following shows the procedure for importing a tag file to GT Designer3.

1. Perform either of the following operations to display the [Label/Tag/Ethernet Setting List] dialog.

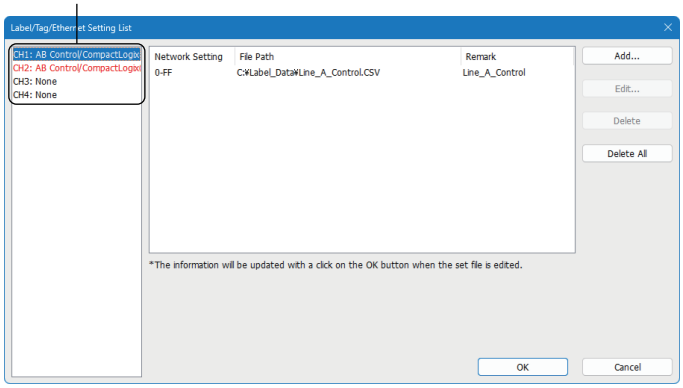
- Select [Project] → [Import Other Data] → [Label/Tag/Ethernet Setting] from the menu.
- In the [Project] window, click [Label/Tag] → [AB Native Tag], and double-click [Import/Setting].

2. Select a channel to establish communication with the controller that uses AB native tags.

The channel that supports importing AB native tags is the one in which the following item is selected for [Controller Type] in the [Controller Setting] window.

- [AB Control/CompactLogix(Tag)

Select a channel.



3. Click the [Add] button to display the [Add AB Native Tag] dialog.

☞ Page 865 [Add AB Native Tag] dialog or [Edit AB Native Tag] dialog

4. Set the network setting and the file to be imported, and click the [OK] button.

AB native tags are imported to the project.

Precautions

■Importing an edited tag file

If you edit the tag file outputted with ALLEN-BRADLEY programming software before importing it in GT Designer3, the tag file may be imported improperly.

■Restriction by the project security

Users who are prohibited from editing by project-wide security cannot import tag files.

For the project security, refer to the following.

☞ Page 2972 Protecting a project by registering users (Project security)

19.8.4 Setting an AB native tag in the device setting

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The following entry methods are available.

Entry method	Description
Directly entering a tag name	☞ Page 942 Directly entering a tag name
Selecting a tag from the tag list	Display the [Select AB Native Tag] dialog, and select one of the registered AB native tags from the list. ☞ Page 837 Selecting a label or tag from the list
Selecting from utilizable data (input assist)	Enter characters in the device entry field in the setting dialog to display utilizable data in the input assist window. You can set an AB native tag simply by selecting it from the utilizable data. ☞ Page 843 Selecting from utilizable data (input assist)

For precautions when setting an AB native tag in the device setting, refer to the following.

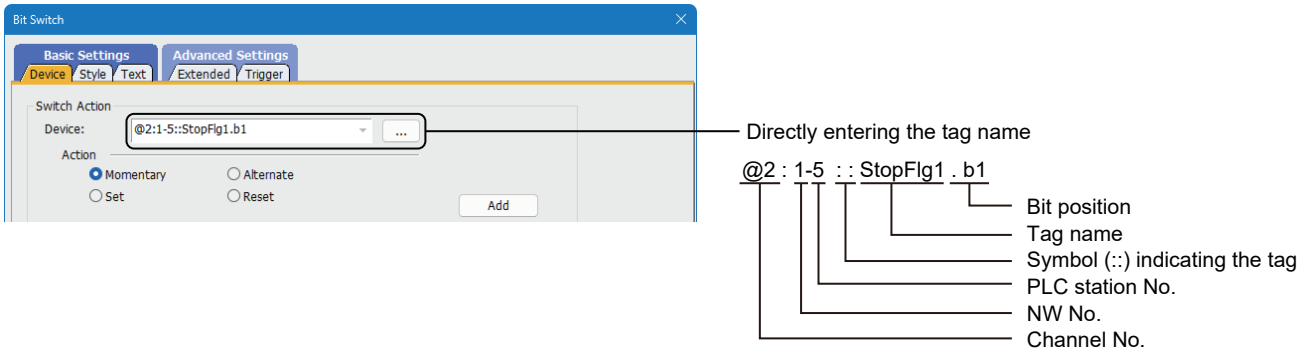
☞ Page 943 Precautions when setting an AB native tag

Directly entering a tag name

Enter an AB native tag name directly in the text box of [Device] in the setting dialog.

At the beginning of the tag name, add a "::" symbol indicating the tag.

When specifying a tag which has not been imported with bit position, available bit positions are b0 to b15.



Precautions

■Data type verification

When you enter the tag name directly, the data type consistency check between the AB native tag and the object or others is not performed automatically.

The data types may be inconsistent between the AB native tag and the object or others.

■String-type AB native tag

When the data type of an AB native tag is string, import the tag and then set the tag by entering its name.

If you do not import the tag before setting it, the data type cannot be recognized as string, and a system alarm occurs.

Precautions when setting an AB native tag

■Checking the data type of the AB native tag

After setting an AB native tag in the device setting of an object or others, performing one of the following changes results in data type inconsistency.

- Changing the data type of the AB native tag
- Manually changing the data type of an object or others

If you perform one of the above, ensure that the data types are consistent between the AB native tag and an object or others. To check the data type, it is recommended to compare the tag file created with RSLogix 5000 with the CSV file exported from [Device List] of GT Designer3.

■Using an AB native tag for the setting that requires multiple devices

To set an AB native tag for the setting that requires consecutive or separate devices, use an AB native tag whose data type is as follows.

- Structure
- String
- Array
- Bit-specified word device

■Unusable AB native tags

The string-type AB native tags of a structure are unusable on the GOT.

■Number of characters when a string-type AB native tag is used

Set an even number of characters to be stored.

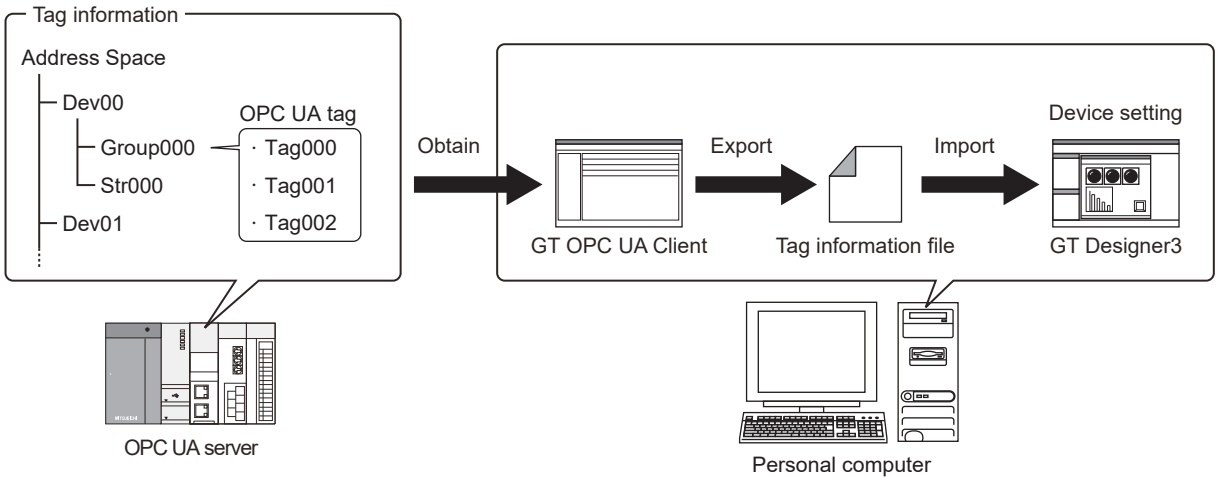
If you set an odd number of characters, some characters may not be monitored.

19.9 How to set OPC UA tags

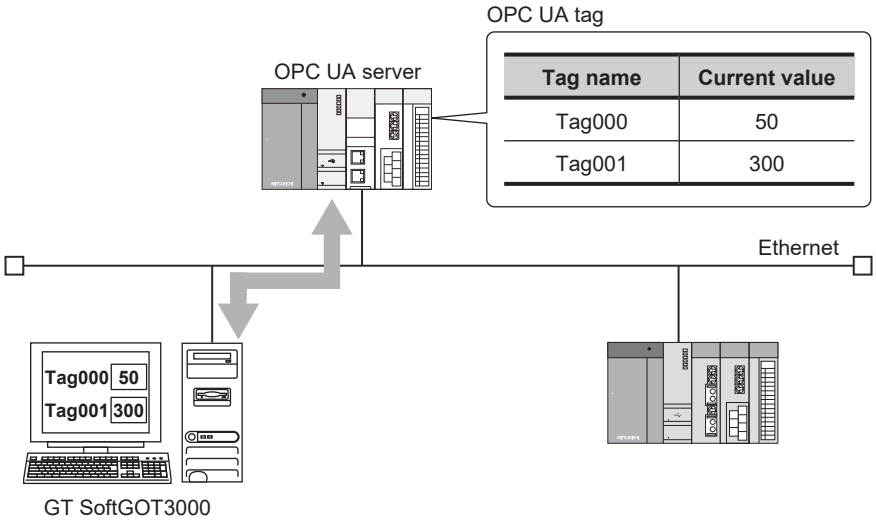
GT37 SoftGOT3000

☞ Page 945 Usable OPC UA tags
☞ Page 950 Importing a tag information file
☞ Page 951 Setting an OPC UA tag
☞ Page 952 Precautions for OPC UA tags

You can specify the OPC UA tags of an OPC UA server in device settings in GT Designer3.
To do this, import the tag information of the OPC UA server to GT Designer3.



The GOT monitors the OPC UA tags of an OPC UA server by using a project in which the tags are set.
For the OPC UA client connection, refer to the following.
📖The manual of the OPC UA client used



19.9.1 Usable OPC UA tags

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The following shows the specifications of tag information files that can be imported and the specifications of usable OPC UA tags.

☞ Page 945 Importable tag information files
☞ Page 945 Characters in the tag names of OPC UA tags
☞ Page 946 Display of OPC UA tags in GT Designer3
☞ Page 946 Supported data types of OPC UA tags
☞ Page 947 Structure
☞ Page 948 Array
☞ Page 949 Offset setting for OPC UA tags

Importable tag information files

Item	Specifications
File format	Tag information file (*.gtuc)
Maximum number of tag information files	One tag information file is imported for each channel. A tag information file is imported for a channel for which [Controller Type] is set to [OPC UA] in the [Controller Setting] window.
Maximum number of OPC UA tags	20480 in one tag information file

Characters in the tag names of OPC UA tags

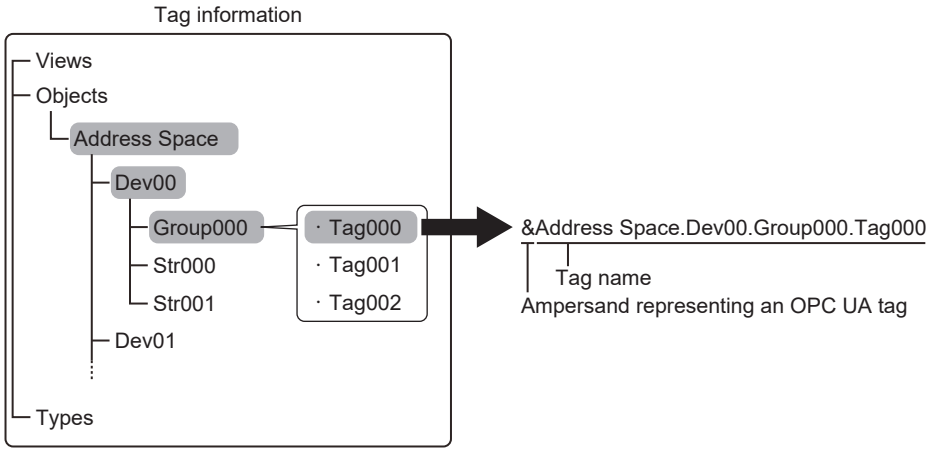
OPC UA tags with the following characters in their names will not be imported.

- " & ( ) . ; { }
- // (Double slash)
- U+0000 to U+001F (C0 control code)
- U+007F (Delete character)
- U+0080 to U+009F (C1 control code)
- One-byte space at the start or end of a tag name
- Two-byte space at the start or end of a tag name

An OPC UA server, GT Designer3, and the GOT use different encoding formats for tag names.
For precautions for encoding formats, refer to the following.
☞ Page 953 Encoding formats used
Case sensitivity differs between an OPC UA server and GT Designer3.
For precautions for case sensitivity, refer to the following.
☞ Page 953 Case sensitivity of tag names

Display of OPC UA tags in GT Designer3

The imported tag information and OPC UA tags are displayed in GT Designer3 as shown below.



In GT Designer3, a tag name includes the names of parent folders (groups and structures) of the tag.

The tag name does not include the folder names "Views", "Objects", and "Types".

The folder names within a tag name are separated by a period (.).

If a tag name includes 532 or more characters (excluding the ampersand), the tag will not be imported.

For arrays, if a tag name includes 553 or more characters including element numbers (excluding the ampersand), the tag will not be imported.

☞ Page 948 Array

Supported data types of OPC UA tags

The following shows the data types of OPC UA tags supported by GT Designer3.

In GT Designer3, select the data types or device types that correspond to the data types of OPC UA tags.

Only the following types of OPC UA tags will be imported to GT Designer3.

Supported data type of OPC UA tags	Data type or device type selectable in GT Designer3	Remarks
Boolean	Bit	The word specification of bit devices is not available.
Int16	Signed 16-bit binary	The bit specification of word devices is not available.
	Unsigned 16-bit binary	
	16-bit binary-coded decimal	
UInt16	Signed 16-bit binary	The bit specification of word devices is not available.
	Unsigned 16-bit binary	
	16-bit binary-coded decimal	
Int32	Signed 32-bit binary	The bit specification of word devices is not available.
	Unsigned 32-bit binary	
	32-bit binary-coded decimal	
	Real	
UInt32	Signed 32-bit binary	The bit specification of word devices is not available.
	Unsigned 32-bit binary	
	32-bit binary-coded decimal	
	Real	
Float	Signed 32-bit binary	The bit specification of word devices is not available.
	Unsigned 32-bit binary	
	32-bit binary-coded decimal	
	Real	
String*1	String	The bit specification of word devices is not available.

*1 An OPC UA server, GT Designer3, and the GOT use different encoding formats for string data.

For precautions for encoding formats, refer to the following.

☞ Page 953 Encoding formats used

For settings requiring consecutive devices or devices that store string data, use the following types of OPC UA tags.

Item	Settable OPC UA tag
Consecutive devices	Use array-type OPC UA tags. Make sure that as many array elements as the required number of consecutive devices are set on an OPC UA server. For precautions for writing data to arrays, refer to the following. ☞ Page 952 Writing data to arrays
Devices that store string data	Use string-type OPC UA tags. Make sure that a data length equivalent to the required number of devices is set for the OPC UA tags on an OPC UA server.

Structure

You can specify the members of a structure in device settings.

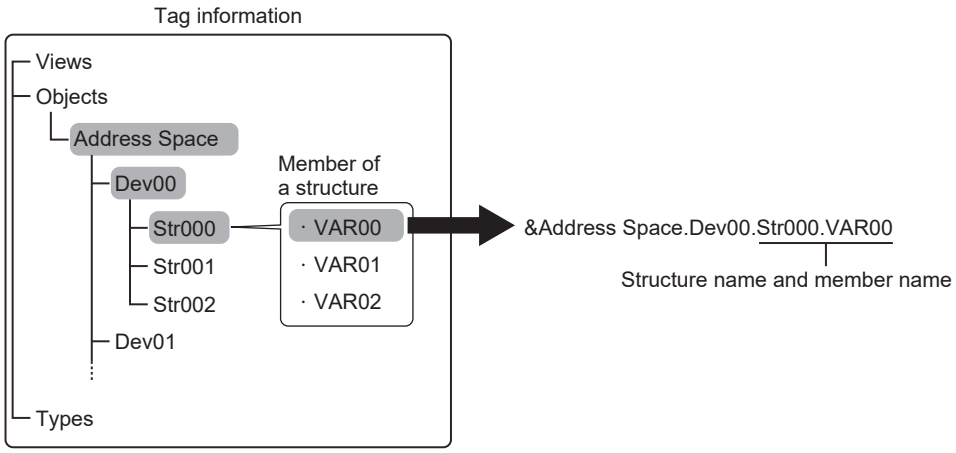
The supported data types of members are the same as the supported data types of usable OPC UA tags.

☞ Page 946 Supported data types of OPC UA tags

A member of a structure is displayed in GT Designer3 as shown below.

Ex.

Display of the VAR00 member of the Str000 structure



The structure name and member name within a tag name are separated by a period (.).

Array

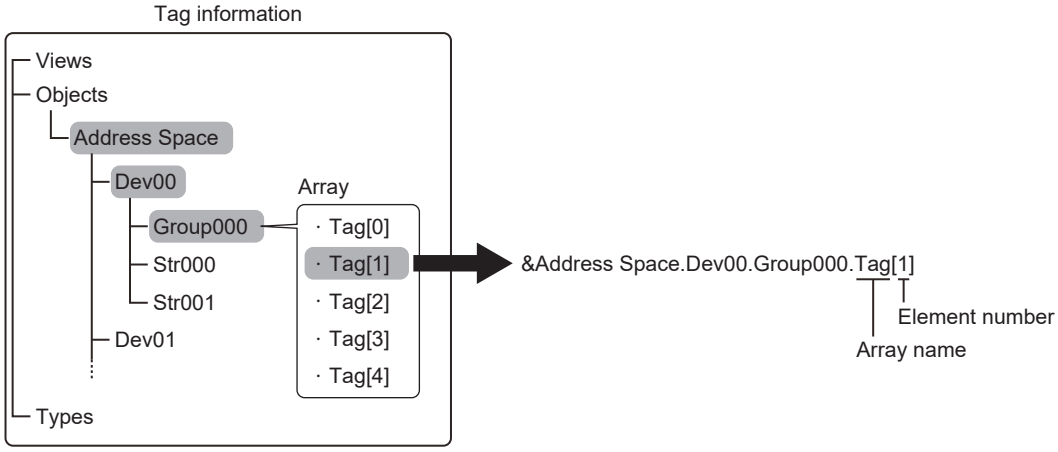
An array must satisfy the following requirements.

Item	Specifications
Number of dimensions	3 or less Tag[0..3,0..5,0..10] Third dimension Second dimension First dimension
Maximum number of elements	65536 regardless of the number of dimensions
Data type	Other than string among the data types of OPC UA tags usable in GT Designer3 ☞ Page 946 Supported data types of OPC UA tags

An array is displayed in GT Designer3 as shown below.

Ex.

Display of array Tag [1]



Regardless of the start element number of an array set on an OPC UA server, GT Designer3 assumes the start element number to be zero.

For precautions for element numbers, refer to the following.

☞ Page 952 Start element number of an array

Offset setting for OPC UA tags

The offset setting is applied to array element numbers.

Ex.

Offset setting for a three-dimensional array

For Tag[0..4,0..4,0..4] set on an OPC UA server

- First dimension: The start element number is 0, and the number of elements is 5.
- Second dimension: The start element number is 0, and the number of elements is 5.
- Third dimension: The start element number is 0, and the number of elements is 5.

OPC UA tag set for an object or others	Offset device value	Offset result
Tag[0,1,1]	2	Tag[0,1,3]
	-1	Tag[0,1,0]
	5	Tag[0,2,1]
	119	A system alarm occurs due to invalid array subscripts.

For an array of structures, the offset setting is not applied to the element numbers.

For an array of members of a structure, the offset setting is applied to the element numbers.

Ex.

Offset setting for a structure

OPC UA tag set for an object or others	Applicability of the offset setting
Str[1].VAR01	The offset setting is not applied to arrays of structures.
Str.VAR01[1]	The offset setting applies to arrays of structure members.

19.9.2 Importing a tag information file

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The following shows the procedure for importing a tag file to GT Designer3.

Operating procedure

1. Perform either of the following operations to display the [Label/Tag/Ethernet Setting List] dialog.

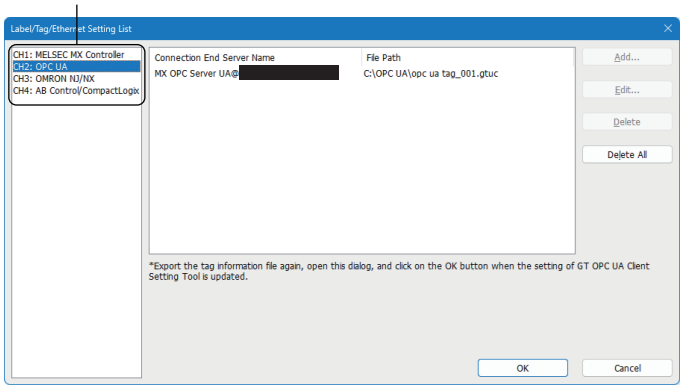
- Select [Project] → [Import Other Data] → [Label/Tag/Ethernet Setting] from the menu.
- Double-click [Import/Setting] under [Label/Tag] → [OPC UA Tag] in the [Project] window.

2. Select a channel to establish communication with the controller that uses OPC UA tags.

The channel that supports importing OPC UA tags is the one in which the following item is selected for [Controller Type] in the [Controller Setting] window.

- [OPC UA]

Select a channel.



3. Click the [Add] button to display the [Add OPC UA Tag] dialog.

Page 866 [Add OPC UA Tag] dialog or [Edit OPC UA Tag] dialog

4. Set the network setting and the file to be imported, and click the [OK] button.

OPC UA tags are imported to the project.

19.9.3 Setting an OPC UA tag

GT37 SoftGOT3000

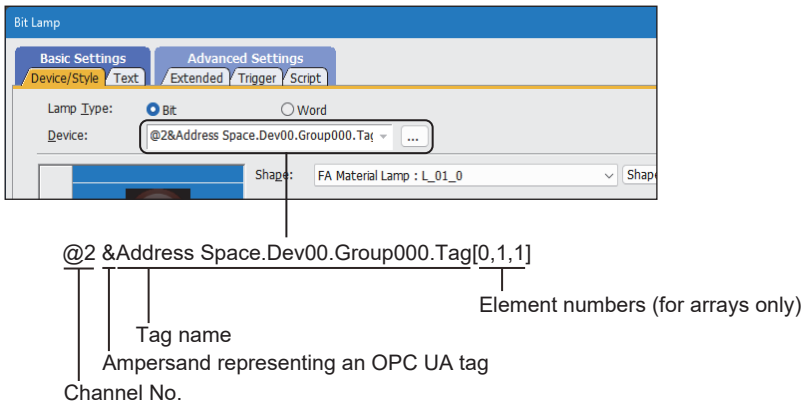
The following setting methods are available.

Entry method	Description
Directly entering a tag name	☞ Page 951 Directly entering a tag name
Selecting a tag from the tag list	Display the [Select OPC UA Tag] dialog, and select one of the registered OPC UA tags from the list. ☞ Page 837 Selecting a label or tag from the list
Selecting from utilizable data (input assist)	Enter characters in the device entry field in the setting dialog to display utilizable data in the input assist window. You can set an OPC UA tag by selecting it from the utilizable data. ☞ Page 843 Selecting from utilizable data (input assist)

Directly entering a tag name

Enter an OPC UA tag name directly in the textbox of [Device] in the setting dialog of an object or others.

Prepend one ampersand (&), which represents an OPC UA tag, to the tag name.



For information on how tag names are displayed in GT Designer3, refer to the following.

☞ Page 946 Display of OPC UA tags in GT Designer3

19.9.4 Precautions for OPC UA tags

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Changing channel settings

If you change the settings of the channel for connecting to an OPC UA server in the [Controller Setting] window, the tag information for the channel will be deleted.

Importing a tag information file if an OPC UA tag is set

After you specify an OPC UA tag as a device, if you import a same-name OPC UA tag of a different data type, the specified tag may be displayed as [??].
If [??] is displayed, specify the relevant OPC UA tag again.

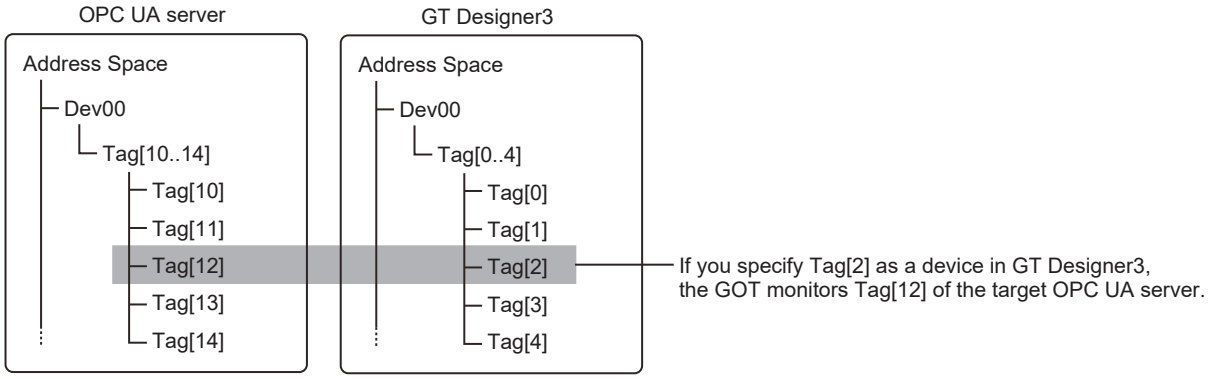
Checking the data types of OPC UA tags

If you change the data type of an object or others, the data types may be inconsistent between the specified OPC UA tag and the object or others.
Check that the data types are consistent between the tag and the object or others.
To check the data type consistency, it is recommended to compare the tag information in GT OPC UA Client and the file exported from [Device List] of GT Designer3.

Start element number of an array

Regardless of the start element number of an array set on an OPC UA server, GT Designer3 assumes the start element number to be zero.
However, the GOT monitors the array with the start element number set on the OPC UA server.

Ex.
Monitoring a one-dimensional array with 5 elements, starting with element number 10
To monitor Tag[12] of the OPC UA server, specify Tag[2] as a device in GT Designer3.



Writing data to arrays

Data is written to the arrays set as consecutive devices only when all the following conditions are satisfied.

- Array element number 0 is set for the start device of consecutive devices.
- The number of array elements set on an OPC UA server equals to the number of consecutive devices set in GT Designer3.

Encoding formats used

An OPC UA server, GT Designer3, and the GOT use different encoding formats.

- OPC UA server: UTF-8
- GT Designer3 and GT SoftGOT3000: UTF-16

Therefore, GT Designer3 and the GOT convert the encoding format of tag names and string data.

The following shows how the data is converted.

Type, software	Tag name	String data
GT Designer3	Changes the encoding format to UTF-16 when importing a tag information file. Does not import OPC UA tags with invalid characters in their names.	-
GOT	Changes the encoding format when accessing an OPC UA tag. (UTF-8←→UTF-16) If invalid characters are included, a system alarm occurs.	Changes the encoding format when accessing an OPC UA tag. (UTF-8←→UTF-16) Converts invalid characters to one-byte spaces (0x20).

Case sensitivity of tag names

Tag names are case-insensitive in GT Designer3.

If tag names are case-sensitive on an OPC UA server, tag names may be duplicated when OPC UA tags are imported to GT Designer3.

Duplicate tags will not be imported.

Data storage order settings when string-type OPC UA tags are set

Configure the following settings for functions that use string-type OPC UA tags.

- Text display object, text input object

Select [Display in order of High -> Low] in the [Extended] tab.

- Text print object

Select [Display in order of High -> Low].

- Recipe function, logging function

Select [Low-->High] for [Storage Order] in the [Device] tab.

19.10 How to Set Device Comments or Device Definitions

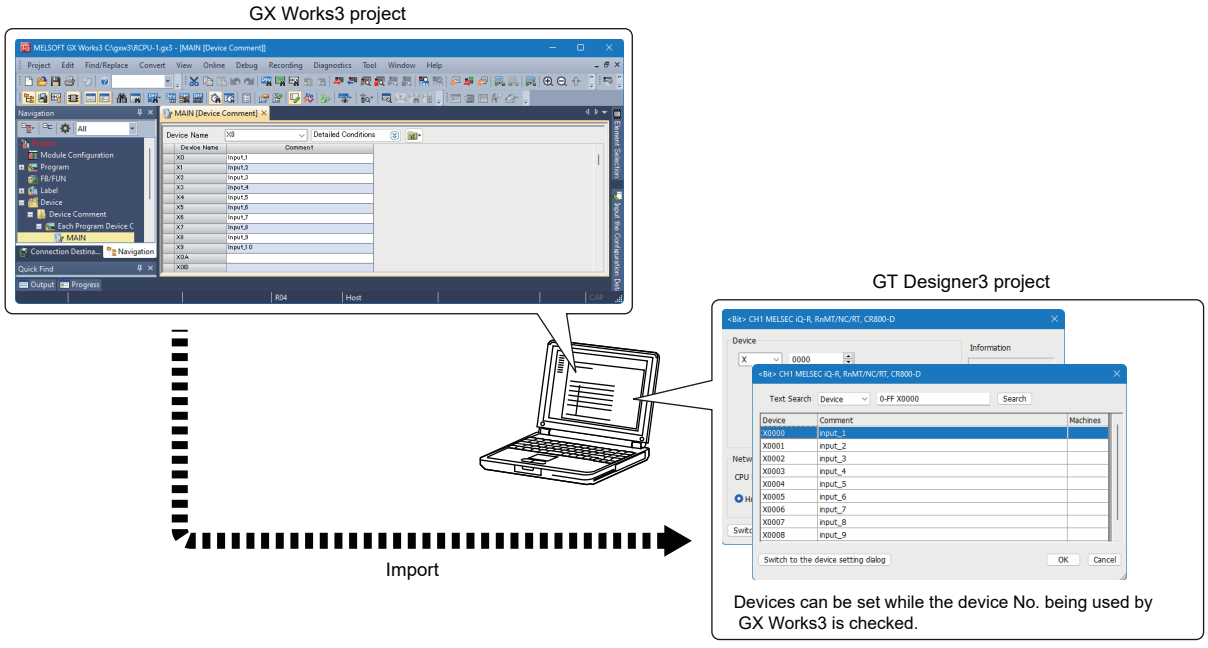
GT37 SoftGOT3000

☞ Page 955 Specifications of the usable device comments in GT Designer3
☞ Page 956 Specifications of the device definitions usable in GT Designer3
☞ Page 957 Importing device comments or device definitions
☞ Page 958 Setting a device by referring to the device comment or device definitions
☞ Page 959 [Device Comment / Device Definition List] dialog
☞ Page 961 Device comment setting dialog
☞ Page 962 Device definition setting dialog

You can retrieve the following device comments or device definitions in the device setting in GT Designer3.

Reference	Description
Device comment	You can set a device by referring to device comments of a MITSUBISHI ELECTRIC PLC or MELIPC. The device comments to be referred to are enabled when the file set with software of the controller is imported to each station connected to the GOT. For the device comments usable in GT Designer3, refer to the following. ☞ Page 955 Specifications of the usable device comments in GT Designer3
Device definition	You can set a device by referring to device definitions of a MITSUBISHI ELECTRIC servo amplifier, inverter, or others. The device definitions to be referred to are enabled when the device definitions are imported to each station connected to the GOT. (Import the device definitions of GT Designer3.) For the device definitions usable in GT Designer3, refer to the following. ☞ Page 956 Specifications of the device definitions usable in GT Designer3

When you set devices, checking the details of the devices used in a sequence program or others helps avoid specifying incorrect device numbers.



19.10.1 Specifications of the usable device comments in GT Designer3

Device comment files importable in GT Designer3

The following shows the software products used to set device comments and file formats of the files importable in GT Designer3.

Software	Extension	Remarks
GX Works3	*.csv	CSV file of the device comments exported with GX Works3 GX Works3 Operating Manual
GX Works2	*.csv	CSV file of the device comments exported with GX Works2 GX Works2 Version 1 Operating Manual (Common)
GX Developer	*.wcd	Device comment file created with GX Developer. The file with the extension of .wcd is created in the GX Developer project. Only a file with the extension of .wcd is required for import in GT Designer3.
MT Developer2	*.csv	CSV file of the device comments exported with MT Developer2 MT Developer2 Help

Importable files depend on the setting of [Controller Type] for each channel in the [Controller Setting] window.

☞ Page 729 [Controller Setting]

The following shows the selectable items for [Controller Type] that support import of device comments.

○: Available, —: Not available

Selectable items for [Controller Type]	Device comment			
	GX Works3	GX Works2	GX Developer	MT Developer2
[MELSEC MX Controller]	○	—	—	—
[MELSEC iQ-R, RnMT/NC/RT, CR800-D]	○	—	—	○
[MELSEC iQ-L]	○	—	—	—
[MELSEC iQ-F]	○	—	—	—
[MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700]	—	○	○	—
[MELSEC-L]	—	○	○	—
[MELSEC-A]	—	○	○	—
[MELSEC-FX]	—	○	○	—
[MELIPC]	○	—	—	○

Maximum number of importable device comments from a file

Up to 32767 device comments can be imported from one file.

The device comments in the 3rd to 32770th rows in the file are imported.

19.10.2 Specifications of the device definitions usable in GT Designer3

The usable device definitions depend on the setting for [Controller Type] in the [Controller Setting] window.

☞ Page 729 [Controller Setting]

The device definitions of the host station (0-FF or 0-0) are automatically imported according to the setting for [Controller Type].

Automatically imported device definitions are not displayed in the [Device Comment / Device Definition List] dialog.

The following shows the selectable items for [Controller Type] that support import of device definitions.

○: Available, —: Not available

Selectable items for [Controller Type]	Automatic import of device definitions	Manual import of device definitions
[MELSEC MX Controller]	○	—
[MELSEC iQ-R, RnMT/NC/RT, CR800-D]	○	—
[MELSEC iQ-L]	○	—
[MELSEC iQ-F]	○	—
[MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700]	○	—
[MELSEC-L]	○	—
[MELSEC-A]	○	—
[MELSEC-FX]	○	—
[MELIPC]	○	—
[MELSERVO-JE-*C]	○	○
[MELSERVO-J5(W)-*G(-RJ), -JET-*G]	○	○
[FREQROL 800/E700NE(Batch monitor)]	○ The device definitions of FR-A800-E are imported.	○

19.10.3 Importing device comments or device definitions

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To retrieve device comments or device definitions in the device setting, import them to GT Designer3.
The information on the imported device comments or device definitions is saved in the project.

1. Select [Project] → [Import Other Data] → [Device Comment/Device Definition] from the menu to display the [Device Comment / Device Definition List] dialog.
2. Set the device comments or device definitions to be used.

☞ Page 959 [Device Comment / Device Definition List] dialog

3. Click the [OK] button to complete the import.

Precautions

■Restriction by the project security

Users who are prohibited from editing by project-wide security cannot import device comments, device definitions, and tag files.
For the project security, refer to the following.

☞ Page 2972 Protecting a project by registering users (Project security)

■When editing an imported device comment

If a device comment file is edited, the device comments imported in GT Designer3 are not automatically updated.
To apply the editing of the device comments in GT Designer3, open the [Device Comment / Device Definition List] dialog and click the [OK] button.

☞ Page 959 [Device Comment / Device Definition List] dialog

19.10.4 Setting a device by referring to the device comment or device definitions

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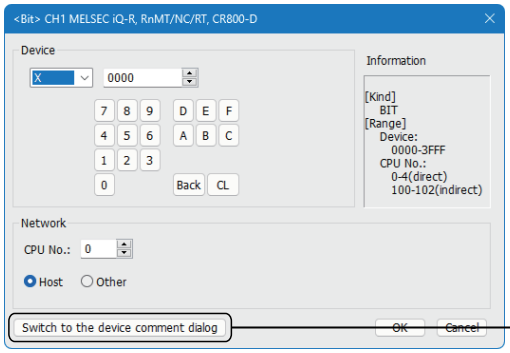
☞ Page 958 Setting a device by referring to the setting dialog
☞ Page 958 Using the input assist

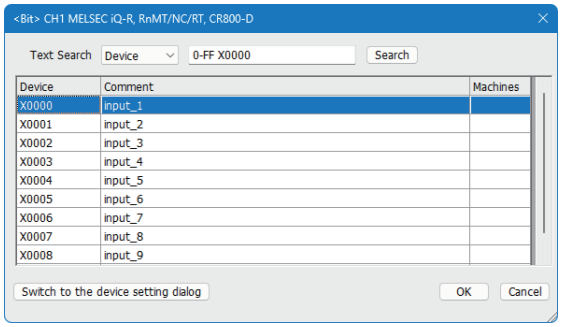
Setting a device by referring to the setting dialog

1. In the device setting dialog, click the [Switch to the device comment dialog] button or [Switch to the device define dialog] button to display the device comment or device definition setting dialog.



2. Search for the device to be used.

☞ Page 961 Device comment setting dialog
☞ Page 962 Device definition setting dialog



3. Select the device and click the [OK] button to complete the device setting.

Using the input assist

Search the device comments or device definitions for a device without opening the setting dialog for device comments or device definitions, and set the device.

For information on how to use the input assist, refer to the following.

☞ Page 843 Selecting from utilizable data (input assist)

19.10.5 [Device Comment / Device Definition List] dialog

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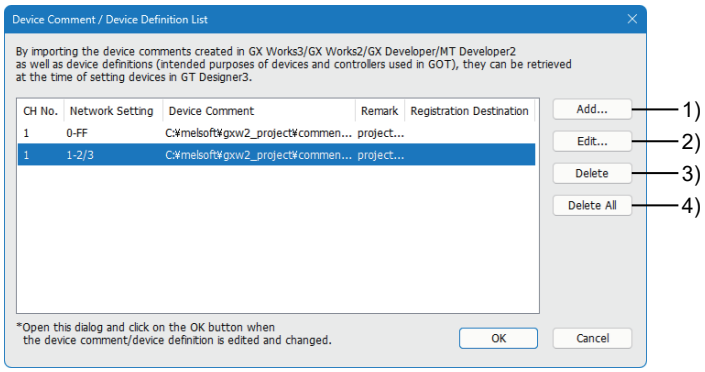
Select [Project] → [Import Other Data] → [Device Comment/Device Definition] from the menu to display the setting dialog.



Device definitions describe the uses of servo amplifier devices and inverter devices.

For the correspondences between the devices used in the GOT and the data of a servo amplifier or inverter, refer to the following.

☞ Page 3128 Device range and settings of Mitsubishi Electric equipment

Item		Description
1)	[Add] button	Displays the [Add Device Comment / Device Definition] dialog. Add the device comments or device definitions to be retrieved. ☞ Page 960 [Add Device Comment / Device Definition] dialog or [Edit Device Comment / Device Definition] dialog
2)	[Edit] button	Displays the [Edit Device Comment / Device Definition] dialog. Edit the settings to import the device comments or device definitions of the selected controller. ☞ Page 960 [Add Device Comment / Device Definition] dialog or [Edit Device Comment / Device Definition] dialog
3)	[Delete] button	Deletes the selected device comment or device definition.
4)	[Delete All] button	Deletes all device comments or device definitions.

Point

If there is a channel with a Mitsubishi Electric servo amplifier or Mitsubishi Electric inverter selected for [Controller Type] in the controller settings, a device definition with [0-0] set for [Network Setting] is automatically added.

The device definitions can be retrieved in the device definition setting dialog or by the input assist, but cannot be updated and deleted because they are not displayed in the list in the [Device Comment / Device Definition List] dialog.

Precautions

■Influences of changing the GOT type

After the GOT type is changed, if the channel number set in the [Device Comment / Device Definition List] dialog cannot be used by the newly set GOT type, the device comments and device definitions of the channel number are deleted.

■Influences of changing the controller type

If the controller type is changed, the device comments and device definitions of the channel number for which the previous model is set are deleted.

[Add Device Comment / Device Definition] dialog or [Edit Device Comment / Device Definition] dialog

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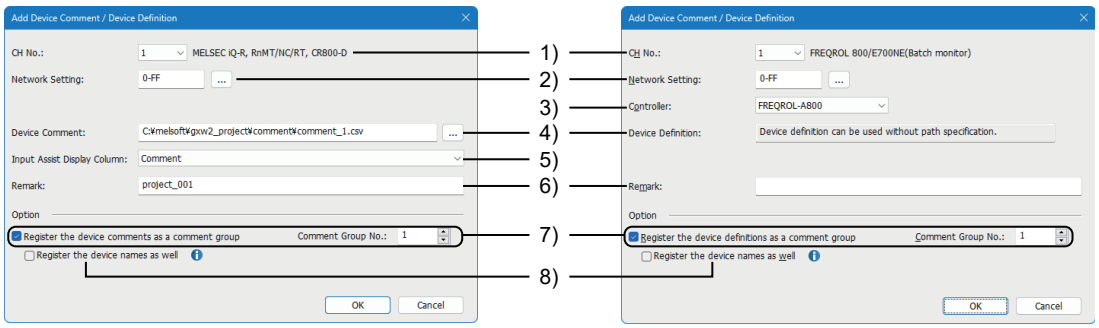

Adding device comments

Adding device definitions

Item		Description
1)	[CH No.]	Select the channel number of the controller having the device comments or device definitions to be added.
2)	[Network Setting]	Specify the network of the controller having the device comments or device definitions to be added.
3)	[Controller]	Set this item only for connection to an inverter. Select the controller having the device comments or device definitions to be added.
4)	[Device Comment] [Device Definition]	Set the file necessary to use the device comments. For the specifications of the files importable in GT Designer3, refer to the following. ☞ Page 955 Device comment files importable in GT Designer3 If a MITSUBISHI ELECTRIC servo amplifier or inverter is selected with [CH No.], this setting is unnecessary.
5)	[Input Assist Display Column]	Specify the column of the device comment to be displayed in the input assist. This item is enabled for the channel for which one of the following items is selected for [Controller Type] in the [Controller Setting] window. • [MELSEC MX Controller] • [MELSEC iQ-R, RnMT/NC/RT, CR800-D] • [MELSEC iQ-L] • [MELSEC iQ-F] • [MELIPC]
6)	[Remark]	Set remarks to be displayed in the [Device Comment / Device Definition List] dialog. Up to 200 characters can be set. When the device comments of GX Works2 are imported, the project name of GX Works2 is set.
7)	[Register the device comments as a comment group] [Register the device definitions as a comment group]	Registers the imported device comments or device definitions as a comment group. Set the destination comment group number in [Comment Group No.]. The setting range is [1] to [500]. The data of [Remark] is set to the comment group name. Up to 32 characters can be used for the comment group name, and the 33rd or later characters are not used.
8)	[Register the device names as well]	Registers the device names to the comment group, together with the device comments or the device definitions. The device names are added to column number 30 in the comment group where the device comments are registered.

19.10.6 Device comment setting dialog

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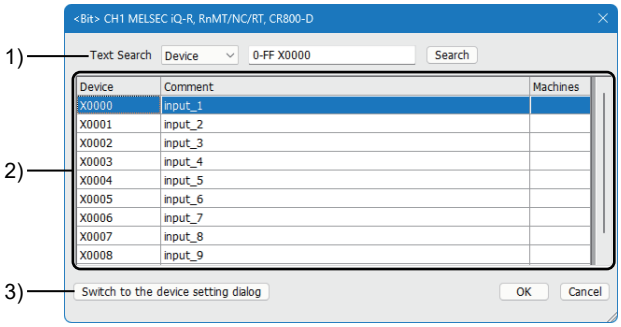
In the device setting dialog, click the [Switch to the device comment dialog] button to display the device comment setting dialog.



Item		Description
1)	[Text Search]	Select the range (category) of the character string and type the character string to search the target device comment. Up to 32 characters can be set.
2)	Device comment list	Displays the device comments that match the search criteria.
3)	[Switch to the device setting dialog] button	Switches the display to the device setting dialog.

Point

If any of the following items has been selected for [Controller Type] in the [Controller Setting] dialog, the buffer memory cannot be searched in the dialog for selecting device comments.

- [MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700]
- [MELSEC-L]
- [MELSEC-FX]

PART 6

19.10.7 Device definition setting dialog

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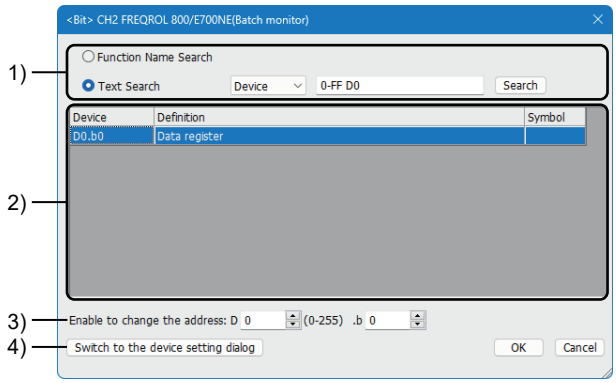
In the device setting dialog, click the [Switch to the device define dialog] button to display the device definition setting dialog.



Item			Description
1)	Search method	—	Select the method of searching.
		[Function Name Search]	Select a function to search the target device. Depending on the controller, the setting range differs.
		[Text Search]	Select the range (category) of the character string and type the character string to search the target device comment. Up to 32 characters can be set.
2)	Device definition list		Displays the device definitions that match the search criteria.
3)	Changing the address		The device number or axis number of each set device definition is changeable. This item appears when [Controller Type] is set to one of the following items in the [Controller Setting] window and the selected device definition is available. • [MELSERVO-J5(W)-*G(-RJ), -JET-*G] • [FREQROL 800/E700NE(Batch monitor)] The setting range differs depending on the device.
4)	[Switch to the device setting dialog] button		Switches the display to the device setting dialog.

19.11 Offset

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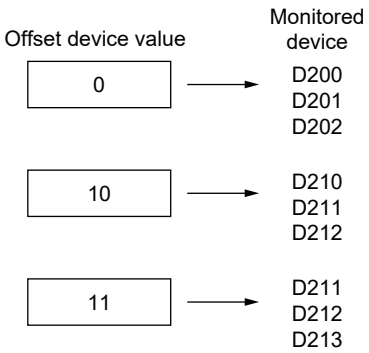
☞ Page 964 Offset specifications
☞ Page 966 Application examples
☞ Page 967 Precautions for the offset

The offset is a function that dynamically changes the device to be monitored during GOT operation.
Multiple target devices for monitoring can be switched according to a single device setting.
The device set for the offset is hereinafter referred to as the offset device.

Ex.

Monitoring the statuses of multiple devices by switching between the devices with a single device
Add offset device values to the devices set in the setting of each object.
Changing an offset device value switches the devices to be monitored by the object.

- Devices set for each object D200, D201, D202
- Offset device D100



19.11.1 Offset specifications

GT37 SoftGOT3000

Functions for which the offset can be set

The following functions allow the offset setting.

For the contents in the setting dialog and the offset target items, refer to the reference for each function.

Function	Reference	Remarks
Touch switch	☞ Page 1191 Placing a touch switch	The offset device value is added to the device number of the device set in [Action List]. The offset setting is available for bit and word switches.
		For the following touch switches, the offset setting is available for the lamp function as well. • Switch • Bit switch • Word switch • Go To Screen switch • Change station No. switch • Key window display switch
Bit lamp Word lamp	☞ Page 1276 Placing a lamp	The offset device value is added to the device number set in [Device] in the [Device/Style] tab.
Numerical display Numerical input	☞ Page 1305 Placing a numerical display or numerical input object	—
Text display Text input	☞ Page 1345 Placing a text display or text input object	—
Bit comment display Word comment display	☞ Page 1386 Placing a comment display	—
Bit parts display Word parts display	☞ Page 1416 Placing a parts display	—
Simple alarm display	☞ Page 1519 Placing a simple alarm display	—
Line graph	☞ Page 1577 Placing a line graph	—
Trend graph	☞ Page 1594 Placing a trend graph	—
Bar graph	☞ Page 1624 Placing a bar graph	—
Band graph	☞ Page 1640 Placing a bar graph	—
Pie graph	☞ Page 1655 Placing a pie graph	—
Scatter graph	☞ Page 1669 Placing a scatter graph	—
Graphical meter	☞ Page 1730 Placing a graphical meter	—
Level	☞ Page 1761 Placing a level object	—
Panel meter	☞ Page 1778 Placing a panel meter	—
Slider	☞ Page 1797 Placing a slider	—
Script	☞ Page 2330 Project script, screen script, script part, and script block ☞ Page 2447 Object script	—
Trigger action	☞ Page 2521 Operating a device as a trigger ([Trigger Action])	If the trigger action is executed in the device value sampling cycle, the cycle in which the offset device value changes must be longer than the cycle in which the trigger action is executed. Example) Sampling cycle (7 s) of the offset device value > Sampling cycle of the trigger action (5 s)
		If using the trigger action, do not place objects for which the offset is specified on the monitor screen. Monitoring of the device for executing the trigger action slows down.

Offset result by data type

The offset result depends on the data type and data length of the device that has been set.

Ex.

When the offset device value is 20, the offset result is as follows.

Data type	Offset result by data length				
	Bit Example) M0	Byte Example) HD100*1	Word Example) D100	Double-word Example) DD100*1	Quad-word Example) QD100*1
Bit	M20	—	D120.b0	DD120.b0	—
Byte (8-bit)	M160 (M160 to M167)	HD120	—	—	—
Word (16-bit)	M320 (M320 to M335)	HD120 (HD120, HD121)	D120	—	—
Double-word (32-bit)	M320 (M320 to M351)	HD120 (HD120 to HD123)	D120 (D120, D121)	DD120	—
Quad-word (64-bit)	—	HD120 (HD120 to HD127)	D120 (D120 to D123)	DD120 (DD120, DD121)	QD120

*1 This is a non-existent device used to indicate the offset result for each data length.

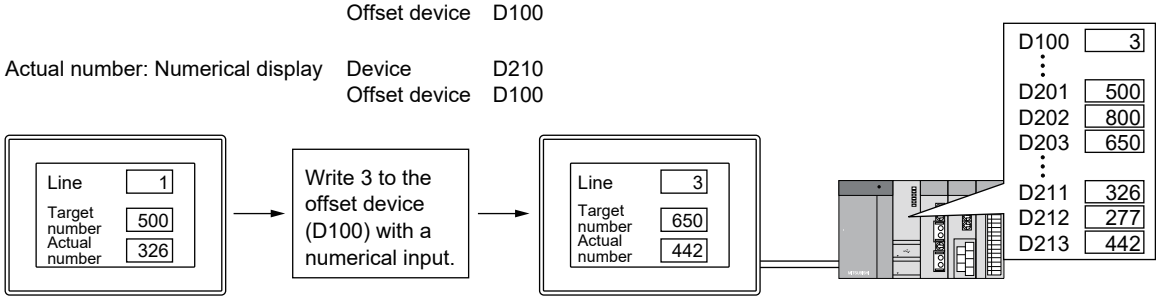
19.11.2 Application examples

GT37 SoftGOT3000

Switching and monitoring multiple line statuses with a single numerical display

☞ Page 1305 Placing a numerical display or numerical input object

Line: Numerical display	Device	D100
Target number: Numerical display	Device	D200
	Offset device	D100
Actual number: Numerical display	Device	D210
	Offset device	D100



"Target number" monitors D201.
(D200 + 1 = D201)
"Actual number" monitors D211.
(D210 + 1 = D211)

"Target number" monitors D203.
(D200 + 3 = D203)
"Actual number" monitors D213.
(D210 + 3 = D213)

Displaying multiple comments by switching them with a single device

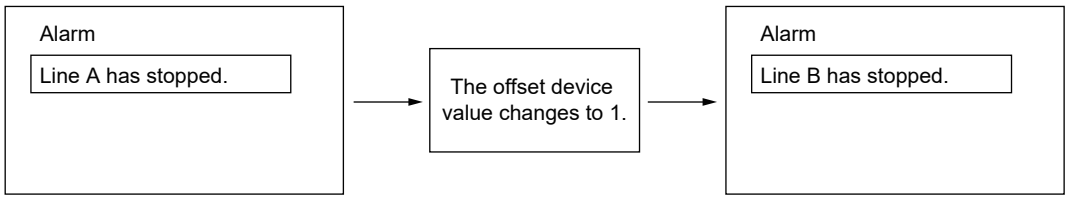
The offset device value is added to the comment number of comments set for a simple alarm display.
To display multiple comments using a simple alarm display in the usual way, you have to set the same number of bit devices with that of comments to be displayed. If the offset is used, multiple comments can be displayed by switching them with a single device.

☞ Page 1519 Placing a simple alarm display

■Offsetting display settings

The offset device value is added to the number associated with the comment to be displayed.

First comment No. : 1
Comment No. offset device : D200



D200 0
Comment 1 is displayed when an alarm occurs.
(First comment No.1 + 0 = 1)

D200 1
Comment 2 is displayed when an alarm occurs.
(First comment No.1 + 1 = 2)

■Offsetting detail display settings

The offset device value is added to the number of the comment (comment window), window screen, and base screen to be displayed as detail displays.

Detail display : Comment window
First comment No. : 1
Comment No. offset device : D200

19.11.3 Precautions for the offset

GT37 SoftGOT3000

Changing the offset value

Monitor devices are read every time the offset value changes.

Frequent changes of the offset value may cause slower monitor speeds.

When the device number is out of the range after the offset

When the device number is out of the range after the offset, monitoring and writing are not performed.

The error can be displayed if a simple alarm display is set.

If multiple devices are monitored in a single graph display, the display depends on the setting of the devices being monitored.

Function	Display method	
Trend graph Line graph Bar graph Band graph Pie graph	When consecutive devices are set	The previous display is held.
	When devices are set randomly	The previous display is held only when the device number is out of the range. Otherwise, the display reflects the offset devices being monitored.
Scatter graph	When consecutive devices are set	The previous display is held.
	When devices are set randomly	The previous display is held.

20 Trigger type settings

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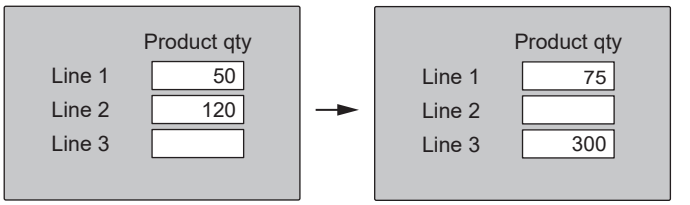
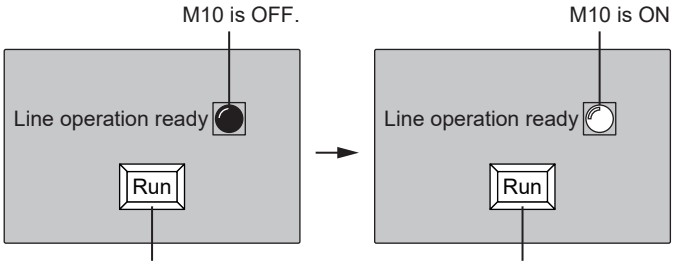
The conditions to run functions such as objects are called trigger types.
The following shows the settings in which a trigger type is to be selected.

Setting having trigger type selection		Description	Reference
Object	Display condition	The display condition is used to set whether to refresh the object display. When the condition is satisfied, the object is refreshed according to the value in the monitored device. When the condition is not satisfied, object refresh is stopped. Example) Displaying the production volume on the numerical display only for the operating line • Bit device that turns on while line 1 is operating: M11 • Bit device that turns on while line 2 is operating: M12 • Bit device that turns on while line 3 is operating: M13 • Numerical display (production volume of line 1): [Trigger Type] = [ON], [Trigger Device] = M11 • Numerical display (production volume of line 2): [Trigger Type] = [ON], [Trigger Device] = M12 • Numerical display (production volume of line 3): [Trigger Type] = [ON], [Trigger Device] = M13  M11: ON → Line 1 is updated. M12: ON → Line 2 is updated. M13: OFF → Hidden M11: ON → Line 1 is updated. M12: OFF → Hidden M13: ON → Line 3 is updated.	☞ Page 969 Trigger types settable for the object display condition
	Operating condition	The operating condition is used to set whether to enable/disable inputs using an object. When the condition of the set trigger type is satisfied, the object is refreshed according to the value in the monitored device and input operation using the object is enabled. When the condition is not satisfied, object refresh and input operation are stopped. Example) Setting a device for interlock to a touch switch • Bit device that turns on when the line is ready to operate: M10 • Touch switch to start operation: [Trigger Type] = [ON], [Trigger Device] = M10  When touched, the operation does not start because the condition is not satisfied. When touched, the operation starts because the condition is satisfied.	☞ Page 976 Trigger types settable for the object operating condition
Functions running in the background		For the functions such as logging and trigger actions running in the background, the execution is controlled.	☞ Page 980 Trigger types of the functions running in the background

20.1 Trigger types settable for the object display condition

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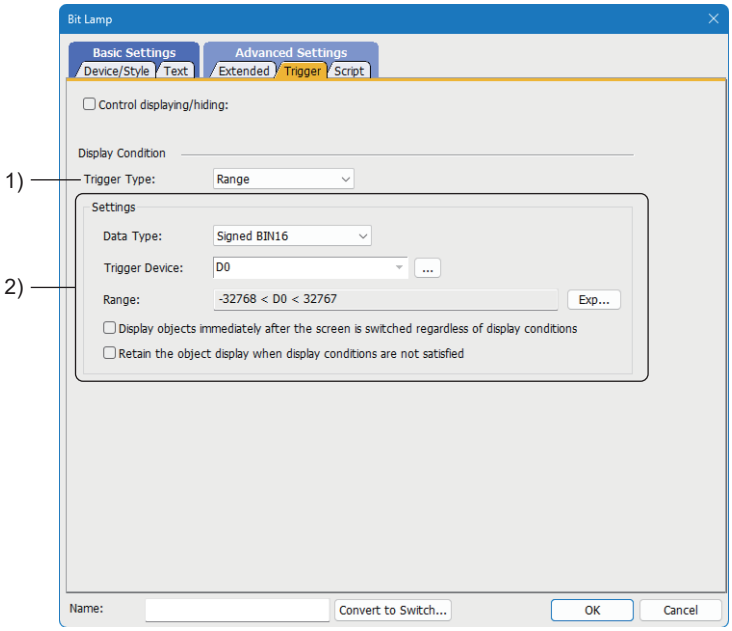
The display condition is used to set whether to refresh the object display.

- When the condition is satisfied: The object is refreshed according to the value in the monitored device.
- When the condition is not satisfied: Object refresh is stopped.

Set the condition to refresh the object display with [Trigger Type].

Ex.

[Trigger] tab in the [Bit Lamp] dialog

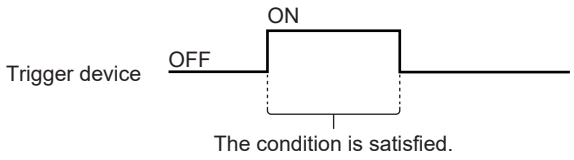
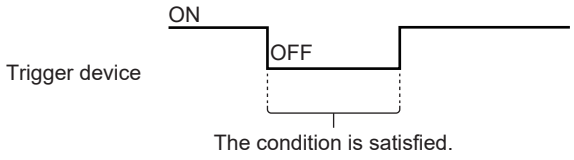
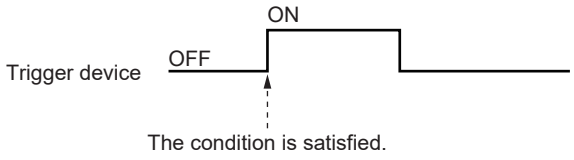
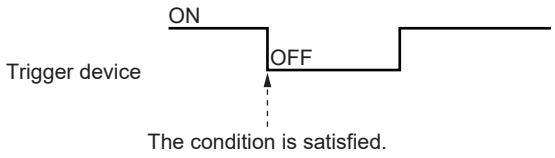
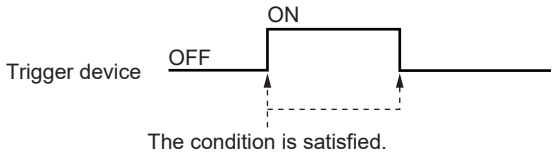
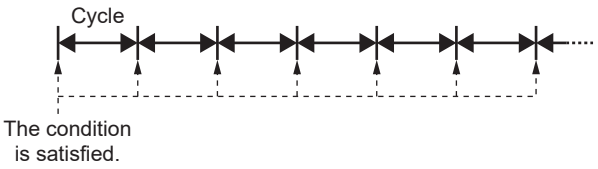


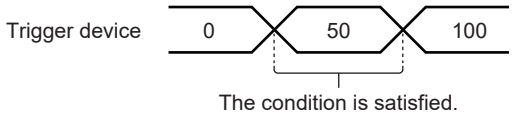
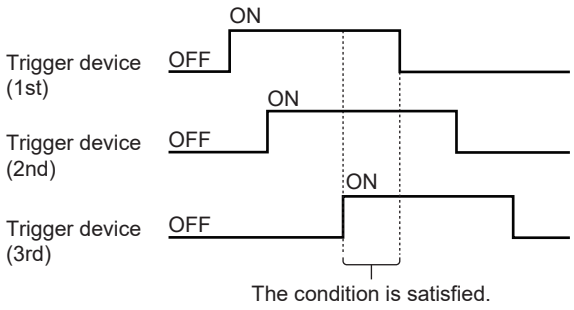
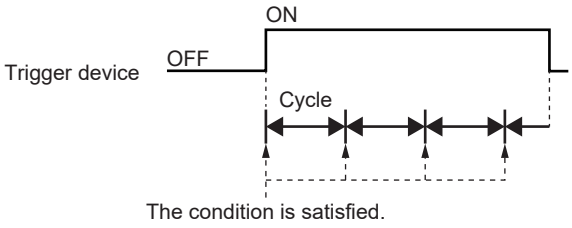
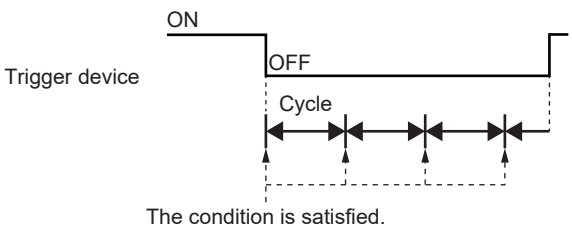
Item		Description
1)	[Trigger Type]	Select the condition to refresh the object display. ☞ Page 970 Specifications of the trigger types The settable trigger types depend on the object. ☞ Page 975 Objects and trigger types applicable to the display condition setting
2)	[Settings]	The setting items differ depending on the setting of [Trigger Type].

PART 6

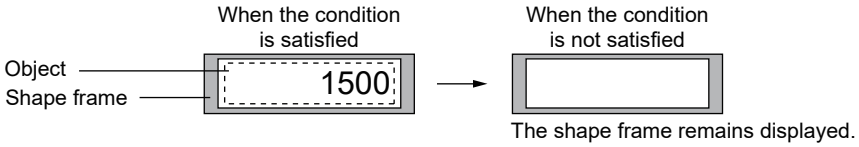
20.1.1 Specifications of the trigger types

The following shows the trigger types settable for the display condition.

[Trigger Type]	Description	Actions for when the condition is satisfied
[Ordinary]	The condition is always satisfied.	The device is monitored and the object display is refreshed. The frequency of refresh varies depending on conditions such as other functions being processed simultaneously.
[ON]*1	The condition is satisfied while the trigger device (bit device) is on. 	The device is monitored and the object display is refreshed. The frequency of refresh varies depending on conditions such as other functions being processed simultaneously. ☞ Page 972 [ON], [OFF]
[OFF]*1	The condition is satisfied while the trigger device (bit device) is off. 	
[Rise]	The condition is satisfied when the trigger device (bit device) is switched from off to on. 	The device is monitored and the object display is refreshed when the condition is satisfied. Other than when the condition is satisfied, the object display is retained. ☞ Page 972 [Rise], [Fall], [Rise/Fall]
[Fall]	The condition is satisfied when the trigger device (bit device) is switched from on to off. 	
[Rise/Fall]	The condition is satisfied when the trigger device (bit device) is switched to on or off. 	
[Sampling]	The condition is first satisfied when the cycle count starts, and thereafter, the condition is satisfied repeatedly at the specified cycle. 	When the condition is satisfied, the object is refreshed. ☞ Page 972 [Sampling]

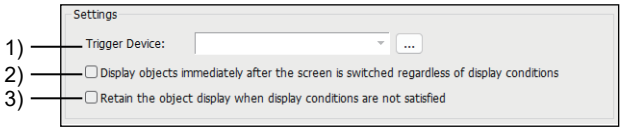
[Trigger Type]	Description	Actions for when the condition is satisfied
[Range]	The condition is satisfied while the value in the trigger device (word device) is within the set range. Example) • [Data Type]: Unsigned 16-bit binary • [Trigger Device]: D1000 • [Range]: 0 < D1000 < 100 	The device is monitored and the object display is refreshed. The frequency of refresh varies depending on conditions such as other functions being processed simultaneously. ☞ Page 973 [Range]
[Bit Trigger]*1	The condition is satisfied when the statuses of two to eight trigger devices (bit devices) match with the conditions (AND or OR). Example) • [Number of Bits]: 3 • [Trigger]: [AND] • [Device]: [Continuous] • Trigger device (1st): X0000 (The condition is satisfied in the ON state.) • Trigger device (2nd): X0001 (The condition is satisfied in the ON state.) • Trigger device (3rd): X0002 (The condition is satisfied in the ON state.) 	The device is monitored and the object display is refreshed. The frequency of refresh varies depending on conditions such as other functions being processed simultaneously. ☞ Page 973 [Bit Trigger]
[ON Sampling]	While the trigger device (bit device) is on, the condition is first satisfied when the cycle count starts, and thereafter, the condition is repeatedly satisfied at the specified cycle. The cycle base point is when switching of the trigger device from off to on is detected. 	The device is monitored and the object display is refreshed when the condition is satisfied. ☞ Page 974 [ON Sampling], [OFF Sampling]
[OFF Sampling]	While the trigger device (bit device) is off, the condition is first satisfied when the cycle count starts, and thereafter, the condition is repeatedly satisfied at the specified cycle. The cycle base point is when switching of the trigger device from on to off is detected. 	

*1 When a shape frame is set to the object, only the shape frame is left and displayed when the object is deleted.



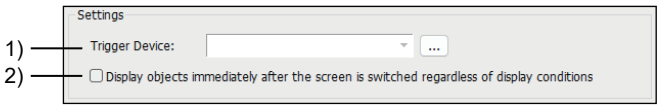
20.1.2 Settings by trigger type

[ON], [OFF]



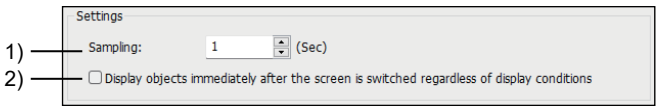
Item		Description
1)	[Trigger Device]	Set a trigger device (bit device). ☞ Page 834 How to set devices, labels, and tags
2)	[Display objects immediately after the screen is switched regardless of display conditions]	The device is monitored and the object display is refreshed immediately after the screen with the object is displayed even though the display condition is not satisfied.
3)	[Retain the object display when display conditions are not satisfied]	The object display is retained even after the display condition becomes unsatisfied.

[Rise], [Fall], [Rise/Fall]



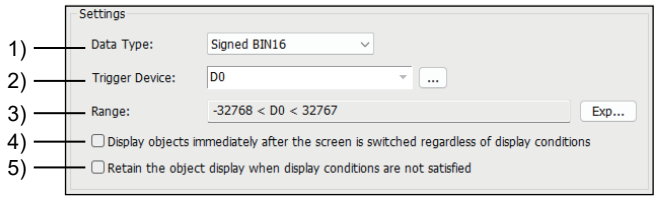
Item		Description
1)	[Trigger Device]	Set a trigger device (bit device). ☞ Page 834 How to set devices, labels, and tags
2)	[Display objects immediately after the screen is switched regardless of display conditions]	The device is monitored and the object display is refreshed immediately after the screen with the object is displayed even though the display condition is not satisfied.

[Sampling]



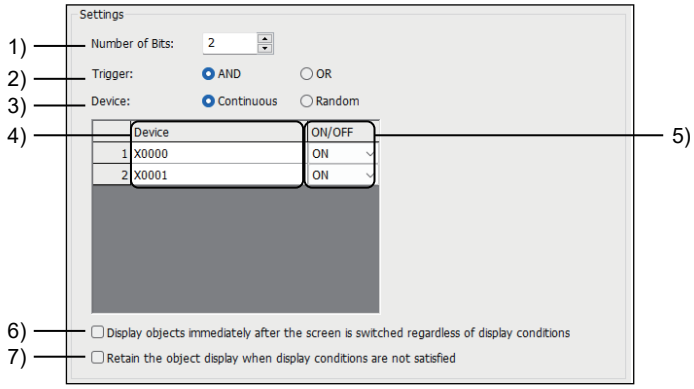
Item		Description
1)	[Sampling]	Set the cycle time to monitor the device and refresh the object. The setting range is [1] second to [3600] seconds.
2)	[Display objects immediately after the screen is switched regardless of display conditions]	The device is monitored and the object display is refreshed immediately after the screen with the object is displayed even though the display condition is not satisfied.

[Range]



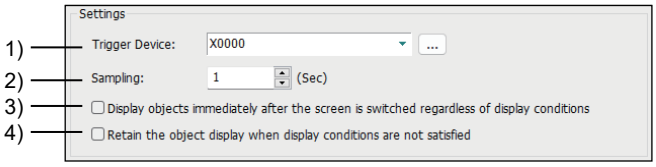
Item		Description
1)	[Data Type]	Select the data type of the trigger device.
2)	[Trigger Device]	Set a trigger device (word device). ☞ Page 834 How to set devices, labels, and tags
3)	[Range]	Range of the device value within which the condition is satisfied. Click the [Range] button, and set the range in the [Edit Range] dialog. ☞ Page 1043 [Edit Range] dialog
4)	[Display objects immediately after the screen is switched regardless of display conditions]	The device is monitored and the object display is refreshed immediately after the screen with the object is displayed even though the display condition is not satisfied.
5)	[Retain the object display when display conditions are not satisfied]	The object display is retained even after the display condition becomes unsatisfied.

[Bit Trigger]



Item		Description
1)	[Number of Bits]	Set the number of trigger devices (bit devices). The setting range is [2] to [8].
2)	[Trigger]	Select trigger conditions of multiple bits. The following shows selectable items. • [AND]: The condition is satisfied when all the [ON/OFF] conditions set to individual devices are satisfied. • [OR]: The condition is satisfied when one or more of the [ON/OFF] conditions set to individual devices are satisfied.
3)	[Device]	Select how to set the multiple devices. Select [Continuous] to set consecutive bit devices as trigger devices. Select [Random] to set non-consecutive bit devices as trigger devices.
4)	[Device]	Set a trigger device (bit device). ☞ Page 834 How to set devices, labels, and tags When selecting [Continuous] for [Device], set the start device of consecutive devices. When selecting [Random] for [Device], set devices one by one.
5)	[ON/OFF]	For each trigger device, set whether the condition is satisfied in the ON or OFF state.
6)	[Display objects immediately after the screen is switched regardless of display conditions]	The device is monitored and the object display is refreshed immediately after the screen with the object is displayed even though the display condition is not satisfied.
7)	[Retain the object display when display conditions are not satisfied]	The object display is retained even after the display condition becomes unsatisfied.

[ON Sampling], [OFF Sampling]



Item		Description
1)	[Trigger Device]	Set a trigger device (bit device). ☞ Page 834 How to set devices, labels, and tags
2)	[Sampling]	Set a cycle at which the device is monitored. The setting range is [1] second to [3600] seconds.
3)	[Display objects immediately after the screen is switched regardless of display conditions]	The device is monitored and the object display is refreshed immediately after the screen with the object is displayed even though the display condition is not satisfied.
4)	[Retain the object display when display conditions are not satisfied]	The object display is retained even after the display condition becomes unsatisfied.

20.1.3 Objects and trigger types applicable to the display condition setting

The following shows the objects having the display condition setting.

The settable trigger types depend on the object.

○: Available, —: Not available

Object		Trigger type						
		Ordinary	ON OFF	Rise Fall Rise/Fall	Sampling	Range	Bit Trigger	ON Sampling OFF Sampling
Lamp	Bit lamp	○	○	○	○	○	○	○
	Word lamp							
Numerical display		○	○	○	○	○	○	○
Text display		○	○	○	○	○	○	○
Comment display	Bit comment display	○	○	○	○	○	○	○
	Word comment display							
Parts display	Bit parts display	○	○	○	○	○	○	○
	Word parts display							
	Fixed parts display (with animation)							
	Fixed parts display (without animation)	○	○	—	—	○	○	—
Frame animation		○	○	—	—	○	○	—
Alarm display (user)		○	○	—	—	○	○	—
Alarm display (system)		○	○	—	—	○	○	—
Simple alarm display		○	○	—	—	○	○	—
Line graph		○	○	○	○	○	○	○
Trend graph		—	—	○	○	—	—	○
Bar graph		○	○	○	○	○	○	○
Band graph		○	○	○	○	○	○	○
Pie graph		○	○	○	○	○	○	○
Scatter graph		○	—	○	○	—	—	○
Graphical meter		○	○	○	○	○	○	○
Level		○	○	○	○	○	○	○
Panel meter		○	○	○	○	○	○	○

20.2 Trigger types settable for the object operating condition

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The operating condition is used to set whether to enable/disable inputs using an object.

- When the condition is satisfied: The object is refreshed according to the value in the monitored device and input operation using the object is enabled.
- When the condition is not satisfied: Object refresh is stopped and input operation is disabled.

Set the condition to enable/disable inputs by touching a touch switch or using a numerical input object with [Trigger Type].

Point

When the operating condition is not satisfied, the behavior of the key window and cursor for numerical input and text input can be set with [When operating conditions are not satisfied] in one of the following screens.

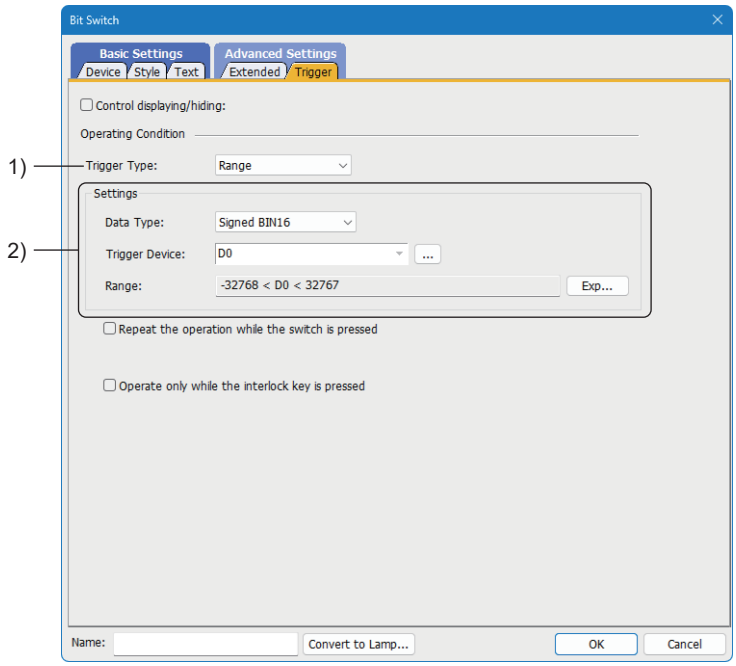
- [Advanced Setting] tab in the [Environmental Setting] window ([Key Window])
- [Key Window Advanced Setting] tab in the [Base Screen Property] dialog
- [Key Window Advanced Setting] tab in the [Window Screen Property] dialog

For details, refer to the following.

☞ Page 572 [Advanced Setting] tab
☞ Page 319 [Key Window Advanced Setting] tab
☞ Page 329 [Key Window Advanced Setting] tab

Ex.

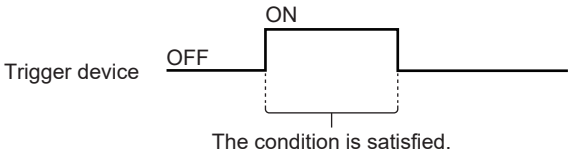
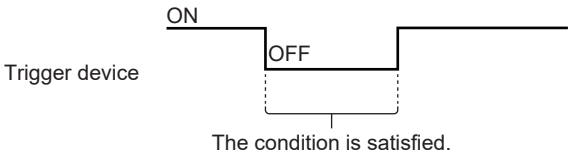
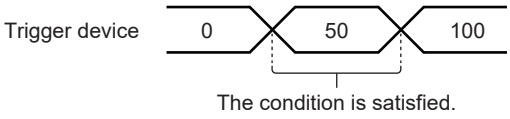
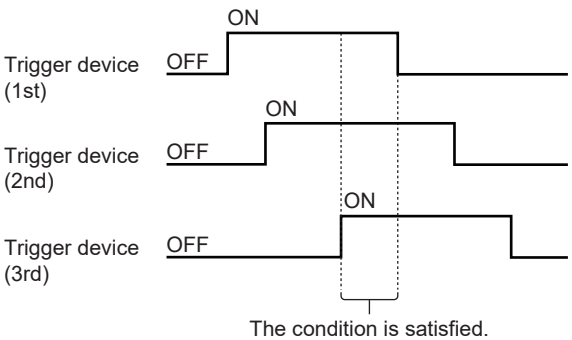
[Trigger] tab in the [Bit Switch] dialog



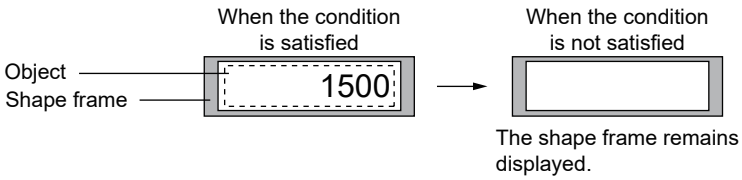
Item		Description
1)	[Trigger Type]	Select the condition to enable/disable inputs using an object. ☞ Page 977 Specifications of the trigger types
2)	[Settings]	The setting items differ depending on the setting of [Trigger Type].

20.2.1 Specifications of the trigger types

The following shows the trigger types settable for the operating condition.

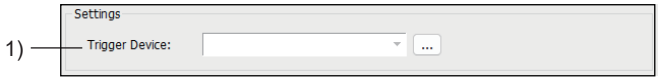
[Trigger Type]	Description	Actions for when the condition is satisfied
[Ordinary]	The condition is always satisfied.	Input using an object is enabled.
[ON]*1	The condition is satisfied while the trigger device (bit device) is on. 	Input using an object is enabled. ☞ Page 978 [ON], [OFF]
[OFF]*1	The condition is satisfied while the trigger device (bit device) is off. 	
[Range]	The condition is satisfied while the value in the trigger device (word device) is within the set range. Example) • [Data Type]: Unsigned 16-bit binary • [Trigger Device]: D1000 • [Range]: 0 < D1000 < 100 	Input using an object is enabled. ☞ Page 978 [Range]
[Bit Trigger]*1	The condition is satisfied when the statuses of two to eight trigger devices (bit devices) match with the conditions (AND or OR). Example) • [Number of Bits]: 3 • [Trigger]: [AND] • [Device]: [Continuous] • Trigger device (1st): X0000 (The condition is satisfied in the ON state.) • Trigger device (2nd): X0001 (The condition is satisfied in the ON state.) • Trigger device (3rd): X0002 (The condition is satisfied in the ON state.) 	Input using an object is enabled. ☞ Page 978 [Bit Trigger]

*1 When a shape frame is set to the object, only the shape frame is left and displayed when the object is deleted.



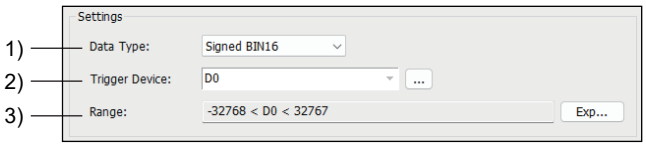
20.2.2 Settings by trigger type

[ON], [OFF]



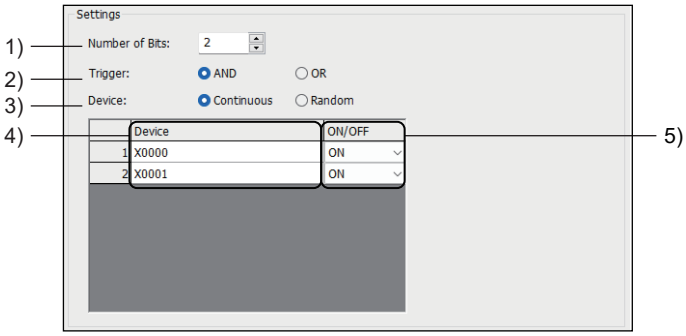
Item		Description
1)	[Trigger Device]	Set a trigger device (bit device). ☞ Page 834 How to set devices, labels, and tags

[Range]



Item		Description
1)	[Data Type]	Select the data type of the trigger device.
2)	[Trigger Device]	Set a trigger device (word device). ☞ Page 834 How to set devices, labels, and tags
3)	[Range]	Range of the device value within which the condition is satisfied. Click the [Range] button, and set the range in the [Edit Range] dialog. ☞ Page 1043 [Edit Range] dialog

[Bit Trigger]



Item		Description
1)	[Number of Bits]	Set the number of trigger devices (bit devices). The setting range is [2] to [8].
2)	[Trigger]	Select trigger conditions of multiple bits. The following shows selectable items. • [AND]: The condition is satisfied when all the [ON/OFF] conditions set to individual devices are satisfied. • [OR]: The condition is satisfied when one or more of the [ON/OFF] conditions set to individual devices are satisfied.
3)	[Device]	Select how to set the multiple devices. Select [Continuous] to set consecutive bit devices as trigger devices. Select [Random] to set non-consecutive bit devices as trigger devices.
4)	[Device]	Set a trigger device (bit device). ☞ Page 834 How to set devices, labels, and tags When selecting [Continuous] for [Device], set the start device of consecutive devices. When selecting [Random] for [Device], set devices one by one.
5)	[ON/OFF]	For each trigger device, set whether the condition is satisfied in the ON or OFF state.

20.2.3 Objects and trigger types applicable to the operating condition setting

The following shows the objects having the operating condition setting.

○: Available, —: Not available

Object	Trigger type			
	Ordinary	ON OFF	Range	Bit Trigger
Touch switch	○	○	○	○
Numerical input	○	○	○	○
Text input	○	○	○	○
Slider	○	○	○	○

20.3 Trigger types of the functions running in the background

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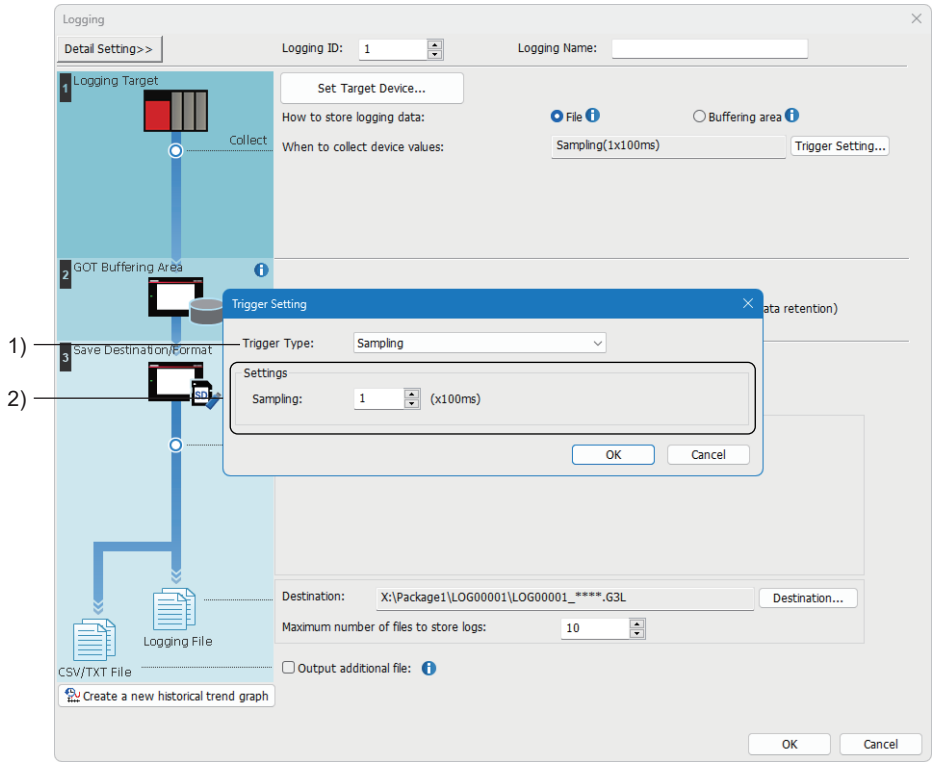
Set a trigger type as the condition to execute functions such as logging and trigger actions running in the background.
Set the condition to control the functions with [Trigger Type].

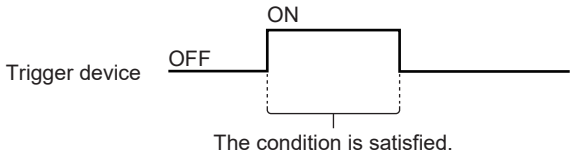
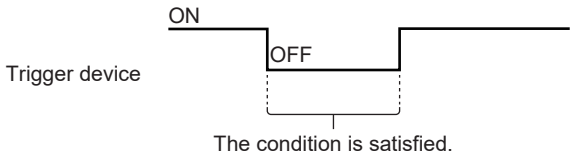
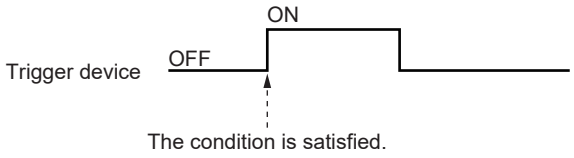
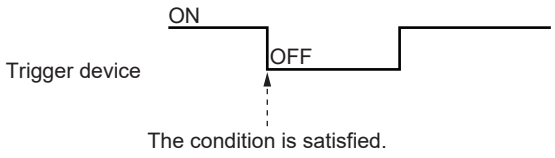
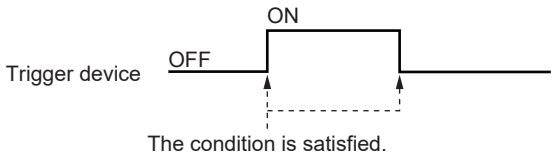
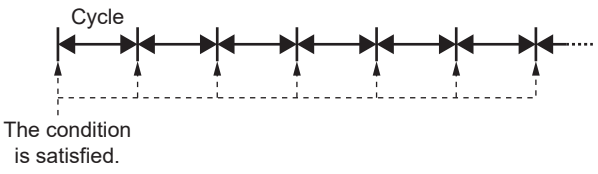
Ex.
[Trigger Setting] displayed from the [Logging] dialog

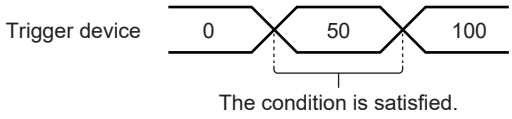
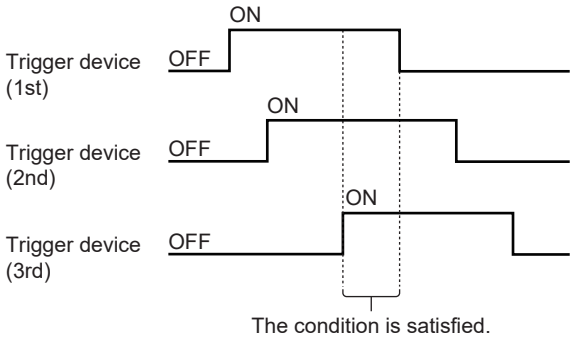
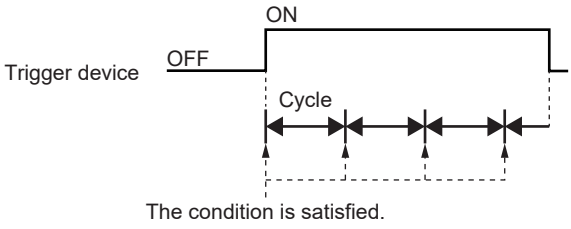
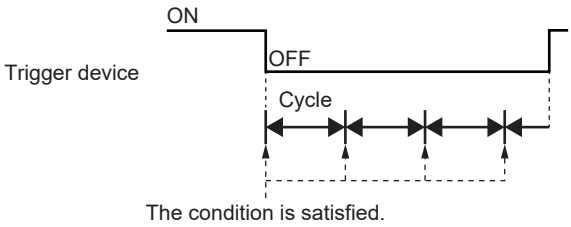


Item		Description
1)	[Trigger Type]	Select the function execution condition. ☞ Page 981 Specifications of the trigger types The settable trigger types depend on the function. ☞ Page 986 Functions running in the background and trigger types
2)	[Settings]	The setting items differ depending on the setting of [Trigger Type].

20.3.1 Specifications of the trigger types

The following shows the trigger types settable for the function execution condition.

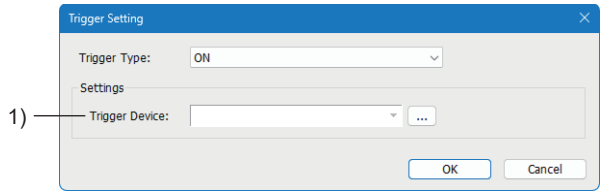
[Trigger Type]	Description	Actions for when the condition is satisfied
[Ordinary]	The condition is always satisfied.	The function is executed repeatedly. The execution cycle varies depending on conditions such as other functions being processed simultaneously.
[When it reached the log storage number]	This item is settable as the storage trigger for the logging function. The condition is satisfied when the number of stored logs has reached the upper limit.	The data in the buffering area is saved to a logging file.
[ON]	The condition is satisfied while the trigger device (bit device) is on. 	While the condition is satisfied, the function is executed repeatedly. The execution cycle varies depending on conditions such as other functions being processed simultaneously. ☞ Page 984 [ON], [OFF], [Rise], [Fall], [Rise/Fall]
[OFF]	The condition is satisfied while the trigger device (bit device) is off. 	
[Rise]	The condition is satisfied when the trigger device (bit device) is switched from off to on. 	When the condition is satisfied, the function is executed. ☞ Page 984 [ON], [OFF], [Rise], [Fall], [Rise/Fall]
[Fall]	The condition is satisfied when the trigger device (bit device) is switched from on to off. 	
[Rise/Fall]	The condition is satisfied when the trigger device (bit device) is switched to on or off. 	
[Sampling]	The condition is first satisfied when the cycle count starts, and thereafter, the condition is satisfied repeatedly at the specified cycle. 	When the condition is satisfied, the function is executed. ☞ Page 984 [Sampling]

[Trigger Type]	Description	Actions for when the condition is satisfied
[Range]	The condition is satisfied while the value in the trigger device (word device) is within the set range. Example) • [Data Type]: Unsigned 16-bit binary • [Trigger Device]: D1000 • [Range]: 0 < D1000 < 100 	While the condition is satisfied, the function is executed repeatedly. The execution cycle varies depending on conditions such as other functions being processed simultaneously. ☞ Page 984 [Range]
[Bit Trigger]	The condition is satisfied when the statuses of two to eight trigger devices (bit devices) match with the conditions (AND or OR). Example) • [Number of Bits]: 3 • [Trigger]: [AND] • [Device]: [Continuous] • Trigger device (1st): X0000 (The condition is satisfied in the ON state.) • Trigger device (2nd): X0001 (The condition is satisfied in the ON state.) • Trigger device (3rd): X0002 (The condition is satisfied in the ON state.) 	While the condition is satisfied, the function is executed repeatedly. The execution cycle varies depending on conditions such as other functions being processed simultaneously. ☞ Page 985 [Bit Trigger]
[ON Sampling]	While the trigger device (bit device) is on, the condition is first satisfied when the cycle count starts, and thereafter, the condition is repeatedly satisfied at the specified cycle. The cycle base point is when switching of the trigger device from off to on is detected. 	When the condition is satisfied, the function is executed. ☞ Page 985 [ON Sampling], [OFF Sampling]
[OFF Sampling]	While the trigger device (bit device) is off, the condition is first satisfied when the cycle count starts, and thereafter, the condition is repeatedly satisfied at the specified cycle. The cycle base point is when switching of the trigger device from on to off is detected. 	
[When closing a screen]	This item is settable for the screen script execution condition. The condition is satisfied when the screen with a screen script set is closed.	The screen script is executed.

[Trigger Type]	Description		Actions for when the condition is satisfied
[Device Writing]	This item is settable for the object script (touch switch) execution condition. When a touch switch with [Bit] or [Word] set for the switch action is touched, the condition is satisfied.		When the condition is satisfied, the function is executed.
[View Change]	The condition is satisfied when the object display is changed.		When the condition is satisfied, the function is executed.
[Synchronize Display Trigger]	The condition is satisfied when the condition of the trigger type set as the object display condition is satisfied.		When the condition is satisfied, the function is executed.
[Key Code Input]	The condition is satisfied when a key code is input to an object. The following shows the applicable key codes.		When the condition is satisfied, the function is executed.
	Numerical input	• 0008h: [Delete one rightmost and shift one to right] • 0088h: [Delete value being input] • 002Dh: ["+/-"(Reverse),"-"(Minus, Hyphen)] • 002Eh: ["."(Dot, Period)] • ASCII code • Shift JIS kanji code	
	Text input	• 0008h: [Delete one rightmost and shift one to right] • 0088h: [Delete value being input] • ASCII code • Shift JIS kanji code • GB code • KS code • Big5 code • Unicode	
[Input Fixation]	When the input value is input, and the input is confirmed with key code 000Dh ([Write to the device and move the cursor]), the condition is satisfied. If the input value is not input, the condition is not satisfied.		When the condition is satisfied, the function is executed.

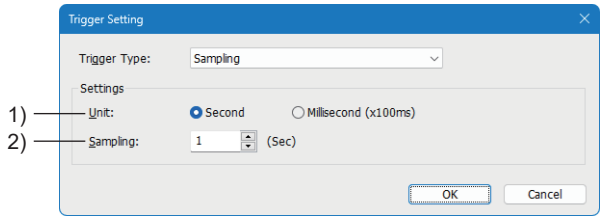
20.3.2 Settings by trigger type

[ON], [OFF], [Rise], [Fall], [Rise/Fall]



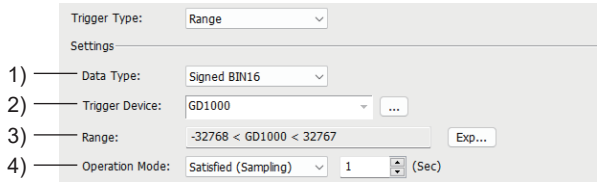
Item		Description
1)	[Trigger Device]	Set a trigger device (bit device). ☞ Page 834 How to set devices, labels, and tags

[Sampling]



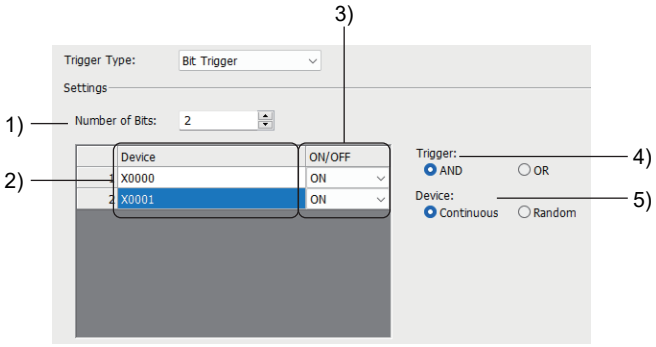
Item		Description	
1)	[Unit]	This item appears when the [Trigger Setting] dialog is opened from the [Edit Script] dialog. Select the unit of the cycle time to execute the script.	
2)	[Sampling]	Set the cycle time to execute the function. The setting range depends on the function.	
		Script	When [Second] is selected for [Unit]: [1] second to [3600] seconds When [Millisecond (x100ms)] is selected for [Unit]: [1] × 100 ms to [600] × 100 ms
		Logging (logging trigger)	[1] x 100 ms to [36000] x 100 ms
		Logging (storage trigger)	[1] minute to [1440] minutes

[Range]



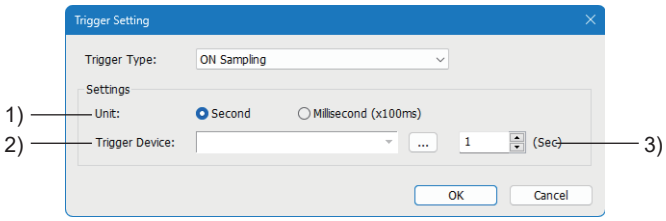
Item		Description
1)	[Data Type]	Select the data type of the trigger device.
2)	[Trigger Device]	Set a trigger device (word device). ☞ Page 834 How to set devices, labels, and tags
3)	[Range]	Range of the device value within which the condition is satisfied. Click the [Range] button, and set the range in the [Edit Range] dialog. ☞ Page 1043 [Edit Range] dialog
4)	[Operation Mode]	This item appears when condition 1 is set in the [Trigger/Action] dialog of the trigger action. Select an operation mode of when the condition is satisfied. To execute the function repeatedly while the condition is satisfied, select [Satisfied]. To execute the function in the specified cycle while the condition is satisfied, select [Satisfied (Sampling)]. The setting range for the cycle time is [1] (second) to [3600] (seconds).

[Bit Trigger]



Item		Description
1)	[Number of Bits]	Set the number of trigger devices (bit devices). The setting range is [2] to [8].
2)	[Device]	Set a trigger device (bit device). ☞ Page 834 How to set devices, labels, and tags When selecting [Continuous] for [Device], set the start device of consecutive devices. When selecting [Random] for [Device], set devices one by one.
3)	[ON/OFF]	For each trigger device, set whether the condition is satisfied in the ON or OFF state.
4)	[Trigger]	Select trigger conditions of multiple bits. The following shows selectable items. • [AND]: The condition is satisfied when all the [ON/OFF] conditions set to individual devices are satisfied. • [OR]: The condition is satisfied when one or more of the [ON/OFF] conditions set to individual devices are satisfied.
5)	[Device]	Select how to set the multiple devices. Select [Continuous] to set consecutive bit devices as trigger devices. Select [Random] to set non-consecutive bit devices as trigger devices.

[ON Sampling], [OFF Sampling]



Item		Description	
1)	[Unit]	This item appears when the [Trigger Setting] dialog is opened from the [Edit Script] dialog. Select the unit of the cycle time to execute the script.	
2)	[Trigger Device]	Set a trigger device (bit device). ☞ Page 834 How to set devices, labels, and tags	
3)	Cycle time	Set the cycle time to execute the function. The setting range depends on the function.	
		Script	When [Second] is selected for [Unit]: [1] second to [3600] seconds When [Millisecond (x100ms)] is selected for [Unit]: [1] × 100 ms to [600] × 100 ms
		Logging (logging trigger)	[1] x 100 ms to [36000] x 100 ms
		Logging (storage trigger)	[1] minute to [1440] minutes

20.3.3 Functions running in the background and trigger types

The following shows the functions having the trigger type setting.

The settable trigger types depend on the function.

☞ Page 986 Logging
☞ Page 986 Script
☞ Page 987 Device data transfer
☞ Page 987 Trigger action

Logging

○: Available, —: Not available

Function	Trigger type							
	Ordinary	When the limit for stored logs is reached	ON OFF	Rise Fall Rise/Fall	Sampling	Range	Bit Trigger	ON Sampling OFF Sampling
Logging trigger	—	—	—	○	○	—	—	○
Storage trigger	—	○	—	○	○	—	—	○

Script

■Project Script, Screen Script, and Script Part

○: Available, —: Not available

Function	Trigger type				
	Ordinary ON OFF Rise Fall Rise/Fall Sampling	Range	Bit Trigger	ON Sampling OFF Sampling	When closing a screen
Project script	○	—	—	○	—
Screen script Script parts	○	—	—	○	○

■Object script

○: Available, —: Not available

Function	Trigger type							
	Ordinary ON OFF Rise Fall Rise/Fall Sampling	Range	Bit Trigger	ON Sampling OFF Sampling	Device Writing	View Change	Synchronize Display Trigger	Key Code Input Input Fixation
Switch	○	—	—	○	○	—	—	—
Lamp Date display Time display Graphical meter Panel meter	○	—	—	○	—	○	—	—
Numerical display Numerical input (display) Text display Text input (display) Bit comment display Word comment display Parts display Trend graph Historical trend graph Line graph Band graph Pie graph Bar graph Scatter graph Level Frame animation	○	—	—	○	—	○	○	—
Numerical input (input) Text input (input)	○	—	—	○	—	—	—	○

Device data transfer

○: Available, —: Not available

Function	Trigger type							
	Ordinary	ON OFF	Rise Fall	Rise/Fall	Sampling	Range	Bit Trigger	ON Sampling OFF Sampling
Device data transfer trigger	—	—	○	—	○	—	—	—

Trigger action

○: Available, —: Not available

Function	Trigger type						
	Ordinary	ON OFF	Rise Fall Rise/Fall	Sampling	Range	Bit Trigger	ON Sampling OFF Sampling
Condition 1	○	○	○	○	○	○	○
Condition 2	—	○	—	—	○	○	—

21 Color settings

GT37 SoftGOT3000

Set colors for objects, figures, and characters.

GT Designer3 provides 16.77 million of colors that can be set.

☞ Page 988 Color settings

☞ Page 989 Color palette

21.1 Color settings

GT37 SoftGOT3000

Click the display area or the button to set a color in the setting dialog to display the color palette.

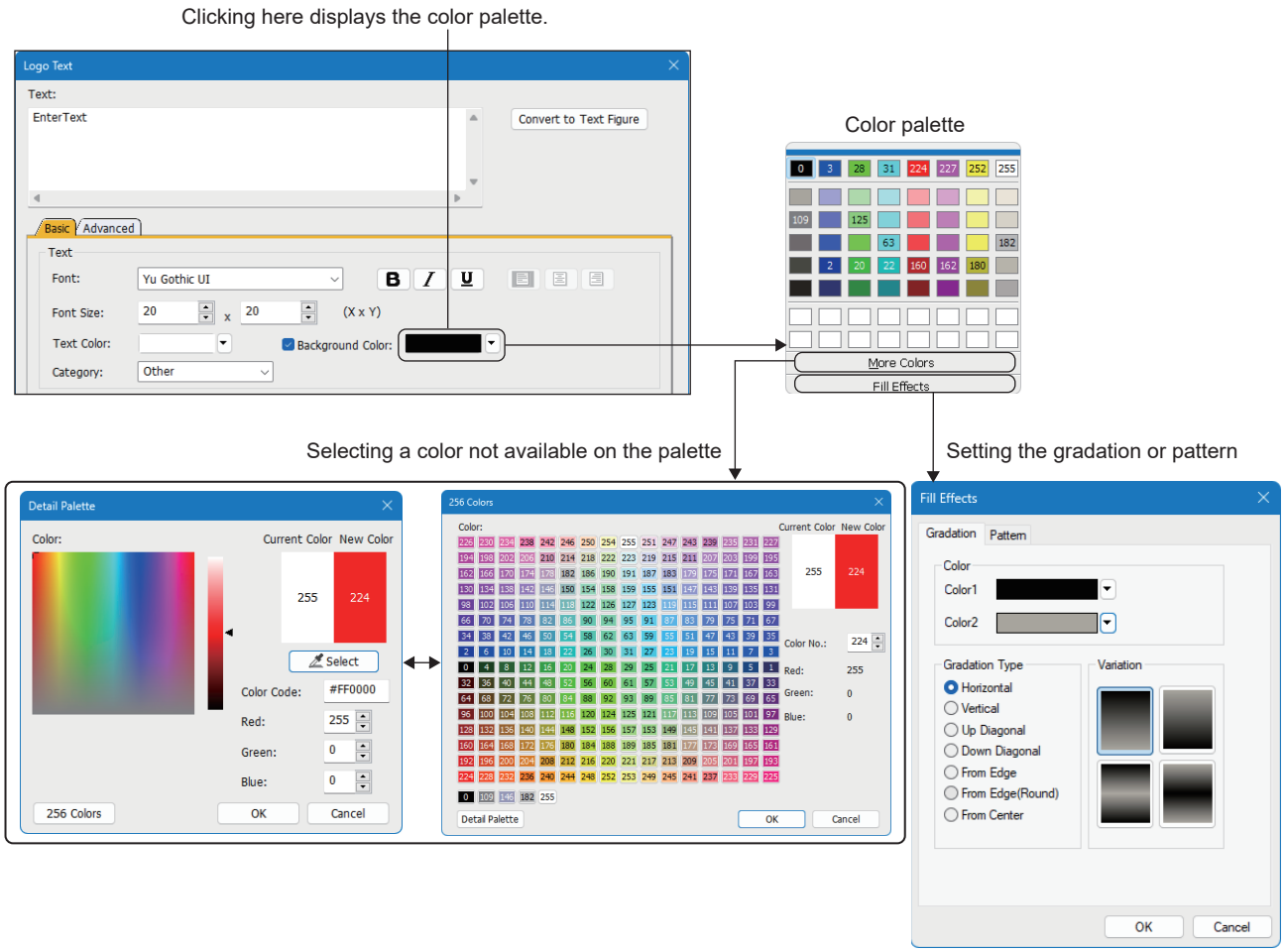
Select a color from the color palette.

☞ Page 989 Color palette

If the intended color is not displayed on the color palette, click the [More Color] button on the palette to open the dialog, and select the color.

For the background color of the screen or logo text, the gradation or pattern can be set.

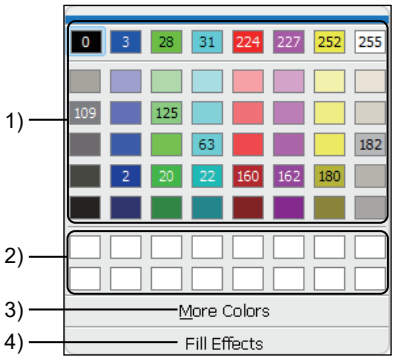
☞ Page 992 [Fill Effects] dialog



21.2 Color palette

GT37 SoftGOT3000

Select a color from the basic colors or recently used colors.



Item		Description
1)	Basic colors	Select a color to be displayed.
2)	Recently used colors	Select a color to be displayed. When you specify a color in the dialog displayed with the [More Color] button, the color is added to the color palette. The colors existing in the palette will not be added as a new one.
3)	[More Color] button	Displays the [Detail Palette] dialog. ☞ Page 990 [Detail Palette] dialog
4)	[Fill Effects] button	This button appears only for the background color in the following dialogs. • Screen Property • [Screen Design] dialog • [Logo Text] dialog Displays the [Fill Effects] dialog. Set the gradation or pattern. ☞ Page 992 [Fill Effects] dialog

PART 6

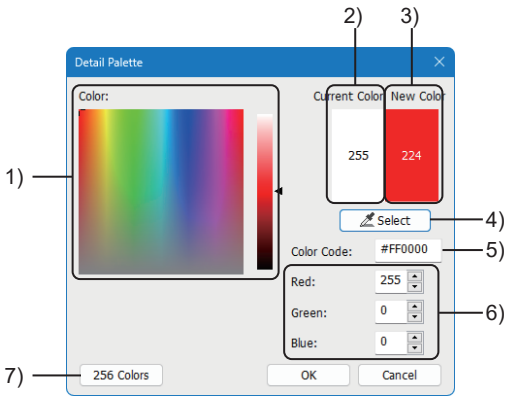
21.2.1 [Detail Palette] dialog

GT37 SoftGOT3000

Select a color from the 16.77 million colors.

To display this dialog, perform either of the following operations.

- Click the [More Colors] button on the color palette.
- Click the [Detail Palette] button in the [256 Colors] dialog.



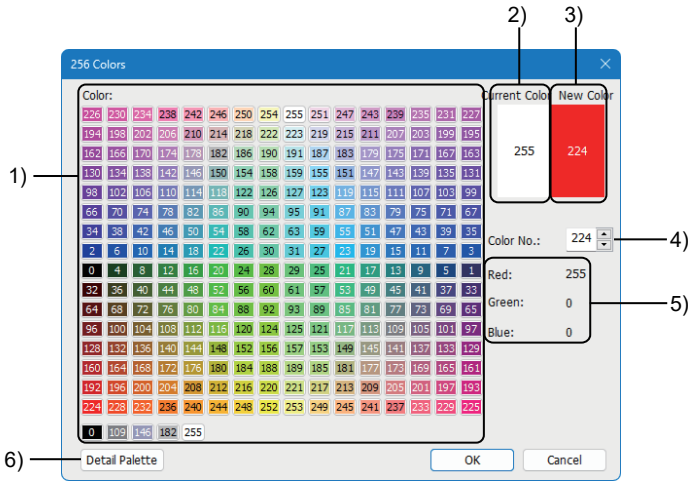
Item			Description
1)	[Color]		Select a color to be displayed.
2)	[Current Color]		Displays the currently set color.
3)	[New Color]		Displays the color set in the following setting items. • [Color] • [Select] button • [Color Code] • RGB value
4)	[Select] button		Changes the shape of the mouse cursor to a dropper and displays the color of the clicked position in [New Color]. When you move the mouse cursor with the display of the dropper, the color on which the cursor is placed is displayed in [New Color].
5)	[Color Code]		Specify a color code to set the color to be displayed. The setting range is [#000000] to [#FFFFFF]. The color code consists of the following elements. #00FF00 Value of blue (hexadecimal) Value of green (hexadecimal) Value of red (hexadecimal) Symbol for color codes
6)	RGB value	—	Set a color to be displayed with three colors: red, green, and blue.
		[Red]	Set the value for red. The setting range is [0] to [255].
		[Green]	Set the value for green. The setting range is [0] to [255].
		[Blue]	Set the value for blue. The setting range is [0] to [255].
7)	[256 Colors] button		Switches the dialog to the [256 Colors] dialog. If a color which cannot be displayed with 256 colors is set, the color is changed to an approximate color in 256 colors when the dialog is switched to the [256 Colors] dialog.

21.2.2 [256 Colors] dialog

GT37 SoftGOT3000

Select a color from the 256 colors.

This dialog is displayed by clicking the [256 Colors] button in the [Detail Palette] dialog.



Item		Description
1)	[Color]	Select a color to be displayed.
2)	[Current Color]	Displays the currently set color.
3)	[New Color]	Displays the color set in the following setting items. • [Color] • [Color No.]
4)	[Color No.]	Specify a color to be displayed with its number from 256 colors. The setting range is [0] to [255].
5)	RGB value	Indicates the numerical values of red, green, and blue for the selected color.
6)	[Detail Palette] button	Switches the dialog to the [Detail Palette] dialog.

21.2.3 [Fill Effects] dialog

GT37 SoftGOT3000

Set the fill effects, such as the gradation or pattern.

To apply the setting configured on a tab, click the [OK] button on the tab.

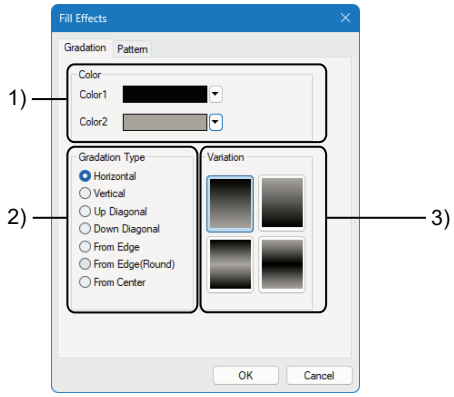
The gradation and pattern cannot be set at the same time.

This dialog is displayed by clicking the [Fill Effects] button on the color palette.

☞ Page 992 [Gradation] tab

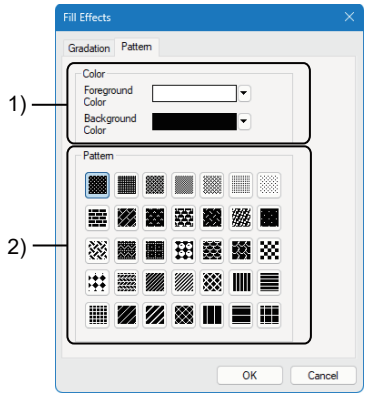
☞ Page 992 [Pattern] tab

[Gradation] tab



Item		Description
1)	[Color]	Select two gradient colors. ☞ Page 989 Color palette
2)	[Gradation Type]	Select a gradation type. The selectable items vary by the setting target item (background color of the logo text or background color of the screen).
3)	[Variation]	Select a gradient to be applied. The displayed gradients vary depending on the setting of [Gradation Type].

[Pattern] tab



Item			Description
1)	[Color]	—	Select a foreground color and a background color for the pattern.
		[Foreground Color]	Pattern foreground color. ☞ Page 989 Color palette
		[Background Color]	Pattern background color. ☞ Page 989 Color palette
2)	[Pattern]		Select a pattern.

PART 7 Settings for figures and objects

22 Basics of figures and objects

23 Using the data registered in the library

24 Efficient Drawing with Templates

25 Managing figures and objects by category

26 Figures

27 Placing a touch switch

28 Placing a lamp

29 Placing a numerical display or numerical input object

30 Placing a text display or text input object

31 Placing a date display or time display

32 Placing a comment display

33 Placing a parts display

34 Placing a frame animation

35 Placing a historical data list display

36 Placing an alarm display

37 Placing a simple alarm display

38 Placing a system alarm display

39 Placing a recipe display (record list)

40 Placing a line graph

41 Placing a trend graph

42 Placing a bar graph

43 Placing a bar graph

44 Placing a pie graph

45 Placing a scatter graph

46 Placing a historical trend graph

47 Placing a graphical meter

48 Placing a level object

49 Placing a panel meter

50 Placing a slider

51 Placing a document display

52 Placing a digital image display object

53 Placing a script parts object

54 Placing a screen on another screen

55 Configuring an animation route

56 Specifying the display position of a window screen

57 Placing an object to display the input information

58 Placing a hyperlink on a mobile screen

22 Basics of figures and objects

GT37 SoftGOT3000

Use figures and objects placing them on the screen.

Function	Description
Figure	Placed on the screen to display text strings and images. They are suitable for displaying text strings and other items that do not change dynamically. For the types of figures, refer to the following. ☞ Page 996 List of figures
Object	Placed on the screen for the following purposes. • Displaying text strings and images on a screen and switching them dynamically according to the change of the device value • Operating a touch switch or an input object to change the device value or display a window For the types of objects, refer to the following. ☞ Page 997 List of objects

☞ Page 996 List of figures and objects
☞ Page 1001 Placing figures and objects
☞ Page 1003 Selecting figures and objects on the screen editor
☞ Page 1006 Moving a figure or an object
☞ Page 1007 Resizing
☞ Page 1014 Changing the settings
☞ Page 1015 Operation with the [Edit] menu
☞ Page 1032 Settings common to figures and objects
☞ Page 1034 Settings common to figures
☞ Page 1037 Settings common to objects
☞ Page 1055 Superimposition of figures and objects

22.1 List of figures and objects

GT37 SoftGOT3000

☞ Page 996 List of figures
☞ Page 997 List of objects

22.1.1 List of figures

GT37 SoftGOT3000

Figure	Description	Reference
Text	Draw a text figure.	☞ Page 1132 Drawing a text figure
Logo text	Draws text with an outline or gradient.	☞ Page 1135 Drawing a logo text figure
Line	Draws a line.	☞ Page 1141 Drawing a Line
Line freeform	Draws a freeform line with connected vertices.	☞ Page 1145 Drawing a Line Freeform
Rectangle	Draws a rectangle or square.	☞ Page 1149 Drawing a Rectangle
Polygon	Draws a polygon.	☞ Page 1153 Drawing a Polygon
Circle	Draws a circle.	☞ Page 1157 Drawing a Circle
Arc	Draws an arc.	☞ Page 1161 Drawing an Arc or a Sector
Sector	Draws a sector.	
Table	Draws a table.	☞ Page 1163 Drawing a Table
Scale	Draws a scale.	☞ Page 1167 Drawing a Scale
Piping	Draws a piping.	☞ Page 1169 Drawing a Piping
Paint	Fills the area or figure enclosed by lines with the specified color.	☞ Page 1173 Filling the framed area of the figure
Import Image Data	Import an image file to GT Designer3, and paste it on the screen.	☞ Page 1177 Pasting an image file
Import DXF Data	Import the data of the DXF file (AutoCAD Data Exchange Format file) to GT Designer3, convert the data into the figure data of GT Designer3, and paste it on the screen.	☞ Page 1184 Pasting DXF Data
Import IGES Data	Import IGES data (Data Exchange Format among CADs) to GT Designer3, convert the data into the figure data of GT Designer3, and paste it on the screen.	☞ Page 1187 Pasting IGES Data

22.1.2 List of objects

GT37 SoftGOT3000

The following shows the list of objects.

The maximum number of objects on one screen depends on the object.

Object		Function and reference	Maximum settable value	Model
Touch switch	Switch Bit switch Word switch Go to screen switch Change station No. switch Special function switch Key window display switch Key code switch	Executes the set action when touched. ☞ Page 1191 Placing a touch switch	• Base screen: 1024 objects per screen • Window screen: 512 objects per screen	GT37 SoftGOT3000
Lamp	Bit lamp Word lamp Lamp area	Controls the lamp illumination with a device. ☞ Page 1276 Placing a lamp	• Base screen: 1024 objects per screen • Window screen: 512 objects per screen Figures with the lamp attribute are included.	GT37 SoftGOT3000
Numerical display, numerical input	Numerical display Numerical input	Displays the device value as a numerical value. A numerical input can also be used for writing to devices. ☞ Page 1305 Placing a numerical display or numerical input object	• Base screen: 1024 objects per screen • Window screen: 512 objects per screen	GT37 SoftGOT3000
Text display, text input	Text display Text input	Displays the device value as a text string. A text input can also be used for writing to devices. ☞ Page 1345 Placing a text display or text input object	• Base screen: 1024 objects per screen • Window screen: 512 objects per screen	GT37 SoftGOT3000
Date display, time display	Date display Time display	Displays the date and time. ☞ Page 1373 Placing a date display or time display	• Base screen: 1024 objects per screen • Window screen: 512 objects per screen	GT37 SoftGOT3000
Comment display	Bit comment Word comment Simple comment	Controls the comment to be displayed with a device. ☞ Page 1386 Placing a comment display	• Base screen: 1024 objects per screen • Window screen: 512 objects per screen	GT37 SoftGOT3000
Parts display	Bit parts Word parts Fixed parts	Controls the part to be displayed with a device. ☞ Page 1416 Placing a parts display	• Base screen: 1024 objects per screen • Window screen: 512 objects per screen	GT37 SoftGOT3000
Frame animation		Plays a video frame by frame. ☞ Page 1477 Placing a frame animation	Up to 32 objects per screen being displayed (including the base screen, window screen, set overlay screen, and window screen output for digital image display)	GT37 SoftGOT3000
Historical data list display		Collects multiple word device values and displays the values in chronological order. The logging setting is required to collect device values. ☞ Page 1495 Placing a historical data list display	8 objects per screen	GT37 SoftGOT3000

PART 7

Object		Function and reference	Maximum settable value	Model
Alarm display	Alarm display (user)	Displays the detected user alarms. The user alarm observation settings need to be configured. ☞ Page 2132 Viewing alarm events (Alarm display)	25 objects per screen 33 objects per screen (total number of alarm displays (user) and simple alarm displays)	GT37 SoftGOT3000
	Alarm display (system)	Displays the detected system alarms. The system alarm observation settings need to be configured. ☞ Page 2132 Viewing alarm events (Alarm display)	8 objects per screen	
	Simple alarm display	Displays the detected user alarms. Set the alarms to be detected for each simple alarm display. ☞ Page 1519 Placing a simple alarm display	24 objects per screen 33 objects per screen (total number of alarm displays (user) and simple alarm displays)	
	System alarm display	Displays the detected system alarms. Set the alarms to be detected for each simple alarm display. ☞ Page 1542 Placing a system alarm display	1 object per screen	
Recipe display (record list)		Displays the recipe records. ☞ Page 1550 Placing a recipe display (record list)	1 object per screen	GT37 SoftGOT3000
Graph	Line graph	Displays the current values of multiple word devices in a line graph. ☞ Page 1577 Placing a line graph	32 objects per screen	GT37 SoftGOT3000
	Trend graph	Collects multiple word device values and displays the values in chronological order in a graph. ☞ Page 1594 Placing a trend graph	32 objects per screen (total number of trend graphs and historical trend graphs)	
	Bar graph	Displays the current values of multiple word devices in a bar graph. ☞ Page 1624 Placing a bar graph	• Base screen: 1024 objects per screen • Window screen: 512 objects per screen 256 objects per project when [Collect data only when trigger conditions are satisfied] is set	
	Band graph	Displays the ratio of the current values of multiple devices in a band graph. ☞ Page 1640 Placing a bar graph	32 objects per screen	
	Pie graph	Displays the ratio of the current values of multiple devices in a pie graph. ☞ Page 1655 Placing a pie graph		
	Scatter graph	Displays the values of two word devices as a data point along the X and Y axes. ☞ Page 1669 Placing a scatter graph	24 objects per screen 16 objects per project when [Store Memory] is set 256 objects per project when [Collect data only when trigger conditions are satisfied] is set	
	Historical trend graph	Collects multiple word device values and displays the values in chronological order in a graph. The logging setting is required to collect device values. ☞ Page 1693 Placing a historical trend graph	32 objects per screen (total number of trend graphs and historical trend graphs)	
Graphical meter		Displays the device value on a meter. ☞ Page 1730 Placing a graphical meter	32 objects per screen	GT37 SoftGOT3000

Object		Function and reference	Maximum settable value	Model
Meter	Level	Monitors the value of a word device, and indicates the value relative to the set upper and lower limits by filling the corresponding area with the user-selected color. ☞ Page 1761 Placing a level object	• Base screen: 1024 objects per screen • Window screen: 512 objects per screen	GT37 SoftGOT3000
	Panel meter	Displays the device value on a meter. This function monitors the word device value and indicates the value relative to the set upper and lower limit values with a needle. ☞ Page 1778 Placing a panel meter	• Base screen: 1024 objects per screen • Window screen: 512 objects per screen	
Slider		Specifies a device value (numeric value) by sliding the knob along the bar. ☞ Page 1797 Placing a slider	• Base screen: 1024 objects per screen • Window screen: 512 objects per screen	GT37 SoftGOT3000
Document display		Displays documents created on a personal computer (such as Microsoft Word and Microsoft Excel). ☞ Page 1809 Placing a document display	1 object per screen	GT37 SoftGOT3000
Digital image display	Camera/PC image display	Displays images entered on the GOT. ☞ Page 1844 Placing a digital image display object	4 objects per screen	GT37 SoftGOT3000
	File playback			
Script parts		Sets the script for the screen. When the condition is satisfied while the placed screen is displayed, the script will run. ☞ Page 1864 Placing a script parts object	32 objects per screen	GT37 SoftGOT3000
Set overlay screen		Calls a base screen or window screen on a basic screen, and displays them as a single screen. ☞ Page 1865 Placing a screen on another screen	2047 objects per screen	GT37 SoftGOT3000
Animation route		Sets the animation route along which the object moves. ☞ Page 1878 Configuring an animation route	30 objects per screen	GT37 SoftGOT3000
Window position	Overlap1	Sets the position of a window screen to be displayed on a base screen or mobile screen. ☞ Page 1883 Specifying the display position of a window screen	1 object per screen	GT37 SoftGOT3000
	Overlap2		1 object per screen	
	Overlap3		1 object per screen	
	Overlap4		1 object per screen	
	Overlap5		1 object per screen	
	Superimpose1		1 object per screen	
	Superimpose2		1 object per screen	
	Key window		1 object per screen	
Key window object	Input value area setting	Displays the relevant information when a numerical value or text is input to an object by using a key window. ☞ Page 1887 Placing an object to display the input information	1 object per screen	GT37 SoftGOT3000
	Input range area setting		1 object per screen	
	Input maximum value area setting		1 object per screen	
	Input minimum value area setting		1 object per screen	
	Previous value area setting		1 object per screen	

Object	Function and reference	Maximum settable value	Model
Hyperlink	Performs the following operations on the GOT Mobile function client on a mobile screen. • Opening a website • Referring to a file in the public folder • Making a phone call ☞ Page 1896 Placing a hyperlink on a mobile screen	1024 objects per screen	GT37 SoftGOT3000

22.2 Placing figures and objects

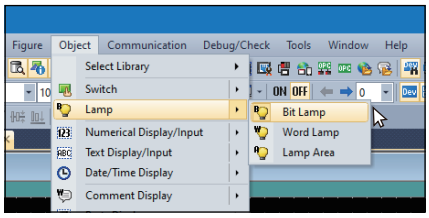
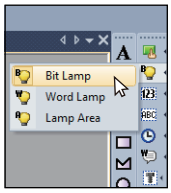
GT37 SoftGOT3000

☞ Page 1001 Placing from the menu or toolbar
☞ Page 1002 Placing from the library or parts

22.2.1 Placing from the menu or toolbar

Operating procedure

1. Perform either of the following operations to change the shape of mouse cursor to + that allows you to place the selected figure or object.

Operation	Details
Selecting from the menu	Select a figure or an object to be placed from [Figure] or [Object] in the menu bar. ☞ Page 100 [Figure] ☞ Page 100 [Object] 
Selecting from the tool bars	Select a figure or an object to be placed from the buttons in the toolbars. ☞ Page 110 [Figure] ☞ Page 111 [Object] 

2. Perform one of the following operations by moving the cursor to place a figure or an object.

Target	Operation			Remarks
Figure	The operation depends on the figure to be placed. For how to place each figure, refer to the following. ☞ Page 1131 Figures			—
Object	Placing an object in its default size	Operation with a mouse	Click the mouse button to complete the placement.	—
		Operation with a keyboard	Press the Enter key twice to complete the placement.	
	Placing an object resized from its default size	Operation with a mouse	Click and hold the mouse button at the start point, and drag the pointer to the end point. Release the mouse button to complete the placement.	The following objects cannot be resized. • Script parts • Set overlay screen • Window position
		Operation with a keyboard	Press the Enter key once at the start point and move the cursor key to the end point. Press the Enter key to complete the placement.	

Double-click the figure or object to display the setting dialog and configure the settings such as the device to be monitored. For details on the setting dialog, refer to each function.

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Point

To change the operation performed when figures and objects are placed, set the following items on the [Edit] tab in the [Options] dialog.

- [Place figures/objects sequentially]
- [Deselect figures/objects once they are placed]
- [Display the setting dialog once figures/objects are placed]
- [Move figures/objects in the screen display area (move to temporary area with the Alt key)]

For how to display the [Option] dialog and for the operations with the above setting items, refer to the following.

☞ Page 199 [Options] dialog ([Edit] tab)

22.2.2 Placing from the library or parts

Figures and objects registered in the library or parts can be placed on the screen.

For details on each function, refer to the following.

Function	Details
Library	Select a figure or an object in the [Library] window and click the screen editor to place it. The library is a collection of preconfigured figures and objects. You can use the registered figures and objects to speed up screen creation. The library stores the figures and objects registered in GT Designer3. The figures and objects configured by the user are registrable. ☞ Page 995 Basics of figures and objects
Parts	Select a part in the [Parts Image List] window and click the screen editor to place it. Refers to the figures registered by the user. The registered figures are used for the following applications. • Displayed with the parts display • Placed on the screen as figures • Displayed as object shapes ☞ Page 812 Registering parts ([Parts])

22.3 Selecting figures and objects on the screen editor

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To select a figure or an object placed on the screen editor, perform either of the following operations.

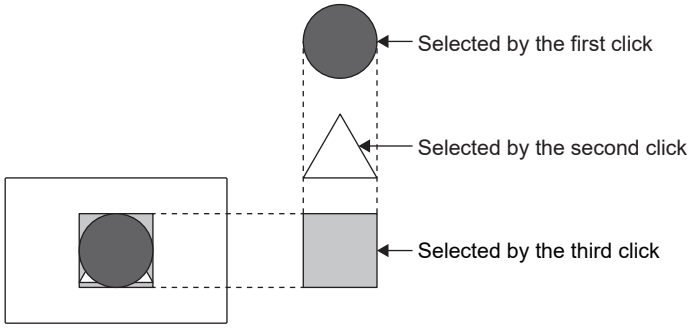
Operation	Details
Selecting on the screen editor	Click a figure or an object on the screen editor to select it.
Selecting from the list	Click the list of figures and objects displayed in the following windows to select the figures and objects on the screen editor. ☞ Page 1005 [Data View] window ☞ Page 175 [Data Browser] window

☞ Page 1003 Selecting one of the overlapped figures and objects
☞ Page 1004 Selecting multiple figures and objects

22.3.1 Selecting one of the overlapped figures and objects

Selecting on the screen editor

Click the overlapped part of a figure or object while pressing the Ctrl key.
Even if completely overlapped, the hidden figures or objects can be selected.
Each click selects the next figure or object.



Selecting from the list

You can select figures and objects from the list in the [Data View] window or [Data Browser] window regardless of the overlap status.

Point

On the screen editor or in the [Data View]window, you can select one of the following items.

- [Figure]
- [Object]
- [Figure + Object]

The settings can be changed from the [Edit] menu or [Edit] toolbar.

☞ Page 94 [Edit]
☞ Page 108 [Edit]

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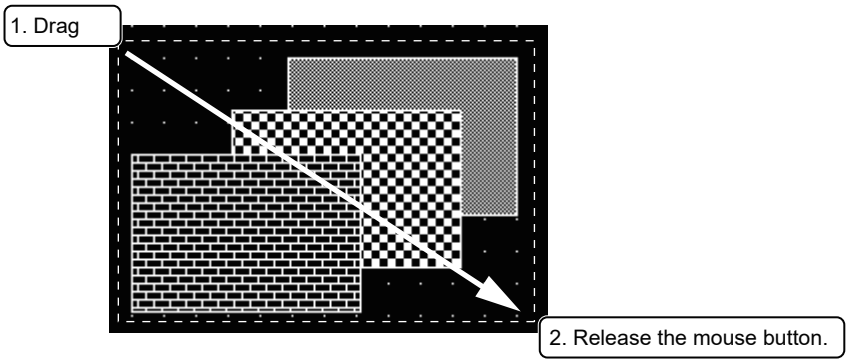
22.3.2 Selecting multiple figures and objects

Selecting on the screen editor

■Mouse drag operation

Drag to take the figures and objects in the square area.

When the mouse button is released, all the figures and objects in the area are selected.



■Keyboard + mouse operation

Click the figures and objects to be selected while pressing the Shift key.

To deselect them, click the figures and objects to be deselected while pressing the Shift key.

Selecting from the list

Perform the following operations in the [Data View] window or [Data Browser] window.

The figures and objects selected in the window are selected on the screen editor.

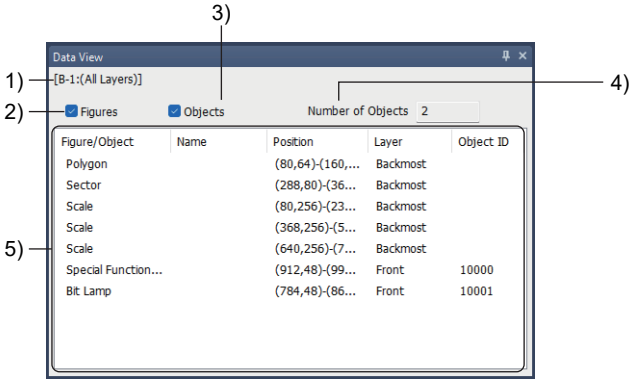
- Ctrl + click: Selects or deselects a row.
- Shift + click: Selects the rows from the row where the cursor is placed to the row where the mouse is clicked.
- Ctrl + ↑, Ctrl + ↓: Moves the cursor while selecting the row where the cursor is placed.

22.3.3 [Data View] window

GT37 SoftGOT3000

This window lists the figures and objects placed on the screen editor.

Select [View] → [Docking Window] → [Data View] from the menu to display this window.



Item			Description
1)	Screen information		Displays the information on the screen editor being edited as shown below. [B-3:LINE_C(Front)] The layer being displayed Title Screen type - screen number
2)	[Figures]		Displays or hides the figures in the data view.
3)	[Objects]		Displays or hides the objects in the data view.
4)	[Number of Objects]		Displays the number of objects placed in the displayed layer. The number is displayed regardless of the [Objects] setting. The figures processed as objects are also counted as objects.
5)	Data view	—	Lists the figures and objects on the screen editor being edited. To change the items to be displayed, configure the [Figures] and [Objects] settings.
		[Figure/Object]	Displays the names of the figures and objects. For the grouped figures and objects, [Gn] is displayed at the beginning of the names. (n= 1, 2.)
		[Name]	Displays the set names if they have been set for [Name] of the figures and objects.
		[Position]	Displays the coordinates of the positions of the figures and objects.
		[Layer]	Displays the layers in which the figures and objects are placed.
		[Object ID]	Displays the object ID numbers which are set for the objects. The ID is also displayed for the figures processed as objects.

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22.4 Moving a figure or an object

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To move a figure or an object, perform one of the following operations.

Operation	Details
Dragging on the screen editor	Drag a figure or an object.
Operating with a keyboard	Select a figure or an object and press the following keys. • ↓ • ← • → • ↑
Changing in the [Property] window	Select a figure or an object and change [X-Position] and [Y-Position] in the [Property] window. For how to use the [Property] window, refer to the following. ☞ Page 126 Checking and editing settings of screens and objects

Guidelines can be displayed to indicate the positional relationship between the item to be moved and the other figures and objects.

☞ Page 302 Displaying guidelines

22.5 Resizing

GT37 SoftGOT3000

This section describes how to resize a figure or an object on the screen editor.

☞ Page 1007 Resizing a figure or an object
☞ Page 1009 Impact of object resizing

22.5.1 Resizing a figure or an object

To resize a figure or an object, perform either of the following operations.

Operation	Details
Operating the handle on the screen editor	Drag the handle displayed on the selected figure or object. ☞ Page 1008 Operating the handle on the screen editor
Changing in the [Property] window	Select a figure or an object and change [Width] and [Height] in the [Property] window. For how to use the [Property] window, refer to the following. ☞ Page 126 Checking and editing settings of screens and objects

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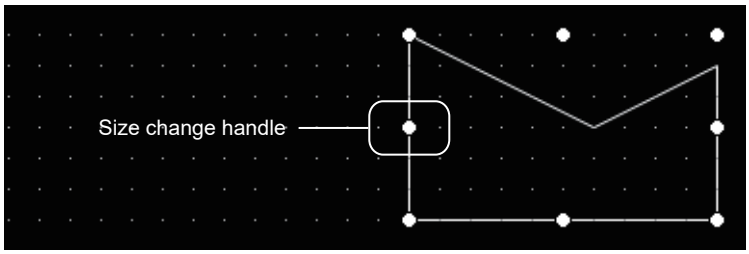
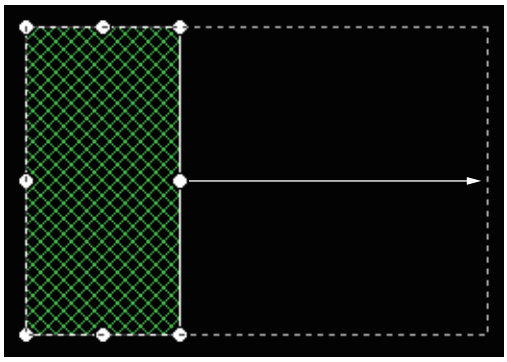
Operating the handle on the screen editor

1. Select the figure or object to be resized to display the size change handles.

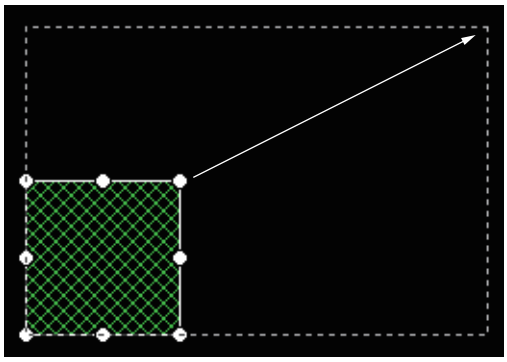


2. Drag one of the size change handles.

Release the mouse button to complete the resizing.



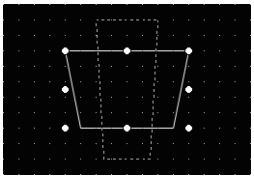
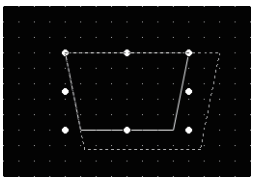
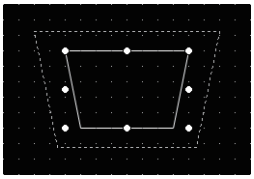
Example) Size change in the horizontal direction



Example) Size change in the vertical and horizontal directions from the corner base

Multiple figures and objects can be selected and resized together.

The following operations can be performed by using a mouse and keyboard keys together.

Operation	Description
Dragging a handle while pressing the Ctrl key	The figure or object can be resized symmetrically about its center. 
Dragging a handle while pressing the Shift key	Resizing is possible with the aspect ratio maintained. 
Dragging handles while pressing the Ctrl key and the Shift key	The figure or object can be resized symmetrically about its center while keeping the aspect ratio. 
Dragging a handle while pressing the Alt key	The [Snap] setting in the [Option] dialog becomes invalid and the sizes can be changed in dots.

Guidelines can be displayed to indicate the positional relationship with other placed figures and objects as a guide for resizing.

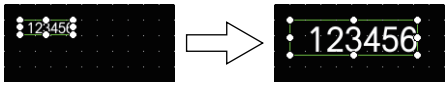
☞ Page 302 Displaying guidelines

22.5.2 Impact of object resizing

☞ Page 1009 Font size
☞ Page 1012 Object shape
☞ Page 1013 Touch area

Font size

The impact on the font size of the text to be displayed on objects depends on each object.

Pattern		Target	Operation
Pattern whose font size is changed		Numerical display Numerical input Text display Text input Date display Time display Historical data list display Alarm display (user) Alarm display (system) Recipe display (record list)	The font size is changed to the largest size that will fit within the object area. Example) When resizing a numerical display 
Pattern whose operation differs depending on the setting	Selecting [Text] for [Text Type]	Touch switch Bit lamp Word lamp Panel meter*1 Graphical meter Hyperlink	The operation depends on the setting of [Adjust Direct Text Size]. ☞ Page 1031 Switching between resizing and not resizing the string (text) as the object is resized
	Selecting [Comment] for [Text Type]	Touch switch Bit lamp Word lamp Comment display*2 Historical data list display*3 Alarm display (user)*3 Alarm display (system)*3 Recipe display (record list)*3 Graphical meter Hyperlink	The operation differs depending on the settings of each object. ☞ Page 1010 Font size of the comment
Pattern whose font size is not changed		This pattern applies to the values on the scale displayed on the following objects. Line graph Trend graph Bar graph Band graph Pie graph Scatter graph Historical trend graph Graphical meter Panel meter Slider	The font size is not changed even if the object size is changed. To change the font size, do so in the setting dialog of each object.

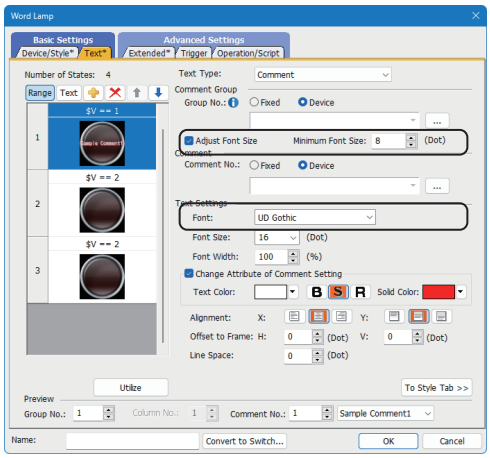
*1 As the setting is fixed to text, the setting of [Text Type] is not displayed.
*2 As the setting is fixed to comment, the setting of [Text Type] is not displayed.
*3 The font size of the title is changed (when a comment is specified).

■Font size of the comment

The font size of the object that meets all the following conditions is changed when the object size is changed.

Ex.

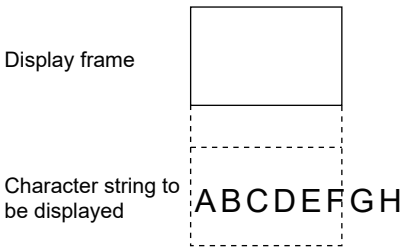
For a word lamp

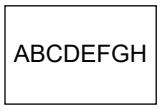
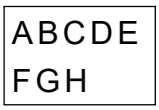
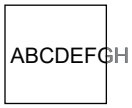


Condition	Description
[Font] setting	One of the following fonts (UD fonts) is selected. • [UD Gothic] • [UD Mincho] • [UDP Gothic] • [UDP Mincho] • [7-Segment Font]
[Adjust Font Size] setting	[Adjust Font Size] is selected. The value set to [Minimum Font Size] is the lower limit when the font size is changed.

The font size is changed with [Font Size] as the upper limit and [Minimum Font Size] as the lower limit.
The following shows the operational differences depending on the setting of [Adjust Font Size].

Ex.
If the text with the [Font Size] extends beyond the display frame of the object



[Font] setting	[Adjust Font Size] setting	
	Selected	**Deselected**
UD font	The font is resized automatically to fit in the display frame.  If the text even with the [Minimum Font Size] extends beyond the display frame, the extended part is not displayed. If a character straddles the frame, the character is not displayed. The text is displayed left aligned. 	The portion of the character string that has been extending off the frame starts a new line to fit in the display frame.  After the text wraps to the next line, if a part of the text still extends off the display frame, the part is not displayed. If a character straddles the frame, the character is not displayed.
Windows font	The text is displayed with the [Minimum Font Size]. If the text even with the [Minimum Font Size] extends beyond the display frame, the extended part is not displayed. If a character straddles the frame, only the part of the character within the frame is displayed. The text alignment is not changed.  	Even if the text extends off the display frame, the text does not wrap to the next line. If a character straddles the frame, only the part of the character within the frame is displayed.

Object shape

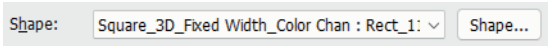
The shapes displayed for objects are called object shapes.

☞ Page 1044 Object shape

The object shape is resized as the object is resized.

The resize behavior of the shape frame width varies according to the shape type and the frame width fixing setting.

<table>
<tr><th colspan="2">Shape type</th><th colspan="2">Resize behavior of the shape frame width</th></tr>
<tr><td rowspan="3">Library</td><td rowspan="3">System Library</td><td colspan="2">The resize behavior of the frame width varies according to the frame width fixing setting.
☞ Page 1027 Switching between fixing or not fixing the frame width of an object shape</td></tr>
<tr><td>When the frame width fixing setting is enabled</td><td>For the object shape to which the setting is applicable, resizing the object does not change the frame width.

For the object shape to which the setting is inapplicable, resizing the object resizes the frame width.</td></tr>
<tr><td>When the frame width fixing setting is disabled</td><td>Resizing an object resizes the frame width.
 </td></tr>
<tr><td>My Library</td><td colspan="2">Resizing an object resizes the frame width.</td></tr>
<tr><td colspan="2" rowspan="3">Basic Figure</td><td colspan="2">The resize behavior of the frame width varies according to the shape state.
For the shape with a fixed frame width, the shape name includes [Fixed Width].
  </td></tr>
<tr><td>When the shape frame width is fixed</td><td>Resizing an object does not change the frame width.
 </td></tr>
<tr><td>When the shape frame width is not fixed</td><td>Resizing an object resizes the frame width.
 </td></tr>
</table>

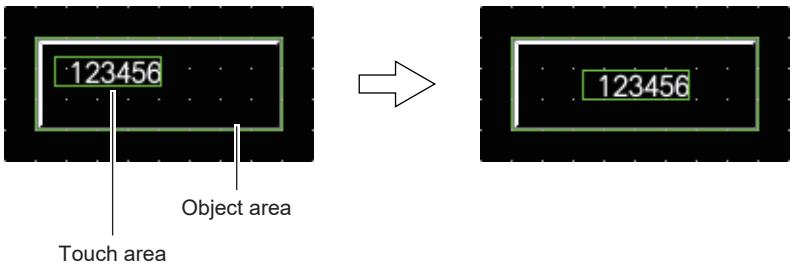
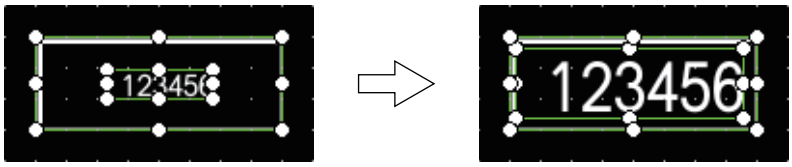
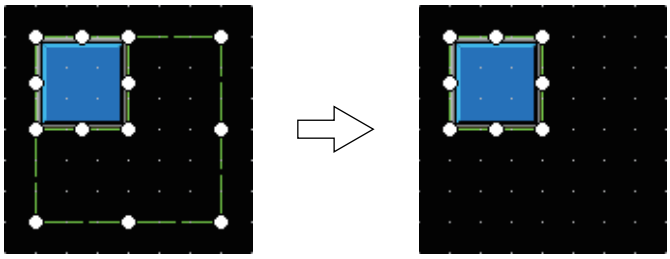
Touch area

The touch area is the area of an object used for input, such as a touch switch or a numeric input.

The touch area is resized as the object is resized.

When you set a shape for an object, resizing the object may make the touch area and object area different-sized and misaligned.

In such a case, perform one of the following operations to adjust the touch area and object area.

Adjustment method	Operation
Centering the touch area in the object area	Right-click the object and select [Centering] from the right-click menu. The touch area is centered in the shape. 
Adjusting the touch area and object area separately	Select [Edit] → [Edit Touch Area] → [Manual Edit] from the menu. ☞ Page 1030 Adjusting the touch area manually 
Matching the touch area of the touch switch with the object area	This operation is only supported by the touch switch. Select the touch switch, and then select [Edit] → [Edit Touch Area] → [Self-adjust] from the menu. ☞ Page 1030 Adjusting the touch area of the touch switch automatically 
Always adjusting the touch area and object area automatically	Select [Edit] → [Edit Touch Area] → [Constant Self-adjust] from the menu. ☞ Page 1031 Adjusting the touch area of the touch switch automatically

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22.6 Changing the settings

GT37 SoftGOT3000

To change the settings of figures and objects, perform either of the following operations.

Operation	Details
Changing in the setting dialog	Perform one of the following operations to change the settings in the displayed setting dialog. • Double-click a figure or object. • Select the intended item on the screen editor, and select [Edit] → [Setting] from the menu. • Double-click the intended item for setting change in the [Data Browser] window. • Double-click the intended item for setting change in the [Data View] window. For details on the setting dialog, refer to each function.
Changing in the [Property] window	Select a figure or an object and change the settings displayed in the [Property] window. For how to use the [Property] window, refer to the following. ☞ Page 126 Checking and editing settings of screens and objects

22.7 Operation with the [Edit] menu

GT37 SoftGOT3000

The following table shows the operations which can be performed on figures and objects with the [Edit] menu.

Menu	Description
[Undo]	☞ Page 1016 Canceling the last operation or redoing the canceled operation
[Redo]	
[Cut]	☞ Page 1016 Copying or cutting a figure or object and pasting it
[Copy]	
[Paste]	
[Duplicate]	Copies and pastes the selected item at a time. Select an item and select [Edit] → [Duplicate] from the menu. You cannot change the intervals for pasting figures or objects.
[Consecutive Copy]	☞ Page 1017 Pasting multiple copies of a figure or object
[Select All]	Selects all the data placed or set on the selected screen editor or window.
[Delete]	Deletes the selected item.
[Object of Selection]	☞ Page 1020 Changing the selectable items on the screen editor
[Group]	☞ Page 1021 Grouping two or more figures and objects or ungrouping them
[Ungroup]	
[Stacking Order]	☞ Page 1022 Changing the stacking order of figures and objects
[Align]	☞ Page 1023 Aligning figures and objects
[Rotate/Flip]	☞ Page 1025 Rotating or flipping a figure
[Edit Vertices]	☞ Page 1026 Editing vertices to change the shape of a figure
[Edit Objects with Fixed Frame Width]	☞ Page 1027 Switching between fixing or not fixing the frame width of an object shape
[Edit Touch Area]	☞ Page 1030 Adjusting the touch area of an object (size, position)
[Adjust Direct Text Size]	☞ Page 1031 Switching between resizing and not resizing the string (text) as the object is resized
[Template Registration]	☞ Page 1092 Efficient Drawing with Templates
[Set to Default]	☞ Page 203 Customizing the default value
[Add to Category]	☞ Page 1121 Managing figures and objects by category
[Shape Change]	☞ Page 1045 How to set the object shape
[Setting]	☞ Page 1014 Changing the settings

22.7.1 Canceling the last operation or redoing the canceled operation

[Undo] and [Redo] are available only on the screen editors and the data view.

Operation	Details
Canceling the last operation	Select [Edit] → [Undo] from the menu.
Redoing the canceled operation	Select [Edit] → [Redo] from the menu.

History retention specifications

Item		Description
Number of storable operations		There is no limit to the number of storable operations to the operation histories.
Unit of the operation histories		The operation history is held per screen. Therefore, when creating multiple screens, display a screen to which you want to redo operations and perform [Undo] or [Redo].
Timing when the operation history is deleted	Deletion of the operation histories of both [Undo] and [Redo]	• Closing a project • Deleting or cutting the target screen • Pasting a copied or cut screen to a selected area • Changing the controller type • Executing the [Collective Edit] command on the [Edit Objects with Fixed Frame Width] submenu • Changing the GOT type
	Deletion of the operation history of [Redo] only	• Performing other editing operations (such as placing an object) when [Redo] is available

22.7.2 Copying or cutting a figure or object and pasting it

You can cut or copy a selected item and paste it to an intended location.

The operation is possible even if multiple items are selected.

Operation	Details
Cut	Select an intended item, and select [Edit] → [Cut] from the menu.
Copy	Select an intended item, and select [Edit] → [Copy] from the menu.
Paste	Select the destination screen and select [Edit] → [Paste] from the menu.

Precautions

If the controller settings differ between in the copy source project and the copy destination project, the set devices may be displayed as [??].

Check if the pasted device has no problem and set the device again as required.

Holding the cut or copied data

The cut or copied data is overwritten when a new data is cut or copied.

The last cut or copied data is deleted when the cut or copy source project is closed.

Data copy between screen design software modules

The data cut and copied in a GT Designer3 (GOT3000) module can be pasted to other running modules of GT Designer3.

Copying and pasting between the following conventional products is unavailable.

- GT Designer3 (GOT2000)
- GT Designer3 (GOT1000)

22.7.3 Pasting multiple copies of a figure or object

Copies and pastes a selected figure or object at a time based on the settings.

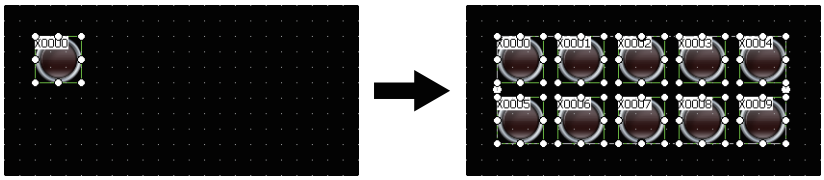
1. Select the item to be copied on the screen editor.

Multiple items can also be selected and copied.

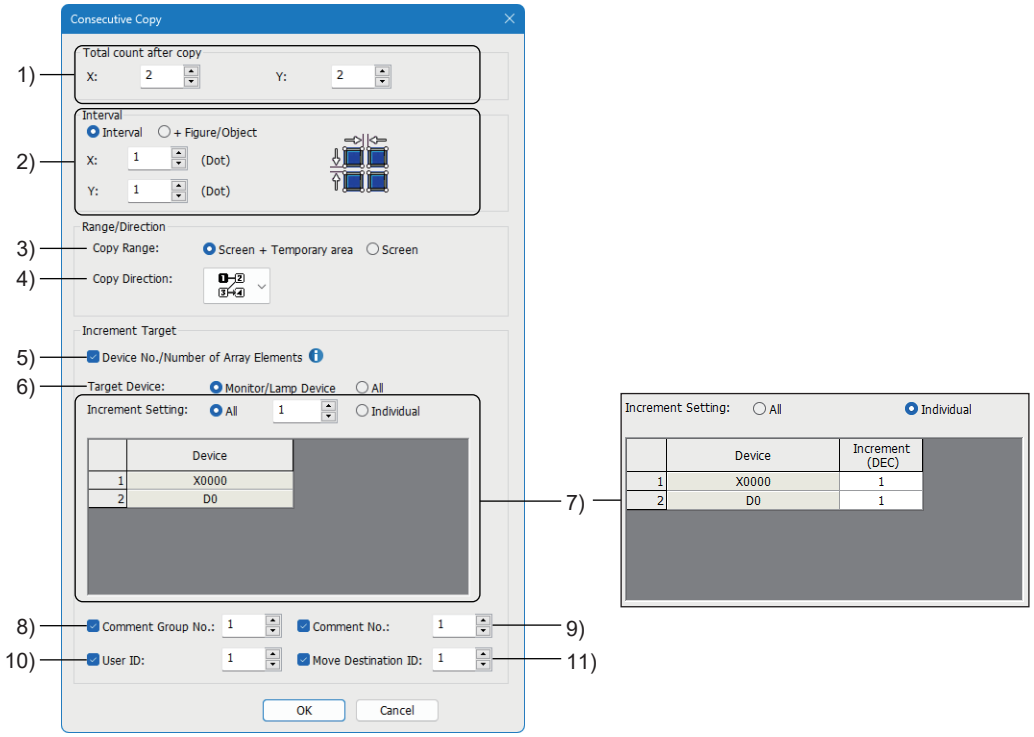
2. Select [Edit] → [Consecutive Copy] from the menu to display the [Consecutive Copy] dialog.

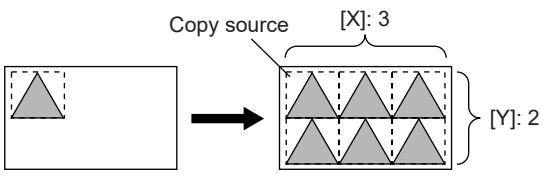
☞ Page 1017 [Consecutive Copy] dialog

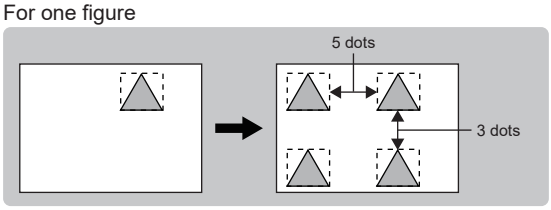
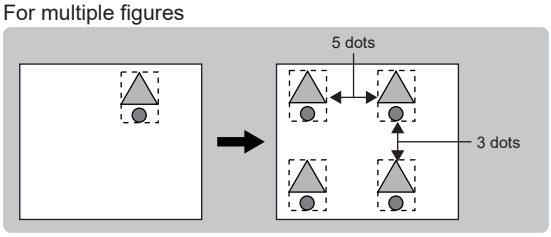
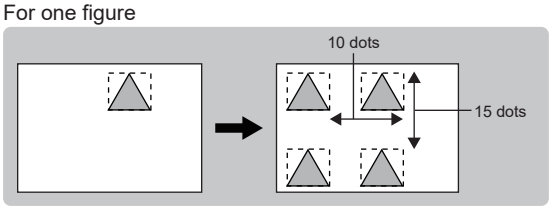
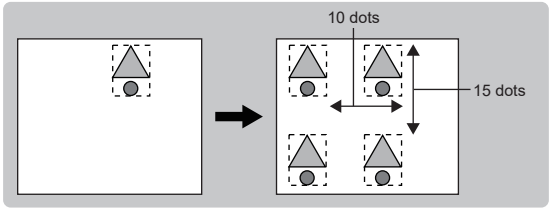
3. Configure the settings and click the [OK] button to paste the target item according to the settings.



[Consecutive Copy] dialog



Item			Description
1)	[Total count after copy]	—	Set the number of figures or objects to be pasted. Example) · [X]: 3 · [Y]: 2 · [Copy Direction]: 
		[X]	Set the number of figures or objects to be horizontally pasted. The setting range is [1] to [100].
		[Y]	Set the number of figures or objects to be vertically pasted. The setting range is [1] to [100].

Item		Description	
2)	[Interval]	Set an interval between figures or objects to be pasted. The setting ranges of [X] and [Y] differ depending on the selected item.	
		When [Interval] is selected	The setting range for [X Position] and [Y Position] is [0] to [300]. Example) · [X]: 5 · [Y]: 3 · [Copy Direction]: For one figure  For multiple figures 
		When [+ Figure/Object] is selected	The following shows the setting range. • [X Position]: [0] to [300] + Horizontal size of the item to be copied (dots) • [Y Position]: [0] to [300] + Vertical size of the item to be copied (dots) Example) · [X]: 10 · [Y]: 15 · [Copy Direction]: For one figure  For multiple figures 
3)	[Copy Range]	Set an area of the screen editor where figures or objects can be pasted.	
4)	[Copy Direction]	Set a direction in which figures or objects are pasted.	
5)	[Device No./Number of Array Elements]	Select this item to increment the device number of the device set to a figure or object. The array subscripts of the array-type label and tag are incremented. When you perform the consecutive copy of the label and tag other than the array-type labels and tags, the same label and tag are set.	
6)	[Target Device]	Set the target device for increment.	
7)	[Increment Setting]	Select whether to set the increment count of the device number collectively or individually for the continuous copy target device. The setting range of the increment count is [-10000] to [10000].	
8)	[Comment Group No.]	Select this item to increment the comment group number set to an object. The setting range of the increment count is [-100] to [100].	
9)	[Comment No.]	Select this item to increment the comment number set to an object. The setting range of the increment count is [-10000] to [10000]. When an object with comment number set to 0 is copied by using the consecutive copy function, the comment number is not incremented.	

Item		Description
10)	[User ID]	Select this item to increment the user ID set to an object. The setting range of the increment count is [-10000] to [10000].
11)	[Move Destination ID]	Select this item to increment the move destination ID set to an object. The setting range of the increment count is [-10000] to [10000].

22.7.4 Changing the selectable items on the screen editor

Change the selectable items on the screen editor.

This setting is applied to the entire project.

☞ Page 1020 Switching the selectable items (figures or objects)

☞ Page 1020 Switching whether to make the overlay screen selectable

☞ Page 1020 Operation when a new figure, object, or called screen is placed

Switching the selectable items (figures or objects)

Change the selectable on the screen editor.

Operation	Details
Limiting the selectable items to figures	Select [Edit] → [Object of Selection] → [Figure] from the menu.
Limiting the selectable items to objects	Select [Edit] → [Object of Selection] → [Object] from the menu.
Not limiting the selectable items	Select [Edit] → [Object of Selection] → [Figure + Object] from the menu.

You can select grouped figures or objects when the selected target is included in the group.

Ex.

When [Figure] is selected for [Object of Selection]

- Group of figures only: Selectable
- Group of figures and objects: Selectable
- Group of objects only: Selectable

Switching whether to make the overlay screen selectable

Select [Edit] → [Object of Selection] → [Overlay Screen] from the menu.

Operation when a new figure, object, or called screen is placed

You can newly place a figure, an object, or a called screen regardless of the selection of [Object of Selection].

When the figure, object, or called screen that was newly placed is out of the selection target, the setting of [Object of Selection] is changed to include it to the selection target.

Ex.

When an object is placed while [Object of Selection] is set to [Figure], the setting of [Object of Selection] is changed to [Figure + Object].

22.7.5 Grouping two or more figures and objects or ungrouping them

Groups multiple figures and objects into one.

Groups are treated as figures.

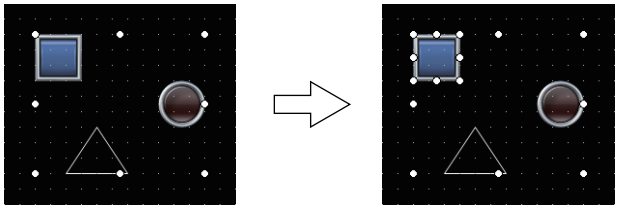
Operation	Details
Grouping	Select figures and objects to be grouped and select [Edit] → [Group] from the menu.
Ungrouping	Select the intended group and select [Edit] → [Ungroup] from the menu.

Operations for the group

Operation	Details
Changing the settings	Select a group to display the setting items in the [Property] window. You can change the setting items common to all the figures and objects in the group in the [Property] window. The changed setting is applied to all the figures and objects in the group. For how to use the [Property] window, refer to the following. ☞ Page 126 Checking and editing settings of screens and objects
Changing the coordinates	When you select a grouping of figures or objects, the [Coordinate/Size] toolbar and the [Property] window display the coordinates of the upper-left corner of the grouping. If you change the coordinates, the figures and objects in the grouping move accordingly while their intervals remain unchanged.
Changing the size (width and height)	When you select a grouping of figures and objects, the [Coordinate/Size] toolbar and the [Property] window display the width and height of the grouping. The width and height are not changeable in the above toolbar and window. To change the size of the grouping, use the size change handle on the screen editor.

Changing the settings of individual figures and objects in a grouping

While a group is selected, select a figure or object displayed in the group to display the handle around the selected figure or object.



To change the settings for grouped figures and objects individually, perform the following operations.

Operation	Details
Changing in the setting dialog	Perform one of the following operations to change the settings in the displayed setting dialog. • Double-click the item intended for setting change while selecting the group. • Select the item intended for setting change while selecting the group, and select [Edit] → [Setting] from the menu. • Double-click the intended item for setting change in the [Data Browser] window. • Double-click the intended item for setting change in the [Data View] window. For details on the setting dialog, refer to each function.
Changing in the [Property] window	Select the item intended for setting change while selecting the group, and change the settings displayed in the [Property] window. For how to use the [Property] window, refer to the following. ☞ Page 126 Checking and editing settings of screens and objects

For a grouping of groups, you can also change the settings by using the same procedure.

Operations that cannot be performed individually for grouped figures and objects

When operating grouped figures or objects individually, you cannot perform the following operations.

- Move
- Resize
- Change touch area
- Delete

22.7.6 Changing the stacking order of figures and objects

To change the stacking order, select a figure or object and perform the following operations.

The menu depends on the selected item.

Operation		Details
Change across layers	Moving to the foreground in the front layer	Select [Edit] → [Stacking Order] → [Move to the Front of Front Layer] from the menu. The menu is not displayed when the selected item includes a figure (excluding figures processed as objects) or has template attributes.
	Moving to the background in the back layer	Select [Edit] → [Stacking Order] → [Move to the Back of Back Layer] from the menu. The menu is not displayed when the selected item includes a figure (excluding figures processed as objects) or has template attributes.
Change in the same layer	Moving to the foreground	Select [Edit] → [Stacking Order] → [Move to the Front of Layer] from the menu.
	Moving to the background	Select [Edit] → [Stacking Order] → [Move to the Back of Layer] from the menu.
	Moving to the front of the target item	Select [Edit] → [Stacking Order] → [Move to the Front]] from the menu.
	Moving to the back of the target item	Select [Edit] → [Stacking Order] → [Move to the Back] from the menu.

For the layers, refer to the following.

☞ Page 65 Layer

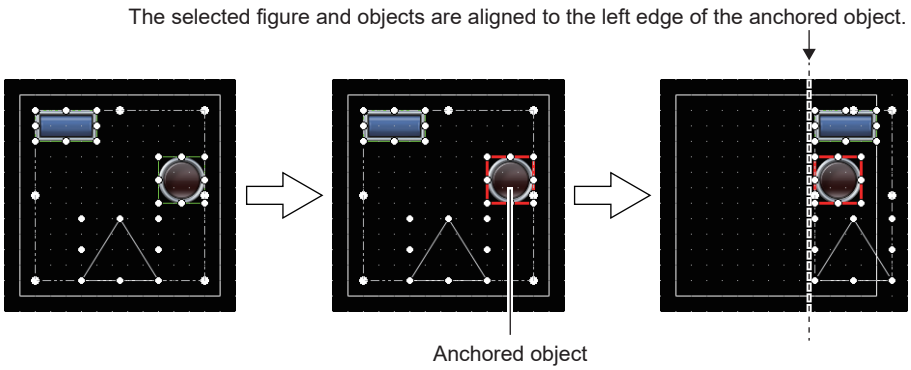
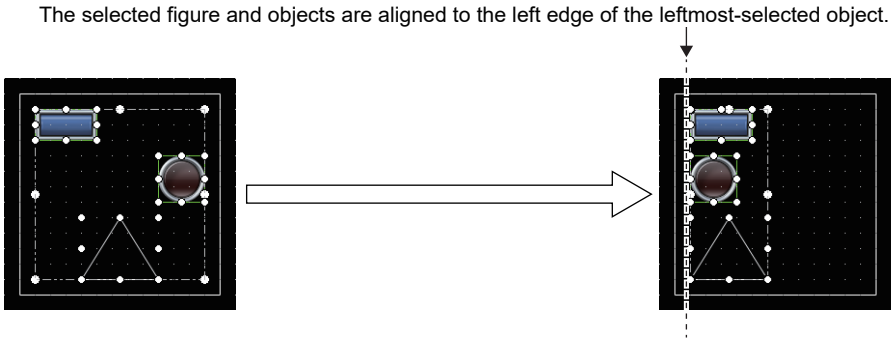
22.7.7 Aligning figures and objects

Align the multiple selected figures and objects.

When you click one of the selected figures or objects, it is enclosed in a red frame and anchored.

Click the figure or object again to cancel the anchoring.

The alignment of figures and objects varies depending on whether a figure or object is anchored.

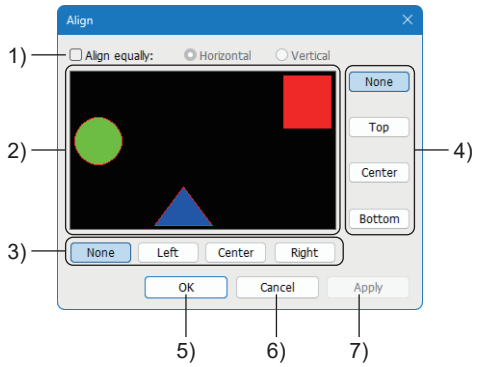
Anchoring	Description
Anchored	Figures and objects are aligned to the edge or center of the anchored figure or object. Example) Left alignment with a lamp object anchored 
Not anchored	The selected figures and objects are aligned to the edge or center of the entire object. Example) Left alignment without anchoring 

The following lists the alignment operations.

Operation		Details
Horizontal alignment	Left alignment	Select [Edit] → [Align] → [Left] from the menu.
	Centered	Select [Edit] → [Align] → [Center (Horizontal)] from the menu.
	Right alignment	Select [Edit] → [Align] → [Right] from the menu.
	Justified	Select [Edit] → [Align] → [Align Sideways] from the menu. This item is enabled when three or more figures or objects are selected.
Vertical alignment	Top aligned	Select [Edit] → [Align] → [Top] from the menu.
	Centered	Select [Edit] → [Align] → [Center (Vertical)] from the menu.
	Bottom aligned	Select [Edit] → [Align] → [Bottom] from the menu.
	Justified	Select [Edit] → [Align] → [Align Lengthways] from the menu. This item is enabled when three or more figures or objects are selected.
Alignment with multiple conditions		Select [Edit] → [Stacking Order] → [Custom] from the menu. ☞ Page 1024 [Align] dialog

[Align] dialog

Set the alignment method.



Item		Description
1)	[Align equally]	Aligns figures and objects evenly and horizontally or vertically. This item is enabled when three or more figures or objects are selected.
2)	Preview	Previews the settings configured in this dialog.
3)	Horizontal alignment	Sets the horizontal alignment position. • [None] button: Not aligned • [Left] button: Left aligned • [Center] button: Centered • [Right] button: Right aligned
4)	Vertical alignment	Sets the vertical alignment position. • [None] button: Not aligned • [Top] button: Top aligned • [Center] button: Centered • [Bottom] button: Bottom aligned
5)	[OK] button	Applies the settings and closes the dialog.
6)	[Cancel] button	Discards the settings and closes the dialog.
7)	[Apply] button	Applies the settings. This dialog is not closed.

22.7.8 Rotating or flipping a figure

Select a figure to be rotated or flipped, and perform any of the following operations.

Operation	Details	Remarks
Vertical flip	Select [Edit] → [Rotate/Flip] → [Flip Vertical] from the menu.	The following figures can be flipped. • Logo text • Line • Line freeform • Polygon • Arc • Sector • Scale • Piping
Horizontal flip	Select [Edit] → [Rotate/Flip] → [Flip Horizontal] from the menu.	
90-degree rotation to the left	Select [Edit] → [Rotate/Flip] → [Rotate Left] from the menu.	—
90-degree rotation to the right	Select [Edit] → [Rotate/Flip] → [Rotate Right] from the menu.	

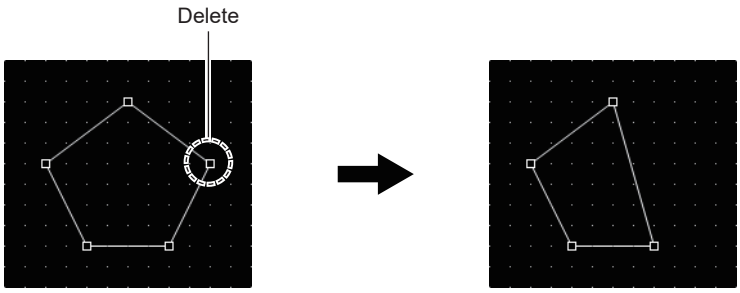
When multiple figures are selected, rotation or flip is applied to each figure.
For grouped figures, rotation or flip is applied to the entire group as a single figure.

Precautions

When [Move figures/objects in the screen display area (move to temporary area with the Alt key)] is selected in the [Options] dialog ([Edit] tab), the figure cannot be rotated if it extends into the temporary area.
For the [Options] dialog ([Edit] tab), refer to the following.
☞ Page 199 [Options] dialog ([Edit] tab)

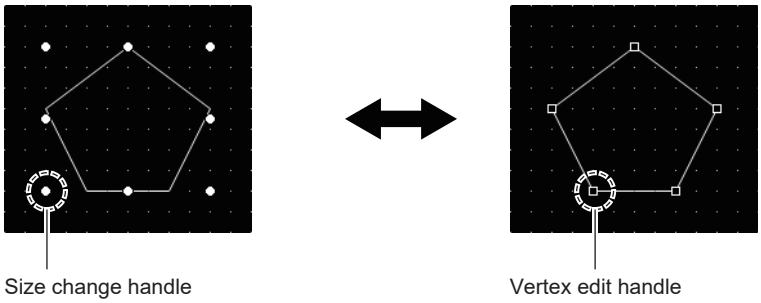
22.7.9 Editing vertices to change the shape of a figure

Change the shape of a figure by moving, adding, or deleting vertices.



To edit vertices, change the handles to vertex edit handles.

Select [Edit] → [Edit Vertex] from the menu to change the handles to vertex edit handles.



Applicable figures

The following figures allow vertex editing.

- Line freeform
- Polygon
- Piping

Grouped figures do not allow vertex editing.

Vertex editing methods

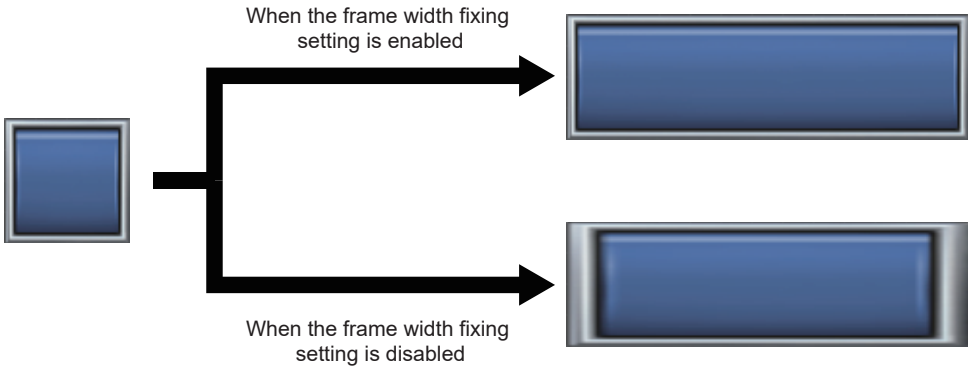
The following shows the vertex editing methods.

Operation	Details
Moving a vertex	Drag a vertex.
Adding a vertex	Click the line of a figure.
	While pressing the Shift key, click and drag a line of the figure to the position where a vertex is to be added.
	Right-click the line of a figure and select [Add Vertices] from the menu.
Deleting a vertex	While pressing the Ctrl key, click the vertex to be deleted.
	Right-click the line of a figure and select [Delete Vertices] from the menu.

22.7.10 Switching between fixing or not fixing the frame width of an object shape

The frame width fixing setting determines whether the frame width of the object shape is fixed when the object is resized.
When the frame width fixing setting is enabled, resizing an object does not change the frame width.
This setting is applied to the entire project.

Ex.
When an object is enlarged



Precautions

Even when the frame width fixing setting is enabled, if you reduce the object size (width or height) to less than its shape frame width, the frame width is reduced as well.

Switching between enabling or disabling frame width fixing

Select [Edit] → [Edit Objects with Fixed Frame Width] → [Always Fix the Width] from the menu to enable or disable frame width fixing.

Editing a frame width collectively

Select [Edit] → [Edit Objects with Fixed Frame Width] → [Collective Edit] from the menu to enable frame width fixing and edit the frame width of all objects in the project.

Target of the frame width fixing setting

The objects that satisfy all the following conditions are the target of the frame width fixing setting.

Condition	Details
The object allows the fame width fixing.	☞ Page 1028 Objects that allow frame width fixing
An object shape that allows frame width fixing is set.	The frame width fixing setting is applied to shapes that satisfy all of the following conditions. • Registered in the System Library • Raster format (registered in the yellow folder in the library tree area) • [Shape] is set to other than [None]. [Shape] can be checked in the [Library data Property] dialog. ☞ Page 1085 [Library] window

■Objects that allow frame width fixing

The following shows the objects that allow frame width fixing.

○: Available, ×: Not available

Object		Applicability	Remarks
Touch switch	Switch	○	—
	Bit switch	○	—
	Word switch	○	—
	Go to screen switch	○	—
	Change station No. switch	○	—
	Special function switch	○	—
	Key window display switch	○	—
	Key code switch	○	—
Lamp	Bit lamp	○	—
	Word lamp	○	—
	Lamp area	×	No shape setting.
Numerical display, numerical input	Numerical display	○	—
	Numerical input	○	—
Text display, text input	Text display	○	—
	Text input	○	—
Date display, time display	Date display	○	—
	Time display	○	—
Comment display	Bit comment	○	—
	Word comment	○	—
	Simple comment	×	No shape setting.
Parts display	Bit parts	×	No shape setting.
	Word parts	×	No shape setting.
	Fixed parts	×	No shape setting.
Frame animation		×	—
Historical data list display		○	—
Alarm display	Alarm display (user)	○	—
	Alarm display (system)	○	—
	Simple alarm display	○	—
	System alarm display	○	—
Recipe display (record list)		○	—
Graph	Line graph	○	—
	Trend graph	○	—
	Bar graph	○	—
	Band graph	○	—
	Pie graph	○	—
	Scatter graph	○	—
	Historical trend graph	○	—
Graphical meter		○	The shape frame width is always fixed regardless of the frame width fixing setting.
Meter	Level	×	No shape setting.
	Panel meter	×	—
Slider		×	—
Document display		×	No shape setting.
Digital image display		×	No shape setting.
Script parts		×	No shape setting.
Set overlay screen		×	No shape setting.
Window position		×	No shape setting.

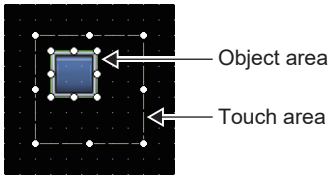
Object		Applicability	Remarks
Key window object	Input value area setting	×	No shape setting.
	Input range area setting	×	No shape setting.
	Input maximum value area setting	×	No shape setting.
	Input minimum value area setting	×	No shape setting.
	Previous value area setting	×	No shape setting.
Hyperlink		○	—

22.7.11 Adjusting the touch area of an object (size, position)

☞ Page 1030 Adjusting the touch area manually
☞ Page 1030 Adjusting the touch area of the touch switch automatically

Adjusting the touch area manually

To enable or disable the manual adjustment, select [Edit] → [Edit Touch Area] → [Edit Manually] from the menu.
Enabling the manual adjustment of the touch area allows you to adjust the object area and the touch area separately.



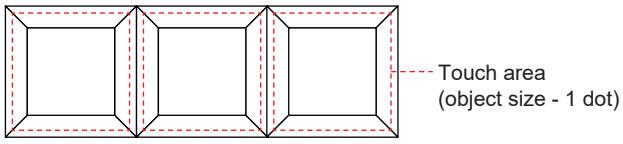
Adjusting the touch area of the touch switch automatically

If you perform the automatic adjustment of the touch area, the touch area will be adjusted according to the object area of the touch switch.
The following table shows how to adjust the touch area automatically.

Operation	Details
Selecting the intended item and performing automatic adjustment	Select the touch switch whose touch area is to be automatically adjusted, and select [Edit] → [Edit Touch Area] → [Self-adjust] from the menu.
Switching whether to always enable automatic adjustment	Select [Edit] → [Edit Touch Area] → [Constant Self-adjust] from the menu. Once the automatic adjustment is always enabled, the touch area will be automatically adjusted for the touch switch placed on the screen editor. Automatic adjustment is also performed at the following timing. • Moving the touch switch • Placing the touch switch

Point

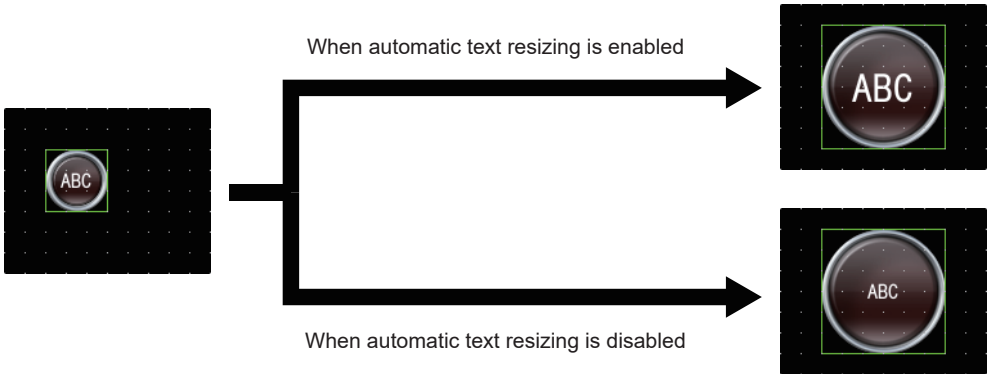
When [Adjust the touch area to be smaller than its object size by 1-dot at the time of touch area self-adjust] is selected on the [Edit] tab in the [Options] dialog, the touch area is reduced to be inside the object area. The edge of the touch area becomes 1 dot away from the edge of the object area.
This setting helps prevent unintended touches when objects are adjacent to each other.



For the [Options] dialog ([Edit] tab), refer to the following.
☞ Page 199 [Options] dialog ([Edit] tab)

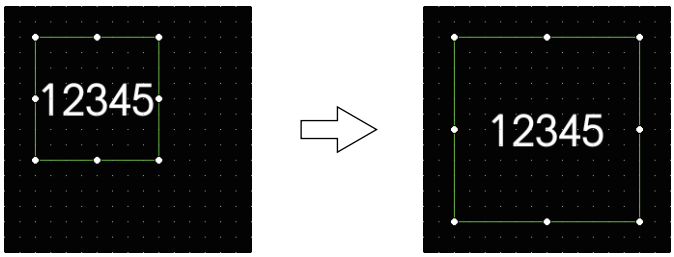
22.7.12 Switching between resizing and not resizing the string (text) as the object is resized

To enable or disable automatic resizing of the string, select [Edit] → [Adjust Direct Text Size] from the menu.
When the setting is enabled and the object for which the direct text has been set is scaled, the text will be scaled according to the size of the object.

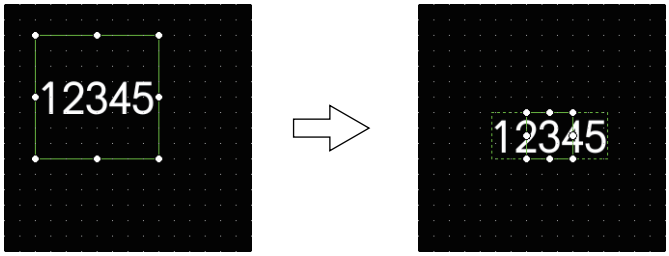


When the objects are scaled beyond the maximum or minimum size of texts, the texts hold the maximum or minimum size.
Objects can be scaled regardless of the maximum or minimum size of the texts.

Ex.
When the object is enlarged beyond the maximum size of the text, only the object is enlarged while the text is kept at the maximum size.



Ex.
When the object size is reduced beyond the minimum size of the text, the text is kept at the minimum size and only the object size is reduced.
The text is displayed beyond the object.



Applicable objects

The following shows the objects that allow automatic resizing of the text string.

- Touch switch
- Lamp
- Graphical meter
- Panel meter
- Hyperlink

22.8 Settings common to figures and objects

GT37 SoftGOT3000

The following shows the settings common to figures and objects.

☞ Page 1032 Attributes
☞ Page 1033 Direct editing of character string

22.8.1 Attributes

This section describes the attributes that figures and objects have as common information.

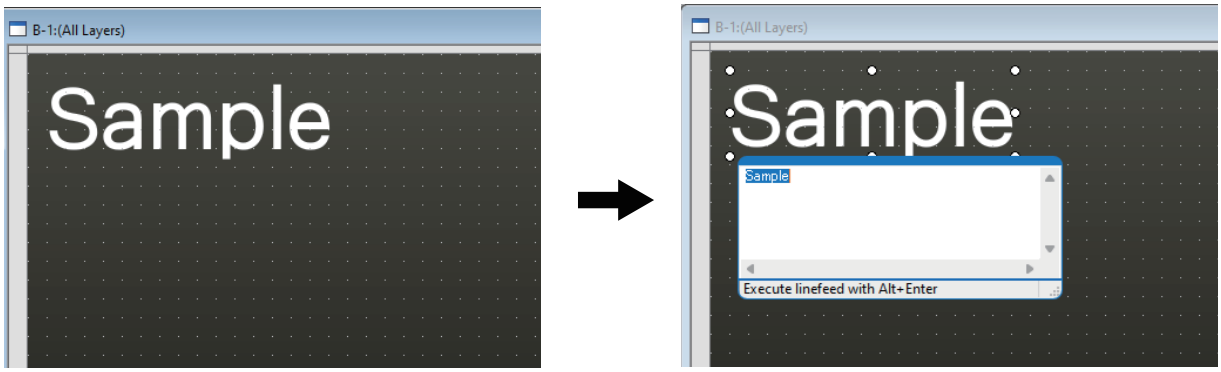
You can check the common information of the figures and objects selected on the screen editor in the [Property] window.

☞ Page 126 Checking and editing settings of screens and objects

Setting item	Description
[Object ID]	The number assigned to each figure and object on the screen editor. A unique number is assigned to each item in the order they are placed on the screen. The user cannot change this number. It is displayed on the figures processed as objects or objects on the screen editor. It is displayed in the [Data Browser] window and [Property] window, and can be used to identify figures and objects.
[Name]	Set a name for the figure or object. It is displayed in the data browser or in the operation log, and can be used to identify figures and objects. Up to 100 characters can be set. The name can be edited in the setting dialog of each figure or object.
[X Position]	The upper left X coordinate of a figure or an object. It is the start point of the X-coordinate for a line or freeform line. The setting range is [-1000] dots to [4999] dots.
[Y Position]	The upper left Y coordinate of a figure or an object. It is the start point of the Y-coordinate for a line or freeform line. The setting range is [-1000] dots to [4999] dots.
[Width]	The width of a figure or an object. The setting range is [1] dots to [6000] dots. The setting range varies by the type and position of the figure or object.
[Height]	The height of a figure or an object. The setting range is [1] dots to [6000] dots. The setting range varies by the type and position of the figure or object.

22.8.2 Direct editing of character string

To display the text edit dialog, select an object or figure that supports text input and press the F2 key.
In the text edit dialog, you can only edit the character string.



Perform one of the following operations to confirm the change and close the dialog.

- Click outside the dialog.
- Press the enter key.
- Press the tab key.
- Cancel operation (Esc key or Alt + F4 keys)

PART 7

22.9 Settings common to figures

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The following shows the settings common only to figures.

☞ Page 1034 Antialiasing
☞ Page 1035 Processing a figure as an object
☞ Page 1036 Lamp attribute

22.9.1 Antialiasing

Antialiasing smooths out jagged edges of figures and graph lines.

The following table shows the figures to which antialiasing is applied.

Figure	Conditions under which antialiasing is applied
Text	One of the following items is selected for [Font]. • [UD Gothic] • [UD Mincho] • [UDP Gothic] • [UDP Mincho] • [7-Segment Font]
Line	[Enable the antialiasing] is selected in [Basic Setting] in the [Type Setting] dialog. When the line width is set to 1 dot, antialiasing is not applied. ☞ Page 519 [Basic Setting]
Line freeform	
Rectangle	
Polygon	
Circle	
Arc	
Sector	
Scale	
Piping	

22.9.2 Processing a figure as an object

When you select one of the following items in the setting dialog of a figure, the figure is processed as an object.

Setting item	Condition for processing a figure as an object	Remarks
[Use lamp attribute]	Select this item.	For the lamp attribute, refer to the following. ☞ Page 1036 Lamp attribute
[Layer]	Select [Front] or [Back].	For the layers, refer to the following. ☞ Page 65 Layer
[Control displaying/hiding]	Select this item.	—

The figures processed as objects are handled as follows.

Item		Description
Handling on the screen editor		The following items are displayed for a figure processed as an object. • An area that indicates the outline of an object (object area) • Object ID • Object frame
Handling in each window	[Device Search] window	[(Object)] is appended to the end of the figure name.
	[Data Browser] window	
	[Property window	
	[Category List] window	
	[Data View] window	[(Object)] is appended to the end of the figure name. The figures processed as objects are counted in [Number of Objects].
Change in the figure setting dialog		[Backmost] can no longer be selected for [Layer]. If the figure is processed as an object using a setting other than [Layer], the [Layer] setting changes from [Backmost] to [Back].

22.9.3 Lamp attribute

The lamp attribute is a function to switch colors by turning on or off a bit device similarly to a lamp object.

Figures that support the lamp attribute

The following shows the figures that support the lamp attribute.

Figure	Reference
Line	☞ Page 1141 Drawing a Line
Line freeform	☞ Page 1145 Drawing a Line Freeform
Rectangle	☞ Page 1149 Drawing a Rectangle
Polygon	☞ Page 1153 Drawing a Polygon
Circle	☞ Page 1157 Drawing a Circle
Piping	☞ Page 1169 Drawing a Piping

Lamp attribute setting

To use the lamp attribute, configure the following settings in the setting dialog of each figure.

- Select [Use lamp attribute], and set the control bit device.
- Configure the display settings for when the control bit device is ON for each item in [Lamp Attribute (Device: ON)].

Handling of figures with the lamp attribute

■Processing figures as objects

Figures with the lamp attribute are processed as objects.

For processing of figures as objects, refer to the following.

☞ Page 1035 Processing a figure as an object

■Maximum number of figures per screen

Figures with the lamp attribute are counted as lamp objects.

For the maximum number of lamps per screen, refer to the following.

☞ Page 997 List of objects

22.10 Settings common to objects

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The following shows the settings common only to objects.

☞ Page 1038 Control with conditions
☞ Page 1044 Object shape
☞ Page 1049 Data operation

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22.10.1 Control with conditions

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Objects can be used to perform the following controls by setting conditions.

- Switching the shape or text displayed on the object
- Switching the operation (destination screen or destination station number) when the touch switch is touched
- Limiting the range of values that can be entered using the numerical input

The following shows the objects that support control with conditions and the control methods.

Object		Target of control	Control method
Touch switch	Switch	Shape Text	☞ Page 1039 Control by the key touch state and the ON and OFF states of the lamp
	Bit switch		
	Word switch		
	Go to screen switch	Shape Text	☞ Page 1039 Control by the key touch state and the ON and OFF states of the lamp
		Destination screen	☞ Page 1041 Control with multiple conditions
	Change station No. switch	Shape Text	☞ Page 1039 Control by the key touch state and the ON and OFF states of the lamp
		Destination station number	☞ Page 1041 Control with multiple conditions
	Special function switch	Shape Text	☞ Page 1039 Control by the key touch state and the ON and OFF states of the lamp
	Key window display switch		
	Key code switch		
Lamp	Bit lamp	Shape Text	☞ Page 1040 Control with a bit device
	Word lamp		☞ Page 1041 Control with multiple conditions
Numerical display		Frame color Shape color Blink Numerical value color	☞ Page 1041 Control with multiple conditions
Numerical input		Frame color Shape color Blink Numerical value color Input range	☞ Page 1041 Control with multiple conditions
Comment display	Bit comment	Shape color Comment	☞ Page 1040 Control with a bit device
	Word comment		☞ Page 1041 Control with multiple conditions
Parts display	Bit parts	Parts	☞ Page 1040 Control with a bit device
	Word parts		☞ Page 1041 Control with multiple conditions
Scatter graph		Type of points or lines Size of points or lines Color of points or lines	Select either of the following. ☞ Page 1040 Control with a bit device ☞ Page 1041 Control with multiple conditions
Level		Level color Pattern Background color	☞ Page 1041 Control with multiple conditions
Panel meter		Needle color Fill color Background color	☞ Page 1041 Control with multiple conditions
Slider		Knob	The object can be controlled by the key touch state. ☞ Page 1797 Placing a slider
Frame animation		Shape	Use either of the following. • Cycle specification • Frame No. specification For details, refer to the following. ☞ Page 1477 Placing a frame animation

Control by the key touch state and the ON and OFF states of the lamp

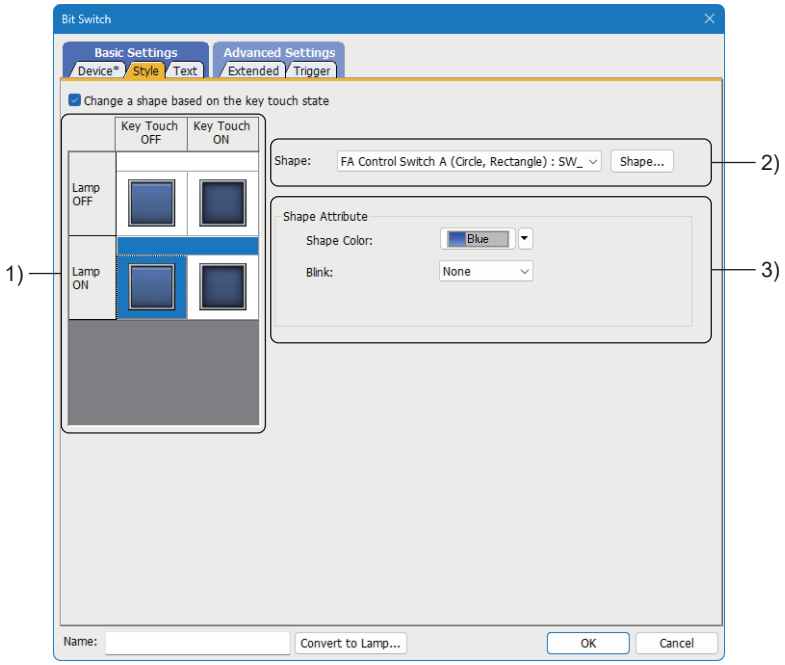
Use either or both of the following items as conditions to set the display when each condition is satisfied.

- Key touch status
- ON and OFF states of the lamp

In addition, the displayed contents can be set under the following conditions.

- When the object is touched twice (between the first touch and second touch)
- When the touch switch does not function (when the operating condition of the touch switch is unsatisfied)

The following shows the setting items for a bit switch as an example.



Item		Description
1)	Preview list	The list of conditions. Set the display to be applied when each condition is satisfied in [Shape Attribute].
2)	[Shape]	The outline of the touch switch. This setting is applied to all the conditions.
3)	[Shape Attribute]	Set the color of the shape to be applied when each condition is satisfied. Select the condition to be set in the preview list and change the settings. The settable items depend on the shape type.

The setting items depend on the touch switch.

For the setting of each touch switch, refer to the following.

☞ Page 1198 Setting touch switches

PART 7

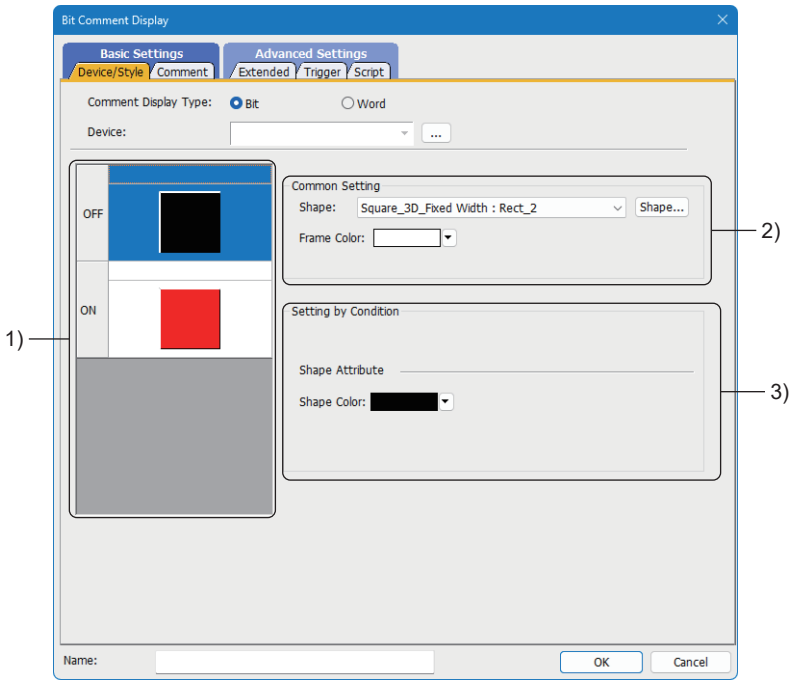
Control with a bit device

For each of the ON and OFF states of the bit device, set the display and operation when the condition is satisfied.

The setting items depend on the object.

Check the setting items in the setting dialog of each object.

The following shows the setting items for a bit comment display as an example.



Item		Description
1)	Preview list	The list of conditions. Set the contents to be applied when each condition is satisfied in [Setting by Condition].
2)	[Common Setting]	The setting applied to all the conditions.
3)	[Setting by Condition]	The setting applied when each condition is satisfied. Select the condition to be set in the preview list and change the settings. The settable items depend on the object type.

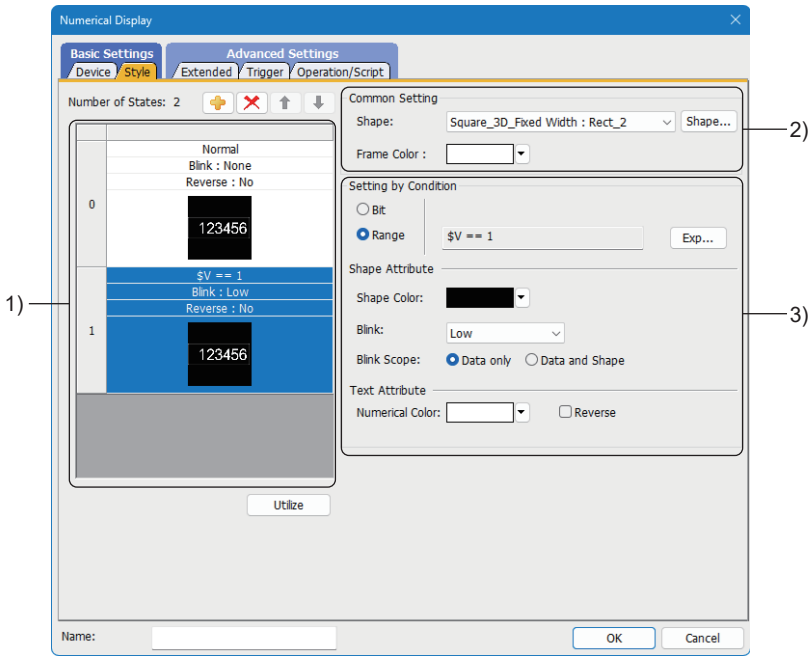
Control with multiple conditions

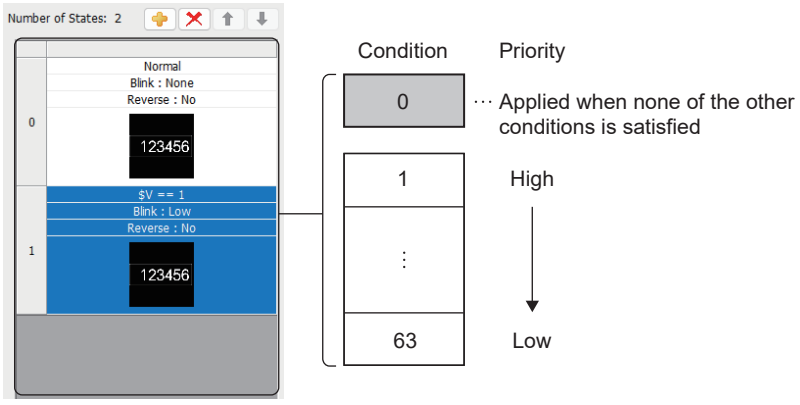
For each condition, set the applicable range and display and operation when the condition is satisfied.

The setting items depend on the object.

Check the setting items in the setting dialog of each object.

The following the setting items for a numerical display as an example.



Item		Description	
1)	Preview list	The list of conditions. Selecting a condition from the list displays the settings to be applied when the condition is satisfied in [Setting by Condition]. Up to 64 conditions can be set. The following shows the available conditions.	
		Condition 0	A condition that must be set. This condition is applied when none of the other conditions are satisfied.
		Condition 1 to condition 63	Conditions that are set by the user. The applicable range of each condition is set by the ON/OFF state of the bit device or by the conditional expression using a word device.  If applicable ranges of multiple conditions overlap, the condition with smallest number is prioritized. Example) If condition 1 and condition 2 are satisfied simultaneously When the range expressions for condition 1 and condition 2 are as follows, condition 1 is applied when D100 = 80. • Range expression of condition 1: 50 < = D100 • Range expression of condition 2: 0 < = D100
2)	[Common Setting]	The setting applied to all the conditions.	

Item		Description	
3)	[Setting by Condition]	The applicable range of each setting and the setting applied when each condition is satisfied. Select the scope of application from [Bit] or [Range].	
		[Bit]	Uses the ON/OFF state of the bit device as the applicable range of the condition. Configure the following settings. • Bit device for control • Applicable condition (when the bit device for control is on or off)
		[Range]	Sets the conditional expression using a word device as the applicable range of the condition. Click the [Range] button, and set the conditional expression in the [Edit Range] dialog. ☞ Page 1043 [Edit Range] dialog

Ex.

Display the production volume in the numerical display and change the shape color according to the number of defective products.

- Device to store the production volume: D500
- Device to store the number of defective products: D100

Configure the following settings in the [Numerical Display] dialog.

Tab	Setting item		Setting
[Device] tab	[Device]		D500
[Style] tab	Condition	0	Shape Color: White Range expression: — Numerical Color: Black
		1	Shape Color: Gray Range expression: 5 < = D100 < = 9 Numerical Color: Black
		2	Shape Color: Black Range expression: 10 < = D100 Numerical Color: White

When the value of D100 changes, the shape color changes as shown below.

D500 = 50
D100 = 0

D500 = 150
D100 = 7

D500 = 200
D100 = 12

■[Edit Range] dialog

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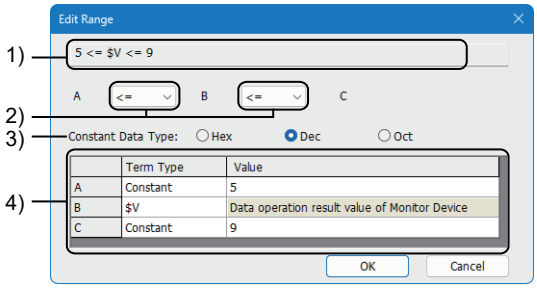
Set a conditional expression as the applicable range of the condition to display the object or execute the function.
This dialog appears when the [Range] button is clicked in the setting dialog of the object or others.
The setting items to be displayed depend on how the [Edit Range] dialog is displayed.



Item			Description	
1)	Conditional expression		The conditional expression you set.	
2)	Relational operators		Select relational operators used in the range expression.	
3)	[Constant Data Type]		Select the data type when [Constant] is selected for [Term Type] of the range expression setting. This item is available if other than [Real] is set for [Data Type] when setting [Range] of [Trigger Type].	
4)	Range expression setting	[Term Type]	Select the type and value of each side (A to C) of the range expression. Set at least one of [$V], [$W], [$$], monitor device, and [Other Device] in the range expression. The following shows selectable items.	
			[Constant]	Operates with constants.
			[$V]	Operates with the value read from the monitored device and displayed on the object. The data type is that of the monitored device.
			[$W]	Operates with the value written to the monitored device when the enter key is touched. The data type is that of the monitored device.
			[$$]	Operates with the value read from the monitored device. The data type is that of the monitored device.
			Monitor device	Operates with the value read from the device that is set to control the display condition or operating condition. The data type is that of the device that is set to control the display condition or operating condition.
			[Other Device]	Operates the value of a word device. The data type is the same as that of the monitored device.
		[Value]	Select the value of each side (A to C) of the range expression. Depending on the [Term Type], the setting item differs.	
			[Constant]	Set a numerical value. The setting range depends on the data type of the monitored device. ☞ Page 857 Data type of devices
			[$V] [$W] [$$] Monitor device	The target device for monitoring is set.
			[Other Device]	Set a device. ☞ Page 834 How to set devices, labels, and tags

Precautions

■Conditional expression whose data type is a real number

For a device whose [Data Type] is [Real], the GOT and a controller handle the device value a little differently.
If you set a precise input condition using [==] or [!=], the input range may not be checked properly.
When checking the input range with such a device, do not use [==] and [!=] to set the input condition.
For the data type specifications, refer to the following.
☞ Page 857 Data type of devices

PART 7

22.10.2 Object shape

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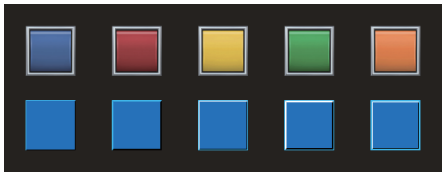
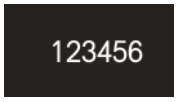
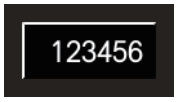
Setting shapes for objects spruces up the displays of the objects.

The shapes displayed for objects are called object shapes.

Some objects display a shape as an outline and others as a frame.

Type	Image	Target object
Object that displays a shape as an outline	Example) Touch switch 	Touch switch Lamp (bit lamp, word lamp) Parts display Slider Graphical meter Frame animation
Object that displays a shape as a frame	Example) Numerical display  Without a frame  With a frame	Numerical display Numerical input Text display Text input Date display Time display Comment display Alarm display Simple alarm display System alarm display Historical data list Recipe display (record list) Panel meter Line graph Bar graph Band graph Pie graph Scatter graph Trend graph Historical trend graph

Object shapes can be switched for each condition.

☞ Page 1038 Control with conditions

Precautions

■When using a PNG file that includes a semi-transparent area (α channel) as the object shape

The display of the semi-transparent area depends on the layer on which the object is placed and the transparent color setting for the front layer.

☞ Page 1177 Transparent and semi-transparent areas (α channel) of a PNG file

How to set the object shape

The following shows how to set the object shape of a bit switch as an example.

Operating procedure

1. Perform either of the following operations to display the [Image List] dialog.

- Click the [Shape] button in the [Style tab] in the [Bit Switch] dialog
- Select the bit switch on the screen editor, and select [Edit] → [Shape Change] from the menu

☞ Page 1045 [Image List] dialog (shape)

2. In the [Image List] dialog, select a shape to be displayed for each condition and click the [OK] button.

3. Click the [OK] button in the [Bit Switch] dialog.

The object shape setting is completed.

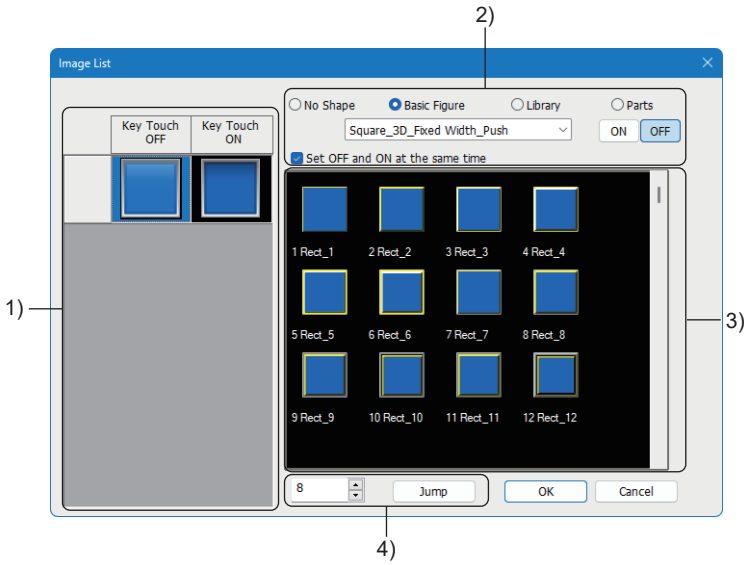
[Image List] dialog (shape)

Set the object shape.

The setting items depend on the object.

Ex.

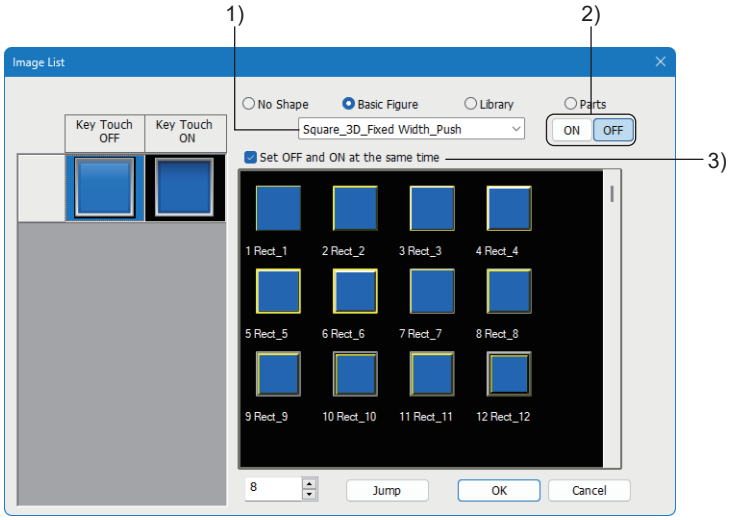
For a bit switch



Item		Description	
1)	Image preview	The image of the shapes to be displayed for each condition. For objects whose shapes are set as frames, no image is displayed. Select a condition in the image preview and select a shape in the shape image list to change the shape for the selected condition.	
2)	Image types	Select the image type of the shapes. The image type cannot be switched for each condition. This item is not displayed for objects whose image types of shapes cannot be changed. The setting items differ depending on the selected image type.	
		When [No Shape] or [None] is selected	The object shape is not set.
		When [Basic Figure] is selected	Select an object shape from the basic shapes. ☞ Page 1047 [Basic Figure]
		When [Library] is selected	Select an object shape from the shapes registered in the library. ☞ Page 1048 [Library]
		When [Parts] is selected	Select an object shape from the shapes registered as parts by the user. For how to register a part, refer to the following. ☞ Page 812 Registering parts ([Parts])
3)	Shape image list	Select an object shape.	

Item		Description
4)	[Jump] button	Specify a number from the shape image list and click the [Jump] button to select the shape associated with that number. This button does not appear when [My Favorites] is selected in [Library].

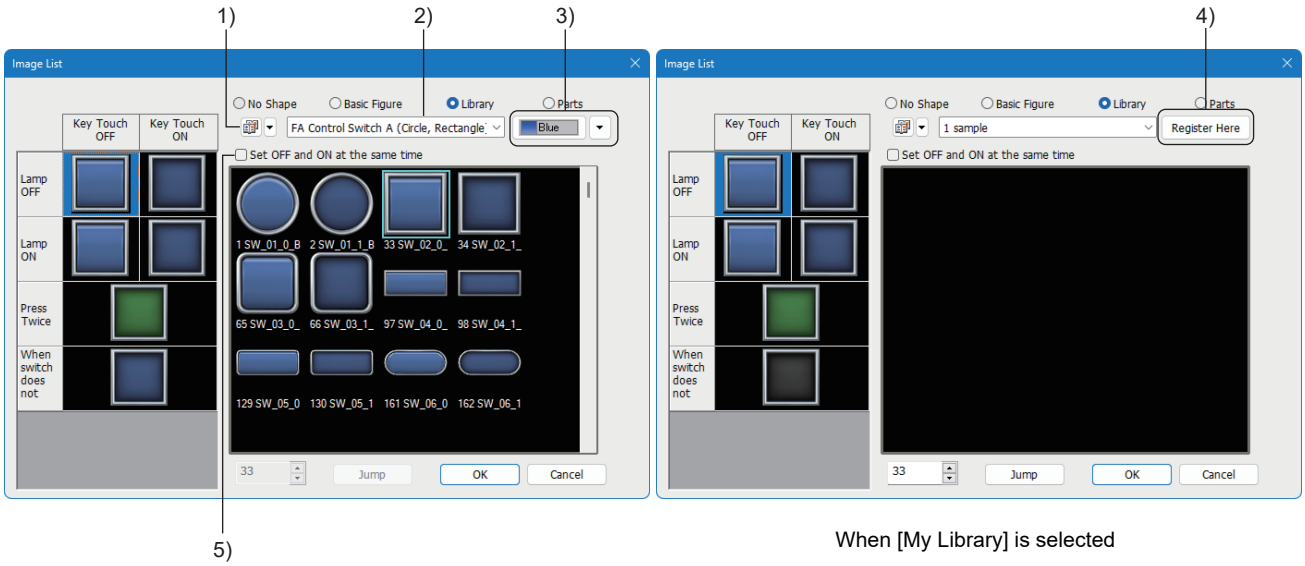
■[Basic Figure]



Item		Description
1)	Basic shape list	Selecting a shape type displays shapes in the shape image list.
2)	Display switching buttons	These are displayed for touch switches, bit lamps, and sliders. The shapes in the shape image list can be switched between those for the ON and OFF states.
3)	[Set OFF and ON at the same time] [Set every state at the same time]	The setting depends on the object. Selecting this item sets the same shape for all the conditions.

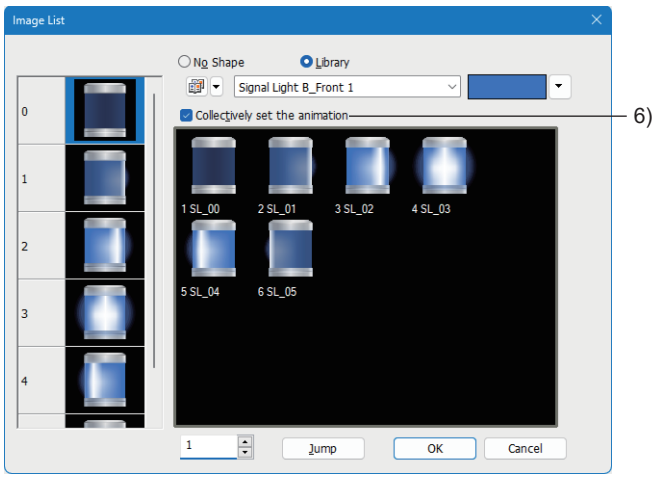
■[Library]

Ex.
For a bit switch



When [My Library] is selected

Ex.
For a frame animation



Item		Description
1)	Library theme button	Select a theme to be displayed in the library folder list. When [My Favorites] or [My Library] is selected, a shape can be selected from the ones registered to the library by users. For registration to a library, refer to the following. ☞ Page 1068 Registering data in the library
2)	Library folder list	Selecting a library folder displays shapes in the shape image list.
3)	Color category button	Narrows down the shapes displayed in the shape image list by the selected color.
4)	[Register Here] button	This button is displayed when [My Library] is selected in the library folder list. The shape selected in the image preview or the shape image list is registered to My Library.
5)	[Set OFF and ON at the same time] [Set every state at the same time]	The setting depends on the object. Selecting this item sets the same shape for all the conditions.
6)	[Collectively set the animation]	This item is displayed only for frame animations. When "shape" is set to any condition, the shapes registered in the library folder are also set to the other conditions collectively. The shapes are set to conditions in order, starting from condition 0, based on the registration numbers of the shapes in the library folder or the numbers of the filter results. If there are more conditions than shapes or filter results, any excess conditions do not have an associated shape.

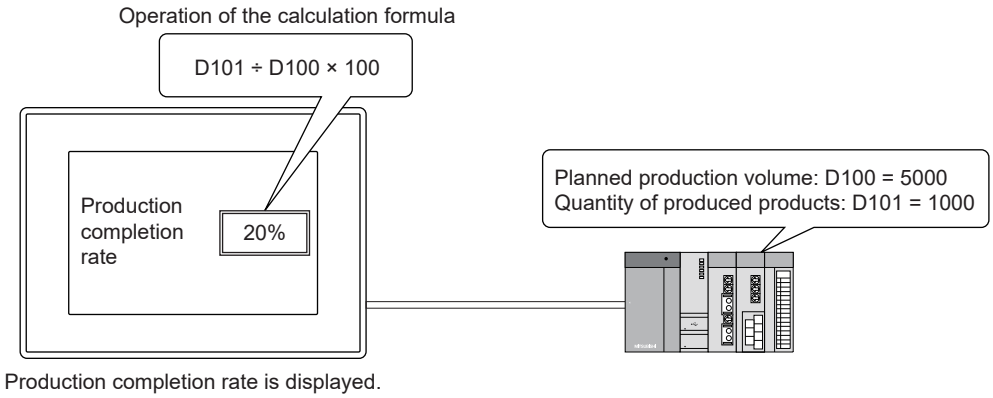
22.10.3 Data operation

Device values handled by objects can be operated.

Ex.

A device value monitored with a numerical display is operated, and the operated value is displayed.

Monitored device of the numerical display: D101



☞ Page 1049 Operation type
☞ Page 1051 Objects to which the data operation is applicable
☞ Page 1052 Order of the operating processes
☞ Page 1053 How to set the data operation
☞ Page 1054 [Edit Data Expression] dialog

Operation type

Data are operated and determined in bitwise operation.

The bitwise operation is the function that operates each bit of the value of a word device.

The following shows the settable operation types.

☞ Page 1049 Mask processing
☞ Page 1050 Shift processing
☞ Page 1050 Operating expression

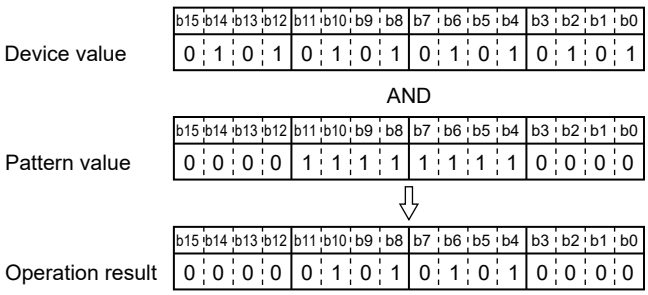
■Mask processing

A logical operation is performed on the value of a word device using a set pattern value.

Mask type	Description
Logical AND	If the corresponding bits of a device value and a pattern value are both 1, the result is 1. Otherwise the result is 0.
Logical OR	If the corresponding bits of a device value and a pattern value are both 0, the result is 0. Otherwise the result is 1.
Exclusive OR	If the corresponding bits of a device value and a pattern value are equal, the result is 0, otherwise 1.

Ex.

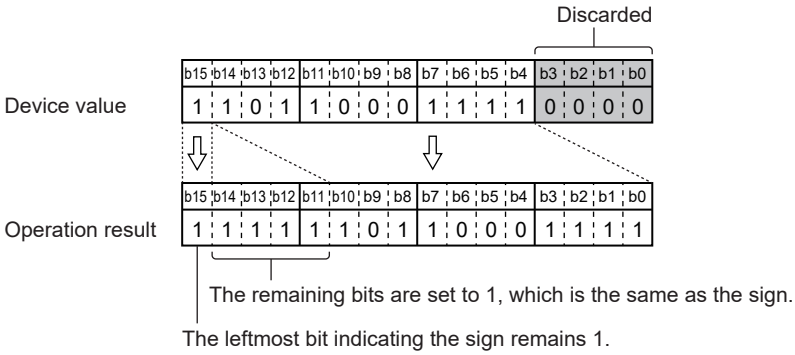
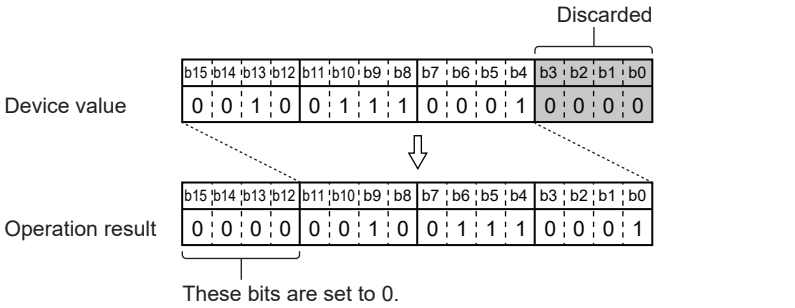
When using the logical AND



■Shift processing

The value of a word device is operated by shifting each bit to right or left.

The operation result depends on the data type of the monitored device.

Data type of the monitored device	Operation result
Signed	If a device of a signed data type is monitored, an arithmetic sift operation is performed. Example) Shifting signed 16-bit binary data to the right by 4 bits • Device value: -10000 (decimal) • Operation result: -625 (decimal) 
Unsigned	Example) Shifting unsigned 16-bit binary data to the right by 4 bits • Device value: 10000 (decimal) • Operation result: 625 (decimal) 

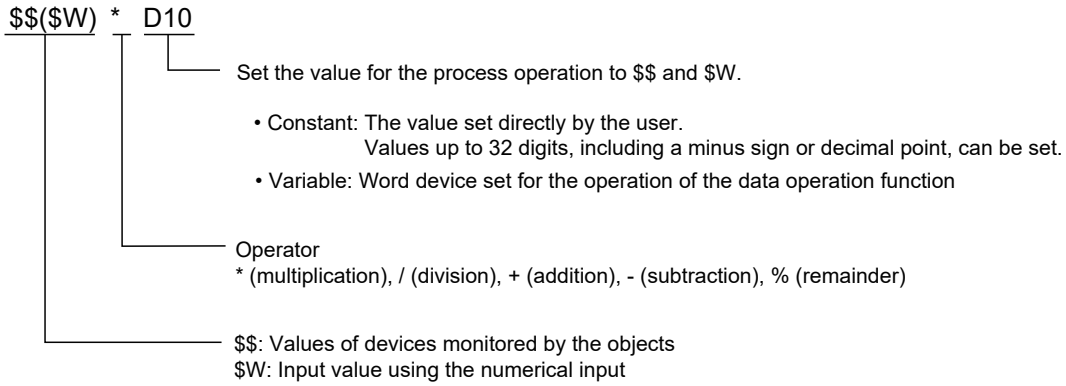
■Operating expression

The value of a word device is operated by applying an operating expression.

The following shows an example of the operating expression.

Ex.

When [Style] is [A.B]



Objects to which the data operation is applicable

The following shows the objects to which the data operation is applicable.

Object		Data operation setting tab	Order of the operating processes
Lamp	Word lamp	☞ Page 1301 [Operation/Script] tab	☞ Page 1052 Order when refreshing the display of an object
Numerical display		☞ Page 1325 [Operation/Script] tab	
Numerical input		☞ Page 1338 [Operation/Script] tab	☞ Page 1052 Order when inputting data in an object
Comment display	Word comment	☞ Page 1410 [Operation/Script] tab	☞ Page 1052 Order when refreshing the display of an object
Parts display	Word parts	☞ Page 1461 [Operation/Script] tab	
Frame animation		☞ Page 1492 [Script] and [Operation/Script] tabs	
Historical data list display		☞ Page 1517 [Trigger] tab	
Graph	Line graph	☞ Page 1591 [Operation/Script] tab	
	Trend graph	☞ Page 1606 [Data] tab ☞ Page 1620 [Operation/Script] tab	
	Bar graph	☞ Page 1637 [Operation/Script] tab	
	Band graph	☞ Page 1652 [Operation/Script] tab	
	Pie graph	☞ Page 1666 [Operation/Script] tab	
	Scatter graph	☞ Page 1690 [Operation/Script] tab	
	Historical trend graph	☞ Page 1710 [Data] tab ☞ Page 1726 [Operation/Script] tab	
Graphical meter		☞ Page 1758 [Operation/Script] tab	
Meter	Level	☞ Page 1775 [Operation/Script] tab	
	Panel meter	☞ Page 1793 [Operation/Script] tab	
Slider		☞ Page 1808 [Operation] tab	☞ Page 1052 Order when inputting data in an object

Order of the operating processes

The order of the operating processes is different between when refreshing the display of an object and when inputting data in an object.

☞ Page 1052 Order when refreshing the display of an object
☞ Page 1052 Order when inputting data in an object

■Order when refreshing the display of an object

The operating processes are performed in the following order for the value read from the monitored device ($$).

Order	Operating process	Remarks
1	Mask processing	—
2	Shift processing	—
3	Data operation by using the expression	For a numerical input and slider, the operation is performed by using the expression for writing.

The display of an object is refreshed with the value after the operating processes.

■Order when inputting data in an object

For a numerical input and slider, the operating processes are performed in the following order for the input value ($W).

Order	Process	Remarks
1	Data operation by using the expression	The operation is performed by using the expression for monitoring.
2	Shift processing	—
3	Mask processing	—

■Processing order when input and display operations are set

After the operating process at the time of input, the operating process for refreshing the object display is performed using the value read from the monitored device ($$).

The following shows the order of the operating processes in an input object, taking a numerical input as an example.

Ex.

When the following operating processes are enabled in a numerical input

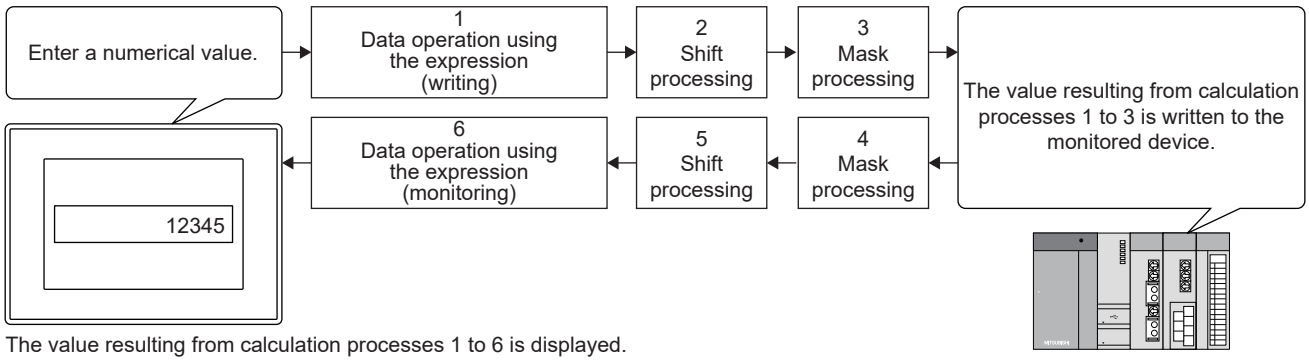
- Mask processing
- Shift processing
- Data operation (monitoring)
- Data operation (writing)

The operating processes are performed in the following order.

Order	Operating process		Description
1	Operating process when inputting data in an object	Data operation by using the expression	Performs the operation by using the expression of the data operation (writing).
2		Shift processing	Shifts the value in the set direction.
3		Mask processing	Masks the value with a set pattern.
4	Operating process when refreshing the display of an object	Mask processing	Masks the value with a set pattern.
5		Shift processing	Shifts the value in the opposite direction of the input.
6		Data operation by using the expression	Performs the operation by using the expression of the data operation (monitoring).

For the monitored device of a numerical input, the value to which operating processes 1 to 3 are applied is written.

For the numerical input, the value to which operating processes 1 to 6 are applied is displayed.



The value resulting from calculation processes 1 to 6 is displayed.

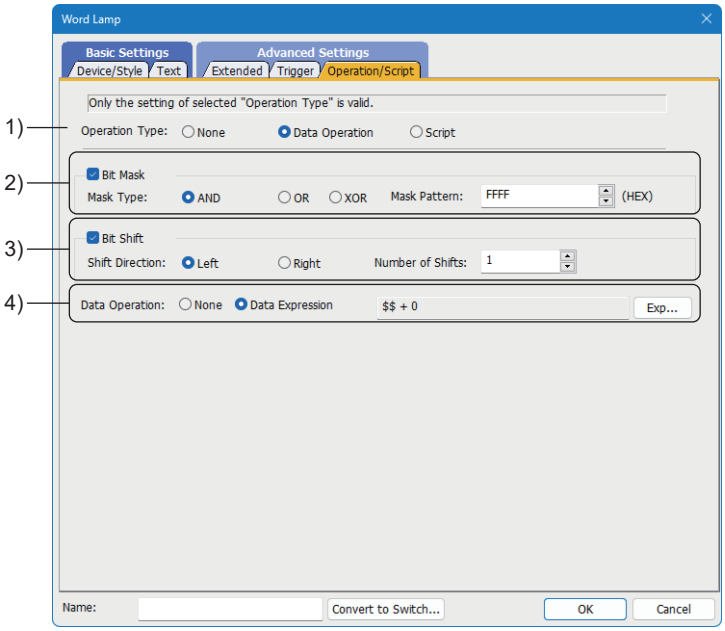
How to set the data operation

Set the operating process.

The setting items depend on the object.

Check the setting items in the setting dialog of each object.

The following shows the setting items using a word lamp as an example.



Item		Description
1)	[Operation Type]	Select [Data Operation].
2)	[Bit Mask]	Select this item to set the mask processing. Set [Mask Type] and [Pattern] (hexadecimal). ☞ Page 1049 Mask processing The setting range of [Pattern] depends on the data type of the monitored device. ☞ Page 857 Data type of devices
3)	[Bit Shift]	Select this item to set the shift processing. Set [Shift Direction] and [Number of Shifts] (number of bits to be shifted). ☞ Page 1050 Shift processing
4)	[Data Operation]	Select [Data Expression] to set an expression. ☞ Page 1050 Operating expression Click the [Exp] button to set an expression in the [Edit Data Expression] dialog. ☞ Page 1054 [Edit Data Expression] dialog

[Edit Data Expression] dialog

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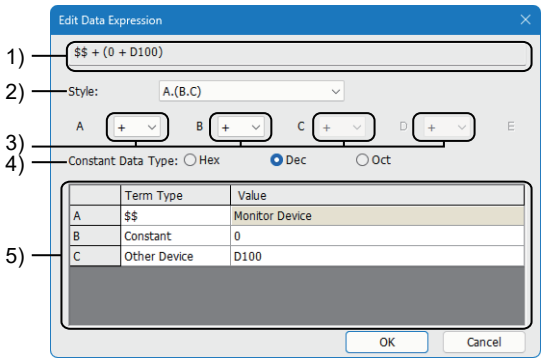
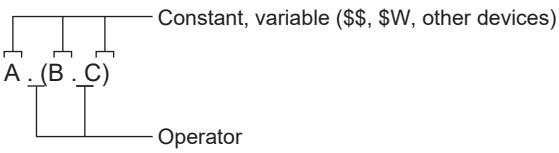
Displayed when the [Exp] button in [Data Expression] is clicked.

Depending on the type of the object, the setting items in the setting dialog differ.

Refer to the setting items explained in this section that are provided for the object to be used.



Item			Description	
1)	Operating expression		Displays a set operating expression.	
2)	[Style]		Select the format of the expression. Example) For [A.(B.C)]  	
3)	Operators		Select operators. If [%] is selected, the left side is divided by the right side, and the operation result is the remainder. Example) 100 % 3 = 1(100 ÷ 3 = 33 and the remainder is 1)	
4)	[Constant Data Type]		Select the data type when [Constant] is selected for [Term Type] of the range expression setting.	
5)	Range expression setting	[Term Type]	Select the type and value of each side (A to E) of the range expression. Set at least one of [$W], [$$], and [Other Device] in the range expression. The following shows selectable items.	
			[Constant]	Operates with constants.
			[$W]	Operates with the value written to the monitored device when the enter key is touched. The data type is that of the monitored device.
			[$$]	Operates with the value read from the monitored device. The data type is that of the monitored device.
			[Other Device]	Operates the value of a word device. The data type is the same as that of the monitored device.
		[Value]	Select the value of each side (A to E) of the range expression. Depending on the [Term Type], the setting item differs.	
			[Constant]	Set a numerical value. The setting range depends on the data type of the monitored device. ☞ Page 857 Data type of devices
			[$W] [$$]	The target device for monitoring is set.
			[Other Device]	Set a device. ☞ Page 834 How to set devices, labels, and tags

22.11 Superimposition of figures and objects

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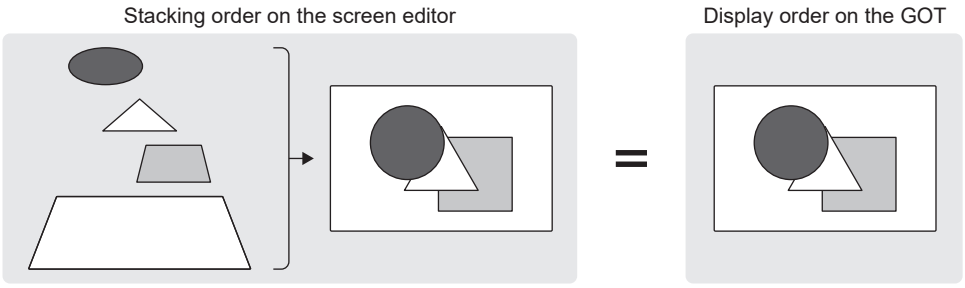
Figures and objects can be placed in superimposition on the screen.
The superimposition order of figures and objects placed on the screen editor is ensured when the screen is displayed on the GOT.



☞ Page 1055 Changing the superimposition order
☞ Page 1056 Operations of the superimposed objects
☞ Page 1057 Touch switch superimposition specifications

22.11.1 Changing the superimposition order

To change the superimposition order of figures and objects, perform either of the following operations.

Operation	Details
Changing the superimposition order by selecting the target	Change the order from the [Edit] menu. ☞ Page 1022 Changing the stacking order of figures and objects
Changing the layer for placement	Change the layer in each setting dialog of the figure or object. Select the destination layer for [Layer] in the [Extended] tab.

By separating the layers, the following processes can be performed.

- Placing a figure in front of an object
- Setting a transparent color to the front layer to display the back layer and backmost layer through the front layer

For the layers, refer to the following.

☞ Page 65 Layer

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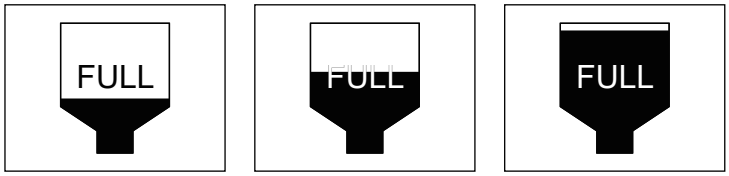
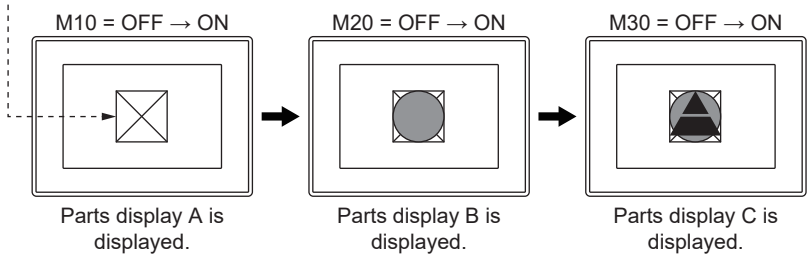
22.11.2 Operations of the superimposed objects

Certain objects can be displayed and operate normally even when they are superimposed in the same layer.
The following lists the objects that can be superimposed in the same layer.

Combination	Reference
Superimposition of touch switches	☞ Page 1057 Touch switch superimposition specifications
Numerical input and text input	The numerical input and text input can be superimposed. They also can be superimposed on a touch switch. When superimposed on a touch switch, the numerical input and text input are also counted as touch switches. ☞ Page 1058 Superimposition of touch switches The cursor and key window are displayed for the last operated numerical input or text input.
Level and numerical display, numerical input, and comment display	When a label and a numerical display, numerical input, and comment display are superimposed, a numerical value or text can be displayed in the level area. When the level fill and the numerical value or text are superimposed, the color of the value or text can be inverted.  For superimposition of levels, refer to the following. ☞ Page 1761 Placing a level object
Superimposition of parts displays	Two or more parts can be displayed in superimposition. Select [Overwrite] for [Display Mode] of parts displays. ☞ Page 1416 Placing a parts display Parts display A: Displays part No.1 when M10 rises. Parts display B: Displays part No.2 when M20 rises. Parts display C: Displays part No.3 when M30 rises. Three parts displays are superimposed. 

Precautions

■Placing objects displayed at the forefront of the layer

The figures and objects with the following settings are always displayed at the forefront of the layer.

Figures and objects	Setting
Alarm display (user)	Select an item other than [Fixed] for [Display Type] in the [Alarm Setting] tab.
Alarm display (system)	
Scatter graph	Select [Store Memory] in the [Extended] tab.
Figures drawn by the free figure drawing function of the object scripts	Set the script in each object.

To superimpose the objects of each type listed above, place them in the separate layers.

22.11.3 Touch switch superimposition specifications

☞ Page 1057 Superimposition of touch switches and other objects
☞ Page 1058 Superimposition of touch switches

Superimposition of touch switches and other objects

Touch switches without figures and texts can be used in superimposition with the other objects.
With the following settings, no shapes or text are set for the touch switches.

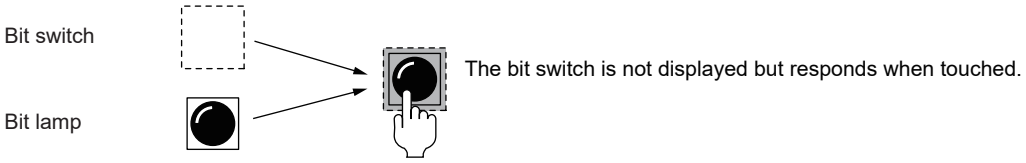
Setting	Description
[Style] tab	• [None] is selected for [Shape] • [Reverse Switch Area] is not selected.
[Text] tab	[Text] is selected for [Text Type] and no string is input for [Text].

For how to set touch switches, refer to the following.

☞ Page 1191 Placing a touch switch

Ex.

When superimposing a bit switch and a bit lamp for which no shapes or text are set



Precautions

■Superimposition with a numerical display and text display

Place on a different layer from the layer of the touch switch.

■Superimposition with an alarm display (user) or alarm display (system)

When an item other than [None] is selected for [Touch Mode] in the [Alarm Setting] tab in the setting dialog of the alarm display (user) or alarm display (system), superimposition with touch switches is not possible.

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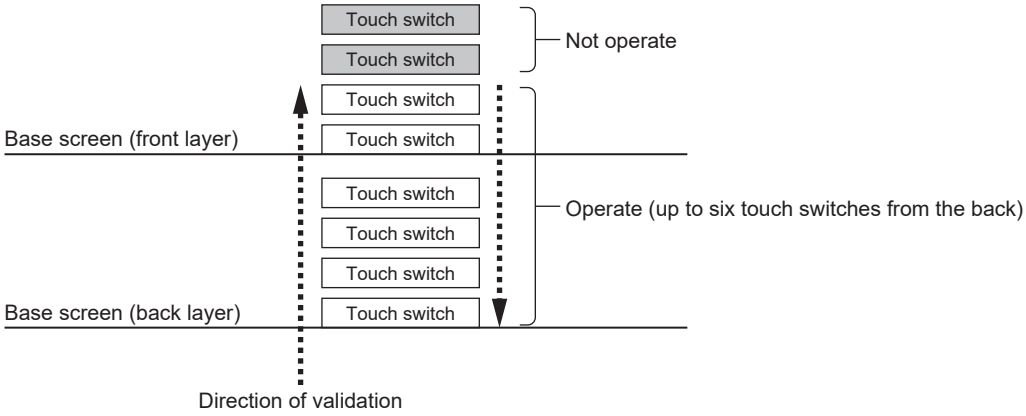
Superimposition of touch switches

Up to six superimposed touch switches can operate on the front layer and back layer.

This also applies to the case when multiple actions are set for each touch switch.

The order in which the actions are determined to be valid is different from the order in which they are performed.

- Order of validation judgment: From back to front
- Order of actions when a touch switch is touched: From front to back



☞ Page 1059 Superimposition of touch switches placed on different screens

☞ Page 1060 Operation example

Precautions

Precautions	Description
Superimposition of touch switches for which the simultaneous press is disabled	A touch switch for which [Simultaneous Press] is selected in the [Extended] tab in the setting dialog does not operate when superimposed with other touch switches. For the following touch switches, [Simultaneous Press] is selected. • Switch ([SP Function] is set for its action.) • Special function switch
Superimposition of key code switches	Superimposed key code switches with individual key code settings may interrupt operation depending on the key code type.

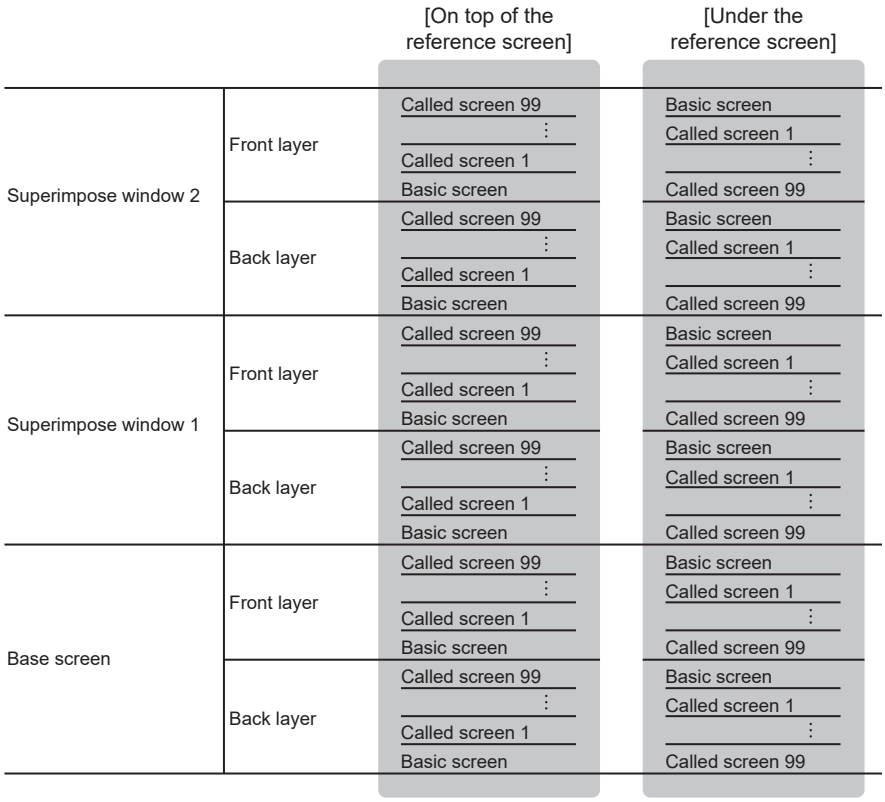
■Superimposition of touch switches placed on different screens

When the touch switches placed on different screens are superimposed by the following methods, they will also operate.

- Displaying a superimpose window on a base screen
- Displaying a called screen on a screen

Up to six touch switches can operate per screen type.

When a superimpose window or called screen is displayed on a screen, the operation is as follows.

Item	Specifications
When a superimpose window is displayed	The superimpose window is displayed as part of the base screen since the window is superimposed on the base screen. ☞ Page 59 Superimpose window The maximum number of operable touch switches depends on the number of displayed superimpose windows. • When one superimpose window is displayed: Up to seven touch switches (At least one touch switch on the superimpose window operates.) • When two superimpose windows are displayed: Up to eight touch switches (At least one touch switch on each superimpose window 1 and 2 operates.) The actions of touch switches are determined to be valid or not in the following order, regardless of the order in which the superimpose windows are displayed. 1st: Base screen 2nd: Superimpose window 1 3rd: Superimpose window 2
When the called screen is displayed	A called screen is displayed on the basic screen (screen on which the called screen is placed) with the set overlay screen function. Calls a base screen or window screen on a basic screen, and displays them as a single screen. ☞ Page 1865 Placing a screen on another screen Superimposed touch switches can operate on a maximum of 99 called screens. The superimposition order of the basic screen and called screen depends on the settings of [Overlay Screen Positioning] in the [Environmental Setting] window ([Screen Switching/Window]). ☞ Page 542 [Screen Switching/Window] Since the validation judgment of touch switches is performed in order from the back layer, the order in which their actions become valid changes depending on the display order of the basic screen and called screen.  The number (1 to 99) of the called screen is the order in which the screen is called.

■Operation example

The following shows operation examples (pattern A to E) when touch switches on each screen are superimposed with the following setting.

- Base screen: Three called screens are displayed.
- Superimpose window 1: Three called screens are displayed.
- Superimpose window 2: Three called screens are displayed.
- [Overlay Screen Positioning] in the [Environmental Setting] window ([Screen Switching/Window]): [On top of the reference screen] is selected.

(n) ... Operative touch switch ("n" indicates the operation order)
× ... Inoperative touch switch

			Pattern A	Pattern B	Pattern C	Pattern D	Pattern E
Superimpose window 2	Front layer	Called screen 3				×	×
		Called screen 2				×	×
		Called screen 1				×	×
		Basic screen				×	×
	Back layer	Called screen 3				×	×
		Called screen 2				×	×
		Called screen 1				×	×
		Basic screen				(1)	(1)
Superimpose window 1	Front layer	Called screen 3		×		×	×
		Called screen 2				×	×
		Called screen 1		×		×	(2)
		Basic screen		(1)	×	×	(3)
	Back layer	Called screen 3			×	×	(4)
		Called screen 2			(1)	×	(5)
		Called screen 1			(2)	×	(6)
		Basic screen			(3)	(2)	(7)
Base screen	Front layer	Called screen 3	×			×	
		Called screen 2		×		×	
		Called screen 1	(1)	(2)		(3)	
		Basic screen	(2)	(3)	(4)	(4)	
	Back layer	Called screen 3	(3)	(4)		(5)	
		Called screen 2	(4)	(5)	(5)	(6)	
		Called screen 1	(5)	(6)	(6)	(7)	
		Basic screen	(6)	(7)	(7)	(8)	

Pattern	Operation
Pattern A	Up to six touch switches can operate since only the base screen is displayed. Six touch switches on the base screen operate.
Pattern B	Since the touch switches placed on superimpose window 1 are superimposed, up to seven touch switches can operate. The number of touch switches that can operate is as follows. • Base screen: Six touch switches (Up to six touch switches can operate per screen type.) • Superimpose window 1: One touch switch (At least one touch switch on the superimpose window operates.)
Pattern C	Since the touch switches placed on superimpose window 1 are superimposed, up to seven touch switches can operate. The number of touch switches that can operate is as follows. • Base screen: Four touch switches • Superimpose window 1: Three touch switches
Pattern D	Since the touch switches placed on superimpose window 1 and 2 are superimposed, up to eight touch switches can operate. The number of touch switches that can operate is as follows. • Base screen: Six touch switches (Up to six touch switches can operate per screen type.) • Superimpose window 1: One touch switch (At least one touch switch on the superimpose window operates.) • Superimpose window 2: One touch switch (At least one touch switch on the superimpose window operates.)
Pattern E	Since the touch switches placed on superimpose window 1 and 2 are superimposed, up to eight touch switches can operate. The number of touch switches that can operate is as follows. • Superimpose window 1: Six touch switches (Up to six touch switches can operate on one screen type.) • Superimpose window 2: One touch switch (At least one touch switch on the superimpose window operates.)

23 Using the data registered in the library

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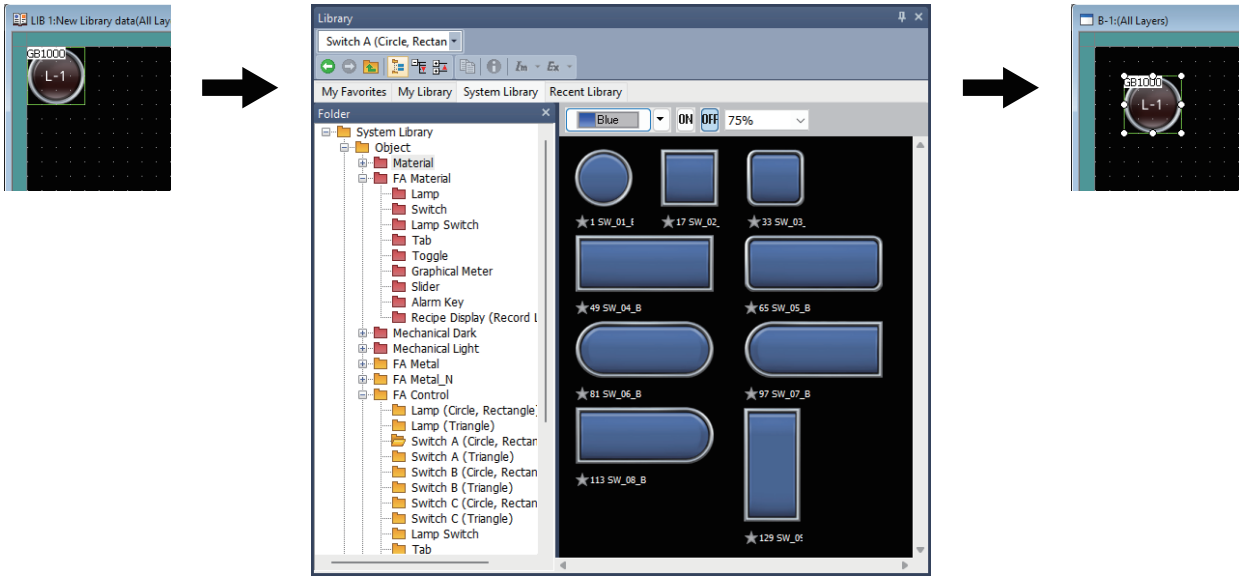
The library is a collection of preconfigured figures and objects.
You can use the registered figures and objects to speed up screen creation.
The library consists of the preregistered System Library and My Library for registering user-configured figures and objects.

Register

Place it on the screen editor.



[Library] window

☞ Page 1062 Specifications of the library
☞ Page 1067 How to use the library
☞ Page 1085 [Library] window

23.1 Specifications of the library

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☞ Page 1062 Library data types
☞ Page 1063 Library classifications
☞ Page 1064 Specifications of My Library

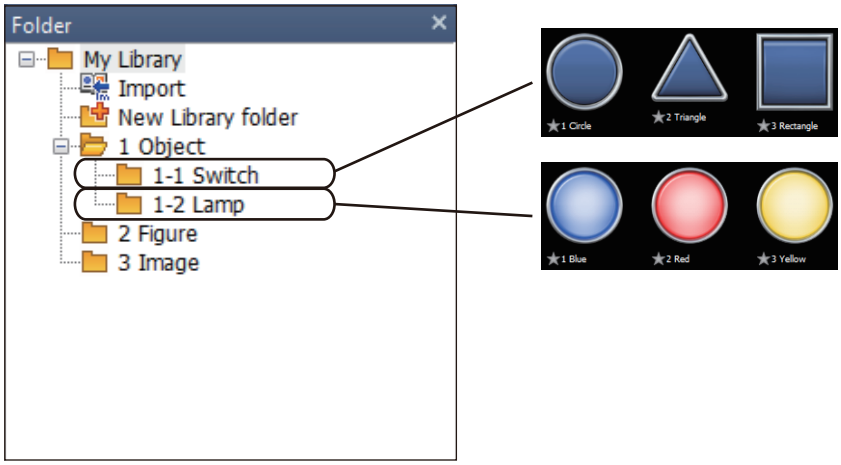
23.1.1 Library data types

The following shows the types of data that can be registered in the library.

Type	Description
Figure	The figures drawn by the user are registrable. Raster and vector format shapes are registered in the System Library. The user cannot register vector format shapes.
Object	The objects configured by the user are registrable. However, the following objects are not registrable. • Set overlay screen • Animation route • Window position • Key window object
Template	User-created templates are registrable. For details on the templates, refer to the following. ☞ Page 1092 Efficient Drawing with Templates
Image file	Image files can be registered as figures. The files in the following formats can be registered. • BMP format: *.bmp • JPEG format: *.jpg, *.jpeg, *.jpe • PNG format: *.png
Video file	Videos used for frame animation can be registered as figures. The files in the following formats can be registered. • Animation PNG format: *.png, *.apng • GIF format: *.gif

23.1.2 Library classifications

The following shows the library classifications.

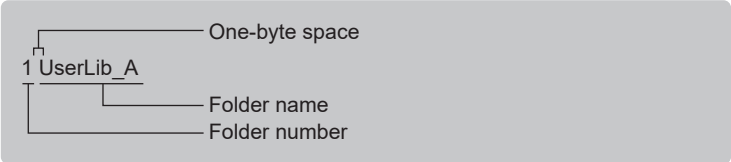
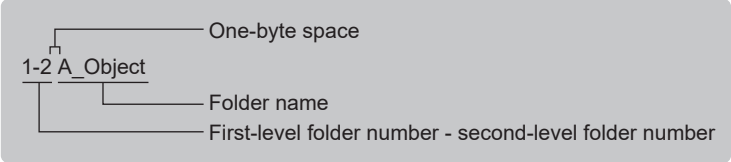
Library	Description	
[System Library]	The library data is supplied with GT Designer3. The icon images differ depending on the format of the registered shapes. ☞ Page 1087 Library tree area The System Library consists of the following library folders.	
	[Object] folder	Object data and other data are registered. The lower-level library folders are divided by design and data type.
	[Image] folder	Image data is registered. The lower-level library folders are divided by design and data type.
[My Library]	User-created figures and objects are registered. This is saved for each user logged in to Windows. It is available for exporting or importing registered data. You can create library folders in the [My Library] folder and categorize the folders by use.  ☞ Page 1064 Specifications of My Library	

23.1.3 Specifications of My Library

☞ Page 1064 Specifications of library folders and library data
☞ Page 1065 Export specifications
☞ Page 1066 Import specifications

Specifications of library folders and library data

The following shows the specifications of library folders and library data to be registered in My Library.

Item		Description
Library folder	Hierarchy	Up to two levels can be created under the [My Library] folder (route folder). The first level can store only either library folders or library data.
	Creation quantity	Up to 512 folders can be created in the first and second levels together.
	Folder number and name	Library folders can be numbered from 1 to 512. A folder names can be up to 128 characters. Library folder numbers and names are displayed in the [Library] window in the following formats. ☞ Page 1085 [Library] window First-level library folder  Second-level library folder 
Library data	Registration quantity	Up to 512 pieces of data can be registered in one library folder.

Export specifications

Exported data (My Library file) can be imported and used by other users or with other personal computers.

For the export operation, refer to the following.

☞ Page 1075 Exporting the library data

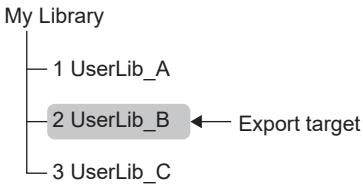
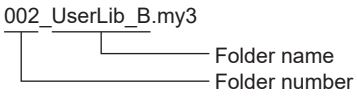
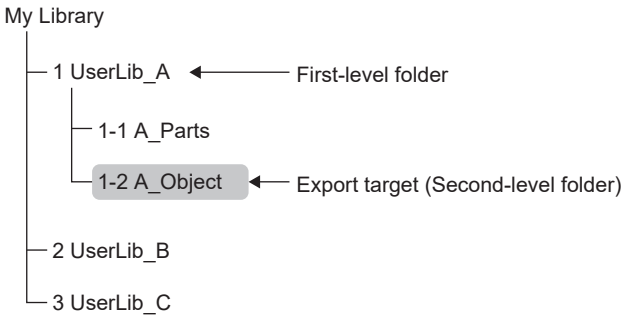
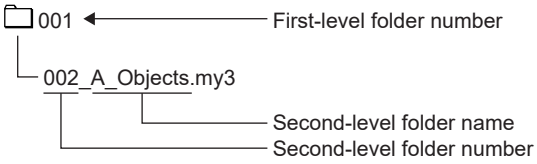
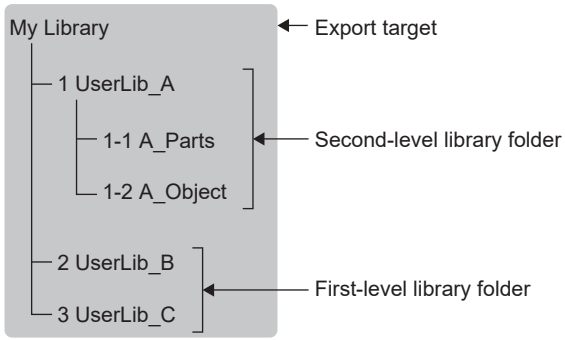
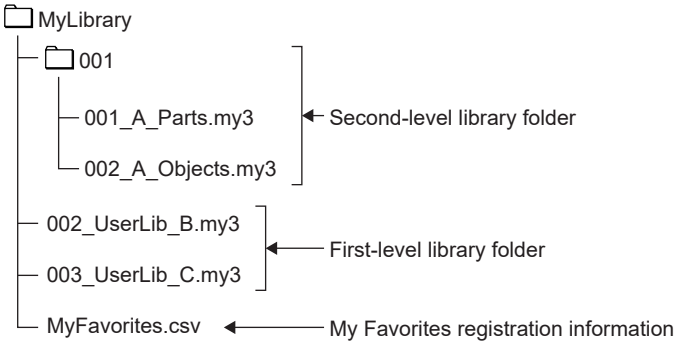
■File format for export

The following shows the file formats of library data for export.

- My Library file: *.my3
- My Favorites file: *.csv, *.txt

■File structure for export

The hierarchy of the library folder to be exported determines the structure of the exported file.

Example of library folder structure	Structure of the exported file
When exporting a first-level library folder 	The export target file is exported as a My Library file (*.my3). 
When exporting a second-level library folder 	A folder with the first-level folder number is created at the export destination. The export target file is exported as a My Library file (*.my3) in the created folder. 
When exporting all of My Library and My Favorites 	A [MyLibrary] folder is created at the export destination. Export is performed maintaining the folder structure of My Library. My Favorites registration information is exported as MyFavorites.csv. 

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Import specifications

The following shows the importable file formats.

Item	Extension	Remarks
My Library file	• *.my3 • *.my2	*.my3 represents a file exported with GT Designer3 (GOT3000). *. my2 represents a file exported with GT Designer3 (GOT2000).
System Library file	• *.sy3	—
Image file	• *.bmp • *.jpg • *.jpeg • *.jpe • *.png	—
Video file	• *.png • *.apng • *.gif	A library folder with the same name as the video file is created and the file is imported as frame-by-frame image data.
My Favorites file	• *.csv • *.txt	—

For the import operation, refer to the following.

☞ Page 1078 Importing data to the library

23.2 How to use the library

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The following shows the operations for the libraries.

The available operations are different between My Library and System Library.

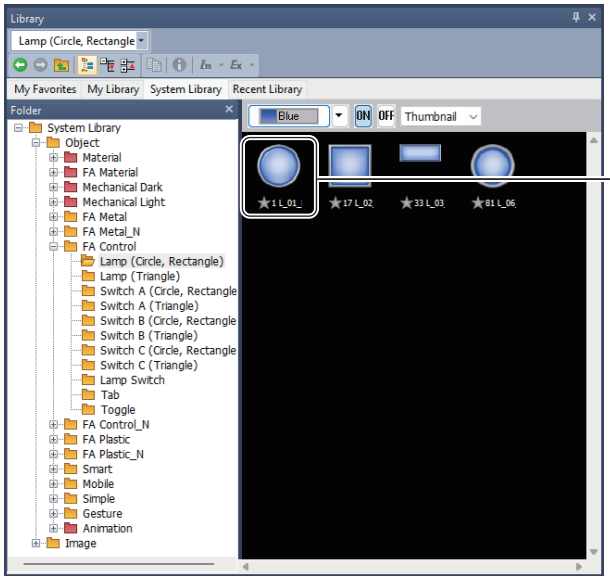
○: Available, —: Not available

Operation	Operation target	
	My Library	System Library
☞ Page 1067 Placing library data on the screen editor	○	○
☞ Page 1068 Registering data in the library	○	—
☞ Page 1071 Copying the library data	○	—*1
☞ Page 1072 Deleting the library data	○	—
☞ Page 1073 Opening the library editor to edit the library data	○	—
☞ Page 1074 Renumbering and renaming the library data	○	—
☞ Page 1074 Registering library data in My Favorites	○	○
☞ Page 1075 Exporting the library data	○	—
☞ Page 1078 Importing data to the library	○	—

*1 Data can be copied but cannot be pasted.

23.2.1 Placing library data on the screen editor

1. Select the library data to be placed on the screen editor from the library.



2. Click the intended position to place the library data on the screen editor.

Click and drag to resize and paste the library data.

Point

The library data registered in [My Favorites] can also be placed from the My Favorites tool bar.

Precautions

■Objects with device, label, or tag settings

If the controller setting does not support the device, label, or tag set to the object to be placed, the device setting of the placed object will be [??].

Change the device setting.

23.2.2 Registering data in the library

☞ Page 1068 Creating new library data
☞ Page 1069 Registering a figure or object on the screen editor in the library
☞ Page 1069 Registering a figure used as an object in the library

To register an image file or video file in the library, the file must be imported.

For the import operation, refer to the following.

☞ Page 1078 Importing data to the library

Creating new library data

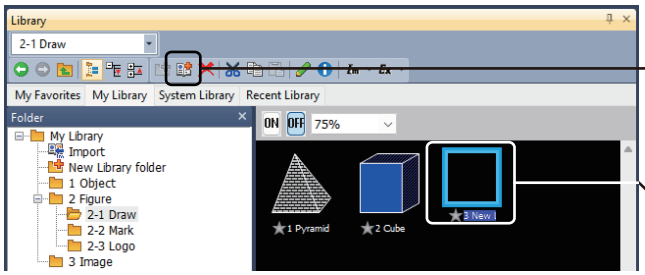
1. Select the [My Library] tab in the [Library] window.

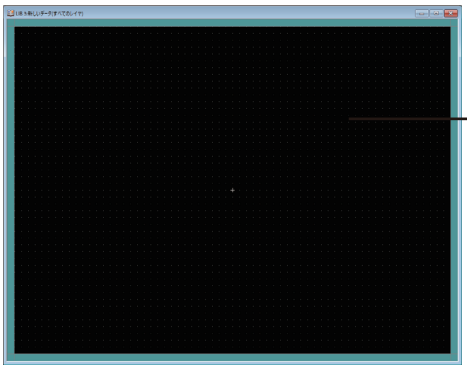
☞ Page 1085 [Library] window

2. Double-click the library folder for storing library data in the library tree area.

To create a new library folder, click the [Create Library Folder] button.

3. Click the [Create New Library Data] button to create library data in the library data area and display the library editor.





4. Place figures and objects on the library editor.

5. After editing, close the library editor.

6. Edit the number and name of the library data.

☞ Page 1074 Renumbering and renaming the library data

The library data creation is completed.

Registering a figure or object on the screen editor in the library

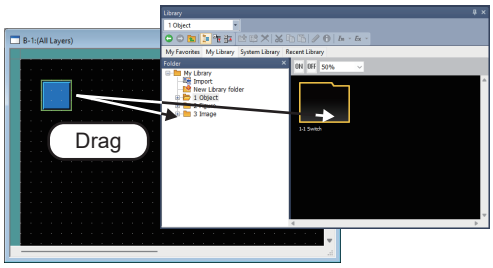
1. Select the [My Library] tab in the [Library] window.

☞ Page 1085 [Library] window

2. Double-click the library folder for registering library data in the library tree area.

To create a new library folder, click the [Create Library Folder] button.

3. Drag a figure or object on the screen editor to the library tree area or library data area.



4. Release the mouse button to display the [Library data Property] dialog.

☞ Page 1091 [Library data Property] dialog

5. Enter [Number] and [Name], and click the [OK] button.

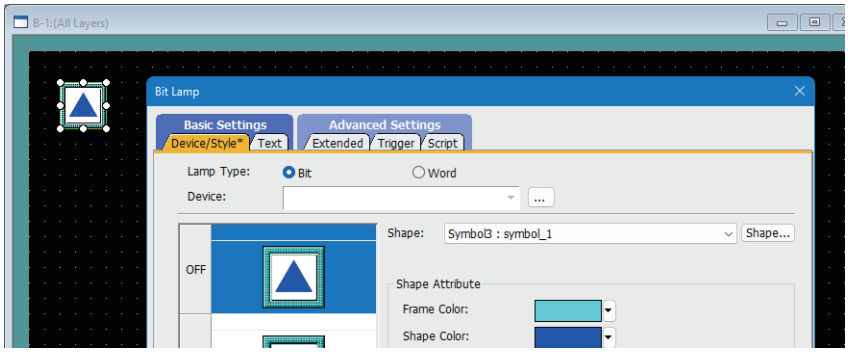
The registration to the library is completed.

Point

Right-clicking a figure or object on the screen editor and selecting [Register] → [Register to My Library] from the menu is also available for registering the figure or object to the library.

Registering a figure used as an object in the library

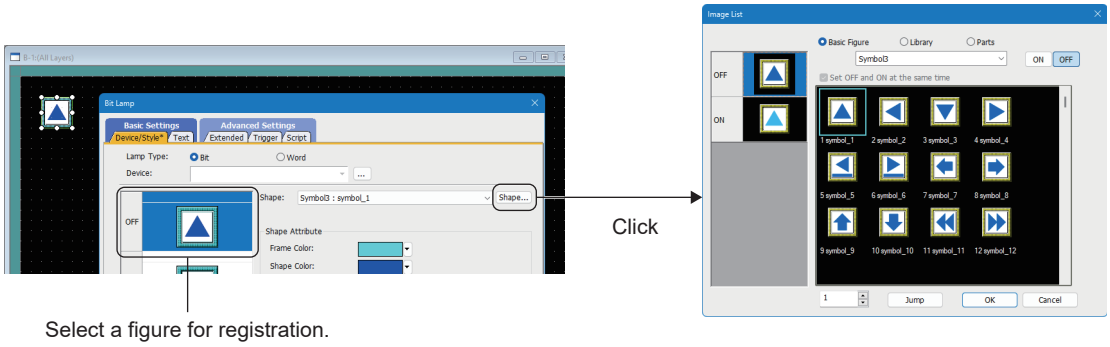
1. Display the object setting dialog.



2. Select a figure from the preview list and click the [Figure] button.

The [Image List] dialog is displayed.

☞ Page 1045 [Image List] dialog (shape)



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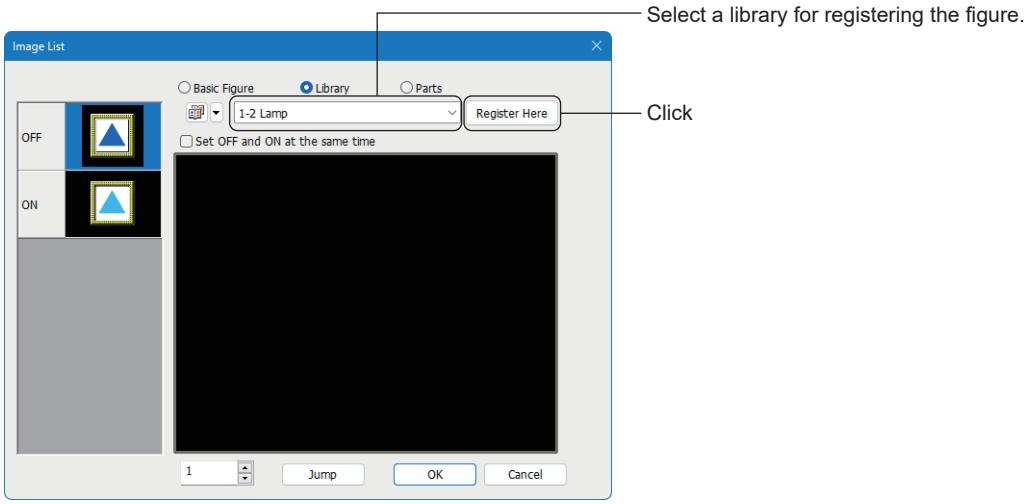
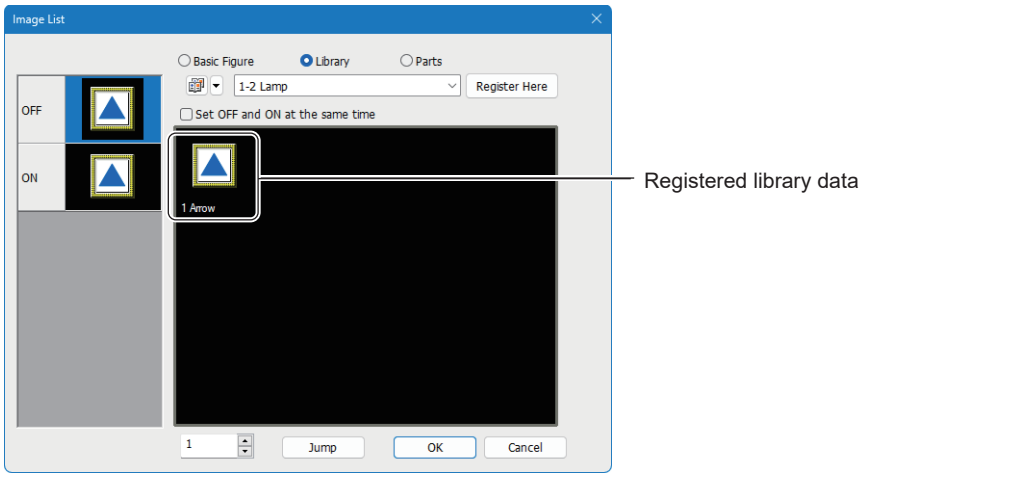
3. In the list of library folders, select the library folder for registering the library data from My Library, and click the [Register Here] button.



4. Enter [Number] and [Name] in the displayed [Library data Property] dialog, and click the [OK] button.

☞ Page 1091 [Library data Property] dialog

The registration to the library is completed.

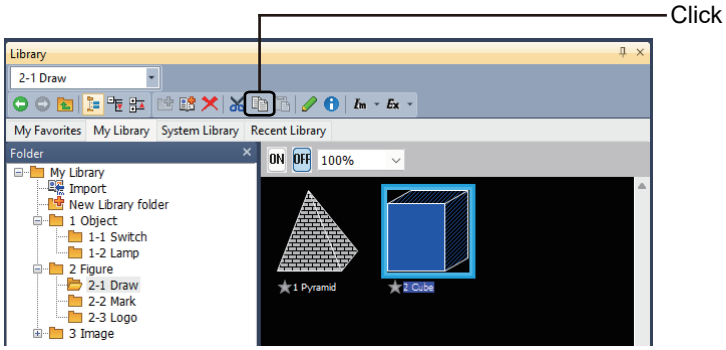


23.2.3 Copying the library data

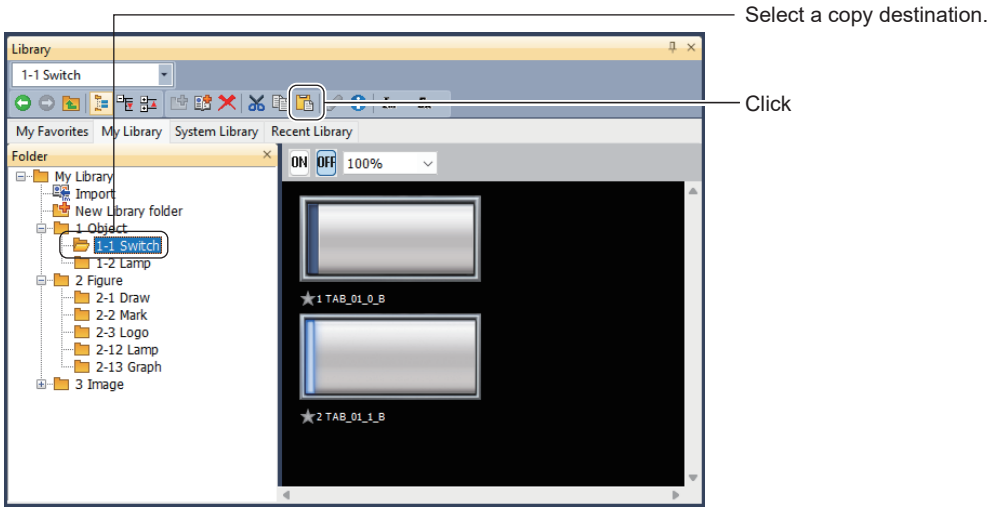
1. Select the [My Library] tab or [System Library] tab in the [Library] window.

☞ Page 1085 [Library] window

2. Select the library folder or library data to be copied, and click the [Copy] button.

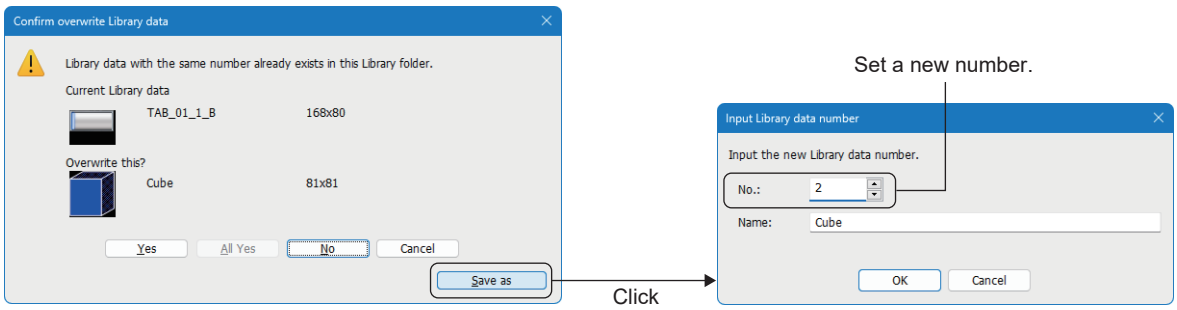


3. Select the [My Library] tab in the [Library] window, select the copy destination library folder, and click the [Paste] button.



4. If library data having the same number as the copy source library data exists, the [Overwriting the Library Data Confirmation] dialog is displayed.

- To overwrite the library data, click the [Yes] button.
- To overwrite all the library data, click the [All Yes] button.
- To not to overwrite the library data, click the [Save as Different Number] button and set a new number.
- To cancel pasting, click the [No] button.
- To cancel the pasting of all the data, click the [Cancel] button.

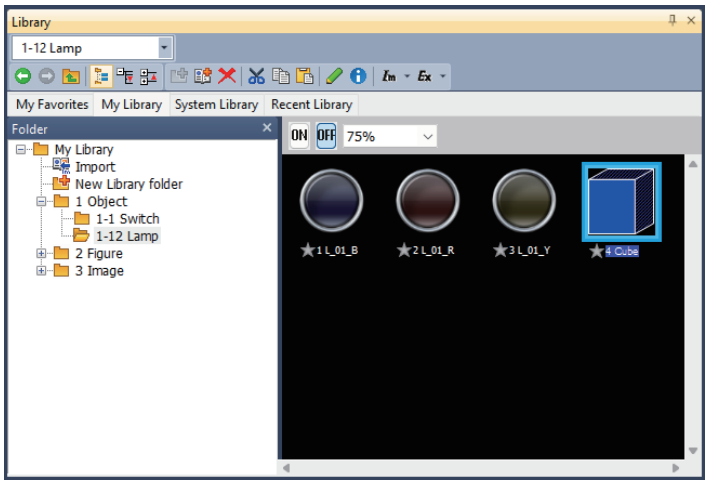


23.2.4 Deleting the library data

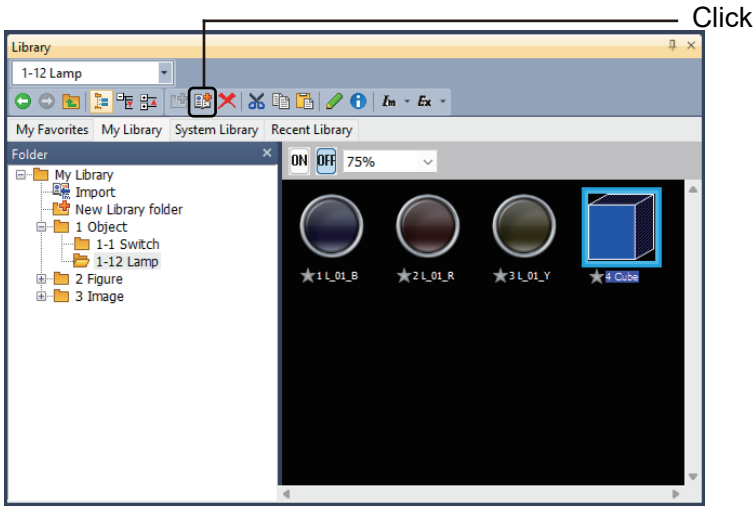
1. Select the [My Library] tab in the [Library] window.

☞ Page 1085 [Library] window

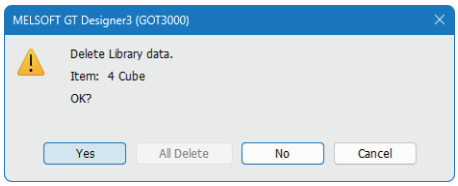
2. Select a library folder or a library data to be deleted from the library.



3. Click the [Delete] button.



4. Click the [Yes] button in the displayed dialog to delete the selected library folder or library data.



Point

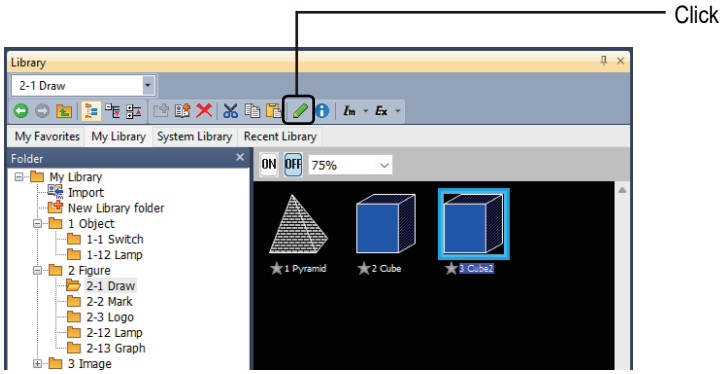
Note that deleting the library folder deletes all the library data sets registered in the library folder as well.

23.2.5 Opening the library editor to edit the library data

1. Select the [My Library] tab in the [Library] window.

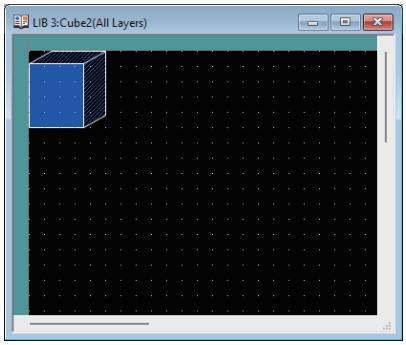
☞ Page 1085 [Library] window

2. Select the library data to be edited in the library data area, and click the [Edit] button.



3. Edit the library data on the displayed library editor.

The edited contents are reflected to the library data immediately.



To cancel the wrong edited contents, click the [Undo] button before closing the library editor.

The edited contents are determined after the library editor is closed.

4. After editing, close the library editor.

The library data creation is completed.

Point

The following copied data can be pasted onto the library editor.

- Figures and objects on the screen editor
- Library data registered in the System Library or My Library

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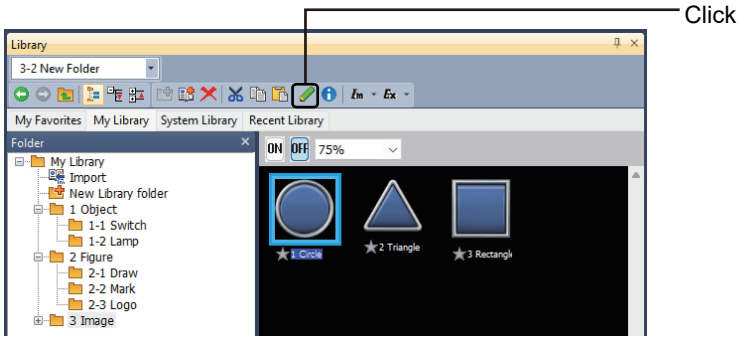
23.2.6 Renumbering and renaming the library data

1. Select the [My Library] tab in the [Library] window.

☞ Page 1085 [Library] window

2. Select the library data for changing its attributes, and click the [Property] button.



3. Enter [Number] and [Name] in the displayed [Library data Property] dialog, and click the [OK] button.

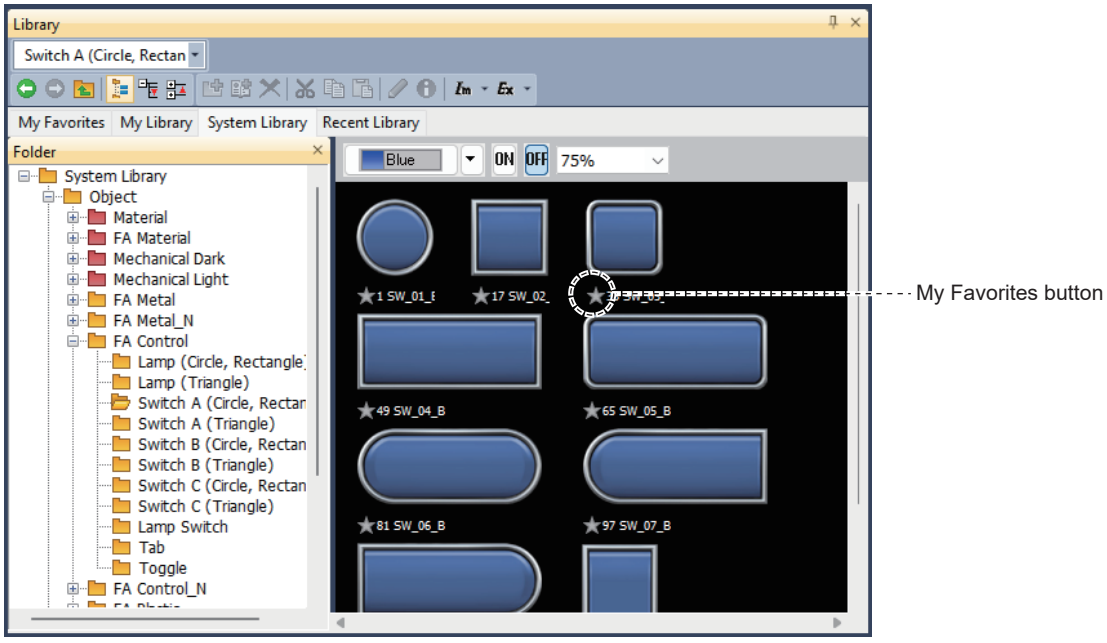
☞ Page 1091 [Library data Property] dialog

The renumbering and renaming are completed.

23.2.7 Registering library data in My Favorites

When library data is registered in My Favorites, the data is displayed in the [My Favorites] tab in the [Library] window.
To register to or deregister from My Favorites, use the My Favorites button displayed in the library data area in the [Library] window.

☞ Page 1089 Library data area



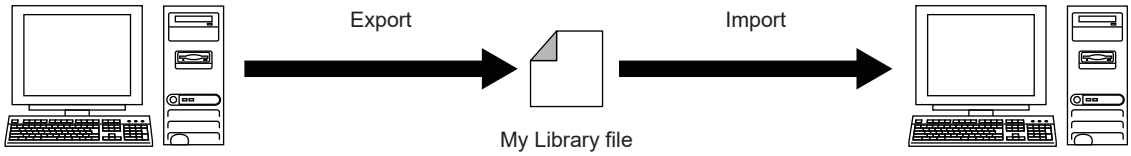
23.2.8 Exporting the library data

My Library is exported by folder or in a batch.

Exported data (My Library file) can be imported and used by other users or with other personal computers.

For the export specifications, refer to the following.

☞ Page 1065 Export specifications



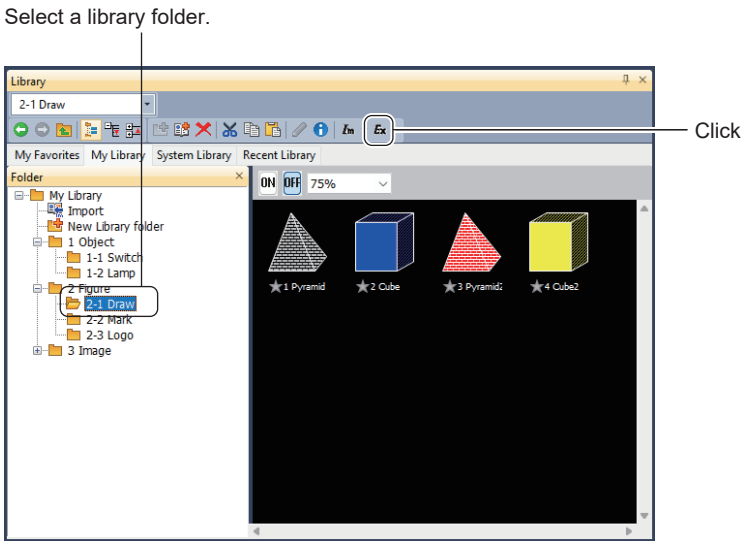
☞ Page 1076 Exporting a specified library folder
☞ Page 1077 Exporting My Favorites
☞ Page 1077 Exporting My Library and My Favorites in a batch

Exporting a specified library folder

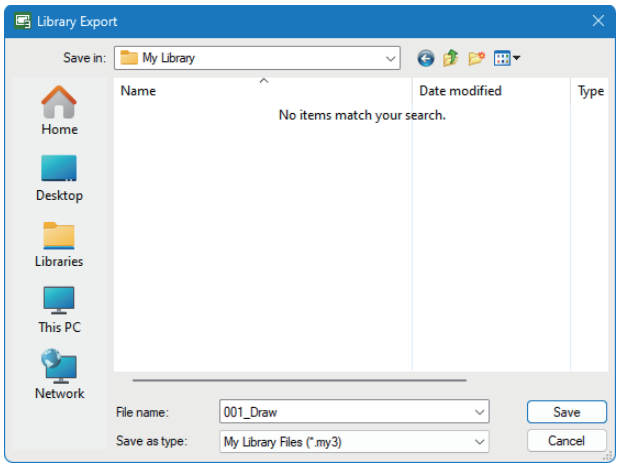
1. Select the [My Library] tab in the [Library] window.

☞ Page 1085 [Library] window

2. Select a library folder to be exported in the library tree area, and click the [Export] button on the edit bar.



3. Set [Save in] and [File name] in the displayed [Export Destination Specification] dialog, and click the [Save] button.



The export is completed.

The contents of the specified library folder determine the structure of the exported file.

☞ Page 1065 Export specifications

Exporting My Favorites

Only My Favorites registration information is exported.

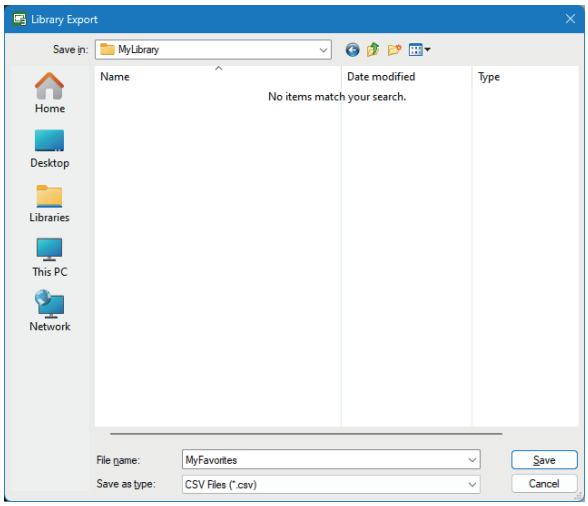
For My Favorites, not the library data itself but My Favorites registration information is exported.

1. Select the [My Favorites] tab in the [Library] window.

☞ Page 1085 [Library] window

2. Click the [Export] button on the edit bar.

3. Set [Save in], [File name], and [Save as type] (extension) in the displayed [Export Destination Specification] dialog, and click the [Save] button.



The export is completed.

Exporting My Library and My Favorites in a batch

Export all the library folders in My Library and My Favorites in a batch.

For My Favorites, not the library data itself but My Favorites registration information is exported.

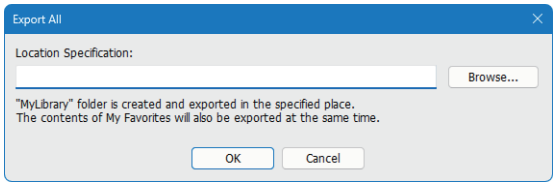
1. Select [Export] and click the [Export All] button on the edit bar in the [Library] window.

☞ Page 1085 [Library] window

2. Set the export destination in the displayed [Export All] dialog.

If the library has already been saved in the specified location, the data is overwritten.

To not to overwrite the data, specify a different location.



3. Click the [OK] button to create [MyLibrary] folder in the specified location and export My Library and My Favorites to the folder.

The export is completed.

Precautions

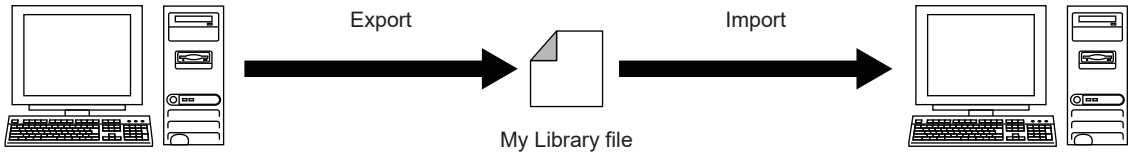
Do not manipulate such as add, delete, and rename the [MyLibrary] folder and the files in the library folder.

Doing so may disable proper import of the library.

23.2.9 Importing data to the library

Importable data includes exported data (My Library file) by other users or with other personal computers and image files.
My Library is imported by file or in a batch.
For the import specifications, refer to the following.

☞ Page 1066 Import specifications



☞ Page 1079 Importing library data or My Favorites registration information
☞ Page 1080 Importing My Library and My Favorites of GT Designer3 (GOT2000)
☞ Page 1081 Importing an image file
☞ Page 1083 Importing a video file
☞ Page 1084 Importing My Library and My Favorites in a batch
☞ Page 1084 Importing a System Library file

Precautions

- When My Favorites registration information is imported, if the corresponding library data does not exist, the information is discarded.
- If the name of the imported file contains invalid characters, those characters are replaced with underscores "_" during the import.
- If the name of library data or folder exceeds 128 characters, the excess characters are discarded.

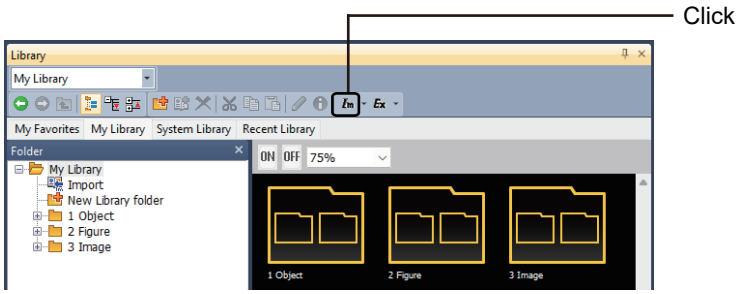
Importing library data or My Favorites registration information

1. Select the tab in the [Library] window according to the file to be imported as shown below.

- When importing the My Library file: [My Library] tab
- When importing My Favorites registration information: [My Favorites] tab

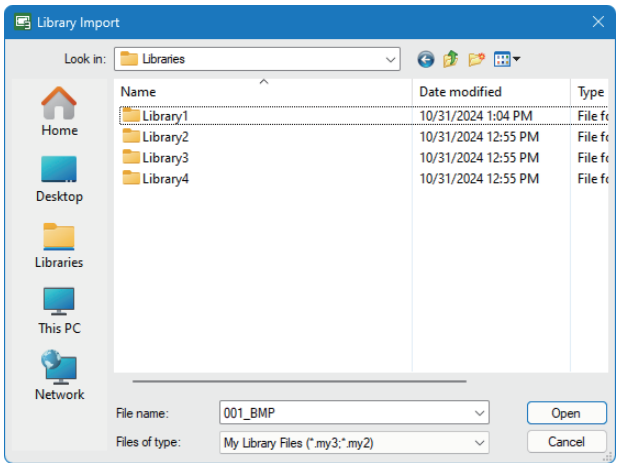
☞ Page 1085 [Library] window

2. Click the [Import] button on the edit bar.



3. Select either of the following for [Files of type] in the displayed [Import Library] dialog.

- When importing the My Library file: [My Library File (*.my3;*.my2)]
- When importing My Favorites registration information: [My Favorites File (*.csv;*.txt)]



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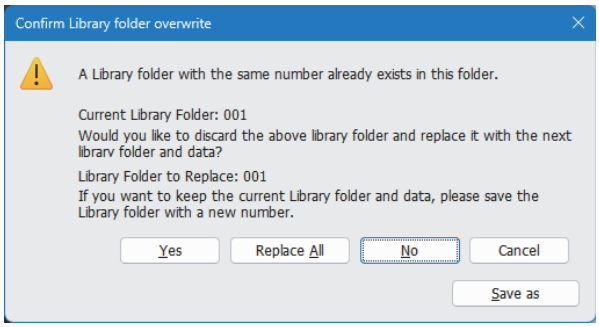
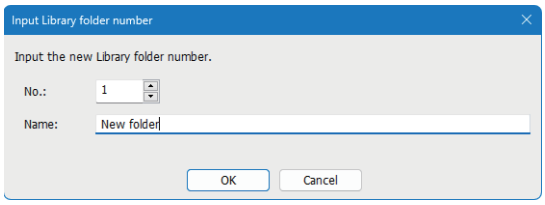
4. Select a file to be imported and click the [Open] button.

The import is completed.

However, if a library folder having the same number as the imported library exists, [Overwriting the Library Folder Confirmation] dialog is displayed.

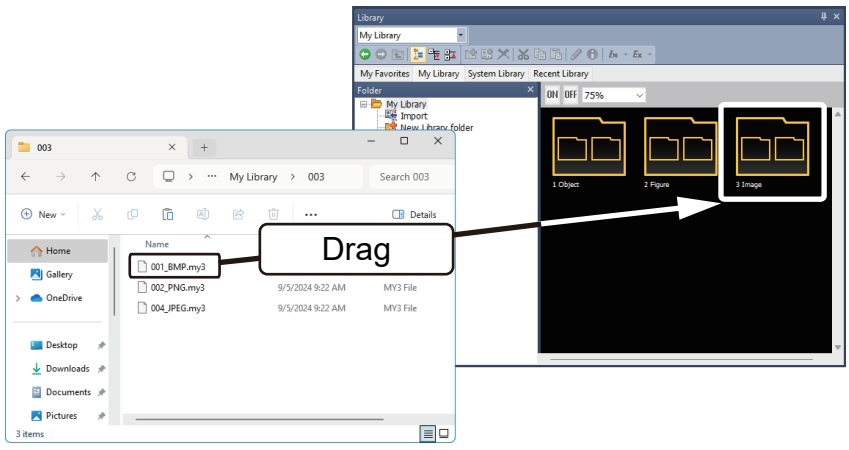
Click one of the buttons.



Button	Action
[Yes] button	The library folder is overwritten.
[Replace All] button	Even if a library folder with the same number exists in subsequent levels, all files are overwritten without displaying a confirmation message.
[No] button	Import is not performed, and the library folder is not overwritten.
[Cancel] button	When multiple library folders are imported, all the subsequent imports are aborted.
[Save as] button	The import target library folder is renumbered. Set the library folder number in the [Input Library folder number] dialog. 

Point

You can also drag the My Library file to import.



Importing My Library and My Favorites of GT Designer3 (GOT2000)

To import the data from My Library and My Favorites in GT Designer3 (GOT2000), follow the steps below.

1. In GT Designer3 (GOT2000), select [Save My library] and save My library and Favorites data.

2. For further steps, refer to the following.

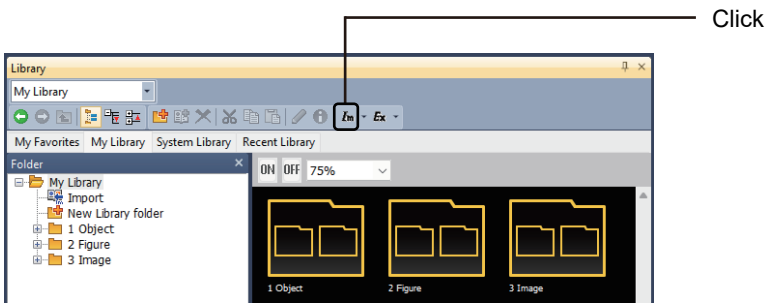
☞ Page 1084 Importing My Library and My Favorites in a batch

Importing an image file

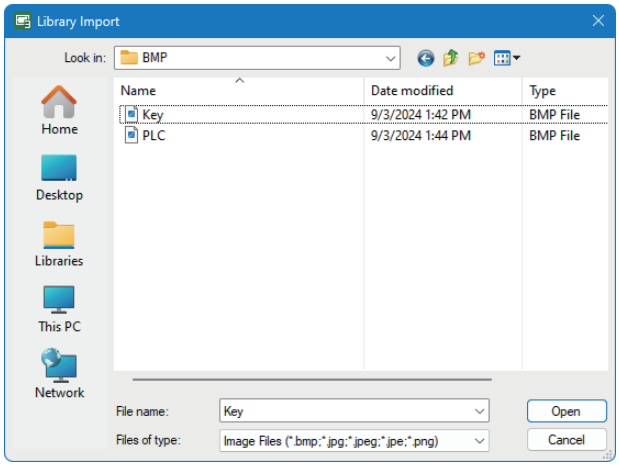
1. Select the [My Library] tab in the [Library] window.

☞ Page 1085 [Library] window

2. Click the [Import] button on the edit bar.



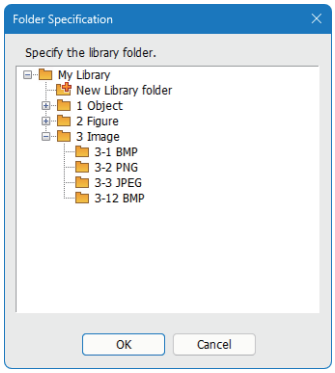
3. Select [Image File (*.bmp;*.jpg;*.jpeg;*.jpe;*.png)] for [Files of type] in the displayed [Library Import] dialog.



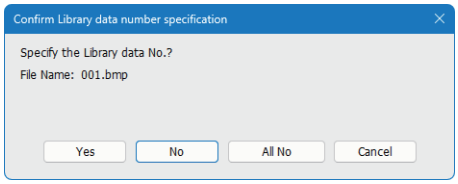
4. Select a file to be imported and click the [Open] button.

Specifying multiple files is also available.

5. In the displayed [Folder Specification] dialog, select a library folder for saving the file, and click the [OK] button.



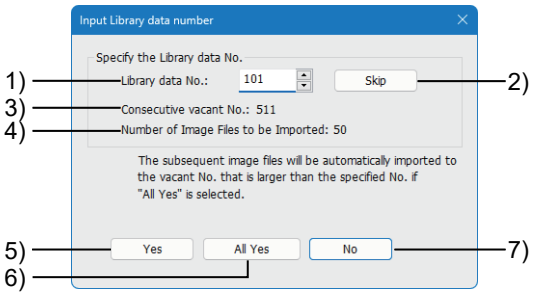
6. Select one of the buttons in the displayed [Confirm Library data number specification] dialog.

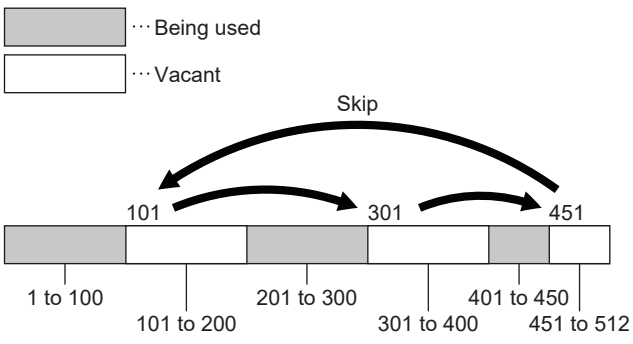


Button	Action
[Yes] button	Specify a library data number. Set a library data number in the [Input Library data number] dialog. ☞ Page 1082 [Input Library data number] dialog
[No] button	Sets an unused library data number and imports the file. When multiple files are selected, the [Confirm Library data number specification] dialog appears repeatedly for each file.
[All No] button	Sets unused library data numbers and imports all files.
[Cancel] button	Aborts the import and closes the dialog.

■[Input Library data number] dialog

Specify the library data number for the file to be imported.



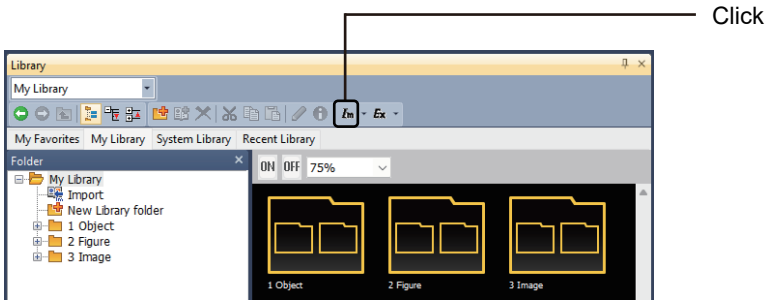
Item		Description
1)	[Library data No.]	Set a library data number. The smallest vacant number is displayed by default. The setting range is [1] to [512].
2)	[Skip] button	Switches the library data number to the start number of the subsequent consecutive vacant numbers. 
3)	[Consecutive vacant No.]	Displays the number of consecutive vacant numbers, beginning with the current library data number.
4)	[Number of Image Files to be Imported]	Displays the number of files to be imported.
5)	[Yes] button	Saves the file with the vacant number specified in [Library data No.].
6)	[All Yes] button	Saves the files with the consecutive vacant numbers, starting from the number specified in [Library data No.]. When the number of files to be imported exceeds that of the current consecutive vacant numbers, the subsequent vacant numbers are used to save all the files. When [Library data No.] is set to 513 or larger, even if consecutive vacant numbers starting with a number less than 513 exist, the import process is stopped.
7)	[No] button	Returns to the [Confirm Library data number specification] dialog.

Importing a video file

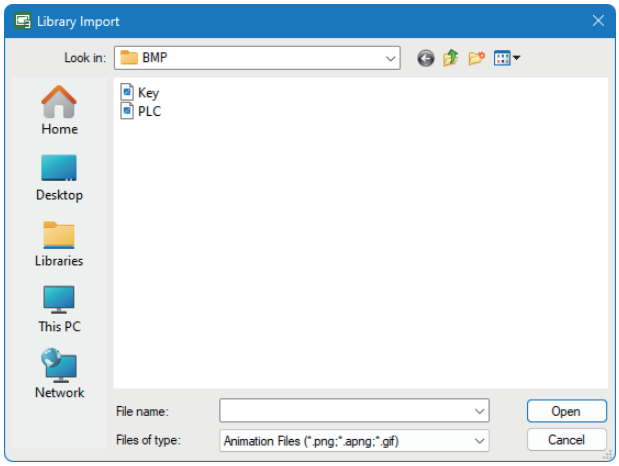
1. Select the [My Library] tab in the [Library] window.

☞ Page 1085 [Library] window

2. Click the [Import] button on the edit bar.



3. Select [Animation Files (*.png;*.apng;*.gif)] for [Files of type] in the displayed [Library Import] dialog.



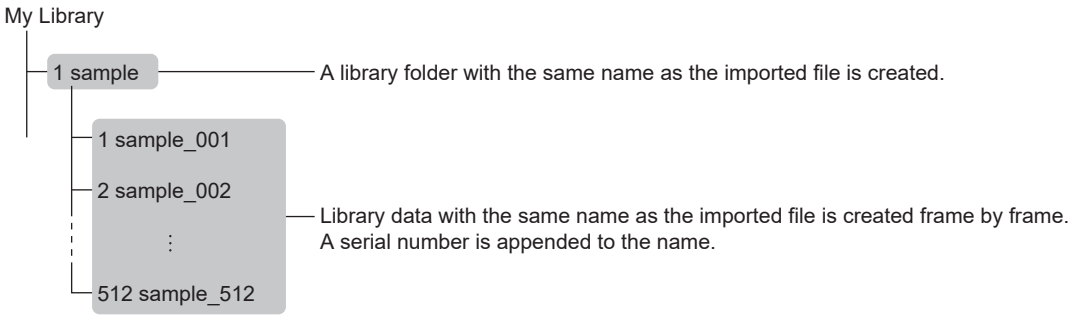
4. Select a file to be imported.

Specifying multiple files is also available.

5. Click the [Open] button to create a library folder and import the frame-by-frame image data as library data to the folder.

Ex.

When importing sample.gif



Importing My Library and My Favorites in a batch

Import the exported My Library and My Favorites in a batch.

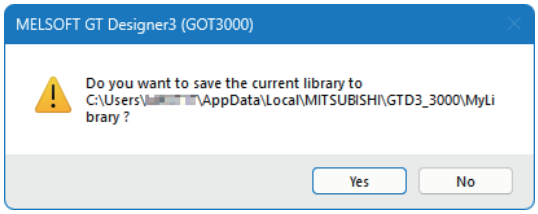
My Library and My Favorites folders before the import are retained.

1. Select [Import] and click the [Import All] button on the edit bar in the [Library] window.

☞ Page 1085 [Library] window

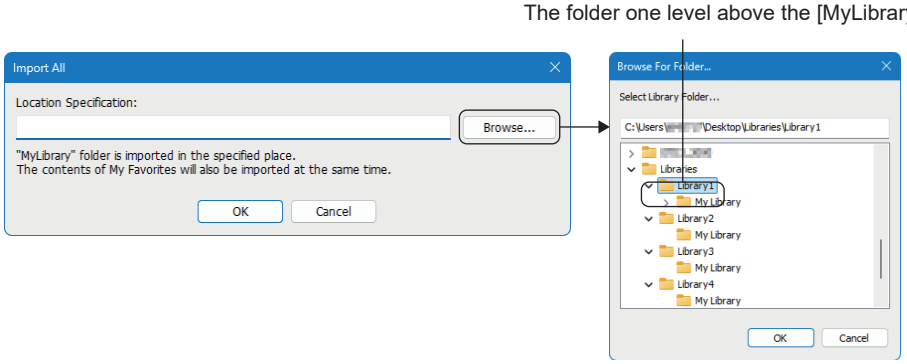
When the library is being edited, the dialog for confirming whether to save the library is displayed.

Click the [Yes] button to save the library, click the [No] button not to save the library.



2. Click the [Browse] button in the displayed [Import All] dialog, and specify the storage destination of the [MyLibrary] folder to be imported.

Specify the folder (the folder one level above the [MyLibrary] folder) where the library to be read is saved.



3. Click the [OK] button to import My Library and My Favorites.

The import is completed.

Importing a System Library file

1. Select the [System Library] tab in the [Library] window.

2. Click the [Import] button on the edit bar or the [Import] button in the library tree area.

☞ Page 1085 [Library] window

3. Select [System Library File (*.sy3)] for [Files of type] in the displayed [Import Library] dialog.

4. Select a library file, and click the [Open] button.

The System Library file is imported.

The import is completed.

Point

You can also import a System Library file by dragging it to a location in the library list.

23.3 [Library] window

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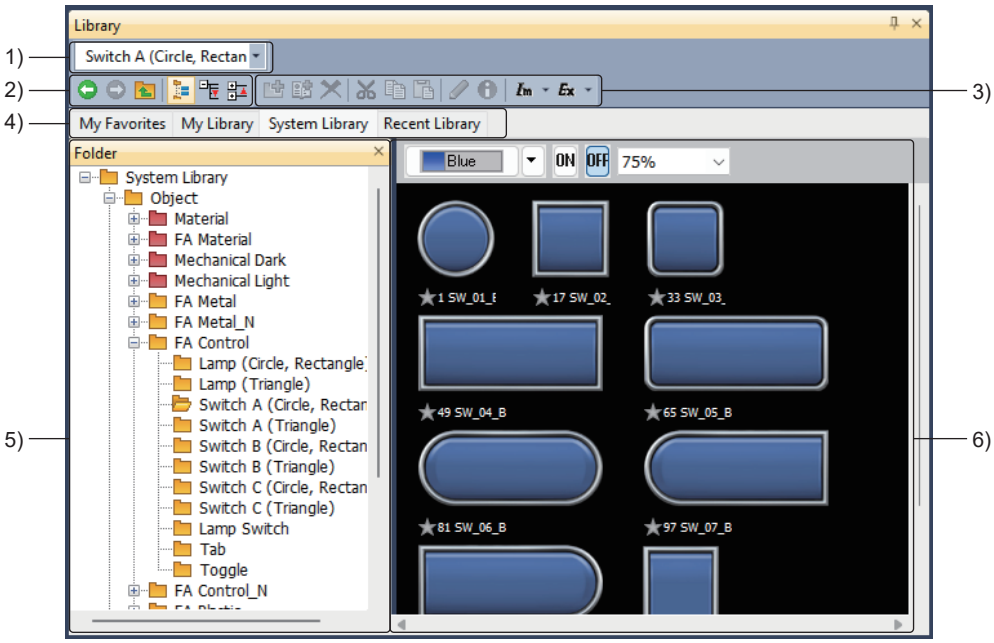
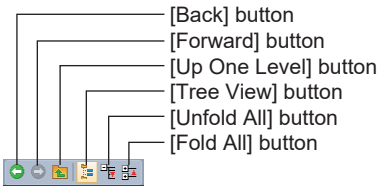
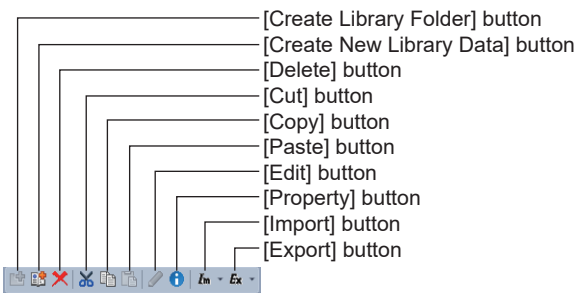
Select [View] → [Docking Window] → [Library List] from the menu to display the [Library] window.



Item			Description
1)	Display bar	—	Performs display-related operations for the library tree area and library data area.
		[Library folder]	When a library folder is selected, the registered data is displayed in the library data area.
2)	Move bar	—	Performs move-related operations for library folders. 
		[Back] button	Moves to the previous library folder.
		[Forward] button	Moves to the next library folder.
		[Up One Level] button	Moves to a one level higher library folder.
		[Tree View] button	Switches display or non-display of a library tree.
		[Unfold All] button	Expands the library tree entirely.
		[Fold All] button	Collapses the library tree entirely.

PART 7

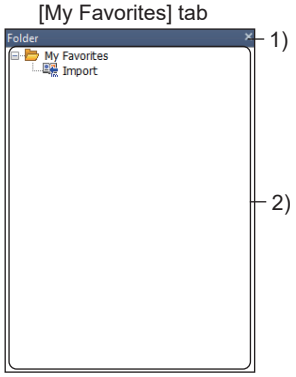
Item				Description
3)	Edit bar	—		Performs edit-related operations for library data. The displayed contents vary by the selected tab. 
		[Create Library Folder] button		Creates a library folder.
		[Create New Library Data] button		Creates library data.
		[Delete] button		Deletes the selected library folder or library data. Deregisters My Favorites registration information of the library data when [My Favorites] tab is selected.
		[Cut] button		Cuts the selected library folder or library data.
		[Copy] button		Copies the selected library folder or library data.
		[Paste] button		Pastes the copied library folder or library data.
		[Edit] button		Edits the selected library data.
		[Property] button		Displays the [Library folder Property] dialog or [Library data Property] dialog. You can renumber or rename the library folder or library data in the [My Library] tab. ☞ Page 1091 [Library folder Property] dialog ☞ Page 1091 [Library data Property] dialog
		[Import] button	[Import]	Imports the library folders or My Favorites.
			[Import All]	Imports My Library and My Favorites from the specified [MyLibrary] folder. Specify the [MyLibrary] folder to be imported in the displayed [Import All] dialog.
		[Export] button	[Export]	Exports the selected library folder.
			[Export All]	Exports all of My Library and My Favorites. Specify the export destination in the displayed [Export All] dialog. A [MyLibrary] folder is created at the export destination. My Library is exported maintaining the tree hierarchy. My Favorites is exported as MyFavorites.csv.
4)	Tab area	—		Switches between the display of the library tree area and the display of the library data area.
		[My Favorites] tab		Displays the library data registered in My Favorites.
		[My Library] tab		Displays the library data registered in My Library. The user can register library data in My Library.
		[System Library] tab		Displays the library data preregistered in the System Library.
		[Recent Library] tab		Displays up to 10 pieces of most recently used library data.
5)	Library tree area			Displays library folder structure in a tree view. ☞ Page 1087 Library tree area
6)	Library data area			Displays the library data registered in the library folder which is selected in the library tree area. ☞ Page 1089 Library data area

23.3.1 Library tree area

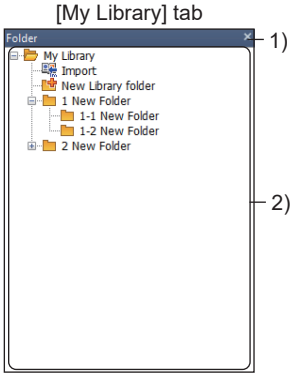
Displays library folder structure in a tree view.

Switch between tabs in the tab area to change items to be displayed.

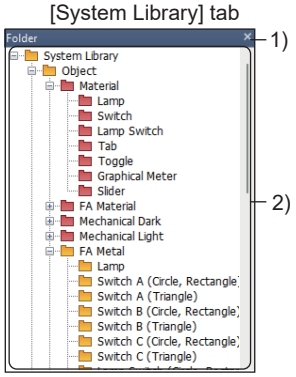
[My Favorites] tab



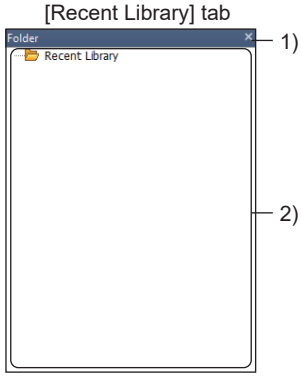
[My Library] tab

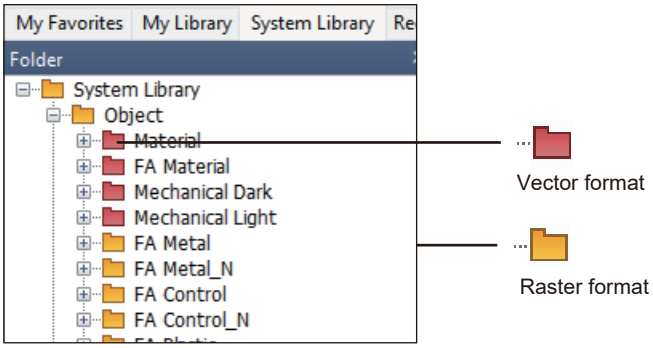


[System Library] tab



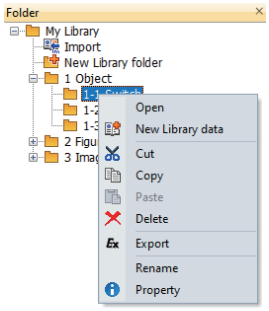
[Recent Library] tab



Item			Description
1)	[Close] button		Closes the library tree area. You can also show or hide the library tree area by using the [Tree View] button on the move bar.
2)	Tree	—	Double-clicking a displayed library folder displays the registered library data in the library data area. Right-click the library folder and select an operation from the menu. The operations for the library folders can be performed by using the edit bar and right-click menu of each folder. ☞ Page 1088 Operations from the right-click menu For the specifications such as the levels in the My Library hierarchy and creation quantity, refer to the following. ☞ Page 1064 Specifications of My Library The icon images differ depending on the format of the registered shapes. 
		[Import]	This item is displayed in the [My Favorites] or [My Library] tab. Imports data to the library.
		[Create Folder]	This item is displayed in the [My Library] tab. Creates a library folder.

Operations from the right-click menu

The displayed menu depends on the selected tab and the right-clicked library folder.

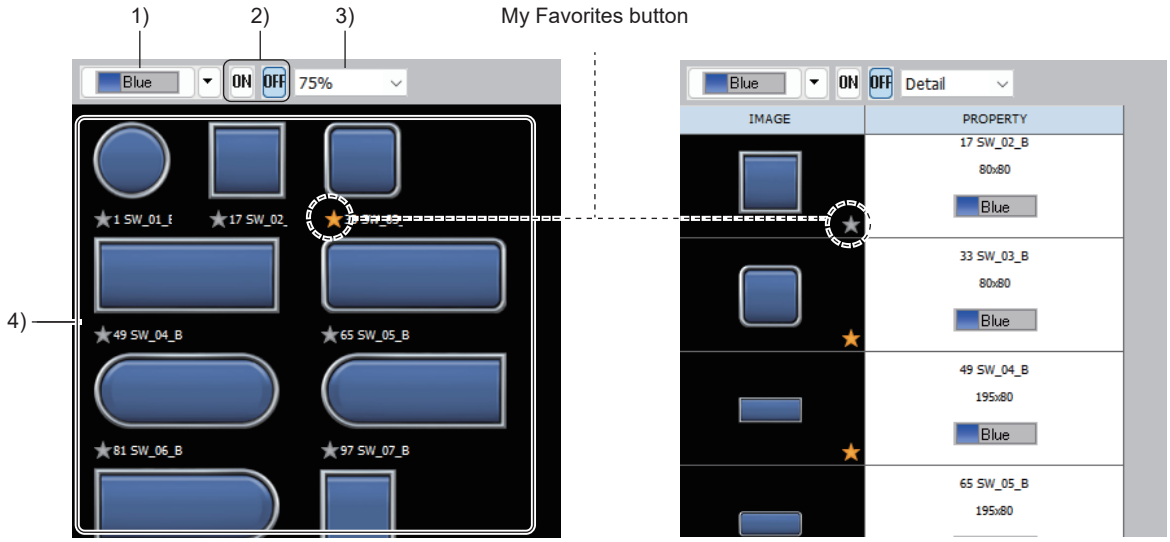


Menu	Description
[All reduce]	Collapses all the levels of library folders displayed in the library tree. Subfolders are folded.
[Fold]	Folds the one hierarchy of library folder displayed in the library tree. Subfolders are not folded.
[Unfold All]	Displays all levels of contents in the library folder in the library tree.
[Unfold]	Displays the one hierarchy of contents in the library folder to the library data area.
[Open]	Displays the contents in the library folder to the library data area.
[Create Library Data]	Creates library data in the [My Library] folder.
[Create Library Folder]	Creates a library folder in the [My Library] folder. A vacant number is assigned to the created library folder automatically, and the folder name is [New Folder].
[Cut]	Cuts a library folder.
[Copy]	Copies a library folder.
[Paste]	Pastes a library folder.
[Delete]	Deletes a library folder.
[Export]	Exports a library folder.
[Rename]	Changes the number and name of the library folder.
[Property]	Displays the [Library folder Property] dialog. (The number and name of the library folder can be changed.) ☞ Page 1091 [Library folder Property] dialog

23.3.2 Library data area

Data in the library folder is displayed.

The setting items vary depending on the selected tab.

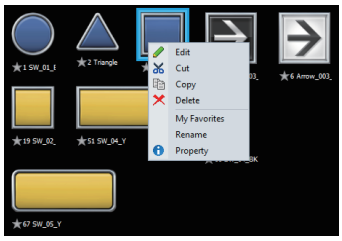


When [Detail] is selected

Item			Description
1)	Color settings	—	The displayed button varies by the data displayed in the library data area.
		Color category button	Narrows down the shapes displayed in the library data area by the selected color.
		Shape color button	Changes the color of the shapes displayed in the library data area.
2)	[ON] button [OFF] button		Switches display or non-display of figures displayed on the library data area.
3)	Display setting		Switches the display magnification and display format of shapes displayed in the library data area. Selecting [Thumbnail] displays the library data in a certain size. Selecting [Detail] displays the library data and the properties.
4)	Library data area		Displays the library folder or library data. Clicking the My Favorites button switches the My Favorites registration status of the library data. The library data registered in My Favorites is displayed in the [My Favorites] tab. The My Favorites button does not appear when the [My Favorites] tab is selected. The operations for the library data can be performed by using the edit bar and from the right-click menu of each library data. ☞ Page 1090 Operations from the right-click menu

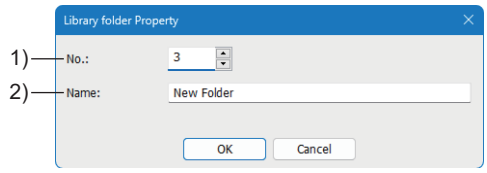
Operations from the right-click menu

The displayed menu depends on the selected tab and the right-clicked item.



Menu	Description
[Open]	Displays the contents in the library folder to the library data area.
[Create Library Data]	Creates library data in the [My Library] folder.
[Create Library Folder]	Creates a library folder in the [My Library] folder. A vacant number is assigned to the created library folder automatically, and the folder name is [New Folder].
[Edit]	Edits the right-clicked library data.
[Cut]	Cuts the right-clicked item.
[Copy]	Copies the right-clicked item.
[Paste]	Pastes the copied item in the [My Library] folder.
[Delete]	Deletes the right-clicked item.
[Export]	Exports a library folder.
[My Favorites]	Switches the My Favorites registration status of the library data. The library data registered in My Favorites is displayed in the [My Favorites] tab.
[Rename]	Changes the number and name of the library folder.
[Property]	Displays the [Library folder Property] dialog or [Library data Property] dialog. You can renumber or rename the library folder or library data in the [My Library] tab. ☞ Page 1091 [Library folder Property] dialog ☞ Page 1091 [Library data Property] dialog

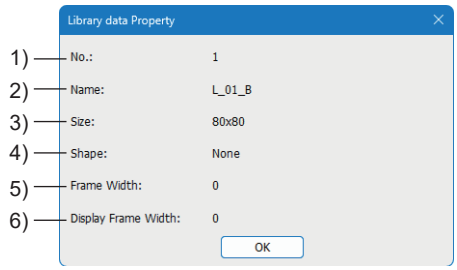
23.3.3 [Library folder Property] dialog



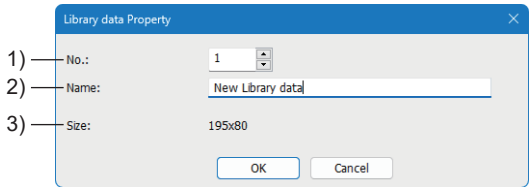
Item		Description
1)	[No.]	Number of the library folder. The setting range is [1] to [512].
2)	[Name]	Name of the library folder. Up to 128 characters can be set.

23.3.4 [Library data Property] dialog

The displayed contents depend on whether the library data is registered in the System Library or in My Library.



System library



My Library

Item		Description
1)	[No.]	Number of the library folder. You can change the library data in My Library. The setting range is [1] to [512].
2)	[Name]	Name of the library folder. You can change the library data in My Library. Up to 128 characters can be set.
3)	[Size]	Size of the library data.
4)	[Shape]	Shape of the library data.
5)	[Frame Width]	Frame width of the library data.
6)	[Display Frame Width]	Display frame width of the library data.

24 Efficient Drawing with Templates

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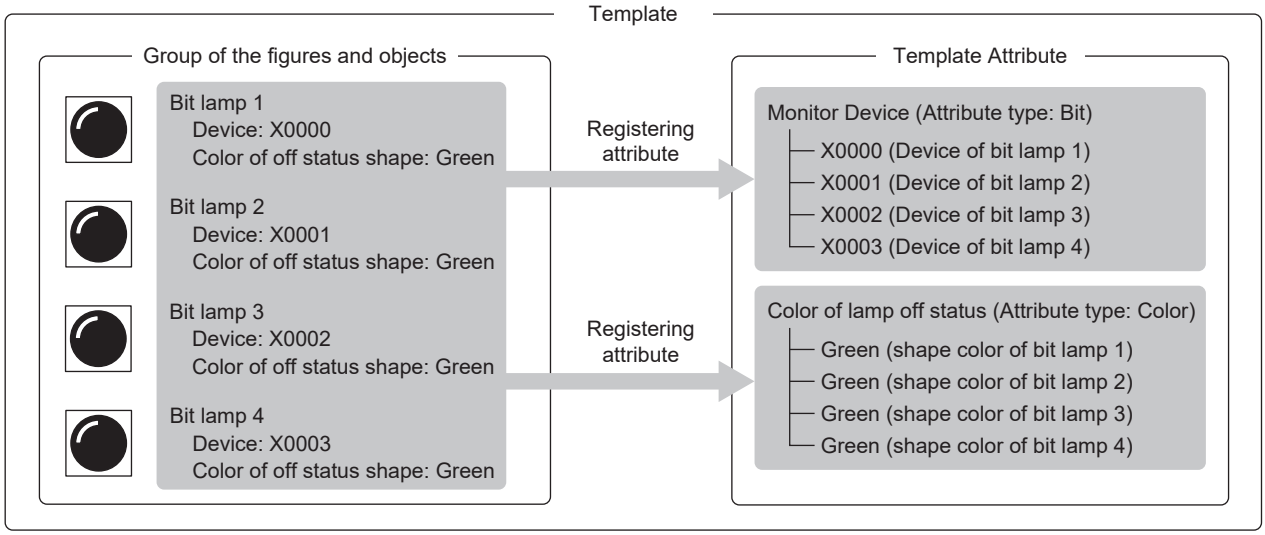
Templates are the combination of the following group and information.

- Group of the figures and objects on the screen editor
- The attribute information for the above group (template attribute)



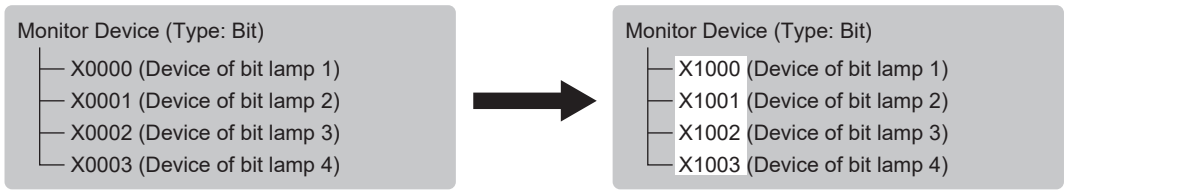
For the attributes registered into template attributes, the set values can be batch changed.

Because the attributes of figures and object do not need changing separately, drawing data can be utilized efficiently.

If created templates are registered in the library, they can be utilized in creating another screen.

Ex.

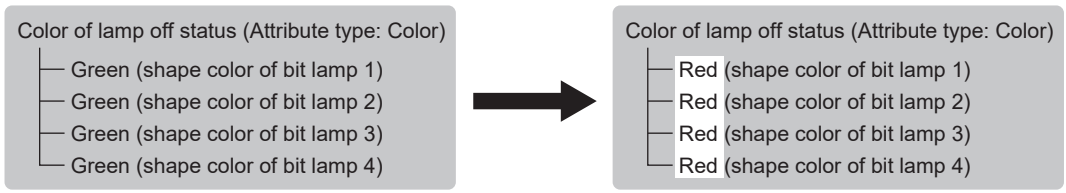
Batch changing successive devices by changing the first device with the difference between any two of successive device numbers retained



The difference between any two of successive device numbers is retained.

Ex.

Batch changing the color



The colors of all the lamps are changed to red.

☞ Page 1093 Specifications of the template
☞ Page 1096 How to use the template
☞ Page 1111 [Edit Template Attribute] dialog
☞ Page 1117 [Register to Template] dialog
☞ Page 1118 [Property] window (when the template property is displayed)

24.1 Specifications of the template

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☞ Page 1093 Figures and objects that can be registered in a template
☞ Page 1093 Template attributes and the types of attributes that can be registered
☞ Page 1094 Displaying templates on the screen editor
☞ Page 1095 Individual operations for figures and objects registered in a template

24.1.1 Figures and objects that can be registered in a template

The figures and objects on the same screen editor can be registered in a template.
Figures and objects that have been registered in a template cannot be registered in another template.

24.1.2 Template attributes and the types of attributes that can be registered

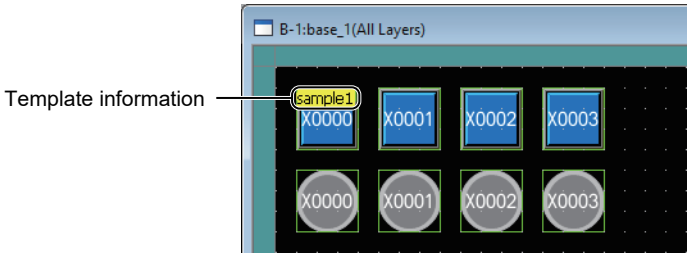
Up to 255 template attributes can be possessed by a single template.
The following shows the types of the attributes that can be registered as template attributes.

- Bit (device)
- Word (device)
- Numerical value
- Character string
- Color
- Figure
- Font
- Font size

PART 7

24.1.3 Displaying templates on the screen editor

When a template is placed on the screen editor, a template information box that indicates the existence of the template is shown.



The template information box displays the template's name.

The information boxes can be used to rearrange the figures and objects registered in the template and to open the editor screen for the template.

Displaying template information boxes

Template information boxes are displayed only on the screen editor of GT Designer3.

The boxes are not displayed in the [Screen Preview] window and [Data View] window of GT Designer3, and on the GOT display screen.

Display settings for template information boxes

Display/hide template information boxes and change their background colors in the [View] tab of the [Options] tab.

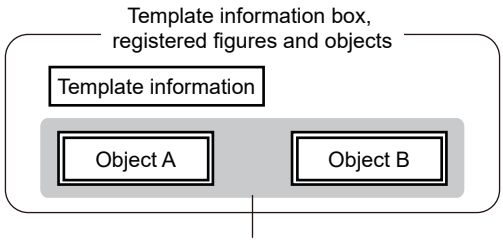
The text of the template name is displayed in the color set for [Device/Object ID Text Color].

☞ Page 201 Customizing the display

Operations on template information boxes

Operation	Details
Move	Template information boxes can be moved as in the case of figures and objects. To move a template information box simultaneously with registered figures and objects, select them together. When a template information box is double-clicked, all the registered figures and objects are selected.
Cut Copy Paste Replicate Consecutive copy	The figures and objects registered in the template are also processed.
Alignment	Available
Rotation Inversion Part registration	Not available

24.1.4 Individual operations for figures and objects registered in a template

Operation	Details
Copy Paste Replicate Consecutive copy	On figures and objects registered in a template, a copy and paste, replication, and consecutive copy operation can be performed. However, replicated figures and objects are not automatically registered into the template.
Cut Delete Drag onto another screen	The target figure or object is deleted from the template.
Grouping	Only template information boxes and figures and objects registered in the same template can be grouped.  Figures and objects that have been registered in the same template can be grouped. For the grouping method, refer to the following. ☞ Page 1021 Grouping two or more figures and objects or ungrouping them
Setting change	The following describes the operations performed when the settings for figures and objects that have been registered in a template are changed individually in the setting dialog. • When an attribute is added due to a change of the setting, the attribute is not automatically registered into the template attribute. • When an attribute that has been registered in a template attribute is deleted due to a change of the setting, it is also deleted from the template attribute. • After the setting is changed, if the change is canceled with [Undo], the registration status of the template attribute returns to the previous.

24.2 How to use the template

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☞ Page 1096 Creating screens using templates
☞ Page 1104 Creating and editing templates
☞ Page 1110 Registering templates in the library
☞ Page 1110 Canceling template settings

24.2.1 Creating screens using templates

☞ Page 1096 Before utilizing templates
☞ Page 1097 Utilizing templates of the library
☞ Page 1099 Checking the attributes of the figures and objects in templates
☞ Page 1100 Batch changing the set values for attributes
☞ Page 1103 Changing by attribute

Before utilizing templates

Certain templates require settings necessary for the project in which the templates are utilized, such as the controller setting and Go To Screen switch setting.
Check the settings of the template to be utilized and set necessary items for the project.
The following shows the required settings for the project in which templates are utilized.

■Controller setting

Before pasting templates, set the items in the [Controller Setting] dialog.
☞ Page 729 [Controller Setting]
If the settings for a pasted template are not supported by the set controller, the device settings are changed as described below.
When setting a controller that does not support the settings for the template, check and change the device settings.

- The devices are changed to the equivalents supported by the controller.
- The devices not supported by the set controller (because the equivalents do not exist or they are outside the acceptable setting range) are changed to [??].

■Common setting

When utilizing templates in which user alarm displays and historical trend graphs are used, set necessary common setting items, such as user alarm observation and logging.

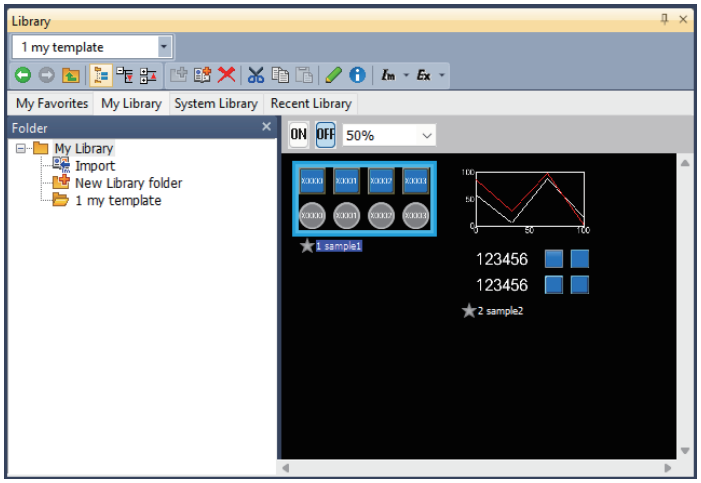
■Go To Screen switch setting

After pasting on a base screen a template in which a Go To Screen switch is placed, check and change [Screen No.] of the switch in consideration of the base screen No.
☞ Page 1220 [Next Screen] tab

Utilizing templates of the library

1. Select [View] → [Docking Window] → [Library List] or [Library List (Template)] from the menu to display the [Library] window.
2. Click the template to utilize, in the [Library] window.

☞ Page 1085 [Library] window



In My Library, you cannot check if the library data include the template.

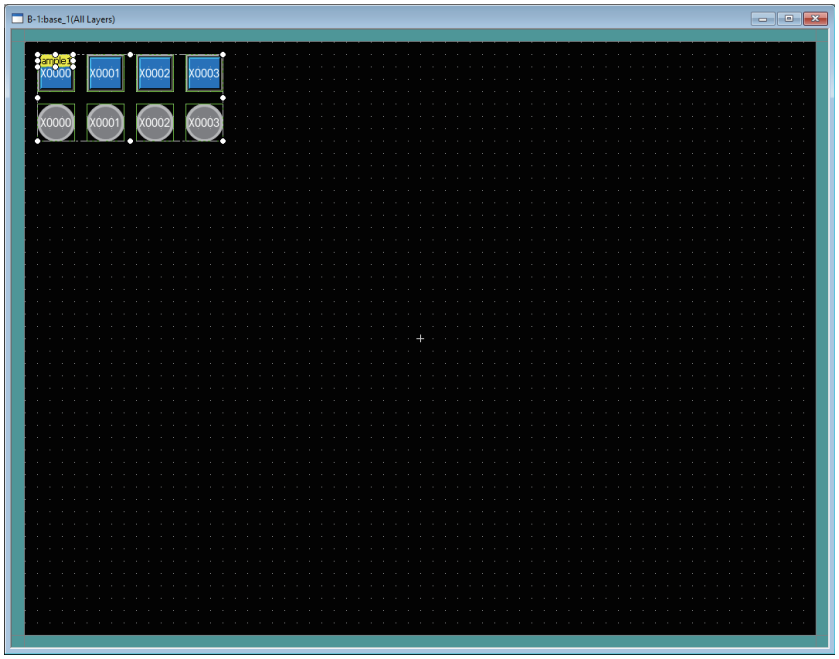
Paste the template on the screen editor to check if the template information box is displayed.

☞ Page 1094 Displaying templates on the screen editor

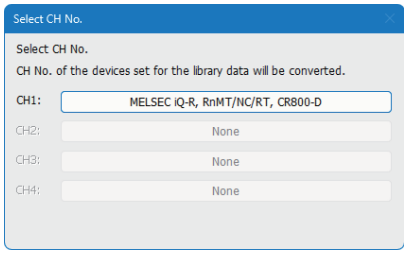
3. Click the screen editor to paste the template.

To change the sizes or positions of individual figures and objects, cancel the grouping.

Even if the grouping is canceled, the registration of the figures and objects in the template is not canceled.



For certain templates, the [Select CH No.] dialog is displayed when the templates are pasted.



Select the channel of the controller to monitor.

The controller devices that have been set for the template are changed as described below according to the controller on the selected channel.

When selecting the channel of a controller that does not support the settings for the template, check and change the device settings.

- The devices are changed to the equivalents supported by the controller on the selected channel.
- The devices not supported by the controller on the selected channel (because the equivalents do not exist or they are outside the acceptable setting range) are changed to [??].

Precautions

The [Select CH No.] dialog is displayed only when the templates in the System Library are utilized.

The dialog is not displayed when the templates registered in My Library are utilized. Also, device conversion according to the controller setting is not carried out.

Checking the attributes of the figures and objects in templates

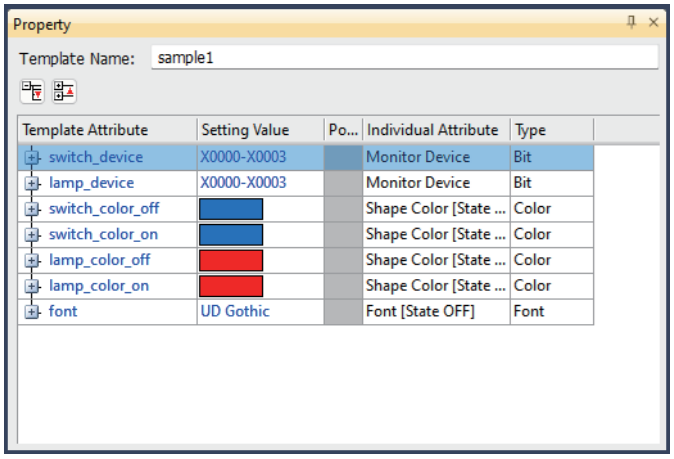
The following procedure shows how to check the set values for the attributes of the figures and objects in a template.

1. Perform one of the following operations to display the details of the settings for the template in the [Property] window.

- Double-click the template information box on the screen editor or in the [Data Browser] window.
- Right-click the template information box on the screen editor and select [Template] → [Display Template Property] from the menu.
- On the screen editor or in the [Data Browser] window, select a figure or object that has been registered in the template and click the [Template Property] button displayed in the [Property] window.

2. Check the set values for attributes in the [Property] window.

☞ Page 1118 [Property] window (when the template property is displayed)



For the procedure for changing the set values, refer to the following.

☞ Page 1100 Batch changing the set values for attributes

☞ Page 1103 Changing by attribute

Batch changing the set values for attributes

The following shows the procedure for changing the set values for attributes in the [Property] window.

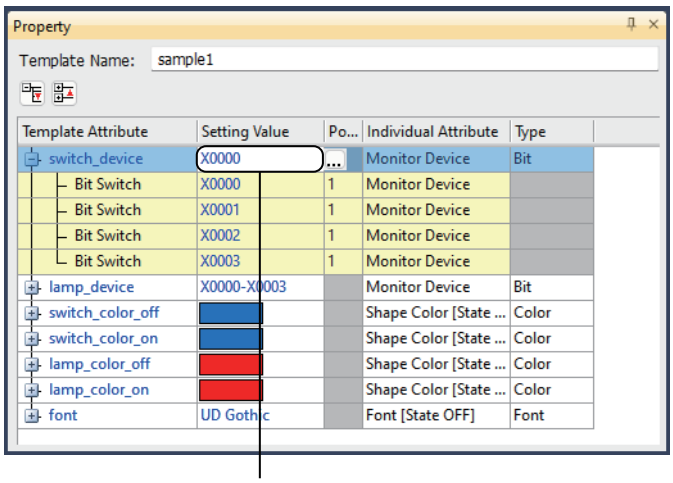
Ex.

When the template attribute is "Bit" and the same device is set for multiple registered attributes

1. Display the details of the template with the [Property] window.

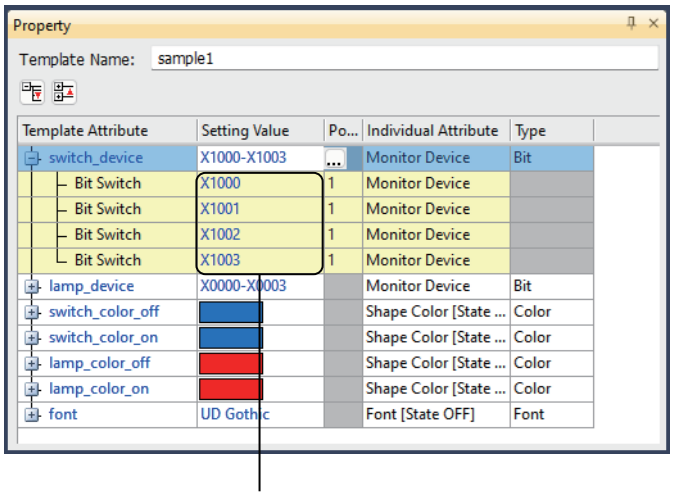
☞ Page 1099 Checking the attributes of the figures and objects in templates

2. Change the set value for the attribute in the target template attribute row.



Change the start device from X0000 to X1000.

3. The set values for the registered attributes in the template attribute are changed.



The set value for each attribute is changed according to the start device.

When a setting falls out of the input range as a result of the batch change, it causes an error.

If a set value falls out of the input range, the set values in the corresponding figure/object attribute row and the successive rows below are not changed.

The following describes the specifications of the batch change for each attribute.

☞ Page 1101 Bit, word

☞ Page 1101 Numerical value

☞ Page 1102 Character string

☞ Page 1102 Color

☞ Page 1102 Figures, fonts, font sizes

■Bit, word

By changing the start device of the set values for attributes, the set values for the attributes below the start device can be batch changed. The difference between any two of successive device numbers is not changed.

Before

Template Attribute	Set value
Monitor device	X0000 to X001F
Bit lamp	X0000
Bit lamp	X0001
⋮	⋮
Bit lamp	X001F

Change the start device from X0000 to X1000.

After

Template Attribute	Set value
Monitor device	X1000 to X101F
Bit lamp	X1000
Bit lamp	X1001
⋮	⋮
Bit lamp	X101F

The set values are changed but the difference between any two of successive device numbers is not changed.

The device names can also be changed collectively.

Before

Template Attribute	Set value
Monitor device	X0000 to X001F
Bit lamp	X0000
Bit lamp	X0001
⋮	⋮
Bit lamp	X001F

Change the start device's name from X to Y.

After

Template Attribute	Set value
Monitor device	Y0000 to Y001F
Bit lamp	Y0000
Bit lamp	Y0001
⋮	⋮
Bit lamp	Y001F

The device name is changed.

Batch change is enabled when the following conditions are satisfied.

- Devices that have the same channel No., network No., station No., CPU No., and block No. are set for all the attributes.
- Devices that have the same name are set for all the attributes.

Even if the data types of the attributes are different, batch change is enabled.

To change the set values for all the attributes to the same device, change the set values for the attributes individually.

☞ Page 1103 Changing by attribute

■Numerical value

By changing the smallest of the set values for the attributes, the set values for the attributes can be batch changed. The difference between any two of successive set values is not changed.

Before

Template Attribute	Set value
Screen No.	1 to 60
Go To Screen switch	1
Go To Screen switch	10
⋮	⋮
Go To Screen switch	60

Change the smallest value from 1 to 100.

After

Template Attribute	Set value
Screen No.	100 to 159
Go To Screen switch	100
Go To Screen switch	109
⋮	⋮
Go To Screen switch	159

The set values are changed but the difference between any two of successive set values is not changed.

To change the set values for all the attributes to the same value, change the set values for the attributes individually.

☞ Page 1103 Changing by attribute

■Character string

The set values for all the attributes can be batch changed to the same character string.

Before

Template Attribute	Set value
Switch name	
Bit Switch	Switch 1
Bit Switch	Switch 2
⋮	⋮
Bit Switch	Switch 10

Type SWITCH as a set value in the template attribute row.

After

Template Attribute	Set value
Switch name	SWITCH
Bit Switch	SWITCH
Bit Switch	SWITCH
⋮	⋮
Bit Switch	SWITCH

The set values of all the attributes are changed.

The maximum number of characters that can be typed in a single template attribute row is the same as the upper limit of the widest of all the acceptable input ranges for the registered attributes.
However, the maximum number of characters for each attribute is within the acceptable input range for each attribute.

■Color

The set values for all the attributes can be batch changed to the same color.

Before

Template Attribute	Set value
Off color (each screen)	Red
Go To Screen switch	Red
Go To Screen switch	Red
⋮	⋮
Go To Screen switch	Red

Change the set value for the template attribute row from red to blue.

After

Template Attribute	Set value
Off color (each screen)	Blue
Go To Screen switch	Blue
Go To Screen switch	Blue
⋮	⋮
Go To Screen switch	Blue

The set values of all the attributes are changed.

For the following attributes, different ways of setting colors are had. Hence if the attributes are mixed in the same template attribute, the colors are not batch changed.

- Text color of switches and lamps
- Color of the switches with their figures from the System Library (color switching)
- Color of logo texts (color fill effect)

■Figures, fonts, font sizes

The set values for all the attributes can be batch changed to the same.
Example) When the type is font size

Before

Template Attribute	Set value
Font size	
Bit Switch	0.5 × 0.5 (width × length)
Bit Switch	1 × 1 (width × length)
⋮	⋮
Bit Switch	6 × 6 (width × length)

Change the set value for the template attribute row to 2 × 2 (width × length).

After

Template Attribute	Set value
Font size	2 × 2 (width × length)
Bit Switch	2 × 2 (width × length)
Bit Switch	2 × 2 (width × length)
⋮	⋮
Bit Switch	2 × 2 (width × length)

The set values of all the attributes are changed.

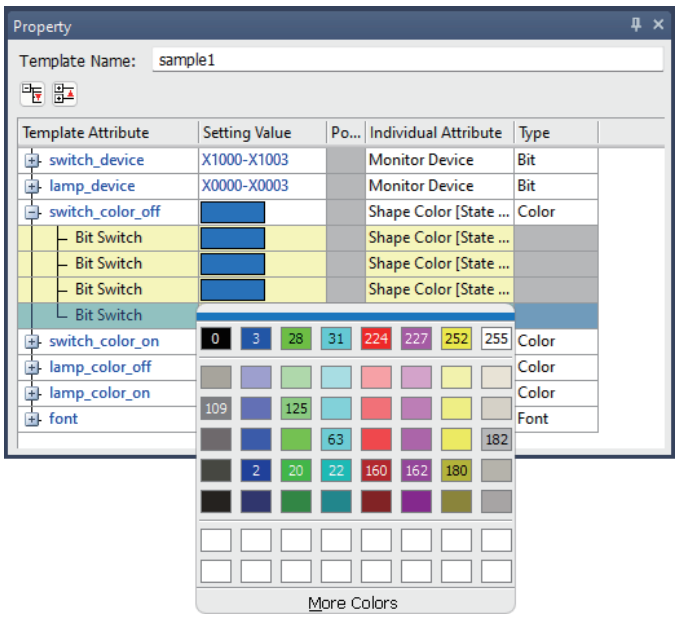
If the acceptable setting range for each attribute is the same, the sizes are batch changed.

Changing by attribute

1. Display the details of the template with the [Property] window.

☞ Page 1099 Checking the attributes of the figures and objects in templates

2. When the setting in a figure/object attribute row is changed, the set value for the attribute is changed.



If the model is a figure, the set value can be changed in the [Image List] dialog.

☞ Page 988 Color settings

PART 7

24.2.2 Creating and editing templates

☞ Page 1104 Creating templates and registering figures and objects into the templates
☞ Page 1105 Registering figures and objects into an existing template
☞ Page 1105 Deleting figures and objects from a template
☞ Page 1106 Creating template attributes
☞ Page 1107 Deleting template attributes
☞ Page 1108 Registering attributes into template attributes
☞ Page 1109 Deleting attributes from the template attributes

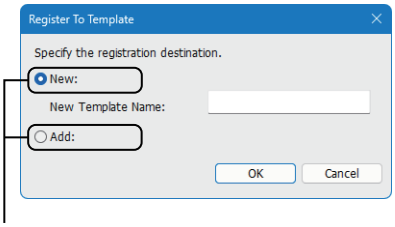
Creating templates and registering figures and objects into the templates

1. On the screen editor, select the figure or object to register in a template.

2. Perform either of the following operations to display the [Register to Template] dialog.

- Select [Edit] → [Template Registration] → [Register to Template] from the menu.
- Right-click the figure or object and select [Template] → [Register to Template] from the menu.

3. Select [New] and set [New Template Name].



These items are not displayed if there is no template on the screen editor.

4. Click the [OK] button to display the [Edit Template Attribute] dialog.

☞ Page 1111 [Edit Template Attribute] dialog

5. Edit the template attribute then click the [OK] button to complete registering into the template.

When a new template is created, template attributes are displayed on the screen editor.

For the procedure for editing template attributes in the [Edit Template Attribute] dialog, refer to the following.

☞ Page 1106 Creating template attributes
☞ Page 1107 Deleting template attributes
☞ Page 1108 Registering attributes into template attributes
☞ Page 1109 Deleting attributes from the template attributes

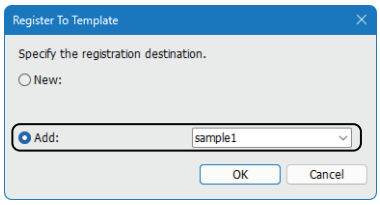
Registering figures and objects into an existing template

1. On the screen editor, select the figure or object to register in a template.

2. Perform either of the following operations to display the [Register to Template] dialog.

- Select [Edit] → [Template Registration] → [Register to Template] from the menu.
- Right-click the figure or object and select [Template] → [Register to Template] from the menu.

3. Select [Add] then select the target template for registering.



4. Click the [OK] button to display the [Edit Template Attribute] dialog.

☞ Page 1111 [Edit Template Attribute] dialog

5. Edit the template attribute then click the [OK] button to complete registering into the template.

For the procedure for editing template attributes in the [Edit Template Attribute] dialog, refer to the following.

☞ Page 1106 Creating template attributes
☞ Page 1107 Deleting template attributes
☞ Page 1108 Registering attributes into template attributes
☞ Page 1109 Deleting attributes from the template attributes

Deleting figures and objects from a template

1. On the screen editor, select the figure or object to delete from the template.

2. Perform either of the following operations to delete the figure or object from the template.

- Select [Edit] → [Template Registration] → [Deregister from Template] from the menu.
- Right-click the figure or object and select [Template] → [Deregister from Template] from the menu.

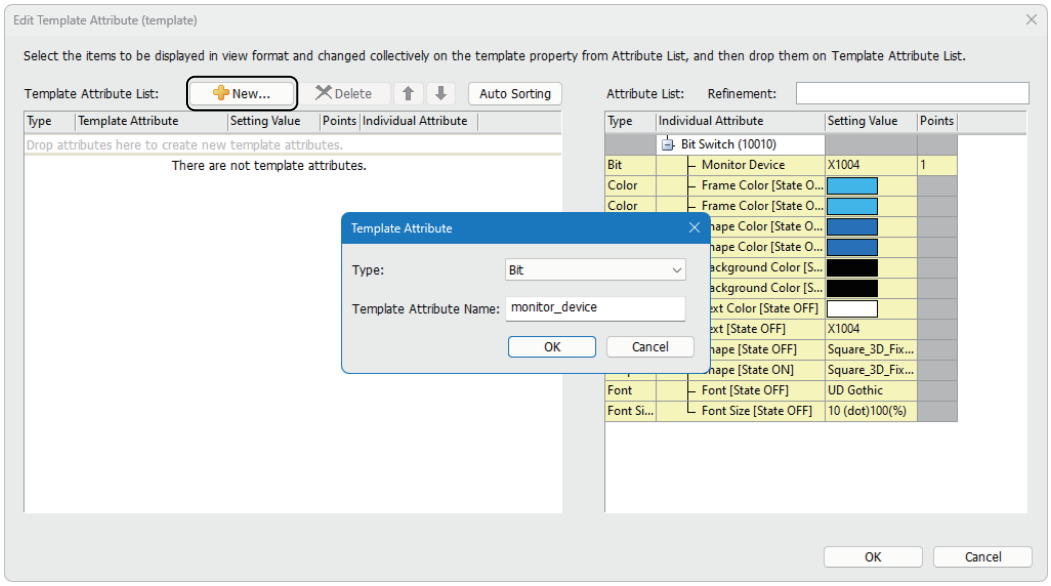
Creating template attributes

1. Perform either of the following operations to display the [Edit Template Attribute] dialog.

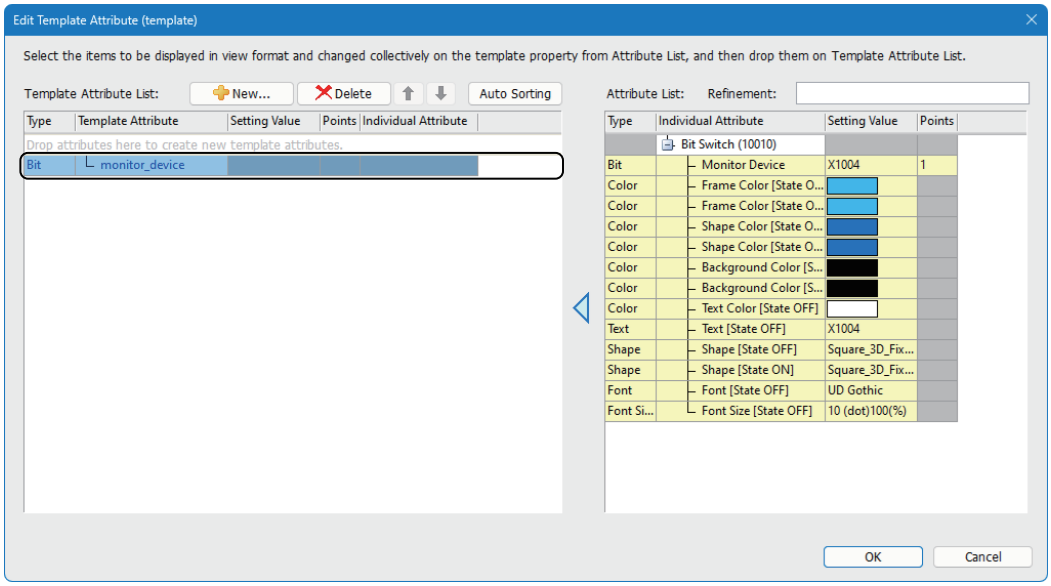
- Select the template information box or a figure/object and select [Edit] → [Edit Template Attribute] from the menu.
- Right-click the template information box or the figure/object and select [Template] → [Edit Template Attribute] from the menu.

☞ Page 1111 [Edit Template Attribute] dialog

2. Click the [New] button to display the [Template Attribute] dialog.



3. Set [Type] and [Template Attribute Name] and click the [OK] button. The template attribute is created.



When the [Auto Sorting] button is clicked, the attributes in [Attribute List] are classified according to their types and are automatically registered in the automatically created corresponding template attributes.

Only the attributes in [Attribute List] are registered in the automatically created template attributes.

The target attributes for the automatic creation can be operated using [Refinement].

For the procedure for registering attributes in template attributes, refer to the following.

☞ Page 1108 Registering attributes into template attributes

Deleting template attributes

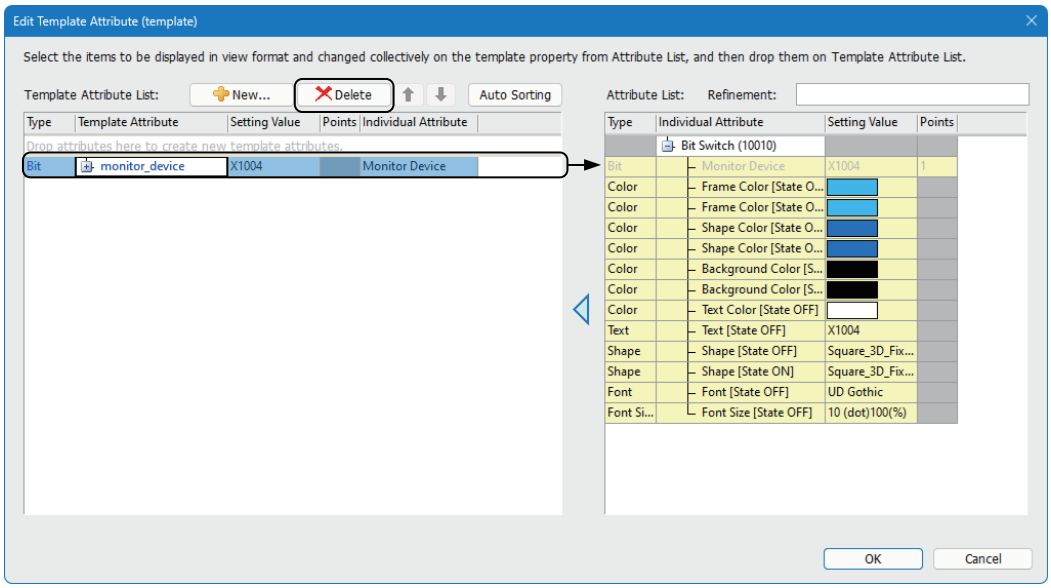
1. Perform either of the following operations to display the [Edit Template Attribute] dialog.

- Select the template information box or a figure/object and select [Edit] → [Edit Template Attribute] from the menu.
- Right-click the template information box or the figure/object and select [Template] → [Edit Template Attribute] from the menu.

☞ Page 1111 [Edit Template Attribute] dialog

2. Perform either of the following operations to delete the template attribute.

- Drag the template attribute to delete from [Template Attribute List] to [Attribute List].
- Select the template attribute row to delete in [Template Attribute List] and click the [Delete] button.



The attributes that have been registered in the template attribute are also deleted.

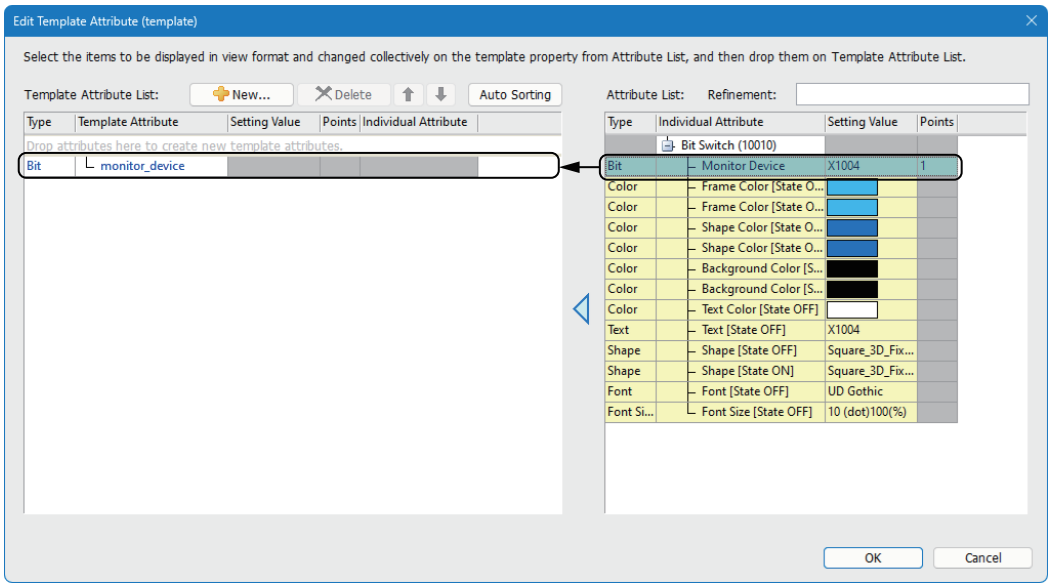
Registering attributes into template attributes

1. Perform either of the following operations to display the [Edit Template Attribute] dialog.

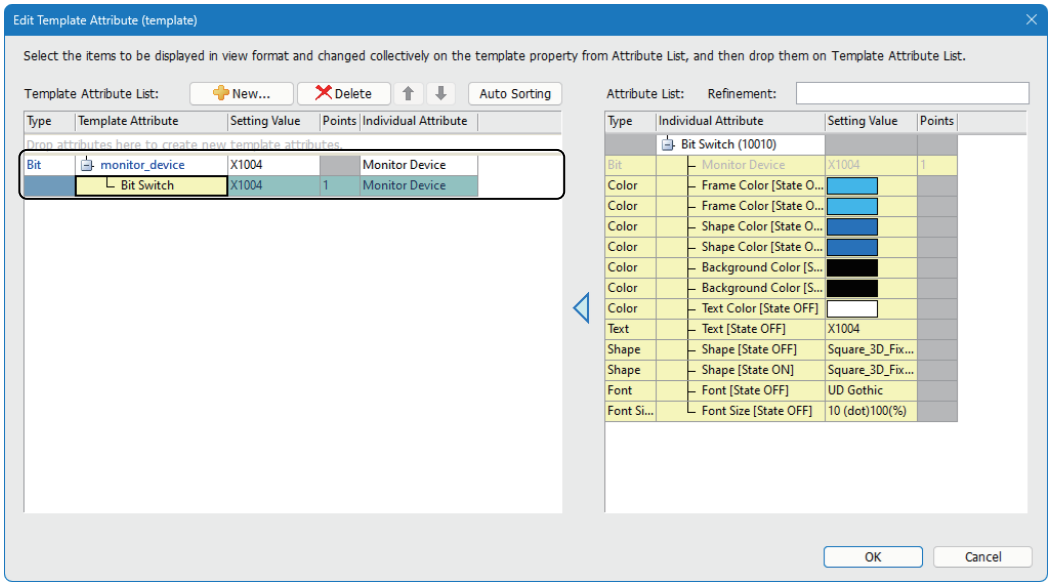
- Select the template information box or a figure/object and select [Edit] → [Edit Template Attribute] from the menu.
- Right-click the template information box or the figure/object and select [Template] → [Edit Template Attribute] from the menu.

☞ Page 1111 [Edit Template Attribute] dialog

2. Drag the target attribute from [Attribute List] into a template attribute row in [Template Attribute List].



3. The dragged attribute is registered in the template attribute.



Deleting attributes from the template attributes

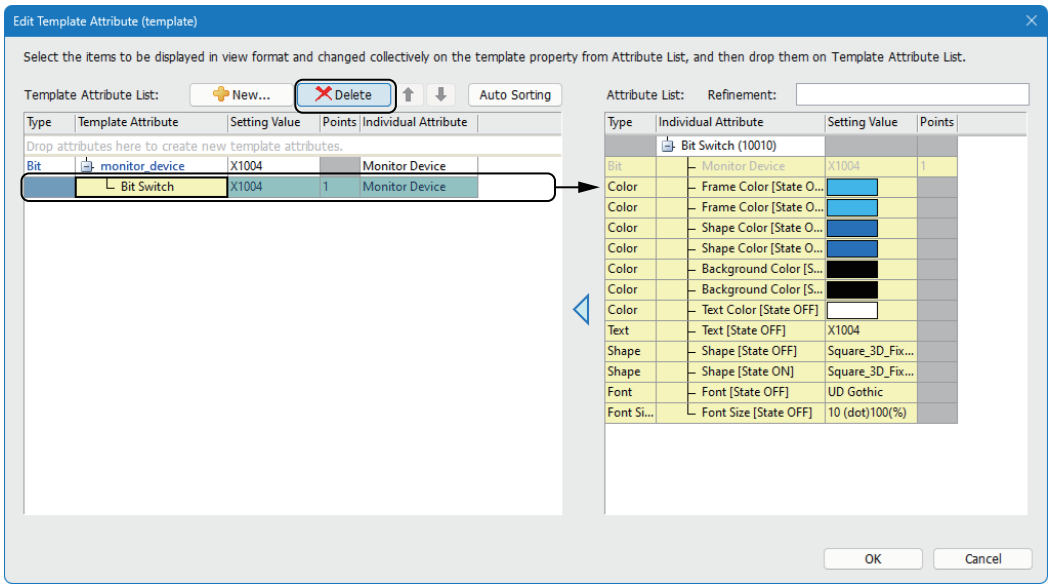
1. Perform either of the following operations to display the [Edit Template Attribute] dialog.

- Select the template information box or a figure/object and select [Edit] → [Edit Template Attribute] from the menu.
- Right-click the template information box or the figure/object and select [Template] → [Edit Template Attribute] from the menu.

☞ Page 1111 [Edit Template Attribute] dialog

2. Perform either of the following operations to delete the target attribute from the template attribute.

- Drag the attribute to delete from [Template Attribute List] to [Attribute List].
- Select the attribute row to delete in [Template Attribute List] and click the [Delete] button.



24.2.3 Registering templates in the library

1. Select [View] → [Docking Window] → [Library List] from the menu to display the [Library] window.

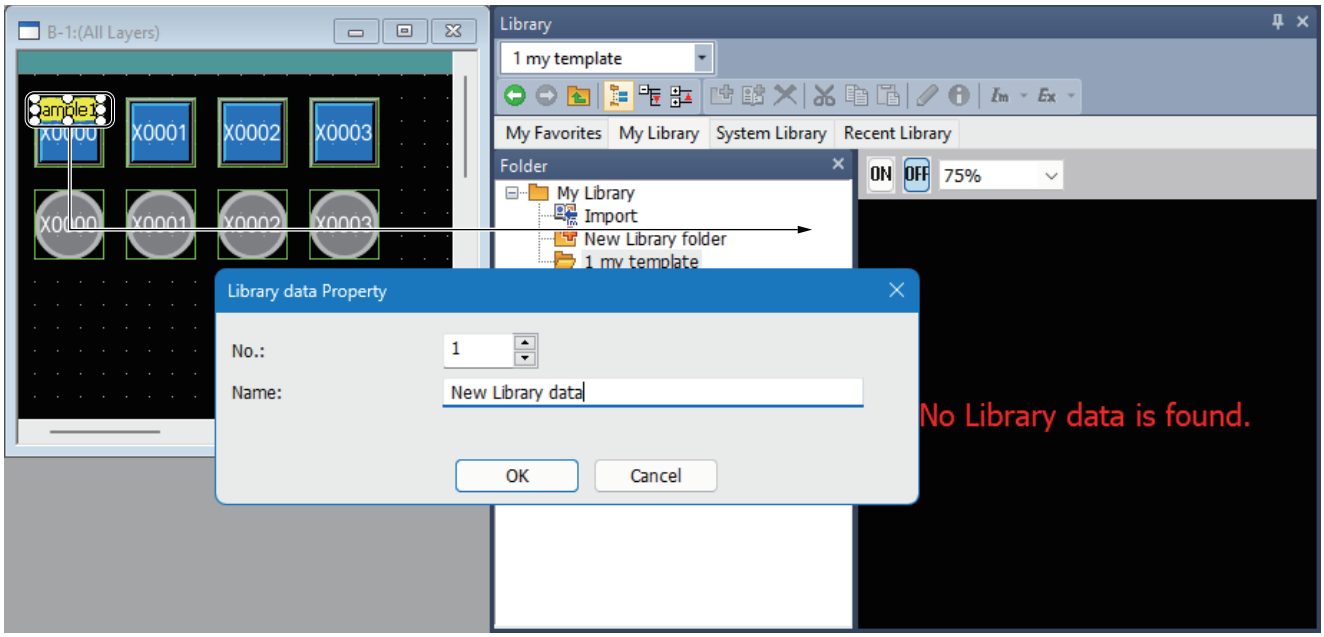
☞ Page 1085 [Library] window

2. Select the [My Library] tab.

3. Double-click the library folder for storing templates in the library tree area.

To create a new library folder, click the [Create Library Folder] button.

4. Drag into the [Library] window the template information box of the target template for registering into the library. The [Library data Property] dialog appears.



5. In the [Library data Property] dialog, set [No.] and [Name], then click the [OK] button. The template is registered in the library.

Precautions

For cases where 10000 or more figures have been registered in a template, when the project is transferred to the GOT or data storage, the 10000th and those registered later are deleted from the template.

The project saved in the GOT or data storage is different from the one designed before the transfer. Exercise care when reading the project saved after the transfer.

24.2.4 Canceling template settings

1. In the screen editor, select the template information box to delete.

Figures and objects selected together with the box are deleted simultaneously with the template.

When the template information box is double-clicked, all the registered figures and objects are selected.

2. Perform either of the following operations to delete the target template setting.

- Select [Edit] → [Delete] from the menu.
- Right-click the template information box and select the [Delete] menu.

24.3 [Edit Template Attribute] dialog

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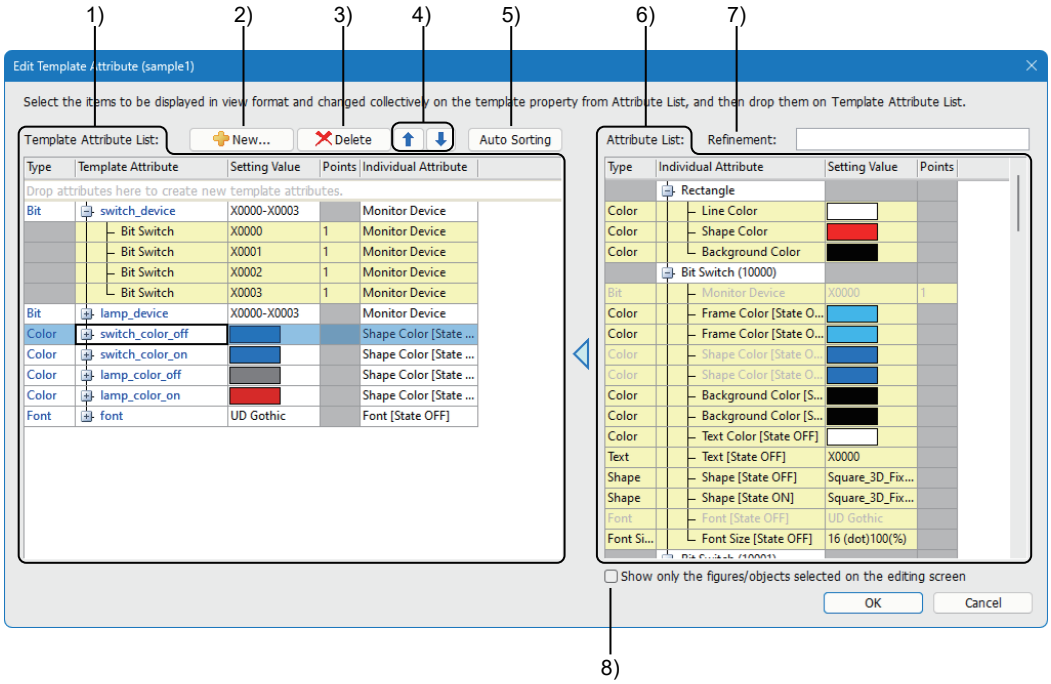
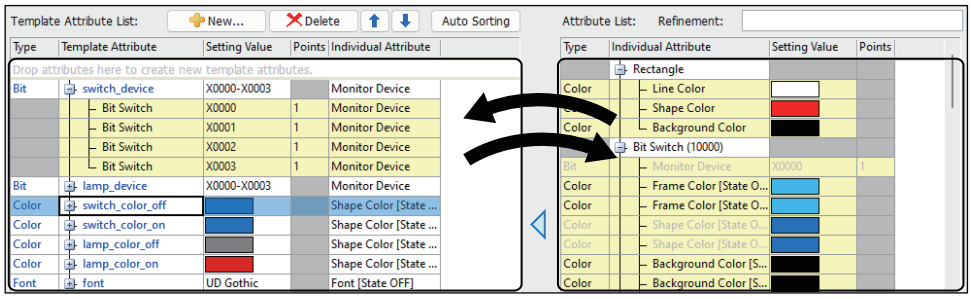
Edit the template attributes.

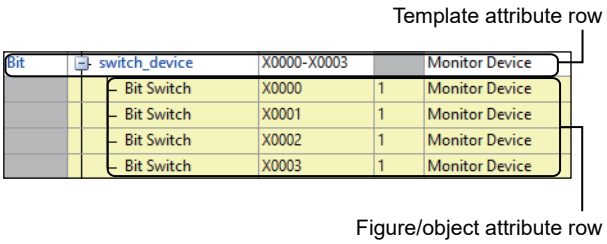


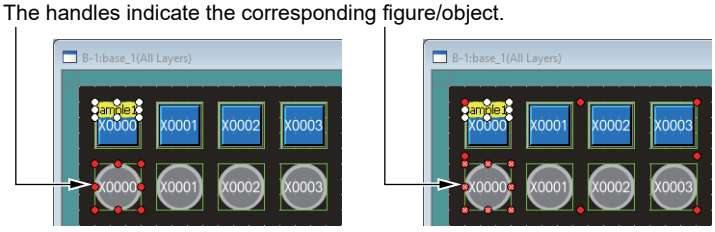
Attributes can be dragged between [Template Attribute List] and [Attribute List] to register into/delete from the template attributes.



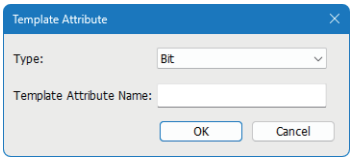
For mouse and keyboard operations, refer to the following.

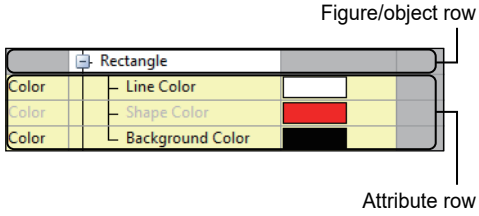
☞ Page 1115 Mouse and keyboard operations

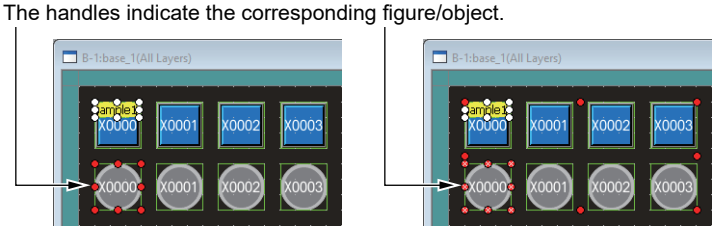
<table>
<tr><th colspan="3">Item</th><th colspan="2">Description</th></tr>
<tr><td>1)</td><td>[Template Attribute List]</td><td>—</td><td colspan="2">Lists template attributes.
Up to 5000 figure/object attributes can be registered into a single template attribute.
The relation between a template attribute and the registered attributes is shown in a tree.
 

The figure/object attribute rows (attributes of the figures and objects registered to the template attributes) are displayed under the template attribute row.
When a figure/object attribute row is selected, handles appear on the figure/object having the corresponding attribute on the screen editor.
The handles indicate the corresponding figure/object.
 

If not grouped　　If grouped</td></tr>
<tr><td></td><td></td><td>[Type]</td><td colspan="2">Displays the types of the template attributes.
To change the settings, double-click them.
When the settings are changed, the registered attributes are deleted.</td></tr>
<tr><td></td><td></td><td>[Template Attribute]</td><td colspan="2">Each row displays different contents.</td></tr>
<tr><td></td><td></td><td></td><td>Template attribute row</td><td>Displays the names of the template attributes.
To change the settings, double-click them.
Up to 128 characters can be set.</td></tr>
<tr><td></td><td></td><td></td><td>Figure/object attribute row</td><td>Displays the types of the figures or names of the objects.
For the attributes of objects for which [Name] is not set, the types are displayed instead of the names.</td></tr>
<tr><td></td><td></td><td>[Setting Value]</td><td colspan="2">Displays the set values for the attributes.
They cannot be changed.</td></tr>
<tr><td></td><td></td><td>[Points]</td><td colspan="2">Each [Type] displays different contents.</td></tr>
<tr><td></td><td></td><td></td><td>[Bit]
[Word]</td><td>Displays the number of consecutive devices.</td></tr>
<tr><td></td><td></td><td></td><td>[Number] having the consecutive or random setting</td><td>Displays the number of consecutive values.</td></tr>
<tr><td></td><td></td><td>[Individual Attribute]</td><td colspan="2">Each row displays different contents.</td></tr>
<tr><td></td><td></td><td></td><td>Template attribute row</td><td>Displays the names of the attributes that have been registered in the template attribute.
Additionally, conditions are displayed if set.
For a script part, the attribute name and execution order number of each script are displayed.</td></tr>
<tr><td></td><td></td><td></td><td>Figure/object attribute row</td><td>Displays the names of the figure/object attributes.
Additionally, conditions are displayed if set.
For a script part, the attribute name and execution order number of each script are displayed.</td></tr>
</table>

Item		Description
2)	[New] button	Displays the [Template Attribute] dialog. A template attribute can be created. Up to 255 template attributes can be possessed by a single template.  • [Type] Select the type of the template attribute to create. • [Template Attribute Name] Set the name of the template attribute. Up to 128 characters can be set.
3)	[Delete] button	Deletes a template attribute or attribute selected in [Template Attribute List]. When a template attribute is deleted, the attributes that have been registered in the template attribute are also deleted.
4)	[↑], [↓] button	Moves a row selected in [Template Attribute List]. When a template attribute row is moved, the figure/object attributes that have been registered in the template attribute are also moved. When multiple rows are selected, the difference between any two of successive rows is retained. When a template attribute row is selected together with figure/object rows, they cannot be moved.
5)	[Auto Sorting] button	Classifies all the attributes displayed in [Attribute List] according to set value and registers them into the template attributes automatically created in [Template Attribute List]. The classification method depends on [Type].

<table>
<tr><th colspan="3">Item</th><th colspan="2">Description</th></tr>
<tr><td>6)</td><td>[Attribute List]</td><td>—</td><td colspan="2">Lists the figures and objects that have been registered and those in the process of being registered.
The text color of the attributes that have already been registered becomes gray.
The relation between figures/objects and attributes is shown in a tree.
 

The figure/object row is the row for the figures and objects registered in the template.
The figure/object row displays the attribute rows (attribute of the figures and objects) underneath.
Clicking the top row sorts the results by item.
When a row is selected, the corresponding figure/object on the screen editor is displayed.
The handles indicate the corresponding figure/object.
 

If not grouped
If grouped</td></tr>
<tr><td></td><td></td><td>[Type]</td><td colspan="2">Displays the types of the attributes.</td></tr>
<tr><td></td><td></td><td>[Individual Attribute]</td><td colspan="2">Each row displays different contents.</td></tr>
<tr><td></td><td></td><td></td><td>Figure/object row</td><td>Displays the types of the figures or names of the objects and the object ID.
For the attributes of objects for which [Name] is not set, the types are displayed instead of the names.</td></tr>
<tr><td></td><td></td><td></td><td>Attribute row</td><td>Displays the names of the figure/object attributes.
Additionally, conditions are displayed if set.
For a script part, the attribute name and execution order number of each script are displayed.</td></tr>
<tr><td></td><td></td><td>[Setting Value]</td><td colspan="2">Displays the set values for the attributes.
They cannot be changed.</td></tr>
<tr><td></td><td></td><td>[Points]</td><td colspan="2">Each [Type] displays different contents.</td></tr>
<tr><td></td><td></td><td></td><td>[Bit]
[Word]</td><td>Displays the number of consecutive devices.</td></tr>
<tr><td></td><td></td><td></td><td>[Number] having the consecutive or random setting</td><td>Displays the number of consecutive values.</td></tr>
<tr><td>7)</td><td colspan="2">[Refinement]</td><td colspan="2">Narrows the displayed contents of [Attribute List] by keywords.
Up to 128 characters can be set.
This search operation is case-insensitive.
To narrow the contents using multiple keywords, separate each keyword with one-byte spaces.</td></tr>
<tr><td>8)</td><td colspan="2">[Show only the figures/objects selected on the editing screen]</td><td colspan="2">Displays in [Attribute List] only the figures and objects selected on the screen editor when the [Edit Template Attribute] dialog is opened.
When the [Edit Template Attribute] dialog is opened for a newly created template, no entry is displayed.</td></tr>
</table>

24.3.1 Mouse and keyboard operations

☞ Page 1115 Operations for the lists on display
☞ Page 1116 Operations when a cell is edited

Operations for the lists on display

The following table describes the mouse and keyboard operations for [Template Attribute List] and [Attribute List] in the [Edit Template Attribute] dialog.

Operation	[Template Attribute List]	[Attribute List]
↑ ↓	Moves the cursor.	Moves the focus upward or downward.
←		Collapses the tree when a figure/object row is selected. If the tree has been folded, moves the focus upward. Moves the focus up to the figure/object row when an attribute row is selected.
→		Expands the tree when a figure/object row is selected. If the tree has been unfolded, moves the focus downward. Moves the focus down when an attribute row is selected.
Shift + ↑ Shift + ↓	Moves the cursor while selecting the row where the cursor is positioned. The destination row of the cursor is also selected.	Moves the focus while selecting the row where the focus is positioned. The destination row of the cursor is also selected.
+ (Numeric keypad)	Expands the template attribute row under the cursor.	
- (Numeric keypad)	Collapses the template attribute row under the cursor.	
Shift + + (Numeric keypad) Ctrl + .	Expands all the trees.	
Shift + - (Numeric keypad) Ctrl + .	Collapses all the trees.	
Home	Moves the cursor to the top row.	Selects the top row.
End	Moves the cursor to the bottom row.	Selects the bottom row.
PgUp	Moves the cursor up one page.	Moves the focus from the row where the focus is positioned to the corresponding row up one page.
PgDown	Moves the cursor down one page.	Moves the focus from the row where the focus is positioned to the corresponding row down one page.
Shift + Home	Selects the rows from the row where the cursor is positioned to the top row.	Selects the rows from the row where the focus is positioned to the top row.
Shift + End	Selects the rows from the row where the cursor is positioned to the bottom row.	Selects the rows from the row where the focus is positioned to the bottom row.
Shift + PgUp	Selects the rows from the row where the cursor is positioned to the corresponding row up one page.	Selects the rows from the row where the focus is positioned to the corresponding row up one page.
Shift + PgDown	Selects the rows from the row where the cursor is positioned to the corresponding row down one page.	Selects the rows from the row where the focus is positioned to the corresponding row down one page.
Shift + click	Selects the rows from the row where the cursor is positioned to the row where the mouse is clicked.	Selects the rows from the row where the focus is positioned to the row where the mouse is clicked.
Ctrl + Space	Selects or deselects a row.	
Ctrl + click		
F2 Double-click	Enables editing of the cell where the cursor is positioned. The target columns for editing are [Type] and [Template Attribute] in a template attribute row. ☞ Page 1116 Operations when a cell is edited	—
Drag	Deletes an attribute from the template attribute by dragging from [Template Attribute List] to [Attribute List].	Registers an attribute to the template attribute by dragging from [Attribute List] to [Template Attribute List].

Operations when a cell is edited

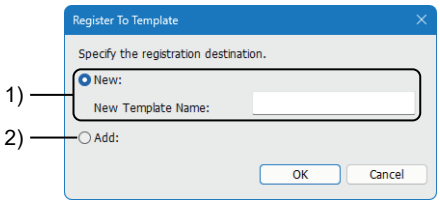
The following table lists the keyboard operations for editing cells in [Template Attribute List].

Operation	[Template Attribute List]
Enter	Confirms and ends the edit.
Esc	Discards and ends the edit.

24.4 [Register to Template] dialog

GT37 SoftGOT3000

Select the template for registering a figure or object.



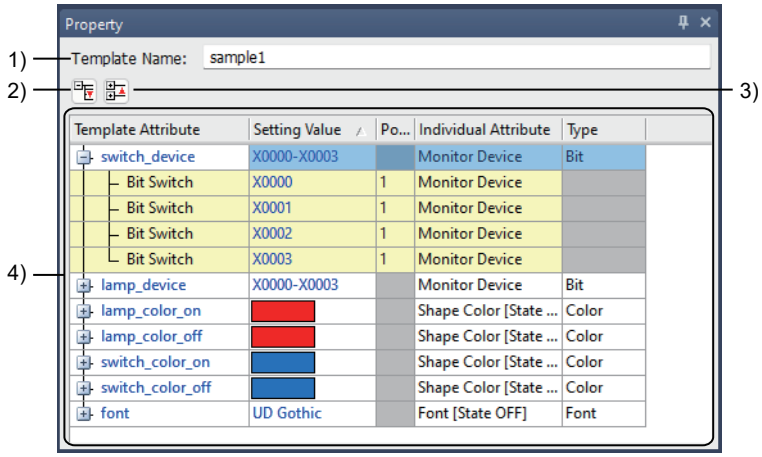
Item			Description
1)	[New]	—	Newly creates a template into which figures and objects are registered.
		[New Template Name]	Set the name of the template to create. Up to 128 characters can be set.
2)	[Add]		Specifies an existing template as the target for registration. Select the target template.

PART 7

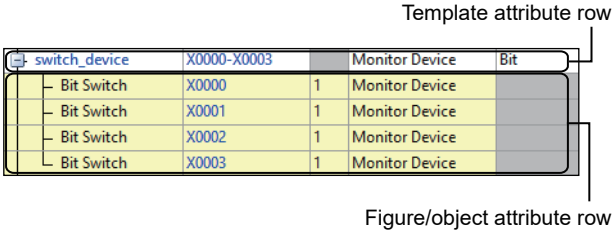
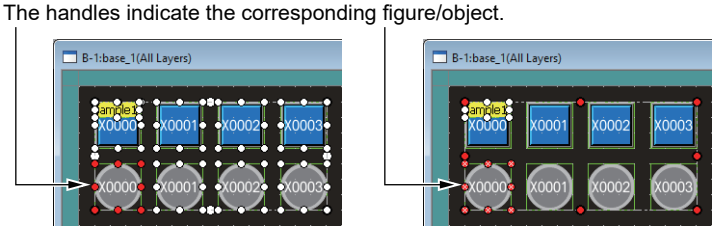
24.5 [Property] window (when the template property is displayed)

GT37 SoftGOT3000

The following describes the screen layout shown when the template setting is displayed in the [Property] window.



Item		Description
1)	[Template Name]	Displays the template name. The name can be changed. Up to 128 characters can be set.
2)	[Unfold All] button	Expands all template attribute items.
3)	[Fold All] button	Collapses all template attribute items.

Item			Description	
4)	Template attribute list	—	Lists template attributes. The set values for attributes can be batch changed by template attribute. ☞ Page 1100 Batch changing the set values for attributes For mouse and keyboard operations, refer to the following. ☞ Page 1120 Mouse and keyboard operations The relation between a template attribute and the registered attributes is shown in a tree.  The figure/object attribute rows (attributes of the figures and objects registered to the template attributes) are displayed under the template attribute row. Clicking the top row sorts the results by item. When a figure/object attribute row is selected, handles appear on the figure/object having the corresponding attribute on the screen editor. The handles indicate the corresponding figure/object.  When a figure/object attribute row is double-clicked, the setting dialog of the corresponding figure/object is displayed.	
		[Template Attribute]	Each row displays different contents.	
			Template attribute row	Displays the names of the template attributes. To change the settings, double-click them. Up to 128 characters can be set.
			Figure/object attribute row	Displays the types of the figures or names of the objects. For the attributes of objects for which [Name] is not set, the types are displayed instead of the names.
		[Setting Value]	Each row displays different contents.	
			Template attribute row	Displays the background color of set values in white when the conditions for batch change are satisfied. Displays the background color of set values in gray when the conditions for batch change are not satisfied. For the conditions for batch change and the procedure for the change, refer to the following. ☞ Page 1100 Batch changing the set values for attributes
			Figure/object attribute row	Displays the set values for figures and objects.
		[Points]	Each [Type] displays different contents.	
			[Bit] [Word]	Displays the number of consecutive devices.
			[Number] having the consecutive or random setting	Displays the number of consecutive values.
		[Individual Attribute]	Each row displays different contents.	
			Template attribute row	Displays the names of the attributes that have been registered in the template attribute. Additionally, conditions are displayed if set. For a script part, the attribute name and execution order number of each script are displayed.
			Figure/object attribute row	Displays the names of the figure/object attributes. Additionally, conditions are displayed if set. For a script part, the attribute name and execution order number of each script are displayed.
		[Type]	Displays the types of the template attributes.	

24.5.1 Mouse and keyboard operations

☞ Page 1120 Operations for the lists on display
☞ Page 1120 Operations when a cell is edited

Operations for the lists on display

The following table shows how to operate the template attribute list in the [Property] window with the mouse or keyboard.

Operation	Action
↑/↓/←/→	Moves the cursor.
Shift + ↑/↓	Moves the cursor while selecting the row where the cursor is positioned. The destination row of the cursor is also selected.
+ (Numeric keypad)	Expands the template attribute row under the cursor.
- (Numeric keypad)	Collapses the template attribute row under the cursor.
Shift + + (Numeric keypad)	Expands all the trees.
Shift + - (Numeric keypad)	Collapses all the trees.
Home	Moves the cursor to the top row.
End	Moves the cursor to the bottom row.
PgUp	Moves the cursor up one page.
PgDown	Moves the cursor down one page.
Shift + Home	Selects the rows from the row where the cursor is positioned to the top row.
Shift + End	Selects the rows from the row where the cursor is positioned to the bottom row.
Shift + PgUp	Selects the rows from the row where the cursor is positioned to the corresponding row up one page.
Shift + PgDown	Selects the rows from the row where the cursor is positioned to the corresponding row down one page.
Shift + click	Selects the rows from the row where the cursor is positioned to the row where the mouse is clicked.
Ctrl + Space	Selects or deselects a row.
Ctrl + click	
Tab	Moves the cursor to the right cell.
Shift + Tab	Moves the cursor to the left cell.
Enter	Move the cursor down one row.
Alt + Enter	Displays the setting dialog for the figure/object corresponding to the figure/object attribute row where the cursor is positioned.
Ctrl + C	Copies the set value in the cell of [Template Attribute] where the cursor is positioned as a character string when the template attribute row is selected. Copies the cell of [Setting Value] where the cursor is positioned when a figure/object attribute row is selected.
Ctrl + V	Pastes a character string in the cell of [Template Attribute] being edited when the template attribute row is selected. Pastes in the cell of [Setting Value] where the cursor is positioned when a figure/object attribute row is selected.
F2	Enables editing of the cell where the cursor is positioned. The target columns for editing are [Template Attribute] (template attribute rows only) and [Setting Value]. ☞ Page 1120 Operations when a cell is edited
Double-click	[Template Attribute] (template attribute row only): Double-clicking the [Setting Value] column enables editing of the cells. Double-clicking any columns other than the above will display the setting dialog of the figure/object having attributes. ☞ Page 1120 Operations when a cell is edited

Operations when a cell is edited

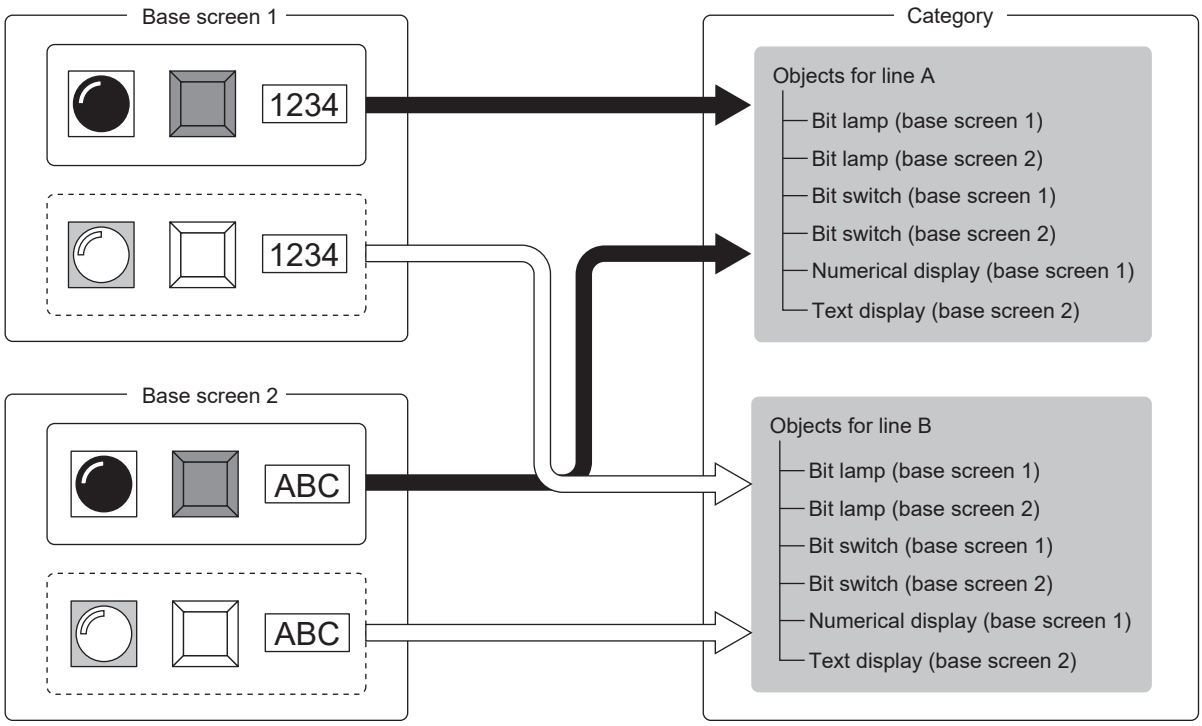
The following table lists the keyboard operations for editing cells in [Template Attribute List].

Operation	Action
Enter	Confirms and ends the edit.
Esc	Discards and ends the edit.
Tab	Confirms the edit and moves the cursor to the right cell.
Shift + Tab	Confirms the edit and moves the cursor to the left cell.
Alt + Enter	Inserts a line feed when text is input.

25 Managing figures and objects by category

GT37 SoftGOT3000

Figures and objects can be managed by grouping them into categories according to the usage.



The following operations are available for figures and objects set in the same category.

- Device batch edit
- Unit No./axis No. batch edit
- Network batch edit
- CH No. batch edit
- Color batch edit
- Shape batch edit

☞ Page 1122 Specifications of the category
☞ Page 1123 How to use the category
☞ Page 1128 [Category List] window

PART 7

25.1 Specifications of the category

GT37 SoftGOT3000

☞ Page 1122 Category type
☞ Page 1122 Registering into categories
☞ Page 1122 Manipulation of the project for which project security is set

25.1.1 Category type

[Switch], [Lamp], and [Other] are provided as default categories.

Categories can be created by the user.

25.1.2 Registering into categories

Figures and objects placed on the following screens can be registered into categories.

- Base screen
- Window screen
- Mobile Screen

Each figure and object can be registered to one category.

One figure/object cannot be registered to multiple categories.

When figures and objects are placed on the screen editor, they are registered to the default categories as described below.

- Switch: Registered to [Switch].
- Lamp: Registered to [Lamp].
- Other than the above: Registered to [Other].

25.1.3 Manipulation of the project for which project security is set

If a login user does not have access to edit projects, the user cannot create or change any categories.

25.2 How to use the category

GT37 SoftGOT3000

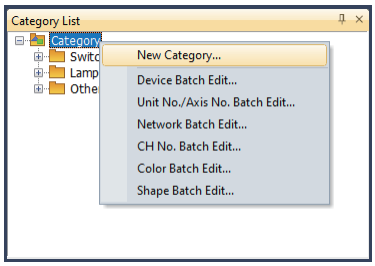
☞ Page 1123 Creating a category
☞ Page 1124 Changing the registered destination category of figures and objects
☞ Page 1126 Batch changing the settings by category

25.2.1 Creating a category

1. Select [View] → [Docking Window] → [Category List] from the menu to display the [Category List] window.

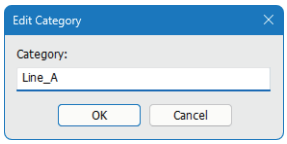
☞ Page 1128 [Category List] window

2. Right-click any one of the categories and select [New Category] from the menu to display the [Edit Category] dialog.

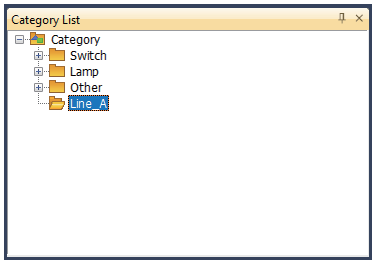


3. Set the name of a new category.

Up to 32 characters can be set.



4. Click the [OK] button to create the category.



For how to change the category of figures and objects, refer to the following.

☞ Page 1124 Changing the registered destination category of figures and objects

25.2.2 Changing the registered destination category of figures and objects

☞ Page 1124 Changing in the [Category List] window
☞ Page 1124 Changing from the menu
☞ Page 1125 Changing in the setting dialog of figure or object

Changing in the [Category List] window

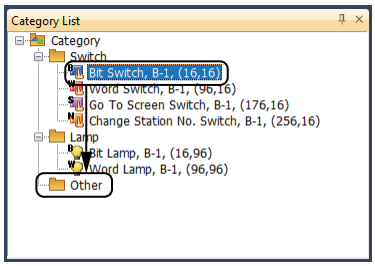
1. Select [View] → [Docking Window] → [Category List] from the menu to display the [Category List] window.

☞ Page 1128 [Category List] window

Figures and objects placed on the open screen are displayed in the tree of each category.
Figures and objects in a closed screen are not displayed in the [Category List] window.

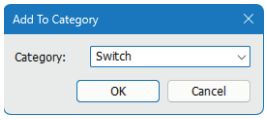
☞ Page 284 Opening a screen

2. Drag the target figure or object into the destination category. The category is changed.



Changing from the menu

Select the target figure or object for placing into another category on the screen editor, then select [Edit] → [Add to Category] from the menu, and then select one of the following categories.

Menu	Action
[Switch]	Changes the registered destination category to [Switch].
[Lamp]	Changes the registered destination category to [Other].
[Other]	Changes the registered destination category to [Other].
[User-defined Category]	Change or create a category. Displays the [Add to Category] dialog.  Select a registered category and click the [OK] button to change the category. If [None] is selected, the figure or object is not registered to any categories. If a nonexistent category is set, the category is newly created and the target is registered. Up to 32 characters can be set.

Changing in the setting dialog of figure or object

1. On the screen editor, double-click the target figure or object for placing into another category to display the setting dialog.
2. Set the registered destination category for [Category] and click the [OK] button to change the category of the figure or object.

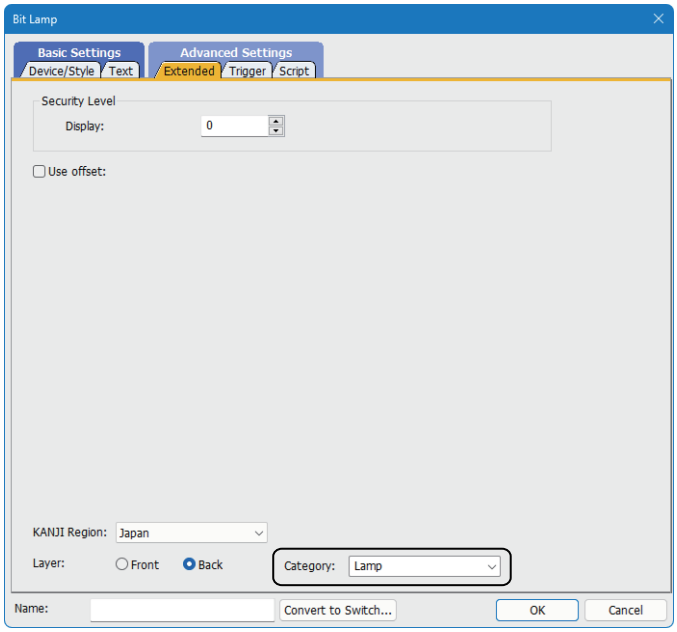
If [None] is selected, the figure or object is not registered to any categories.

If a nonexistent category is set, the category is newly created and the target is registered.

Up to 32 characters can be set.

Ex.

Setting dialog of a bit lamp



PART 7

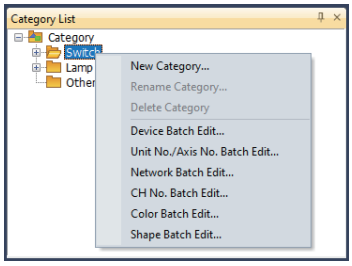
25.2.3 Batch changing the settings by category

1. Select [View] → [Docking Window] → [Category List] from the menu to display the [Category List] window.

☞ Page 1128 [Category List] window

2. Right-click any one of the categories and select the following menus according to the target settings for batch change.

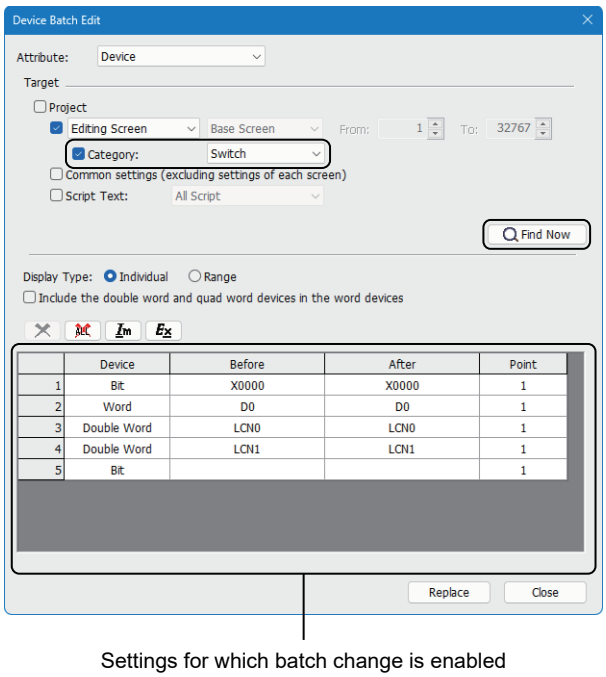
The setting dialog which is corresponding to the selected menu is displayed.



Menu	Action	Reference
[Device Batch Edit]	Change the devices in a batch.	☞ Page 155 [Device Batch Edit] dialog
[Unit No./Axis No. Batch Edit]	Change the unit numbers and axis numbers in a batch.	☞ Page 157 [Unit No./Axis No. Batch Edit] dialog
[Network Batch Edit]	Change the network settings in a batch, such as the network number, station number, and CPU number.	☞ Page 159 [Network Batch Edit] dialog
[CH No. Batch Edit]	Change the channel numbers in a batch.	☞ Page 161 [CH No. Batch Edit] dialog
[Color Batch Edit]	Change the colors in a batch.	☞ Page 163 [Color Batch Edit] dialog
[Shape Batch Edit]	Change the shapes of touch switches and lamps in a batch.	☞ Page 165 [Shape Batch Edit] dialog

3. Select the search target in [Category] and click the [Find Now] button to display the settings for which batch change is enabled.

Example) [Device Batch Edit] dialog



Settings for which batch change is enabled

4. Change the settings in [After] and click the [Replace] button to apply the settings collectively.

Precautions

■ Figures and objects not displayed in the [Category List] window

Figures and objects in a closed screen are not displayed in the [Category List] window.

However, figures and objects that have been registered in categories are identified as the targets for batch change even if the figures and objects are not displayed in the [Category List] window.

■Precautions for batch change

Refer to the following for other precautions related to batch change.

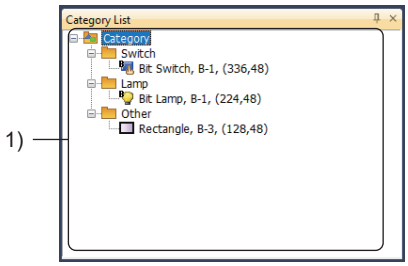
☞ Page 147 Changing the set values collectively (Batch Edit)

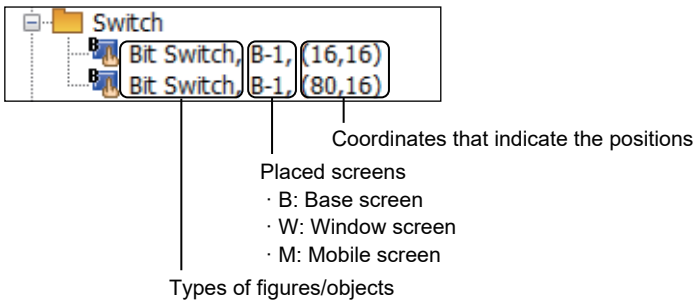
PART 7

25.3 [Category List] window

GT37 SoftGOT3000

Add or change a category.

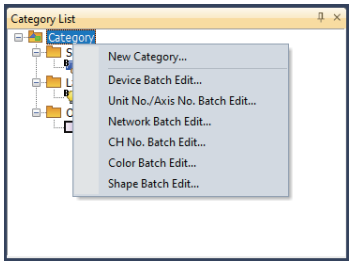


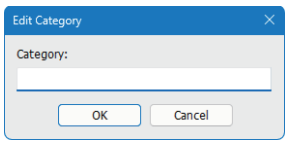
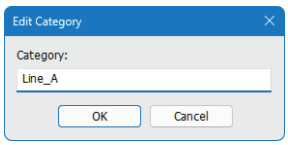
Item		Description
1)	Category list	Lists the categories in the project. [Switch], [Lamp], and [Other] are default categories. Figures and objects placed on the open screen are displayed in the tree of each category. Figures and objects in a closed screen are not displayed in the [Category List] window.  A category of figures and objects can be changed by dragging them to another category. Right-click a category, a figure, or an object to display a menu for operating a category. ☞ Page 1129 Operations from the right-click menu

25.3.1 Operations from the right-click menu

☞ Page 1129 Right-click menu of category
☞ Page 1130 Right-click menu of a figure or an object

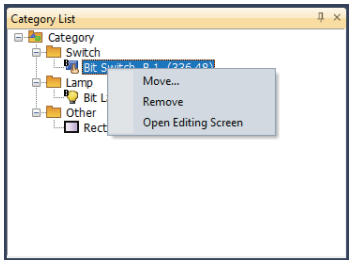
Right-click menu of category

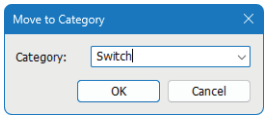


Menu	Description
[New Category]	Displays the [Edit Category] dialog. Create a new category.  Set a category's name. Up to 32 characters can be set.
[Rename Category]	Displays the [Edit Category] dialog. Change the name of the right-clicked category. The names of [Switch], [Lamp], [Other] cannot be changed.  Set a category's name. Up to 32 characters can be set.
[Delete Category]	Deletes the right-clicked category. The registered figures, objects are deleted from the category. [Switch], [Lamp], [Other] cannot be deleted.
[Device Batch Edit]	Displays the [Device Batch Edit] dialog. Change the devices in a batch. ☞ Page 155 [Device Batch Edit] dialog
[Unit No./Axis No. Batch Edit]	Displays the [Unit No./Axis No. Batch Edit] dialog. Change the unit numbers and axis numbers in a batch. ☞ Page 157 [Unit No./Axis No. Batch Edit] dialog
[Network Batch Edit]	Displays the [Network Batch Edit] dialog. Change the network settings in a batch, such as the network number, station number, and CPU number. ☞ Page 159 [Network Batch Edit] dialog
[CH No. Batch Edit]	Displays the [CH No. Batch Edit] dialog. Change the channel numbers in a batch. ☞ Page 161 [CH No. Batch Edit] dialog
[Color Batch Edit]	Displays the [Color Batch Edit] dialog. Change the colors in a batch. ☞ Page 163 [Color Batch Edit] dialog
[Shape Batch Edit]	Displays the [Shape Batch Edit] dialog. Change the shapes of touch switches and lamps in a batch. ☞ Page 165 [Shape Batch Edit] dialog

PART 7

Right-click menu of a figure or an object



Menu	Description
[Move]	Displays the [Move to Category] dialog. Change the registered destination category of the right-clicked figure or object.  Selecting a registered category changes the category. If [None] is selected, the figure or object is not registered to any categories. If a nonexistent category is set, the category is newly created and the target is registered. Up to 32 characters can be set.
[Remove]	Deletes the right-clicked figure or object from the category.
[Open Editing Screen]	Selects the right-clicked figure or object on the screen editor.

26 Figures

☞ Page 1132 Drawing a text figure
☞ Page 1135 Drawing a logo text figure
☞ Page 1141 Drawing a Line
☞ Page 1145 Drawing a Line Freeform
☞ Page 1149 Drawing a Rectangle
☞ Page 1153 Drawing a Polygon
☞ Page 1157 Drawing a Circle
☞ Page 1161 Drawing an Arc or a Sector
☞ Page 1163 Drawing a Table
☞ Page 1167 Drawing a Scale
☞ Page 1169 Drawing a Piping
☞ Page 1173 Filling the framed area of the figure
☞ Page 1177 Pasting an image file
☞ Page 1184 Pasting DXF Data
☞ Page 1187 Pasting IGES Data

26.1 Drawing a text figure

GT37 SoftGOT3000

Draw a text figure.

Operating procedure

1. Select [Figure] → [Text] from the menu.
2. Click the position where text starts.

A text is placed on the screen.

3. Double-click the text to display the [Text] dialog.

☞ Page 1133 [Text] dialog

4. Set a text to be displayed and a font, and click the [OK] button.

The text setting is completed.

For the settings and editing operations common to figures, refer to the following.

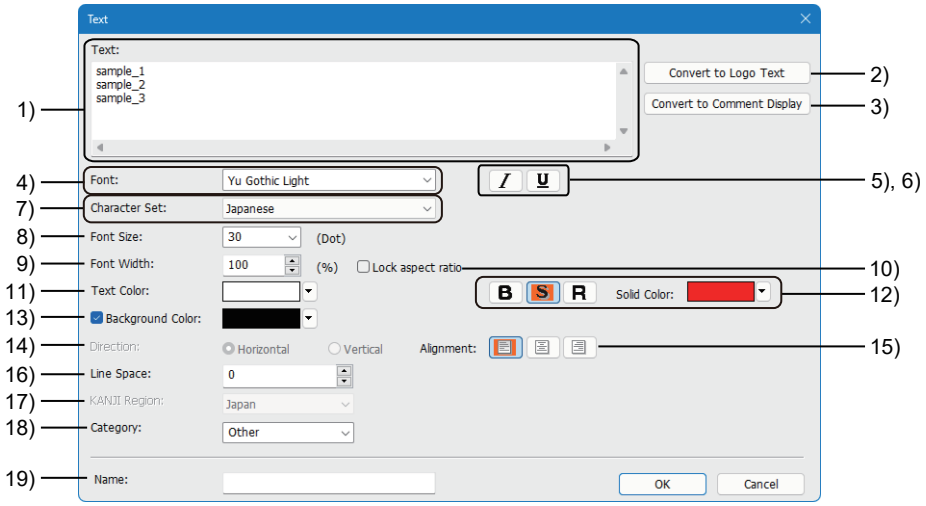
☞ Page 988 Color settings

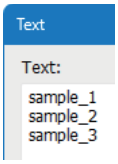
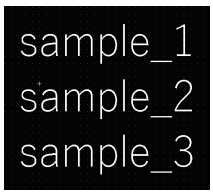
26.1.1 [Text] dialog

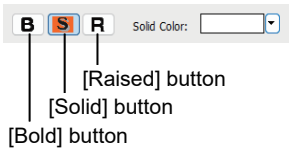
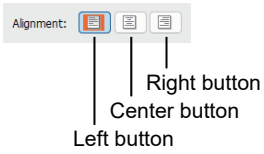
GT37 SoftGOT3000

For mobile screens, some setting items are not available.

☞ Page 2742 Usable functions



Item		Description
1)	[Text]	Set the text to be displayed. The input text is displayed on the screen.  [Text] dialog  Screen Up to 512 characters can be set. A line feed is counted as two characters.
2)	[Convert to Logo Text] button	Converts the text figure to a logo text figure. The [Text] dialog changes to the [Logo Text] dialog. ☞ Page 1136 [Logo Text] dialog If an unusable font is set for the logo text, it is converted to a usable one.
3)	[Convert to Comment Display] button	Registers the entered text to a comment group and converts the text figure to a simple comment display object. For the conversion method, refer to the following. ☞ Page 810 Registering characters of a text figure, touch switch, or other attribute to a comment group
4)	[Font]	Select a font. ☞ Page 74 Specifications of displayable characters
5)	[Italic] button	Italicizes the text. This item is displayed when a Windows font is selected for [Font].
6)	[Underline] button	Underlines the text. This item is displayed when a Windows font is selected for [Font].
7)	[Character Set]	Set the language. This item is displayed when a Windows font is selected for [Font].
8)	[Font Size]	Set a vertical text size. The setting range is [8] dots to [540] dots.
9)	[Font Width]	Set a horizontal text size. The horizontal size is specified with the magnification relative to [Font Size] (vertical text size). The setting range is [6]% to [1600]%.
10)	[Lock aspect ratio]	The aspect ratio of the text is retained when you resize the text by manipulating a handle on the screen editor.
11)	[Text Color]	Select a text color. For details on the color, refer to the following. ☞ Page 988 Color settings

Item		Description
12)	Text style	Set a text style. Only one of the styles ([Bold], [Solid], or [Raised]) is settable.  • [Bold] button: Displays the text in bold. • [Solid] button: Displays the text with a shadow. • [Raised] button: Displays the text embossed. • [Solid Color]: When [Solid] or [Raised] is selected as the text style, set the color of the shadow.
13)	[Background Color]	Fills the background of the text with the specified color. If [Background Color] and a character effect ([Bold], [Solid], or [Raised]) are set at the same time, the text may extend off the left or top edge.
14)	[Direction]	Select the direction of the text. This item is enabled when one of the following options is selected for [Font]. • [UD Gothic] • [UD Mincho]
15)	[Alignment]	Set the horizontal position (left-aligned, centered, or right-aligned) of the text. This item is applied when the text is entered in two or more lines. 
16)	[Line Space]	Set the space between lines. The setting range is [0] dots to [128] dots.
17)	[KANJI Region]	Select the KANJI region. ☞ Page 76 KANJI region This item is enabled when one of the following options is selected for [Font]. • [UD Gothic] • [UD Mincho] • [UDP Gothic] • [UDP Mincho]
18)	[Category]	Select the category to which the figure belongs. ☞ Page 1121 Managing figures and objects by category
19)	[Name]	Set the figure name. The name is displayed in places such as the data browser and property sheet. Up to 100 characters can be set.

26.1.2 Similar functions

The following shows other functions that display text on the GOT.

Applicable function	Description
Logo text	Draws text with an outline or gradient. The logo text is effective to make the text highly visible. ☞ Page 1135 Drawing a logo text figure The logo text can be converted from the text in the [Text] dialog.
Text display	Uses the values stored in the word device as the text code to display the text on the object. ☞ Page 1345 Placing a text display or text input object
Comment display	Displays a registered text (comment). To display a text, register the text as a comment group in the project. This function is useful in the following cases. • Displaying the same text on multiple objects • Switching the text according to the change of the device value ☞ Page 1386 Placing a comment display

26.2 Drawing a logo text figure

GT37 SoftGOT3000

Draws text with an outline or gradient.

Operating procedure

1. Select [Figure] → [Logo Text] from the menu.
2. Click the position where text starts.

A logo text is placed on the screen.

3. Double-click the logo text to display the [Logo Text] dialog.

☞ Page 1136 [Logo Text] dialog

4. Set a text to be displayed and a font, and click the [OK] button.

The logo text setting is completed.

For the settings and editing operations common to figures, refer to the following.

☞ Page 988 Color settings

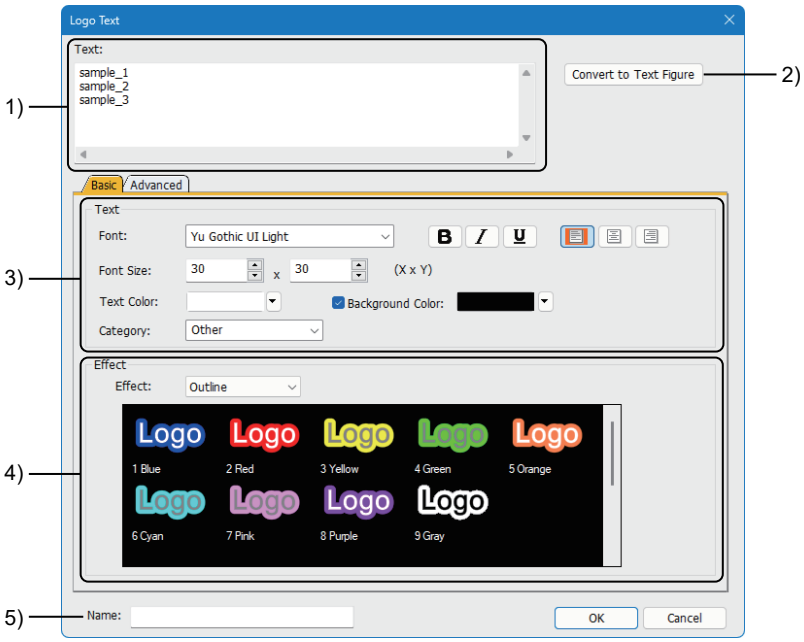
PART 7

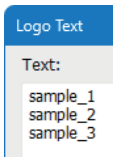
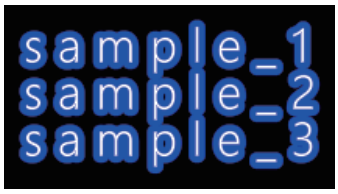
26.2.1 [Logo Text] dialog

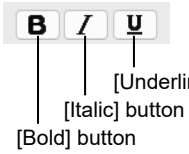
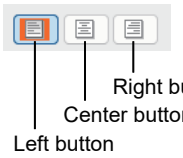
GT37 SoftGOT3000

☞ Page 1136 [Basic] tab
☞ Page 1138 [Advanced] tab

[Basic] tab



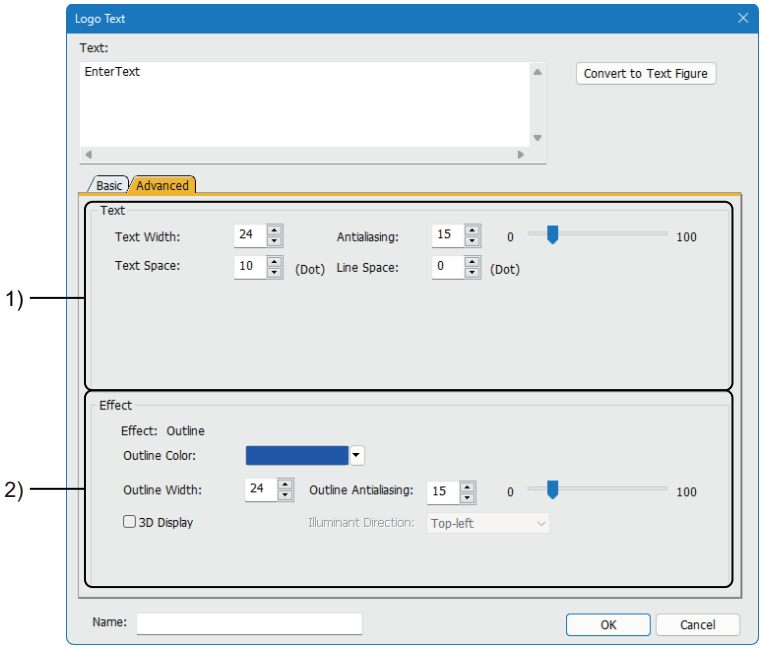
Item		Description
1)	[Text]	Set the text to be displayed. The input text is displayed on the screen.  [Logo Text] dialog  Screen Up to 512 characters can be set. A line feed is counted as two characters.
2)	[Convert to Text Figure] button	Converts the logo text figure to a text figure. The [Logo Text] dialog changes to the [Text] dialog. ☞ Page 1133 [Text] dialog

Item			Description
3)	[Text]	[Font]	Select a font. UD fonts and some types of Windows font are not supported. ☞ Page 74 Specifications of displayable characters
		Text style	Set a text style.  • [Bold] button: Displays the text in bold. • [Italic] button: Italicizes the text. • [Underline] button: Underlines the text.
		[Alignment]	Set the horizontal position (left-aligned, centered, or right-aligned) of the text. This item is applied when the text is entered in two or more lines. 
		[Font Size]	Set the horizontal and vertical text sizes. For both sizes, the setting range is [1] dots to [800] dots.
		[Text Color]	Select a text color. For details on the color, refer to the following. ☞ Page 988 Color settings When [Fill Effects] is selected in the color palette, the text can be displayed with gradation or pattern.
		[Background Color]	To make the background of the text transparent, do not select this item. To color the background of the text, select this item. For details on the color, refer to the following. ☞ Page 988 Color settings
		[Category]	Select the category to which the figure belongs. ☞ Page 1121 Managing figures and objects by category
4)	[Effect]	[Effect]	Select the effect type.
		Preset list	Select one from the preset color shades. The preset color shades to be displayed vary with the item selected for [Effect]. After selecting a color shade, configure the detail settings in [Effect] in the [Advanced] tab. ☞ Page 1138 [Advanced] tab
5)	[Name]		Set the figure name. The name is displayed in places such as the data browser and property sheet. The setting can also be changed in other tabs. Up to 100 characters can be set.

[Advanced] tab

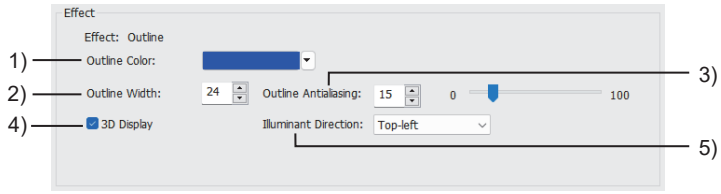
Point

The settings configured in the [Advanced] tab will not be applied until the [OK] button is clicked.
If you change the setting for [Effect] in the [Basic] tab before clicking the [OK] button, the settings configured in the [Advanced] tab are cleared.



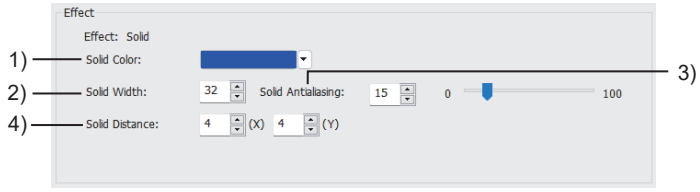
Item			Description
1)	[Text]	[Text Width]	Set the width of the text. The setting range is [0] dots to [100] dots.
		[Antialiasing]	Set the value of the anti-aliasing (which eliminates the aliasing of pixels) for the text. The setting range is [0] dots to [100] dots.
		[Text Space]	Set the space between the texts. The setting range is [0] dots to [128] dots.
		[Line Space]	Set the space between lines. The setting range is [0] dots to [128] dots.
2)	[Effect]		Configure the detail settings for the effect. The displayed setting items vary with the effect selected for [Effect] in the [Basic] tab. For the settings items for each effect, refer to the following. ☞ Page 1139 [Outline] ☞ Page 1139 [Solid] ☞ Page 1139 [3D] ☞ Page 1140 [Stamp] ☞ Page 1140 [Neon]

■[Outline]



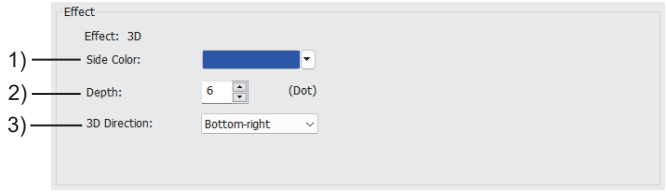
Item		Description
1)	[Outline Color]	Select the color of the outline. For details on the color, refer to the following. ☞ Page 988 Color settings When [Fill Effects] is selected in the color palette, the text can be displayed with gradation or pattern.
2)	[Outline Width]	Set the width of the outline. The setting range is [0] dots to [100] dots.
3)	[Outline Antialiasing]	Set the value of the anti-aliasing (which eliminates the aliasing of pixels) for the outline. The setting range is [0] dots to [100] dots.
4)	[3D Display]	Highlights the logo text so that it appears three-dimensional.
5)	[Illuminant Direction]	Select a direction of illuminant that highlights the text.

■[Solid]



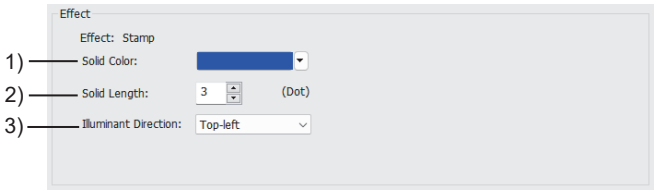
Item		Description
1)	[Solid Color]	Set the color of the shadow. For details on the color, refer to the following. ☞ Page 988 Color settings When [Fill Effects] is selected in the color palette, the text can be displayed with gradation or pattern.
2)	[Solid Width]	Set the width of the shade. The setting range is [0] dots to [100] dots.
3)	[Solid Antialiasing]	Set the value of the anti-aliasing (which eliminates the aliasing of pixels) for the shade. The setting range is [0] dots to [100] dots.
4)	[Solid Distance]	Set the gap between the text and the shade in the X-axis and Y-axis directions. The setting range is [-20] dots to [20] dots.

■[3D]



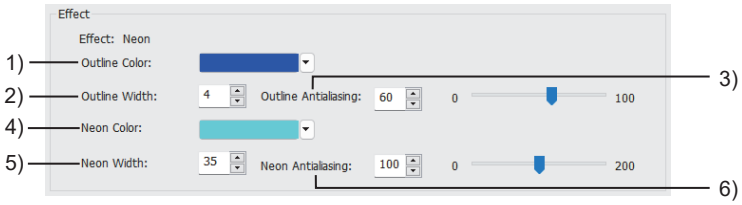
Item		Description
1)	[Side Color]	Set the color of the sides of the three-dimensional text. For details on the color, refer to the following. ☞ Page 988 Color settings When [Fill Effects] is selected in the color palette, the text can be displayed with gradation or pattern.
2)	[Depth]	Set the width of the sides of the three-dimensional text. The setting range is [0] dots to [20] dots.
3)	[3D Direction]	Select the direction in which the sides of the three dimensions extend.

■[Stamp]



Item		Description
1)	[Solid Color]	Set the color of the shadow. For details on the color, refer to the following. ☞ Page 988 Color settings When [Fill Effects] is selected in the color palette, the text can be displayed with gradation or pattern.
2)	[Solid Length]	Set the length of the shade. The setting range is [0] dots to [20] dots.
3)	[Illuminant Direction]	Select a direction in which the text is illuminated.

■[Neon]



Item		Description
1)	[Outline Color]	Select the color of the outline. For details on the color, refer to the following. ☞ Page 988 Color settings When [Fill Effects] is selected in the color palette, the text can be displayed with gradation or pattern.
2)	[Outline Width]	Set the width of the outline. The setting range is [0] dots to [100] dots.
3)	[Outline Antialiasing]	Set the value of the anti-aliasing (which eliminates the aliasing of pixels) for the outline. The setting range is [0] dots to [100] dots.
4)	[Neon Color]	Set the color of the radiant light around the outline. For details on the color, refer to the following. ☞ Page 988 Color settings When [Fill Effects] is selected in the color palette, the text can be displayed with gradation or pattern.
5)	[Neon Width]	Select the width of the neon. The setting range is [0] dots to [100] dots.
6)	[Neon Antialiasing]	Set the value of the anti-aliasing (which eliminates the aliasing of pixels) for the neon. The setting range is [0] dots to [200] dots.

26.3 Drawing a Line

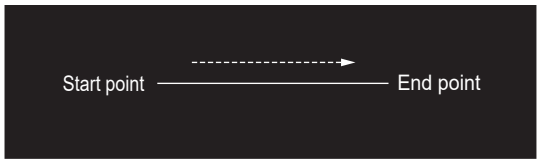
GT37 SoftGOT3000

Draw a line.

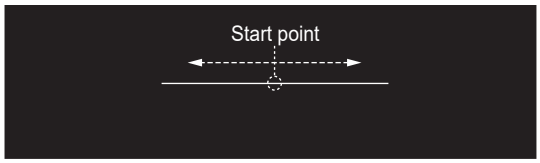
Operating procedure

1. Select [Figure] → [Line] from the menu.
2. Click and hold the mouse button at the start point, and drag the pointer to the end point on the screen editor.

Release the mouse button to complete the placement.



Holding down the Shift key and drag enables drawing of a line in 45-degree increments.
Holding down the Ctrl key and drag enables drawing of a line with the start point as the center.



3. Double-click the placed line to display the [Line] dialog.

☞ Page 1142 [Line] dialog

4. Set a width, color, and others, and click the [OK] button.

The line setting is completed.
For the settings and editing operations common to figures, refer to the following.

☞ Page 988 Color settings

PART 7

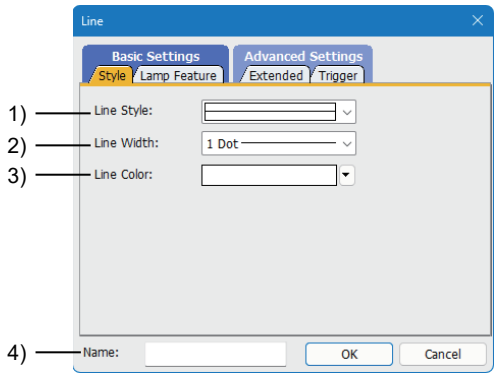
26.3.1 [Line] dialog

GT37 SoftGOT3000

☞ Page 1142 [Style] tab
☞ Page 1143 [Lamp Feature] tab
☞ Page 1143 [Extended] tab
☞ Page 1144 [Trigger] tab

[Style] tab

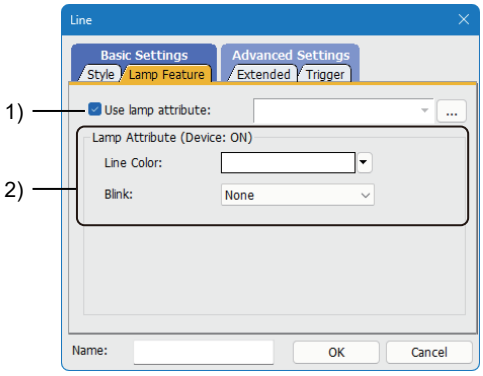
GT37 SoftGOT3000



Item		Description
1)	[Line Style]	Select the style of the line.
2)	[Line Width]	Select the width of the line.
3)	[Line Color]	Select the color of the line. For details on the color, refer to the following. ☞ Page 988 Color settings
4)	[Name]	Set the figure name. The name is displayed in places such as the data browser and property sheet. The setting can also be changed in other tabs. Up to 100 characters can be set.

[Lamp Feature] tab

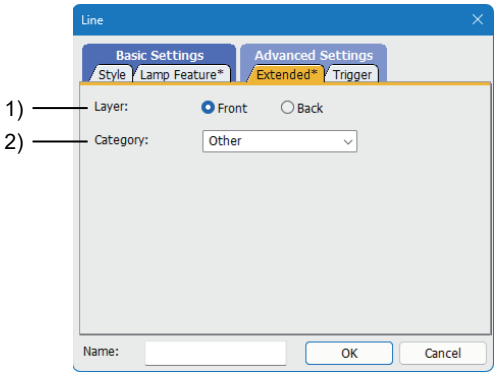
GT37 SoftGOT3000



Item			Description
1)	[Use lamp attribute]		Enables color switching similar to the color switching of a lamp by turning the bit device on or off. ☞ Page 1036 Lamp attribute Set a bit device for control.
			When this item is selected, the figure is processed as an object. ☞ Page 1035 Processing a figure as an object
2)	[Lamp Attribute (Device: ON)]	—	Set the attribute of when the bit device is on.
		[Line Color]	Select the color of the line.
		[Blink]	Select the blinking speed.

[Extended] tab

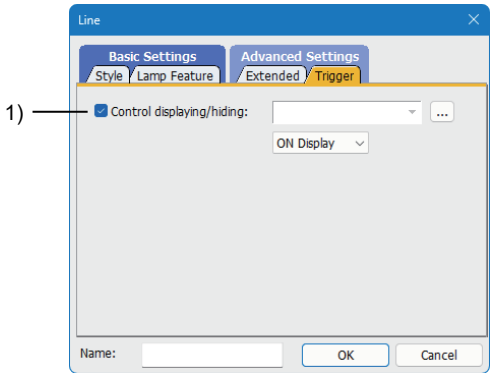
GT37 SoftGOT3000



Item		Description
1)	[Layer]	Select the layer on which the figure is to be placed. ☞ Page 65 Layer
		If either of the following settings is configured, [Backmost] does not appear. • [Use lamp attribute] is selected in the [Lamp Feature] tab • [Control displaying/hiding] is selected in the [Trigger] tab
		When [Front] or [Back] is selected, the figure is processed as an object. ☞ Page 1035 Processing a figure as an object
2)	[Category]	Select the category to which the figure belongs. ☞ Page 1092 Efficient Drawing with Templates

[Trigger] tab

GT37 SoftGOT3000



Item		Description
1)	[Control displaying/hiding]	Enables the setting to display the figure only when requirements are met. Set the following as requirements. • Bit device for control • When to display: When the bit device for control is on or off

26.4 Drawing a Line Freeform

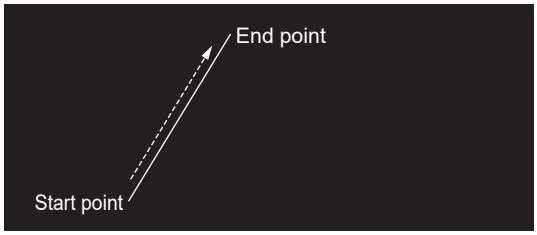
GT37 SoftGOT3000

Draws a freeform line with connected vertices.

Operating procedure

1. Select [Figure] → [Line Freeform] from the menu.
2. Click and hold the mouse button at the start point, and drag the pointer to the end point of the first line on the screen editor.

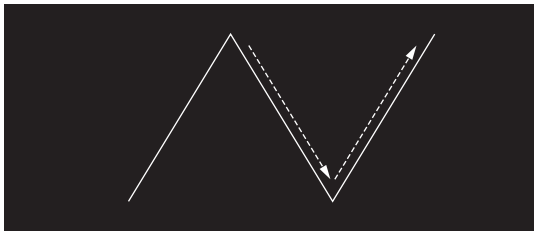
Release the mouse button to determine the drawing of the first line.



Holding down the Shift key and drag enables drawing of a line in 45-degree increments.

3. Move the mouse pointer to the end point of the next line and click the end point.

Repeat this as necessary.



Clicking the Back space key allows reposition of the immediately preceding vertex.

4. Double-click the last vertex to complete the placement.
5. Double-click the placed freeform line to display the [Line Freeform] dialog.

☞ Page 1146 [Line Freeform] dialog

6. Set a width, color, and others, and click the [OK] button.

The freeform line setting is completed.

For the settings and editing operations common to figures, refer to the following.

☞ Page 988 Color settings

Point

After a figure is placed, vertices can be moved, added, or deleted.

Select [Edit] → [Edit Vertices] from the menu to switch the handles to the vertex editing handles.

For how to edit vertices, refer to the following.

☞ Page 1026 Editing vertices to change the shape of a figure

PART 7

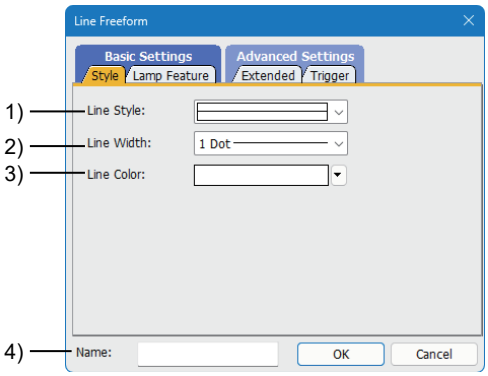
26.4.1 [Line Freeform] dialog

GT37 SoftGOT3000

☞ Page 1146 [Style] tab
☞ Page 1147 [Lamp Feature] tab
☞ Page 1147 [Extended] tab
☞ Page 1148 [Trigger] tab

[Style] tab

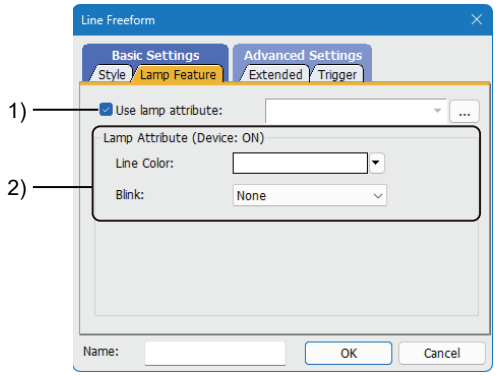
GT37 SoftGOT3000



Item		Description
1)	[Line Style]	Select the style of the line.
2)	[Line Width]	Select the width of the line.
3)	[Line Color]	Select the color of the line. For details on the color, refer to the following. ☞ Page 988 Color settings
4)	[Name]	Set the figure name. The name is displayed in places such as the data browser and property sheet. The setting can also be changed in other tabs. Up to 100 characters can be set.

[Lamp Feature] tab

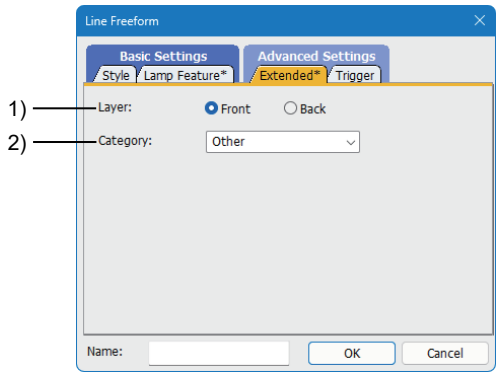
GT37 SoftGOT3000



Item			Description
1)	[Use lamp attribute]		Enables color switching similar to the color switching of a lamp by turning the bit device on or off. ☞ Page 1036 Lamp attribute Set a bit device for control.
			When this item is selected, the figure is processed as an object. ☞ Page 1035 Processing a figure as an object
2)	[Lamp Attribute (Device: ON)]	—	Set the attribute of when the bit device is on.
		[Line Color]	Select the color of the line.
		[Blink]	Select the blinking speed.

[Extended] tab

GT37 SoftGOT3000

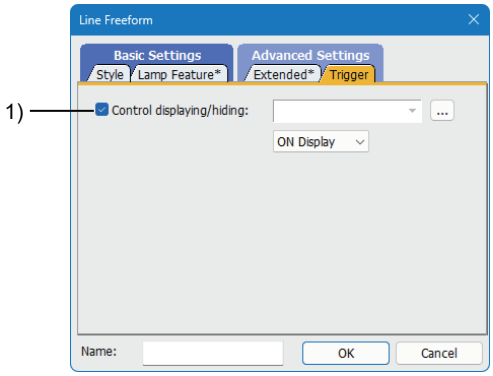


Item		Description
1)	[Layer]	Select the layer on which the figure is to be placed. ☞ Page 65 Layer
		If either of the following settings is configured, [Backmost] does not appear. • [Use lamp attribute] is selected in the [Lamp Feature] tab • [Control displaying/hiding] is selected in the [Trigger] tab
		When [Front] or [Back] is selected, the figure is processed as an object. ☞ Page 1035 Processing a figure as an object
2)	[Category]	Select the category to which the figure belongs. ☞ Page 1121 Managing figures and objects by category

PART 7

[Trigger] tab

GT37 SoftGOT3000



Item		Description
1)	[Control displaying/hiding]	Enables the setting to display the figure only when requirements are met. Set the following as requirements. • Bit device for control • When to display: When the bit device for control is on or off

26.5 Drawing a Rectangle

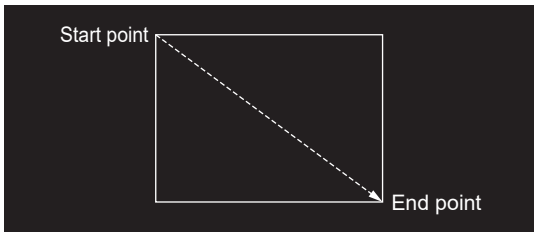
GT37 SoftGOT3000

Draw a rectangle and square.

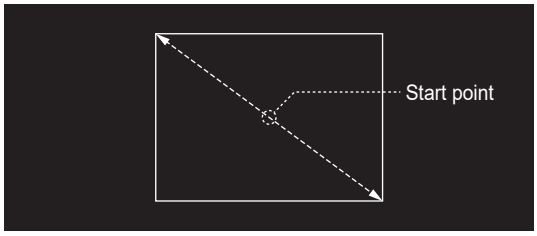
Operating procedure

1. Select [Figure] → [Rectangle] from the menu.

2. Click and hold the mouse button at the start point, and drag the pointer to the end point on the screen editor.
Release the mouse button to complete the placement.



Holding down the Shift key and drag enables drawing of a square.
Holding down the Ctrl key and drag enables drawing of a rectangle with the start point as the center.



3. Double-click the placed rectangle to display the [Rectangle] dialog.
☞ Page 1150 [Rectangle] dialog

4. Set a width, color, and others, and click the [OK] button.
The rectangle setting is completed.
For the settings and editing operations common to figures, refer to the following.
☞ Page 988 Color settings

PART 7

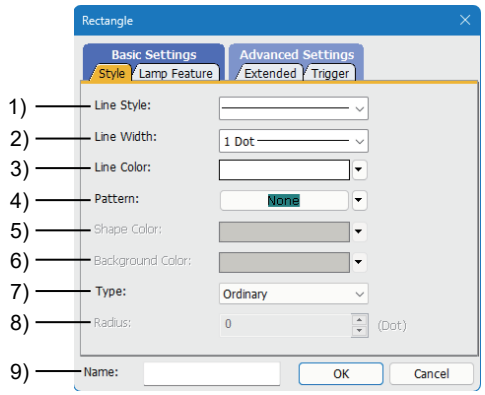
26.5.1 [Rectangle] dialog

GT37 SoftGOT3000

☞ Page 1150 [Style] tab
☞ Page 1151 [Lamp Feature] tab
☞ Page 1152 [Extended] tab
☞ Page 1152 [Trigger] tab

[Style] tab

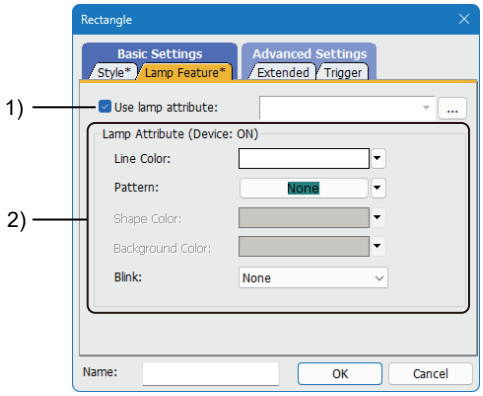
GT37 SoftGOT3000



Item		Description
1)	[Line Style]	Select the style of the frame.
2)	[Line Width]	Select the width of the frame.
3)	[Line Color]	Select the color of the frame. For details on the color, refer to the following. ☞ Page 988 Color settings
4)	[Pattern]	Select a fill pattern for the frame inside. To display the frame only without filling, select [None].
5)	[Shape Color]	This item is enabled when [None] is not selected for [Pattern]. Select a pattern color.
6)	[Background Color]	This item is enabled when [None] is not selected for [Pattern]. Select a background color.
7)	[Type]	Select a corner shape. For [Rounded], when the value other than [1 Dot] is selected for [Line Width], the line style is automatically changed to the straight line. For [Rounded], when the style other than the straight line is selected for [Line Style], the line width is automatically changed to [1 Dot].
8)	[Radius]	Set the radius of the corner. This item is enabled when [Rounded] or [Octagonal] is selected for [Type]. The radius can be set from [0] dot. The maximum value is the value calculated by dividing either of the vertical and horizontal sides of a rectangle, whichever is shorter, by 2. The value is rounded down after the decimal point. (Unit: dot)
9)	[Name]	Set the figure name. The name is displayed in places such as the data browser and property sheet. The setting can also be changed in other tabs. Up to 100 characters can be set.

[Lamp Feature] tab

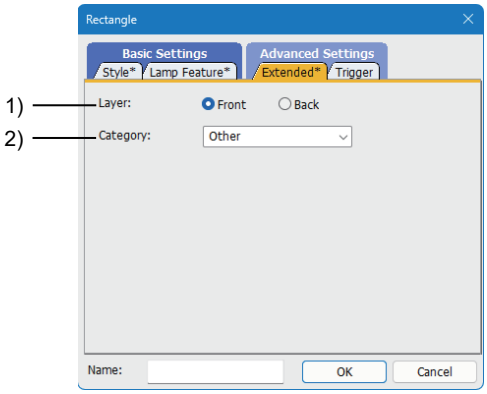
GT37 SoftGOT3000



Item			Description
1)	[Use lamp attribute]		Enables color switching similar to the color switching of a lamp by turning the bit device on or off. ☞ Page 1036 Lamp attribute Set a bit device for control.
			When this item is selected, the figure is processed as an object. ☞ Page 1035 Processing a figure as an object
2)	[Lamp Attribute (Device: ON)]	—	Set the attribute of when the bit device is on.
		[Line Color]	Select the color of the frame. For details on the color, refer to the following. ☞ Page 988 Color settings
		[Pattern]	Select a fill pattern for the frame inside. To display the frame only without filling, select [None].
		[Shape Color]	This item is enabled when [None] is not selected for [Pattern]. Select a pattern color.
		[Background Color]	This item is enabled when [None] is not selected for [Pattern]. Select a background color.
		[Blink]	Select the blinking speed.

[Extended] tab

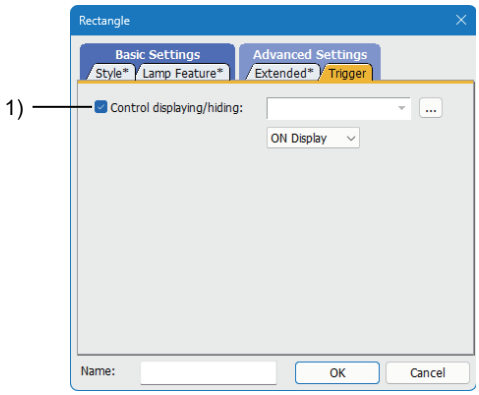
GT37 SoftGOT3000



Item		Description
1)	[Layer]	Select the layer on which the figure is to be placed. ☞ Page 65 Layer
		If either of the following settings is configured, [Backmost] does not appear. • [Use lamp attribute] is selected in the [Lamp Feature] tab • [Control displaying/hiding] is selected in the [Trigger] tab
		When [Front] or [Back] is selected, the figure is processed as an object. ☞ Page 1035 Processing a figure as an object
2)	[Category]	Select the category to which the figure belongs. ☞ Page 1121 Managing figures and objects by category

[Trigger] tab

GT37 SoftGOT3000



Item		Description
1)	[Control displaying/hiding]	Enables the setting to display the figure only when requirements are met. Set the following as requirements. • Bit device for control • When to display: When the bit device for control is on or off

26.6 Drawing a Polygon

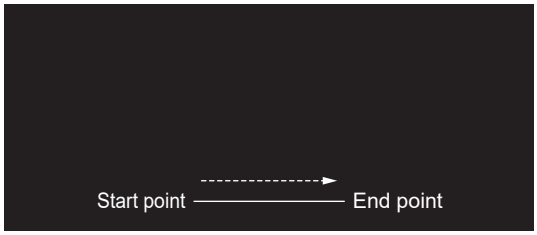
GT37 SoftGOT3000

Draw a polygon.

Operating procedure

1. Select [Figure] → [Polygon] from the menu.
2. Click and hold the mouse button at the start point, and drag the pointer to the end point of the first side on the screen editor.

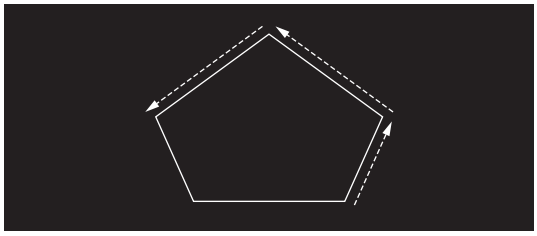
Release the mouse button to determine the drawing of the first side.



Holding down the Shift key and drag enables drawing of a line in 45-degree increments.

3. Move the mouse pointer to the end point of the next side and click the end point.

Repeat this as necessary.



Clicking the Back space key allows reposition of the immediately preceding vertex.

4. Double-click the last vertex to complete the placement.
5. Double-click the placed polygon to display the [Polygon] dialog.

☞ Page 1154 [Polygon] dialog

6. Set a width, color, and others, and click the [OK] button.

The polygon setting is completed.

For the settings and editing operations common to figures, refer to the following.

☞ Page 988 Color settings

Point

After a figure is placed, vertices can be moved, added, or deleted.

Select [Edit] → [Edit Vertices] from the menu to switch the handles to the vertex editing handles.

For how to edit vertices, refer to the following.

☞ Page 1026 Editing vertices to change the shape of a figure

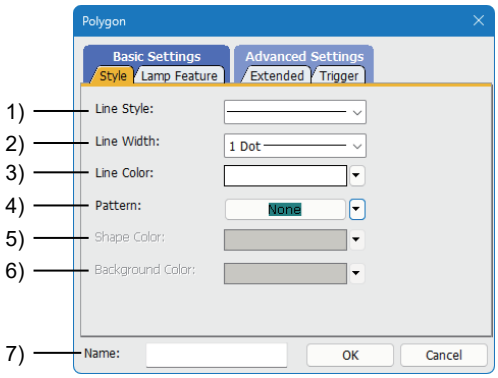
26.6.1 [Polygon] dialog

GT37 SoftGOT3000

☞ Page 1154 [Style] tab
☞ Page 1155 [Lamp Feature] tab
☞ Page 1156 [Extended] tab
☞ Page 1156 [Trigger] tab

[Style] tab

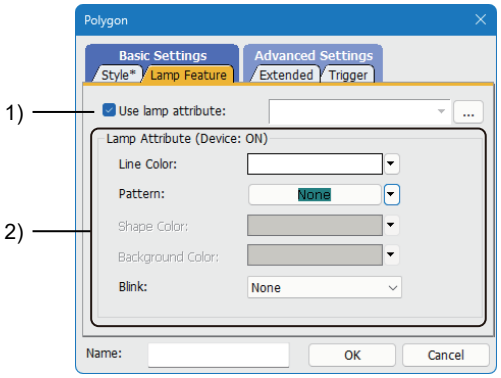
GT37 SoftGOT3000



Item		Description
1)	[Line Style]	Select the style of the frame.
2)	[Line Width]	Select the width of the frame.
3)	[Line Color]	Select the color of the frame. For details on the color, refer to the following. ☞ Page 988 Color settings
4)	[Pattern]	Select a fill pattern for the frame inside. To display the frame only without filling, select [None].
5)	[Shape Color]	This item is enabled when [None] is not selected for [Pattern]. Select a pattern color.
6)	[Background Color]	This item is enabled when [None] is not selected for [Pattern]. Select a background color.
7)	[Name]	Set the figure name. The name is displayed in places such as the data browser and property sheet. The setting can also be changed in other tabs. Up to 100 characters can be set.

[Lamp Feature] tab

GT37 SoftGOT3000

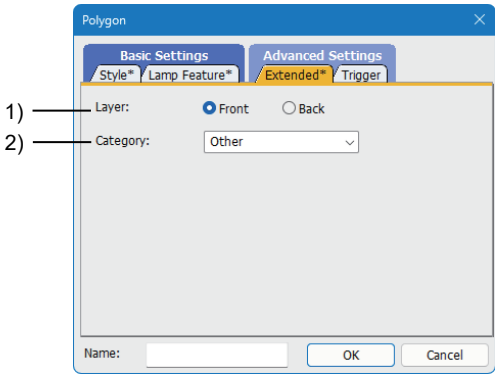


Item			Description
1)	[Use lamp attribute]		Enables color switching similar to the color switching of a lamp by turning the bit device on or off. ☞ Page 1036 Lamp attribute Set a bit device for control.
			When this item is selected, the figure is processed as an object. ☞ Page 1035 Processing a figure as an object
2)	[Lamp Attribute (Device: ON)]	—	Set the attribute of when the bit device is on.
		[Line Color]	Select the color of the frame. For details on the color, refer to the following. ☞ Page 988 Color settings
		[Pattern]	Select a fill pattern for the frame inside. To display the frame only without filling, select [None].
		[Shape Color]	This item is enabled when [None] is not selected for [Pattern]. Select a pattern color.
		[Background Color]	This item is enabled when [None] is not selected for [Pattern]. Select a background color.
		[Blink]	Select the blinking speed.

PART 7

[Extended] tab

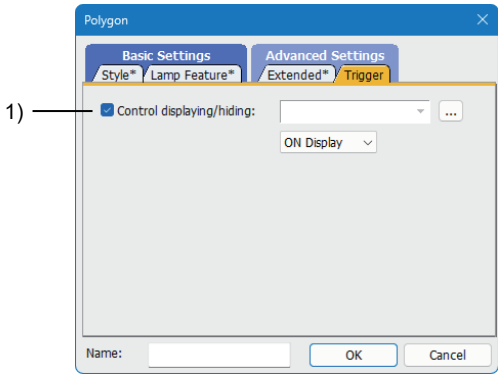
GT37 SoftGOT3000



Item		Description
1)	[Layer]	Select the layer on which the figure is to be placed. ☞ Page 65 Layer
		If either of the following settings is configured, [Backmost] does not appear. • [Use lamp attribute] is selected in the [Lamp Feature] tab • [Control displaying/hiding] is selected in the [Trigger] tab
		When [Front] or [Back] is selected, the figure is processed as an object. ☞ Page 1035 Processing a figure as an object
2)	[Category]	Select the category to which the figure belongs. ☞ Page 1121 Managing figures and objects by category

[Trigger] tab

GT37 SoftGOT3000



Item		Description
1)	[Control displaying/hiding]	Enables the setting to display the figure only when requirements are met. Set the following as requirements. • Bit device for control • When to display: When the bit device for control is on or off

26.7 Drawing a Circle

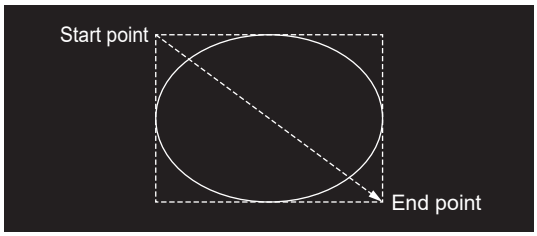
GT37 SoftGOT3000

Draw a circle.

Operating procedure

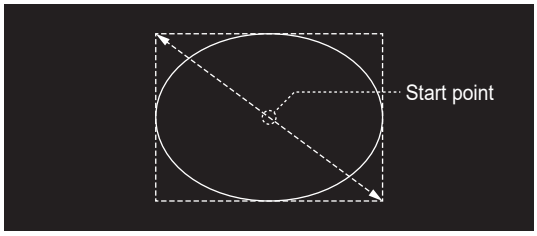
1. Select [Figure] → [Circle] from the menu.
2. Click and hold the mouse button at the start point, and drag the pointer to the end point on the screen editor.

Release the mouse button to complete the placement.



Holding down the Shift key and drag enables drawing of a perfect circle.

Holding down the Ctrl key and drag enables drawing of a circle with the start point as the center.



3. Double-click the placed circle to display the [Circle] dialog.

☞ Page 1158 [Circle] dialog

4. Set a width, color, and others, and click the [OK] button.

The circle setting is completed.

For the settings and editing operations common to figures, refer to the following.

☞ Page 988 Color settings

PART 7

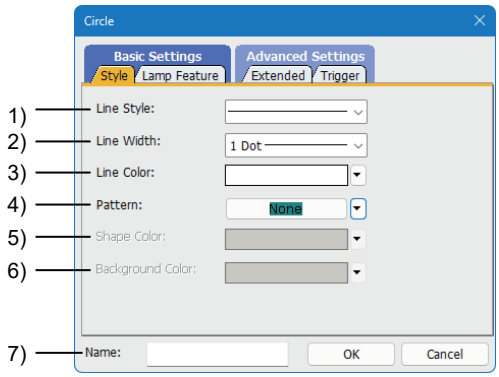
26.7.1 [Circle] dialog

GT37 SoftGOT3000

☞ Page 1158 [Style] tab
☞ Page 1159 [Lamp Feature] tab
☞ Page 1160 [Extended] tab
☞ Page 1160 [Trigger] tab

[Style] tab

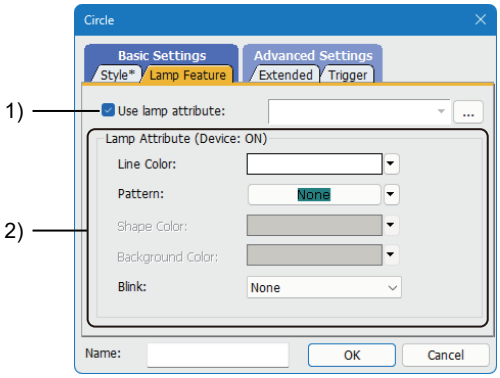
GT37 SoftGOT3000



Item		Description
1)	[Line Style]	Select the style of the frame.
2)	[Line Width]	Select the width of the frame.
3)	[Line Color]	Select the color of the frame. For details on the color, refer to the following. ☞ Page 988 Color settings
4)	[Pattern]	Select a fill pattern for the frame inside. To display the frame only without filling, select [None].
5)	[Shape Color]	This item is enabled when [None] is not selected for [Pattern]. Select a pattern color.
6)	[Background Color]	This item is enabled when [None] is not selected for [Pattern]. Select a background color.
7)	[Name]	Set the figure name. The name is displayed in places such as the data browser and property sheet. The setting can also be changed in other tabs. Up to 100 characters can be set.

[Lamp Feature] tab

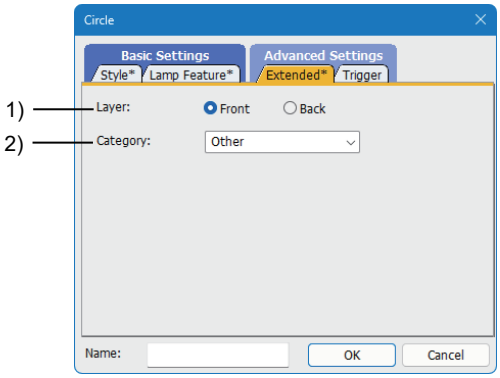
GT37 SoftGOT3000



Item			Description
1)	[Use lamp attribute]		Enables color switching similar to the color switching of a lamp by turning the bit device on or off. ☞ Page 1036 Lamp attribute Set a bit device for control.
			When this item is selected, the figure is processed as an object. ☞ Page 1035 Processing a figure as an object
2)	[Lamp Attribute (Device: ON)]	—	Set the attribute of when the bit device is on.
		[Line Color]	Select the color of the frame. For details on the color, refer to the following. ☞ Page 988 Color settings
		[Pattern]	Select a fill pattern for the frame inside. To display the frame only without filling, select [None].
		[Shape Color]	This item is enabled when [None] is not selected for [Pattern]. Select a pattern color.
		[Background Color]	This item is enabled when [None] is not selected for [Pattern]. Select a background color.
		[Blink]	Select the blinking speed.

[Extended] tab

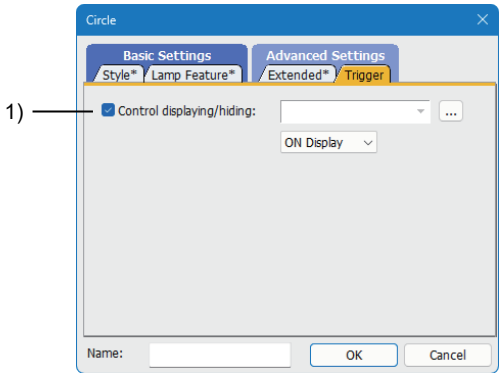
GT37 SoftGOT3000



Item		Description
1)	[Layer]	Select the layer on which the figure is to be placed. ☞ Page 65 Layer
		If either of the following settings is configured, [Backmost] does not appear. • [Use lamp attribute] is selected in the [Lamp Feature] tab • [Control displaying/hiding] is selected in the [Trigger] tab
		When [Front] or [Back] is selected, the figure is processed as an object. ☞ Page 1035 Processing a figure as an object
2)	[Category]	Select the category to which the figure belongs. ☞ Page 1121 Managing figures and objects by category

[Trigger] tab

GT37 SoftGOT3000



Item		Description
1)	[Control displaying/hiding]	Enables the setting to display the figure only when requirements are met. Set the following as requirements. • Bit device for control • When to display: When the bit device for control is on or off

26.8 Drawing an Arc or a Sector

GT37 SoftGOT3000

Draw an arc or a sector.

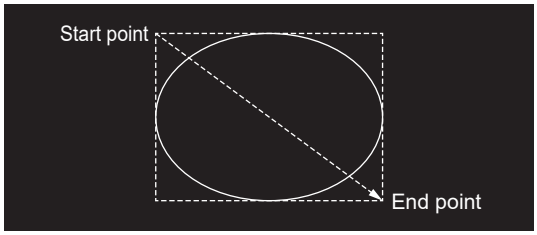
Operating procedure

1. Perform either of the following operations according to the figure to be drawn.

- When drawing an arc: Select [Figure] → [Arc] from the menu.
- When drawing a sector: Select [Figure] → [Sector] from the menu.

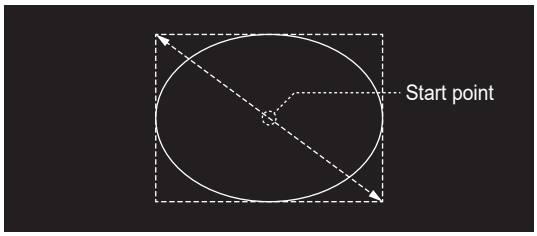
2. Click and hold the mouse button at the start point, and drag the pointer to the end point on the screen editor.

Release the mouse button to complete the placement.



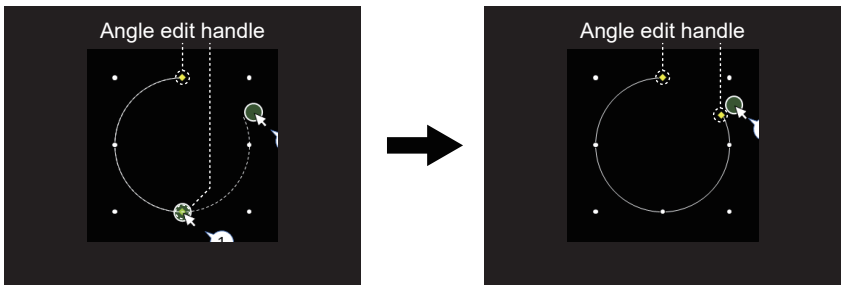
Holding down the Shift key and drag enables drawing of a perfect circle.

Holding down the Ctrl key and drag enables drawing of a circle with the start point as the center.



3. Select the placed arc or sector to display the angle edit handles.

Drag an angle edit handle to adjust the start and end angles.



4. Double-click the placed arc or sector to display the [Arc/Sector] dialog.

☞ Page 1162 [Arc/Sector] dialog

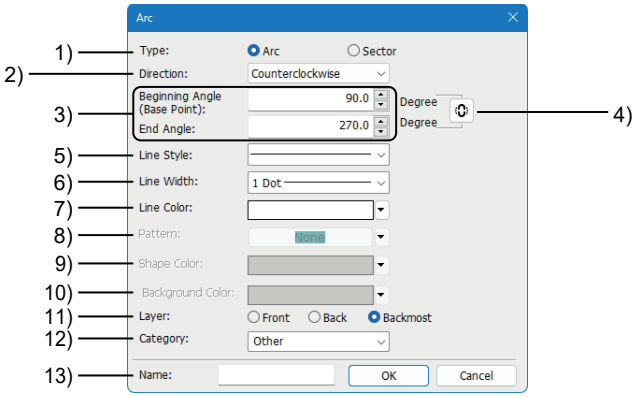
5. Set a width, color, and others, and click the [OK] button.

The arc or sector setting is completed.

For the settings and editing operations common to figures, refer to the following.

☞ Page 988 Color settings

26.8.1 [Arc/Sector] dialog



Item		Description
1)	[Type]	Select the type of the figure to be drawn.
2)	[Direction]	Select the direction in which the arc or sector is drawn from the start angle to the end angle.
3)	[Beginning Angle (Base Point)] [End Angle]	Set angles to define the arc or sector shape. The setting range is [0.0] degrees to [359.9] degrees.
4)	[Fix central angle] button	Link [Beginning Angle (Base Point)] and [End Angle] to maintain the center angle when this setting is enabled.
5)	[Line Style]	Select the style of the frame.
6)	[Line Width]	Select the width of the frame.
7)	[Line Color]	Select the color of the frame. For details on the color, refer to the following. ☞ Page 988 Color settings
8)	[Pattern]	Select a fill pattern for the frame inside. To display the frame only without filling, select [None].
9)	[Shape Color]	This item is enabled when [None] is not selected for [Pattern]. Select a pattern color.
10)	[Background Color]	This item is enabled when [None] is not selected for [Pattern]. Select a background color.
11)	[Layer]	Select the layer on which the figure is to be placed. ☞ Page 65 Layer
		When [Front] or [Back] is selected, the figure is processed as an object. ☞ Page 1035 Processing a figure as an object
12)	[Category]	Select the category to which the figure belongs. ☞ Page 1121 Managing figures and objects by category
13)	[Name]	Set the figure name. The name is displayed in places such as the data browser and property sheet. Up to 100 characters can be set.

26.9 Drawing a Table

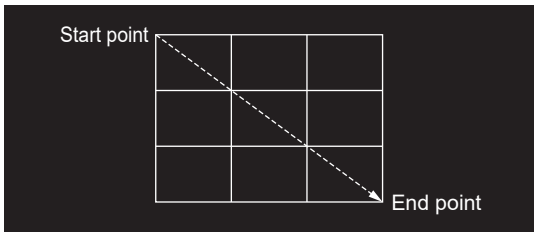
GT37 SoftGOT3000

Draw a table.

Displayed items

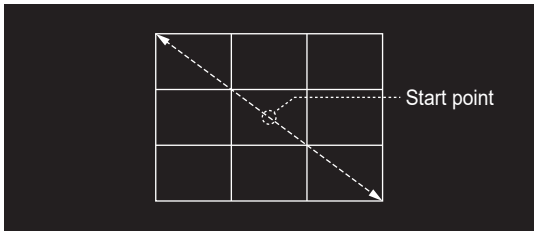
1. Select [Figure] → [Table] from the menu.
2. Click and hold the mouse button at the start point, and drag the pointer to the end point on the screen editor.

Release the mouse button to complete the placement.



Holding down the Shift key and drag enables drawing of a square table.

Holding down the Ctrl key and drag enables drawing of a table with the start point as the center.



3. Double-click the placed table to display the [Table] dialog.

☞ Page 1164 [Table] dialog

4. Set the number of rows and columns, and click the [OK] button.
5. Drag a border to edit the row height or column width as necessary.

When a border is dragged, the behavior differs depending on the setting of [Interval] in the [Table] dialog.

☞ Page 1165 Editing a table on the screen editor

The table setting is completed.

For the settings and editing operations common to figures, refer to the following.

☞ Page 988 Color settings

26.9.1 [Table] dialog

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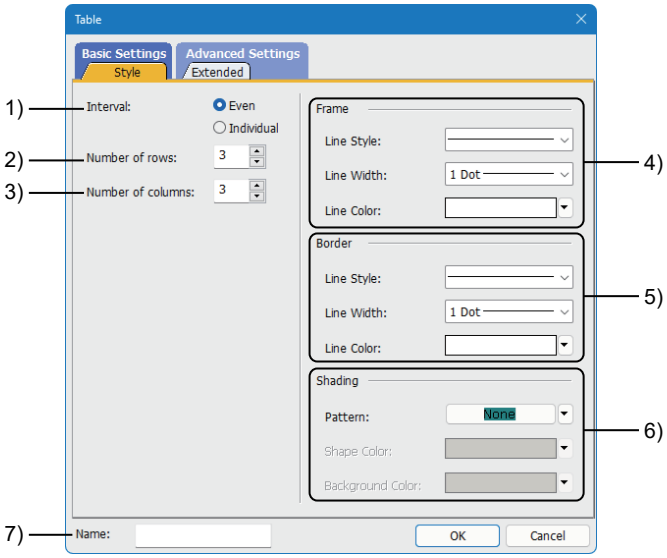
☞ Page 1164 [Style] tab
☞ Page 1166 [Extended] tab

[Style] tab

GT37 SoftGOT3000



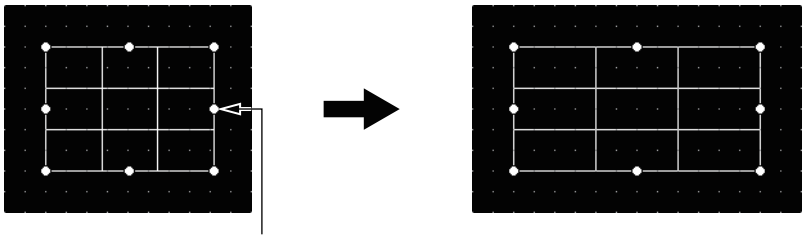
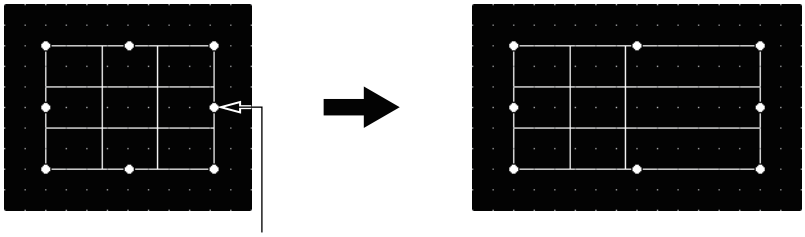
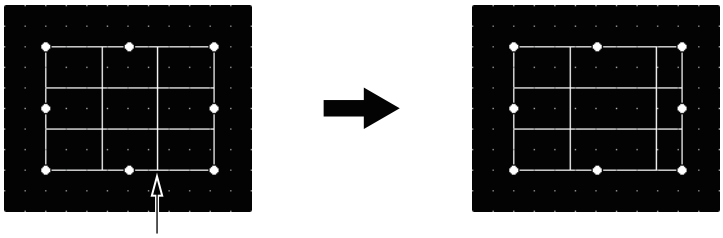
Item			Description
1)	[Interval]		Select the row height and column width. When a border of the table is dragged, the behavior differs depending on the setting. ☞ Page 1165 Editing a table on the screen editor
2)	[Number of rows]		Set the number of rows. The setting range depends on the setting of [Interval] or the table height. • When [Interval] is set to [Even] (table height is 31 dots or more): [1] row to [30] rows • When [Interval] is set to [Even] (table height is 30 dots or less): [1] row to the table height - 1 row • When [Interval] is set to [Individual]: [1] row to [30] rows
3)	[Number of columns]		Set the number of columns. The setting range depends on the setting of [Interval] or the table width. • When [Interval] is set to [Even] (table width is 31 dots or more): [1] column to [30] columns • When [Interval] is set to [Even] (table width is 30 dots or less): [1] column to the table width - 1 column • When [Interval] is set to [Individual]: [1] column to [30] columns
4)	[Frame]	[Line Style]	Select the style of the frame.
		[Line Width]	Select the width of the frame.
		[Line Color]	Select the color of the frame. For details on the color, refer to the following. ☞ Page 988 Color settings
5)	[Border]	[Line Style]	Select the style of the border.
		[Line Width]	Select the width of the border.
		[Line Color]	Select the color of the border. For details on the color, refer to the following. ☞ Page 988 Color settings

Item			Description
6)	[Shading]	[Pattern]	Select a fill pattern for the frame inside. To display the frame only without filling, select [None].
		[Shape Color]	This item is enabled when [None] is not selected for [Pattern]. Select a pattern color.
		[Background Color]	This item is enabled when [None] is not selected for [Pattern]. Select a background color.
7)	[Name]		Set the figure name. The name is displayed in places such as the data browser and property sheet. The setting can also be changed in other tabs. Up to 100 characters can be set.

■Editing a table on the screen editor

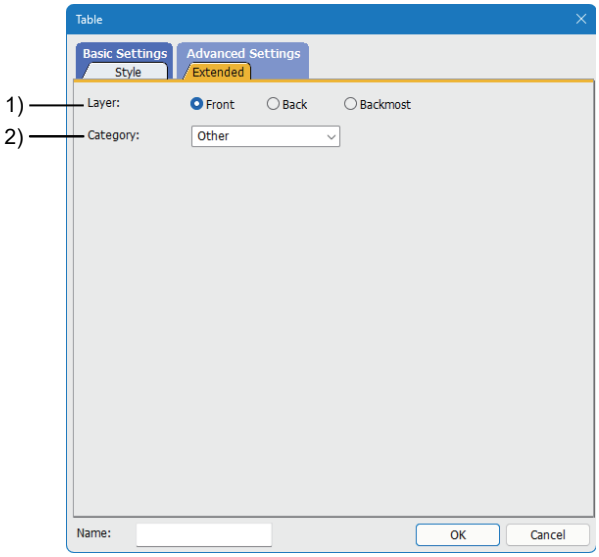
The row height or column width of a table selected on the screen editor can be edited by dragging of a handle or a border.

The behavior at dragging depends on the setting of [Interval] in the [Table] dialog.

Setting of [Interval]	Behavior at dragging
[Even]	The rows and columns are evenly distributed. Dragging a handle on the table frame or a border automatically resizes rows and/or columns and distributes them evenly according to the table size.  Drag the handle to the right.
[Individual]	The row height and column width can be set individually. Dragging a handle on the table frame resizes the table with the locations of borders unchanged.  Drag the handle to the right. Dragging a border only moves this border.  Drag the border to the right.

[Extended] tab

GT37 SoftGOT3000



Item		Description
1)	[Layer]	Select the layer on which the figure is to be placed. ☞ Page 65 Layer
		When [Front] or [Back] is selected, the figure is processed as an object. ☞ Page 1035 Processing a figure as an object
2)	[Category]	Select the category to which the figure belongs. ☞ Page 1121 Managing figures and objects by category

26.10 Drawing a Scale

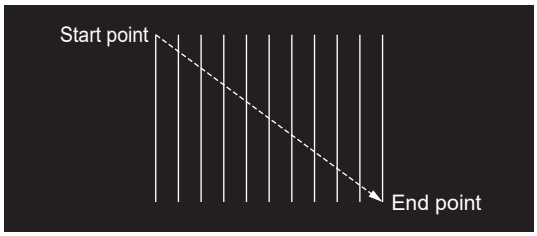
GT37 SoftGOT3000

Draw a scale.

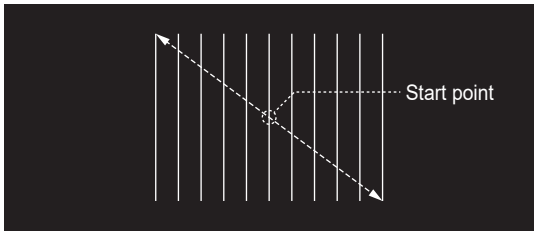
Operating procedure

1. Select [Figure] → [Scale] from the menu.
2. Click and hold the mouse button at the start point, and drag the pointer to the end point on the screen editor.

Release the mouse button to complete the placement.



Holding down the Shift key and drag enables drawing of a vertically and horizontally symmetrical scale.
Holding down the Ctrl key and drag enables drawing of a scale with the start point as the center.



3. Double-click the placed scale to display the [Scale] dialog.

☞ Page 1168 [Scale] dialog

4. Set a width, color, and others, and click the [OK] button.

The scale setting is completed.
For the settings and editing operations common to figures, refer to the following.

☞ Page 988 Color settings

PART 7

26.10.1 [Scale] dialog

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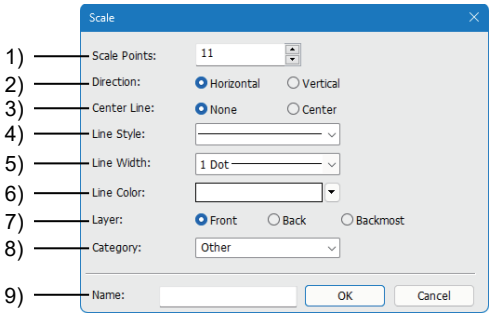


Item		Description
1)	[Scale Points]	Set the number of scale marks. The setting range is [2] to [255].
2)	[Direction]	Select the direction of the scale.
3)	[Center Line]	Select the center line which passes vertically through the scale.
4)	[Line Style]	Select the style of the line.
5)	[Line Width]	Select the width of the line.
6)	[Line Color]	Select the color of the line. For details on the color, refer to the following. ☞ Page 988 Color settings
7)	[Layer]	Select the layer on which the figure is to be placed. ☞ Page 65 Layer
		When [Front] or [Back] is selected, the figure is processed as an object. ☞ Page 1035 Processing a figure as an object
8)	[Category]	Select the category to which the figure belongs. ☞ Page 1121 Managing figures and objects by category
9)	[Name]	Set the figure name. The name is displayed in places such as the data browser and property sheet. Up to 100 characters can be set.

26.11 Drawing a Piping

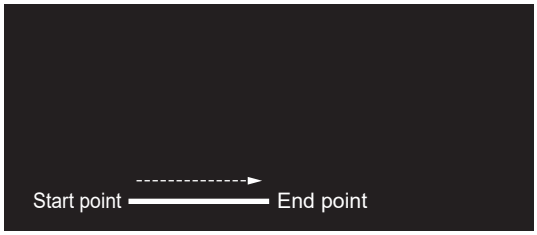
GT37 SoftGOT3000

Draw a piping.

Operating procedure

1. Select [Figure] → [Piping] from the menu.
2. Click and hold the mouse button at the start point, and drag the pointer to the end point of the first line on the screen editor.

Release the mouse button to determine the drawing of the first line.

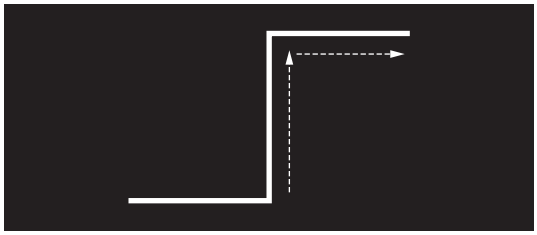


Holding down the Shift key and drag enables drawing of a line in 45-degree increments.

3. Move the mouse pointer to the end point of the next line and click the end point.

Repeat this as necessary.

When 100 vertices are drawn, the drawing automatically ends.



Clicking the Back space key allows reposition of the immediately preceding vertex.

4. Double-click the last vertex to complete the placement.
5. Double-click the placed piping to display the [Piping] dialog.

☞ Page 1170 [Piping] dialog

6. Set a width, color, and others, and click the [OK] button.

The piping setting is completed.

For the settings and editing operations common to figures, refer to the following.

☞ Page 988 Color settings

Point

After a figure is placed, vertices can be moved, added, or deleted.

Select [Edit] → [Edit Vertices] from the menu to switch the handles to the vertex editing handles.

For how to edit vertices, refer to the following.

☞ Page 1026 Editing vertices to change the shape of a figure

PART 7

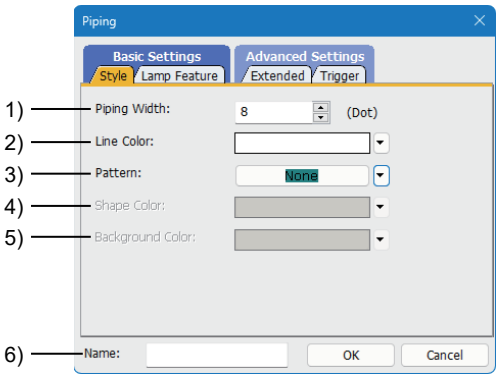
26.11.1 [Piping] dialog

GT37 SoftGOT3000

☞ Page 1170 [Style] tab
☞ Page 1171 [Lamp Feature] tab
☞ Page 1172 [Extended] tab
☞ Page 1172 [Trigger] tab

[Style] tab

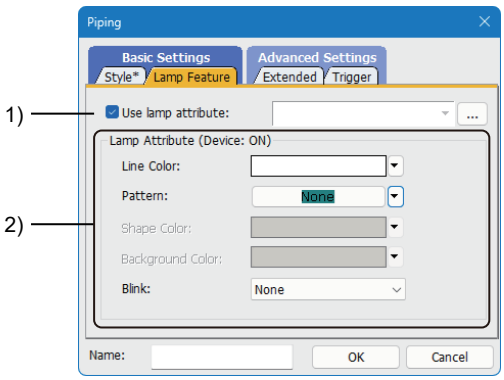
GT37 SoftGOT3000



Item		Description
1)	[Piping Width]	Set the width of the piping. The setting range is [3] dots to [100] dots.
2)	[Line Color]	Select the color of the frame. For details on the color, refer to the following. ☞ Page 988 Color settings
3)	[Pattern]	Select a fill pattern for the frame inside. To display the frame only without filling, select [None].
4)	[Shape Color]	This item is enabled when [None] is not selected for [Pattern]. Select a pattern color.
5)	[Background Color]	This item is enabled when [None] is not selected for [Pattern]. Select a background color.
6)	[Name]	Set the figure name. The name is displayed in places such as the data browser and property sheet. The setting can also be changed in other tabs. Up to 100 characters can be set.

[Lamp Feature] tab

GT37 SoftGOT3000



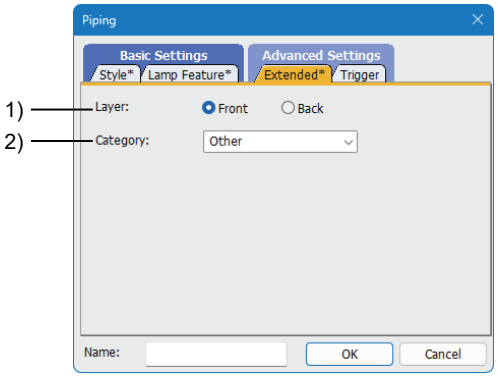
Item			Description
1)	[Use lamp attribute]		Enables color switching similar to the color switching of a lamp by turning the bit device on or off. ☞ Page 1036 Lamp attribute Set a bit device for control.
			When this item is selected, the figure is processed as an object. ☞ Page 1035 Processing a figure as an object
2)	[Lamp Attribute (Device: ON)]	—	Set the attribute of when the bit device is on.
		[Line Color]	Select the color of the frame. For details on the color, refer to the following. ☞ Page 988 Color settings
		[Pattern]	Select a fill pattern for the frame inside. To display the frame only without filling, select [None].
		[Shape Color]	This item is enabled when [None] is not selected for [Pattern]. Select a pattern color.
		[Background Color]	This item is enabled when [None] is not selected for [Pattern]. Select a background color.
		[Blink]	Select the blinking speed.

[Extended] tab

GT37 SoftGOT3000

For mobile screens, some setting items are not available.

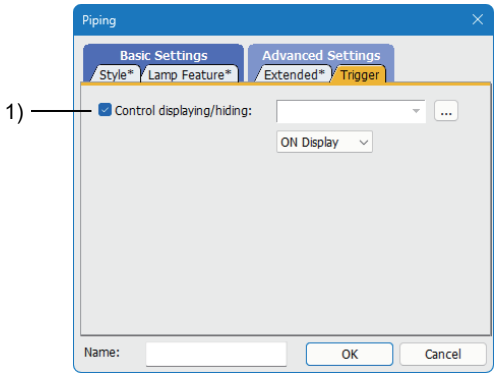
☞ Page 2742 Usable functions



Item		Description
1)	[Layer]	Select the layer on which the figure is to be placed. ☞ Page 65 Layer
		If either of the following settings is configured, [Backmost] does not appear. • [Use lamp attribute] is selected in the [Lamp Feature] tab • [Control displaying/hiding] is selected in the [Trigger] tab
		When [Front] or [Back] is selected, the figure is processed as an object. ☞ Page 1035 Processing a figure as an object
2)	[Category]	Select the category to which the figure belongs. ☞ Page 1121 Managing figures and objects by category

[Trigger] tab

GT37 SoftGOT3000



Item		Description
1)	[Control displaying/hiding]	Enables the setting to display the figure only when requirements are met. Set the following as requirements. • Bit device for control • When to display: When the bit device for control is on or off

26.12 Filling the framed area of the figure

GT37 SoftGOT3000

Fill the area or figure enclosed by lines with the specified color.

Point

Paint is not available when either of the following items is selected in the [Type Setting] dialog ([Basic Setting]).

- [Enable the antialiasing]
- [Expand base screen sizes]

☞ Page 519 [Basic Setting]

If the above items are selected with a paint placed on the screen editor, the paint is deleted.

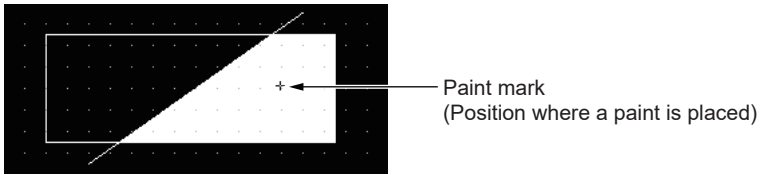
Setting an area to be filled with a paint

A figure drawn with solid lines is used as demarcation lines to set an area to be filled.

Set the same color for the figure (demarcation lines) and for [Boundary Color] in the [Paint] dialog.

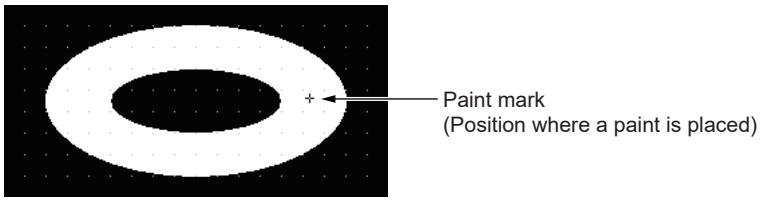
Ex.

Filling the area enclosed by a line and a rectangle



Ex.

Filling the area between the two circles



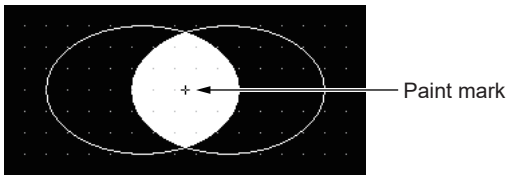
PART 7

Placing a paint

Operating procedure

1. Select [Figure] → [Paint] from the menu.
2. Place the cursor over the area to be filled, and click the area.

A paint mark is placed on the screen and the area within the frame is filled.
The paint mark is displayed on GT Designer3 only.



3. Double-click the paint mark to display the [Paint] dialog.

☞ Page 1176 [Paint] dialog

4. Set a fill color, pattern, and others, and click the [OK] button.

The paint setting is completed.
For the settings and editing operations common to figures, refer to the following.

☞ Page 988 Color settings

Precautions

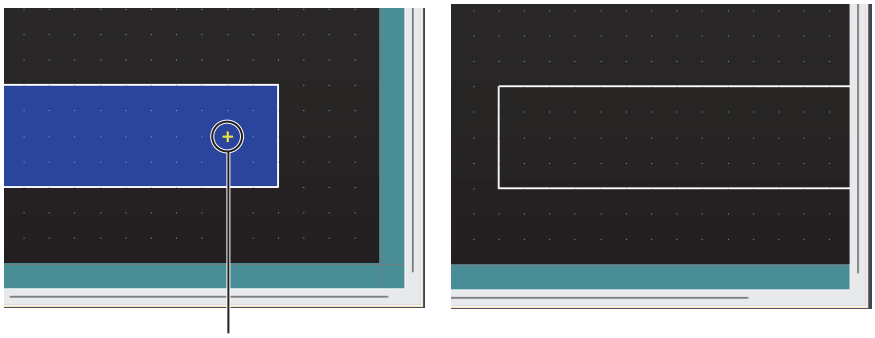
■Precautions for demarcation lines

Precaution	Description
Layer on which demarcation lines are placed	Place the figure used as demarcation lines on the rearmost layer.
Stacking order of demarcation lines and a paint	Place a figure (demarcation lines) behind the paint mark. If not, unintended areas will also be filled.
Color of demarcation lines and background color of the area to be filled	Set different colors for demarcation lines and background color of the area to be filled. If the same color is set, filling is not performed.
Placement of demarcation lines	Enclose the area without any clearance between demarcation lines. With even a little clearance between the lines, unintended areas will also be filled.

■Precautions for display on the screen editor

Precaution	Description
When part of the area is unfilled on the screen editor	In some cases, part of the area is unfilled. Redisplaying the screen editor will solve the issue. ☞ Page 296 Redisplaying a selected screen editor

■Precaution for placing an object on a screen

Precaution	Description
When placing an object on a window screen with rounded corners set	Even if rounded corners are set for the window screen on which a paint is placed, the radius setting is fixed at "0".
When the position of the paint mark is outside the window	The fill is not displayed in the following cases: • The paint mark is not displayed in the window on the screen editor. • The paint mark is placed outside the range of the displayed monitor screen.  When the paint mark is displayed　When the paint mark is not displayed

26.12.1 [Paint] dialog

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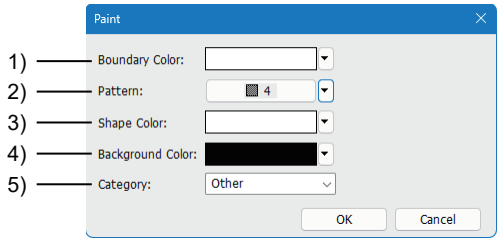

Item		Description
1)	[Boundary Color]	Set a color for the demarcation lines of the area to be filled. For details on the color, refer to the following. ☞ Page 988 Color settings
		If the same color is selected for [Boundary Color] and either of [Shape Color] or [Background Color], the area may not be filled. In such a case, shift the position of the paint mark.
2)	[Pattern]	Select a fill pattern for the area.
3)	[Shape Color]	This item is enabled when [None] is not selected for [Pattern]. Select a pattern color.
4)	[Background Color]	This item is enabled when [None] is not selected for [Pattern]. Select a background color.
5)	[Category]	Select the category to which the figure belongs. ☞ Page 1121 Managing figures and objects by category

26.13 Pasting an image file

GT37 SoftGOT3000

Import an image file to GT Designer3, and paste it on the screen.

26.13.1 Specifications of importable image files

GT37 SoftGOT3000

Files in the following formats can be imported.

- BMP format
- JPEG format
- PNG format

The following shows details on importable file formats.

Item	Specifications of importable file formats		
	BMP format	JPEG format	PNG format
Extension	*.bmp	• *.jpg • *.jpeg • *.jpe	*.png
Supported format	• 2 colors (monochrome) • 16 colors • 256 colors • 24-bit color	Full-color RGB-compatible baseline JPEG (JFIF, EXIF)	• RGB 24-bit PNG • 32-bit PNG data with RGB + α channel (α channel (transparency information) supported)
Number of colors	16.77 million colors		
Size of images that can be pasted	6000 × 6000 pixels		
Editing after pasting	Available	Available	Not available

Transparent and semi-transparent areas (α channel) of a PNG file

The transparent and semi-transparent areas of a PNG file become transparent according to the data (value of α channel) before import.

- Transparent area (α = 0): Displays the background color.
- Semi-transparent area (0 < α < 1): Combines the background color.

For an object using a PNG file containing an α channel as its shape, the appearance of the semi-transparent area differs depending on the color settings of the layer where the object is placed or the front layer.

Layer	Transparent color of the front layer	
	Enabled	Disabled
Front layer	For an object that using PNG file containing an α channel as its shape, if another figure or object is placed behind the object, the semi-transparent area becomes transparent. If no figure or object is placed behind the object, the semi-transparent area is combined with the transparent color of the screen. Because the combined color is different from the transparent color of the screen, the semi-transparent area does not become transparent.	The semi-transparent area becomes transparent.
Back layer	The semi-transparent area becomes transparent.	
Backmost layer		

Precautions

If the image file is large, the memory of the GOT may be insufficient.
If the memory is insufficient, only the frame of the placed image file is displayed.

PART 7

26.13.2 Pasting an image file

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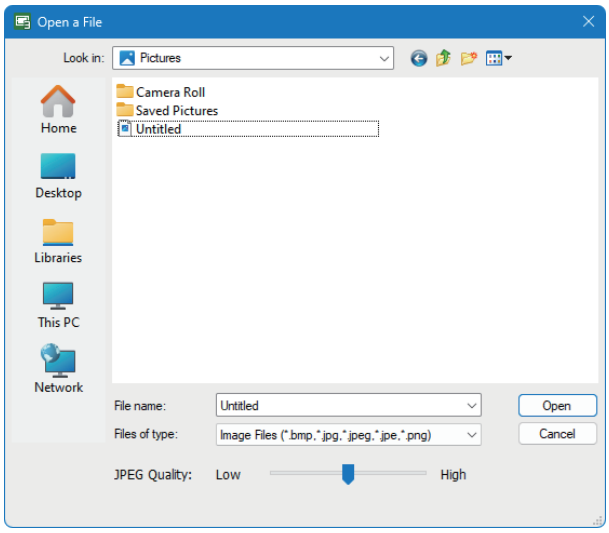
Point

The color of an image may appear slightly different between in GT Designer3 and on the GOT.

Pasting from the menu

1. Select [Figure] → [Import Image Data] from the menu to display the [Open a File] dialog.
2. Select an image file to be pasted, and click the [Open] button.



When you paste the JPEG file, set [JPEG Quality].

[Low]: The image quality deteriorates, and the file size becomes smaller.

[High]: The image quality improves, and the file size becomes larger.

3. Click an intended position on the screen editor to paste the image.
4. Resize or reposition the image to fit it into the screen display area.

The part extending to the temporary area is not displayed on the GOT.

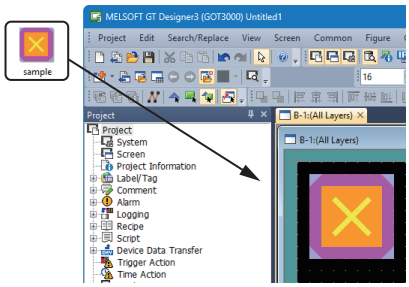
Pasting is completed.

For the settings and editing operations common to figures, refer to the following.

☞ Page 988 Color settings

Pasting by drag operation

1. Drag an image file onto the GT Designer3 screen editor.
2. Release the mouse button at an intended position to paste the image.



3. Resize or reposition the image to fit it into the screen display area.

The part extending to the temporary area is not displayed on the GOT.

Pasting is completed.

For the settings and editing operations common to figures, refer to the following.

☞ Page 988 Color settings

PART 7

26.13.3 Editing the pasted image

GT37 SoftGOT3000

The pasted image is editable or not editable depending on the file format and operating environment of GT Designer3.

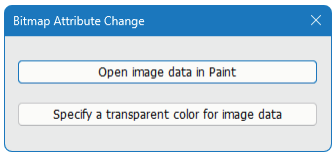
File format	Editing of the pasted image	
	In Windows11	In other than Windows11
BMP format	Pasted images are not editable. To edit an image, use image editing software and paste the edited image to the screen.	Editable ☞ Page 1180 Editing a BMP image
JPEG format		Editable ☞ Page 1182 Editing a JPEG image
PNG format		Pasted images are not editable. To edit an image, use image editing software and paste the edited image to the screen.

Editing a BMP image

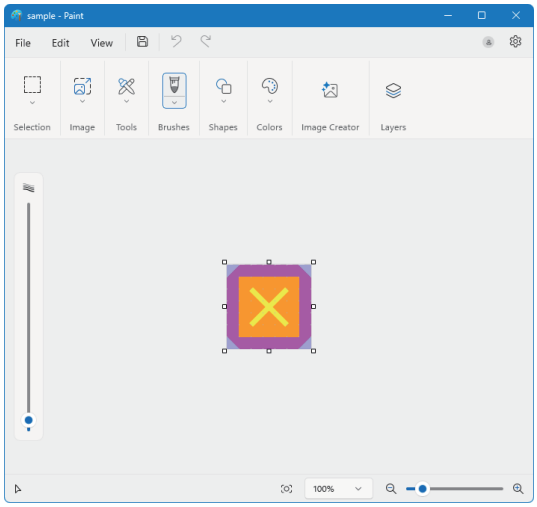
☞ Page 1180 Editing an image
☞ Page 1181 Setting a transparent color

■Editing an image

1. Double-click the image to be edited on the screen editor to display the [Bitmap Attribute Change] dialog.



2. Click the [Open image data in Paint] button to start Paint in Windows.

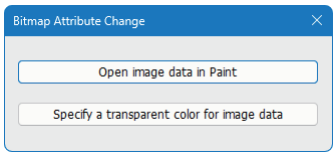


3. Edit the image, and select [File] → [Save] from the menu.

The paint window is closed, and editing is completed.

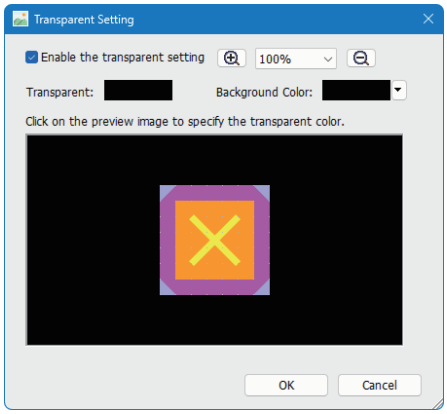
■Setting a transparent color

1. Double-click the image to be edited on the screen editor to display the [Bitmap Attribute Change] dialog.



2. Click the [Specify a transparent color for image data] button to display the [Transparent Setting] dialog.

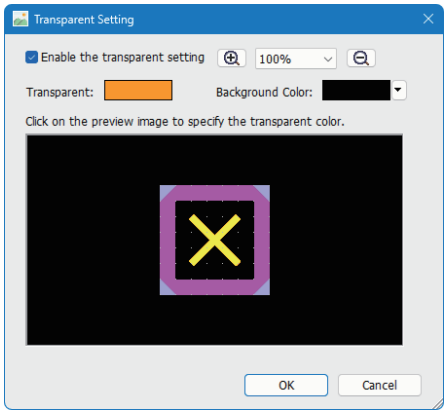
☞ Page 1183 [Transparent Setting] dialog



3. Select [Enable the transparent setting].

4. Click the preview image and select a color to become transparent.

The preview image changes to an image with the selected color transparent.



5. Click the [OK] button to confirm the transparent color setting.

Editing a JPEG image

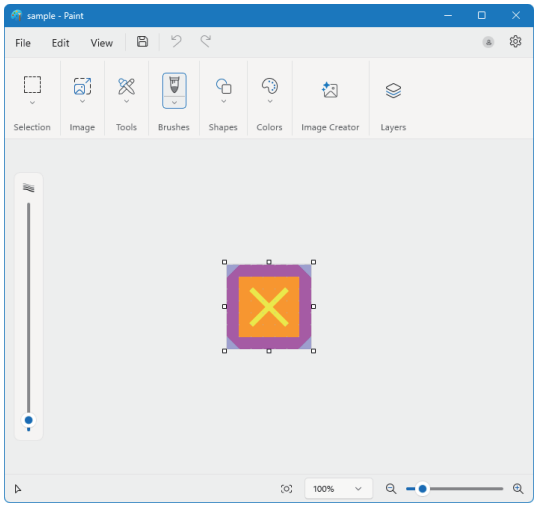
Point

In the following cases, the image quality may deteriorate.

- When the pasted JPEG file is in the JFIF format, and not the baseline JPEG
- When the pasted image of the JPEG file is edited

To avoid the image quality deterioration, use the BMP file.

1. Double-click the image to be edited on the screen editor to open Paint in Windows.



2. Edit the image, and select [File] → [Save] from the menu.

The paint window is closed, and editing is completed.

26.13.4 [Transparent Setting] dialog

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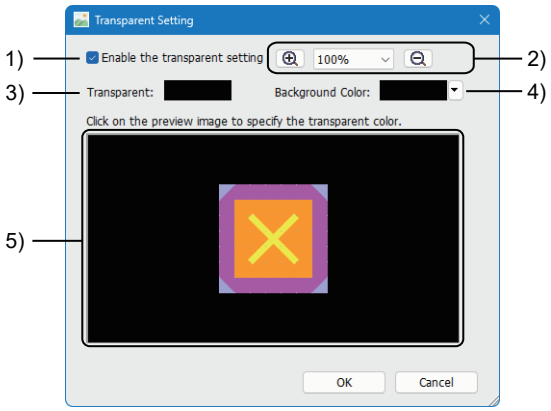
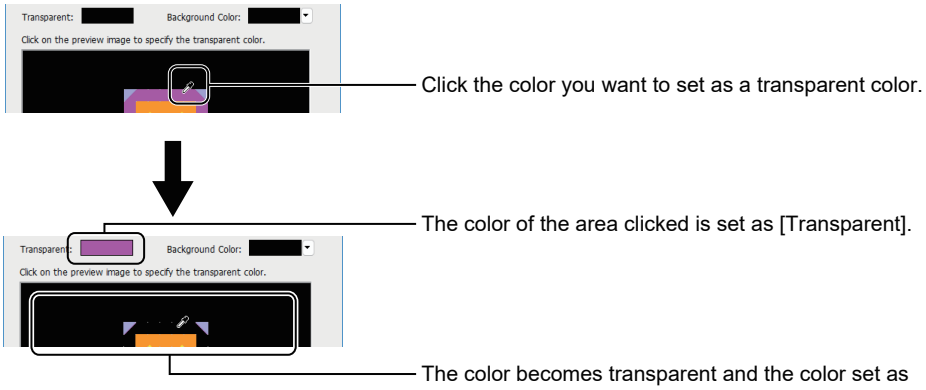
Set a transparent color from the image file displayed in the preview.

To display this dialog, perform either of the following operations.

- Double-click the BMP image on the screen editor to display the [Bitmap Attribute Change] dialog, and then click the [Specify a transparent color for image data] button.
- Click the [From image] button in the [Image File Setting] dialog of a parts display object.



Item		Description
1)	[Enable the transparent setting]	This item is displayed only when a transparent color is set for the image file pasted on the screen editor. Select this item to enable the setting.
2)	Preview image scaling	Zooms in or out the preview image.
3)	[Transparent]	Displays a transparent color. The color of the part clicked on the preview image is set as a transparent color.
4)	[Background Color]	Set a background color of the preview image. For details on the color, refer to the following. ☞ Page 988 Color settings
5)	Preview	Displays the image for which a transparent color is to be set. The color of the part clicked is set as a transparent color. 

26.14 Pasting DXF Data

GT37 SoftGOT3000

Import the data of the DXF file (AutoCAD Data Exchange Format file) to GT Designer3, convert the data into the figure data of GT Designer3, and paste it on the screen.

26.14.1 Specifications of importable DXF files

GT37 SoftGOT3000

The following shows details on importable file formats.

Item	Specifications of importable DXF files
Extension	*.dxf
Version	• R12 • R13 • R14
Maximum importable file size	2048 × 1536 or smaller Regardless of the unit, the dimension 1 on the DXF file is converted to 1 dot in GT Designer3. If the width or height exceeds the maximum size, the file cannot be imported.

For the specifications of DXF file conversion into a figure, refer to the following.

☞ Page 1185 Specifications of DXF file conversion

26.14.2 Pasting a DXF file

Point

Some DXF files may require 10 minutes or more for importing.

Pasting from the menu

1. Select [Figure] → [Import DXF Data] from the menu to display the [Open a File] dialog.
2. Select a DXF file to be pasted, and click the [Open] button.
3. Click an intended position on the screen editor to paste the figure data.

Pasting is completed.

The figure data of the pasted DXF file is grouped.

For how to edit a grouping of figures, refer to the following.

☞ Page 1021 Grouping two or more figures and objects or ungrouping them

For the settings and editing operations common to figures, refer to the following.

☞ Page 988 Color settings

Pasting by drag operation

1. Drag a DXF file onto the GT Designer3 screen editor.
2. Release the mouse button at an intended position to paste the figure.

The figure data of the pasted DXF file is grouped.

For how to edit a grouping of figures, refer to the following.

☞ Page 1021 Grouping two or more figures and objects or ungrouping them

26.14.3 Specifications of DXF file conversion

☞ Page 1185 DXF file tags and conversion rules
☞ Page 1186 Specifications of other conversions

DXF file tags and conversion rules

☞ Page 1185 Converting the figure data
☞ Page 1186 Converting the line
☞ Page 1186 Converting the color

■Converting the figure data

The following shows the specifications of conversion into a figure.

DXF file tag (Before pasting)	Figure in GT Designer3 (After pasting)	Remarks
ARC	Arc	—
ATTDEF	(Skipped)	—
ATTRIB	Text	• The text size is converted to the nearest one within the range of 0.5 to 8 dots. • The text orientation is converted to the nearest one in 90-degree increments. • The text style and inclination angle are not converted.
CIRCLE	Circle	—
DIMENSION	Group	The color and line style are converted based on the definition of BLOCK instead of the layer of DIMENSION.
ELLIPSE	Circle or arc	When the main axis is inclined, the figure is converted so that its main axis will be rotated to vertical or horizontal.
INSERT	Group	• The color and line style are converted based on the definition of BLOCK instead of the layer of INSERT. • The scale and rotation angle are not converted.
LEADER	Freeform line*1	The figure is converted to the freeform line by connecting vertices with straight lines.
LINE	Line	—
LWPOLYLINE	Freeform line or polygon*1	• The figure is converted to the freeform line or polygon by connecting vertices with straight lines. • The figure with curved lines is not converted.
MLINE	Freeform line*1	• MLINESTYLE is not converted. The color and line style of the freeform line are determined by the layer definition. • Cap processing is not supported.
MTEXT	Text	• The text size is converted to the nearest one within the range of 0.5 to 8 dots. • The text orientation is converted to the nearest one in 90-degree increments. • The format code and text style are not converted.
POINT	Circle, rectangle, or line	—
POLYLINE	Freeform line or polygon*1	• The figure is converted to the freeform line or polygon by connecting vertices with straight lines. • The figure with curved lines is not converted.
SEQEND	(End of sequence data)	—
SOLID	Polygon	—
SPLINE	Freeform line or polygon*1	The figure is converted to the freeform line or polygon by connecting each fit point with the straight line.
TEXT	Text	• The text size is converted to the nearest one within the range of 0.5 to 8 dots. • The text orientation is converted to the nearest one in 90-degree increments. • The text style and inclination angle are not converted.
TRACE	Polygon*1	—

*1 If the converted freeform line or polygon has 2000 vertices or more, the 2000th vertex and later are not displayed on the GOT. Edit the figure in GT Designer3 so that the number of vertices will be 1999 or less.

■Converting the line

The line width is converted to 1 dot.

The following shows the specifications of line style conversion.

DXF file tag (Before pasting)	Line style in GT Designer3 (After pasting)	Image
CONTINUOUS	Straight line	
DASHED	Coarse broken line	
HIDDEN	Coarse broken line	
CENTER	Speck chain line	
PHANTOM	Two-dot long and two short dashes line	
User definition	Straight line	
Others	Straight line	

■Converting the color

The following shows the specifications of color conversion.

Color in the DXF file (Before pasting)	Color in GT Designer3 (After pasting)
Red (0x01)	Red (#FF0000)
Yellow (0x02)	Yellow (#FFFF00)
Green (0x03)	Green (#00FF00)
Light blue (0x04)	Light blue (#00FFFF)
Blue (0x05)	Blue (#0000FF)
Purple (0x06)	Purple (#FF00FF)
White (0x07)	White (#FFFFFF)
Black (0x08)	Black (#000000)
Dark red (0x09)	Dark red (#BF0000)
Dark yellow (0x0A)	Dark yellow (#BFBF00)
Dark green (0x0B)	Dark green (#00BF00)
Dark-light blue (0x0C)	Dark-light blue (#00BFBF)
Dark blue (0x0D)	Dark blue (#0000BF)
Dark purple (0x0E)	Dark purple (#BF00BF)
Dark white (0x0F)	Dark white (#7F7F7F)
Others	White (#FFFFFF)

Specifications of other conversions

■Layer of the DXF file

The data with the layer off cannot be converted.

■Conversion supported character code

Only shift JIS code texts are supported for conversion in GT Designer3.

No texts other than shift JIS code texts are converted.

■Category of the figure pasted in GT Designer3

[Category] of the pasted figure is set to [None].

26.15 Pasting IGES Data

GT37 SoftGOT3000

Import IGES data (Data Exchange Format among CADs) to GT Designer3, convert the data into the figure data of GT Designer3, and paste it on the screen.

26.15.1 Specifications of importable IGES files

GT37 SoftGOT3000

The following shows details on importable file formats.

Item	Specifications of importable IGES files
Extension	• *.igs • *.ige • *.iges
Format	IGES files created with Autodesk Inventor manufactured by Autodesk, Inc. in a wireframe format

For the specifications of IGES file conversion into a figure, refer to the following.

☞ Page 1190 Specifications of IGES file conversion

Point

For an IGES file that cannot be imported, capture the file's image displayed with software that support display of IGES file, and paste the image on the screen editor.

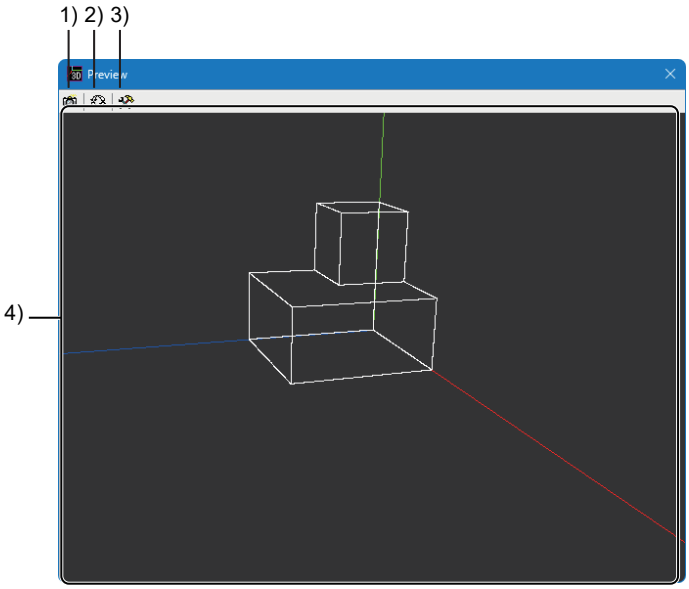
26.15.2 Pasting an IGES file

GT37 SoftGOT3000

1. Select [Figure] → [Import IGES Data] from the menu to display the [Open a File] dialog.

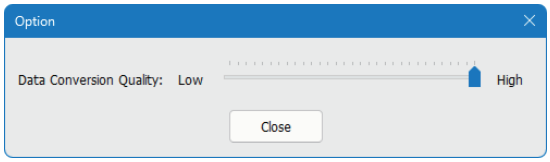
2. Select an IGES file to be pasted, and click the [Open] button.

The [Preview] dialog appears, and the figure data is displayed.



Item		Description
1)	Confirmation button	Confirms the editing of the figure to be pasted on the screen editor. The [Preview] dialog is closed, which is followed by pasting operation onto the screen editor.
2)	Reset button	Resets the status of the display section.
3)	Option button	Displays the [Option] dialog. Set the optimization level for converting the curved line to freeform line.
4)	Display section	Image of the figure to be pasted on the screen editor. The figure can be rotated or zoomed in or out by mouse drag operation.

3. Click the option button in the [Preview] dialog to display the [Option] dialog.



4. Set the optimization level for converting the curved line to freeform line, and click the [Close] button.

[Low]: The image quality deteriorates, and the data size becomes smaller.

[High]: The image quality improves, and the data size becomes larger.

5. Adjust the size and orientation of the figure data in the [Preview] dialog.

The figure data is pasted on the screen in the size and orientation displayed in the [Preview] dialog.

- Dragging with the left mouse button pressed: The figure data rotates in the direction of dragging.
- Dragging with the right mouse button pressed: The figure data moves in the direction of dragging.
- Dragging upward with both mouse buttons pressed: The figure data is zoomed in.
- Dragging downward with both mouse buttons pressed: The figure data is zoomed out.

6. Click the [Save] button to close the [Preview] dialog.

7. Click an intended position on the screen editor to paste the figure data.

Pasting is completed.

The figure data of the pasted IGES file is grouped.

For how to edit a grouping of figures, refer to the following.

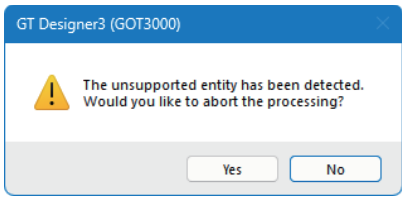
☞ Page 1021 Grouping two or more figures and objects or ungrouping them

For the settings and editing operations common to figures, refer to the following.

☞ Page 988 Color settings

Precautions

When the IGES file has unsupported entity, the following dialog is displayed.



Clicking the [No] button displays the [Preview] dialog; however, the unsupported entity and subsequent ones are not imported.

The following shows the examples.

Example	Processing
Parent entity (importable)-child entity (importable)-grandchild entity (not importable)	Although the parent entity and child entity are imported, the grandchild entity is not imported.
Parent entity (importable)-child entity (not importable)-grandchild entity (importable)	Although the parent entity is imported, the child entity and grandchild entity are not imported.
Parent entity (not importable)-child entity (importable)-grandchild entity (importable)	As the parent entity is not importable, no entity is imported.

26.15.3 Specifications of IGES file conversion

Importable entities

GT Designer3 supports the entities defined by JAMA-IGES.

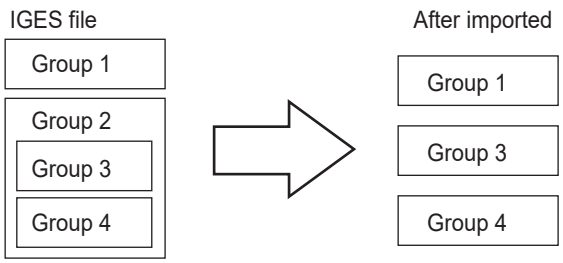
The following shows the importable entities.

Entity name	Entity ID
Circle	100
Ellipse	104
Line	110
Transformation matrix	124
Rational B-spline curve	126
General note	212
Subfigure definition	308
Color definition	314
Subfigure entity	408

Nested format groups

When some groups are nested in the IGES file, only the bottom level groups are imported.

Exa



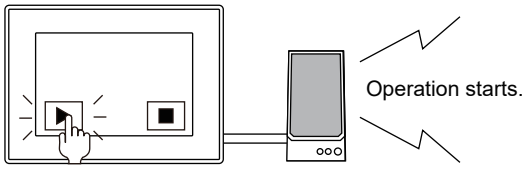
27 Placing a touch switch

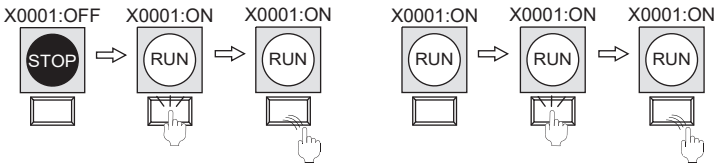
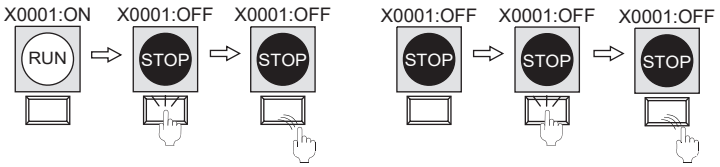
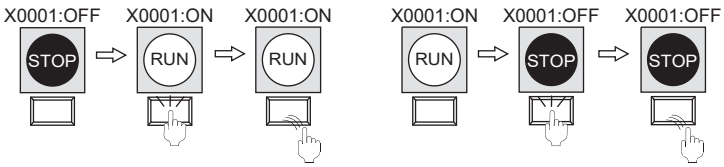
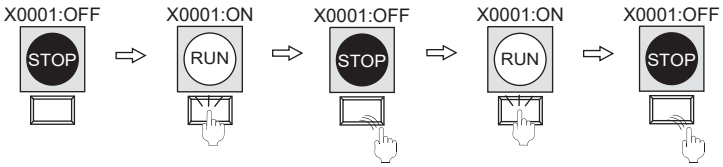
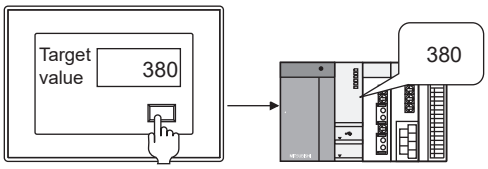
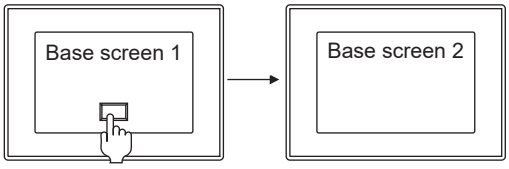
GT37 SoftGOT3000

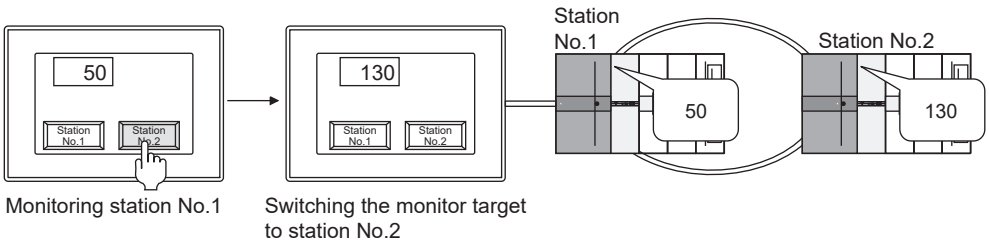
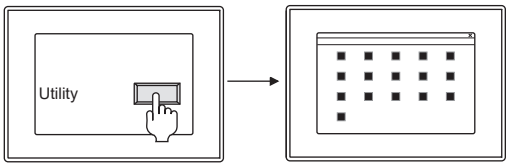
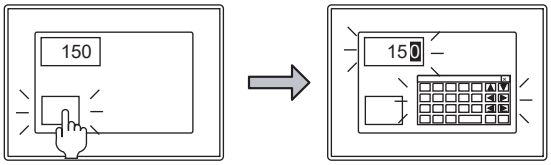
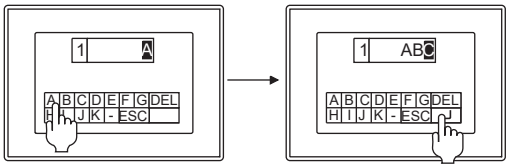
☞ Page 1192 Overview of a touch switch
☞ Page 1195 How to use touch switch
☞ Page 1197 Specifications of touch switch
☞ Page 1198 Setting touch switches
☞ Page 1199 [Switch] dialog
☞ Page 1215 [Bit Switch] dialog
☞ Page 1217 [Word Switch] dialog
☞ Page 1220 [Go To Screen Switch] dialog
☞ Page 1227 [Change Station No. Switch] dialog
☞ Page 1230 [Special Function Switch] dialog
☞ Page 1249 [Key Window Display Switch] dialog
☞ Page 1251 [Key Code Switch] dialog
☞ Page 1257 Settings common to touch switches
☞ Page 1273 Relevant settings

27.1 Overview of a touch switch

A touch switch is an object placed on the monitor screen that allows an operator to execute the action set to the switch by touching it.
For example, you can change a specific device value and switch the screen displayed on the monitor screen to another one. Also, setting an action, such as importing/exporting recipe data, for a switch allows the operator to execute the action with a single touch without complicated operations.
There are two types of touch switches: ones for which only one action is set and ones for which multiple actions can be set. Touch switches for which multiple actions can be set are called [Switch].

Touch switch type	Description	
Switch	Multiple actions can be set for one switch (multi-action switch). Up to 136 actions can be set, and the execution order of them can be set as well. ☞ Page 1199 [Switch] dialog	
	The following shows the settable actions. Although the switch can be configured with the same functions as individual touch switches, the [Sound output] function is unique to the switch. For switches with an extended function set, no other actions can be assigned. ☞ Page 1202 [Bit] ☞ Page 1203 [Word] ☞ Page 1204 [Extended] ☞ Page 1204 [Screen Switching] ☞ Page 1205 [Station No. Switching] ☞ Page 1206 [Key Code] ☞ Page 1208 [Key Window Display]	
	Sound output	Plays or stops a sound. Also, it can be used to mute or unmute the sound.  Set a sound file used for the sound output in the [Sound File List] dialog. ☞ Page 1209 [Sound Output]

Touch switch type	Description	
Bit switch	Turns on or off a bit device. ☞ Page 1215 [Bit Switch] dialog The following shows the four bit device types.	
	Bit set	Turns on the specified bit device when the switch is touched. 
	Bit reset	Turns off the specified bit device when the switch is touched. 
	Bit alternate	Alternates (ON←→OFF) the current status of the specified bit device when the switch is touched. 
	Bit momentary	Keeps the specified bit device on while the switch is being touched. 
Word switch	Changes the value of a word device. ☞ Page 1217 [Word Switch] dialog 	
	Constant	Writes the specified value (constant) to the word device being monitored.
	Indirect device	Writes the value of the specified word device to the word device being monitored.
	Constant + Indirect device	Writes the total value of the specified value (constant) and the value of the specified word device to the word device being monitored.
Go to screen switch	Switches the screen displayed on the monitor screen. This applies to base screens and window screens. ☞ Page 1220 [Go To Screen Switch] dialog 	
	• Switching to the screen with a specified screen number • Switching to the screen with the base screen number previously displayed • Switching to the screen with the specified screen number by turning on or off the specified bit device • Switching to the screen with the specified screen number when the current value of the specified word device corresponds to the set conditional expression	

Touch switch type	Description
Change station No. switch	Switches the device of the currently monitored object on the same network system to the same device with another station number. Multiple controllers (station numbers) can be monitored in one monitor screen. ☞ Page 1227 [Change Station No. Switch] dialog 
	• Switching the monitoring target to a specified station number • Switching the monitoring target to a specified station number by turning on or off the specified bit device • Switching the monitor target to the specified station number when the current value of the specified word device corresponds to the set conditional expression
Special function switch	Switches the screen to the utility screen, add-on function screen, or other screens. ☞ Page 1230 [Special Function Switch] dialog 
Key window display switch	Displays the specified key window at the specified position. The specified key window must be the one set in the key window settings for each project or screen. Also, a cursor can be displayed on the specified object. ☞ Page 1249 [Key Window Display Switch] dialog 
Key code switch	Specifying key codes enables control of the key input on the numerical input or text input object, alarm display, recipe display (record list), historical trend graph, historical data list, document display, and screen gestures. ☞ Page 1251 [Key Code Switch] dialog 

27.2 How to use touch switch

GT37 SoftGOT3000

☞ Page 1195 Safely performing operation with touch switches
☞ Page 1196 Converting the touch switch to lamp

27.2.1 Safely performing operation with touch switches

To prevent unexpected system operation and ensure the safety of the operation, the following functions are available.

Delay function

The delay function can execute operation only when a touch switch is touched and held or pressed twice.
Also, you can set the touch switch to turn off after a specified time period instead of turning off immediately.
This prevents the action from being executed immediately in case the switch is touched by mistake.
This function can be set in [Delay] in the [Special Function Switch] dialog for the touch switch.
☞ Page 1230 [Special Function Switch] dialog

Simultaneous press prohibition function

While a touch switch with this function set is being touched, the function disables touches in any other areas on the GOT screen.
This prevents multiple actions from being executed at the same time in case two or more touch switches are touched by mistake.
This function can be set in [Simultaneous Press] in the [Special Function Switch] dialog for the touch switch.
☞ Page 1230 [Special Function Switch] dialog

27.2.2 Converting the touch switch to lamp

When the [Convert to Lamp] button is clicked in the setting dialog of each switch, the switch is convert to the lamp.

Types of the lamp to be converted to

The type of the lamp to be converted to differs depending on the setting of [Lamp (Timing to change shape/text)] in the setting dialog.

If no setting item for [Lamp (Timing to change shape/text)] exists , the touch switch is converted to the bit lamp.

Setting of [Lamp (Timing to change shape/text)]	Description
[Key Touch State] [Bit-ON/OFF]	The touch switch is converted to a bit lamp.
[Word Range]	The touch switch is converted to a word lamp.

Settings to be deleted

When the touch switch is converted to the lamp, settings that do not exist in the lamp are deleted.

Settings that only exist in the lamp are configured with the default values of the lamp.

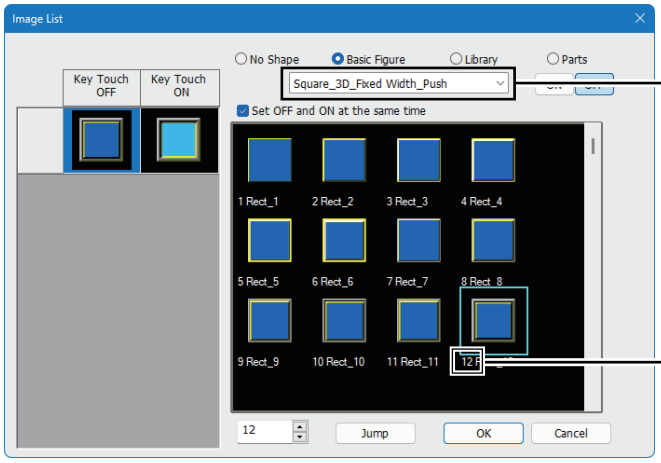
Converting a basic figure

For converting the basic figure from the touch switch to the lamp, the figure of the switch is converted to the corresponding figure with the same number on the lamp.

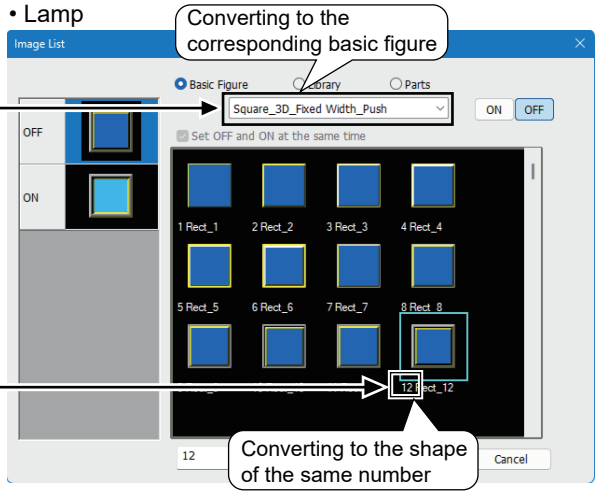
Ex.

Converting the touch switch to the lamp when the basic figure [Square_3D_Fixed Width _Push] is set for the touch switch

• Touch switch



• Lamp



When the touch switch is converted to the lamp under the following conditions, the default basic figure is set.

- No basic figure on the lamp has the same number as the basic figure set for the touch switch.
- The basic figure [Toggle] is set for the touch switch.
- The basic figure [Selector] is set for the touch switch.

Even if the shapes have the same reference number, there may be difference between the touch switch and the lamp. Check the shape after the conversion to see if it can be properly used.

Restoring the lamp to the touch switch after the conversion

To restore the lamp to the switch after conversion, select [Edit]→[Undo] from the menu.

Even if the lamp has been converted back to the touch switch, the previous settings cannot be restored.

If the [OK] button is not clicked, clicking the [Cancel] button cancels the conversion even after the [Convert to Lamp] button is clicked.

27.3 Specifications of touch switch

GT37 SoftGOT3000

The following shows the specifications of the touch switch.

27.3.1 Maximum number of objects that can be placed on one screen

A total of 1024 touch switches and other objects can be placed on one base screen, while 512 can be placed on one window screen.

27.3.2 Size of touch switch

The following shows the minimum and maximum sizes of the touch switch.

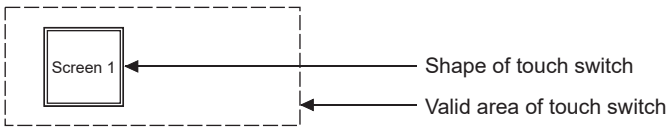
Size	Size (dot)
Minimum	2 × 2
Maximum	6000 × 6000

27.3.3 Valid range of the touch switch

The touch area of the touch switch can be automatically adjusted to the largest size that will fit within the object size.
When the following two items are set, the size automatically adjusted is further adjusted so that each of its four sides becomes 1 dot smaller.

- [Edit] → [Edit Touch Area] → [Self-adjust] or [Constant Self-adjust] is set.
- In the [Edit] tab of the window displayed by selecting [Tools] → [Option] from the menu, [Adjust the touch area to be smaller than its object size by 1-dot at the time of touch area self-adjust] is selected.

Selecting [Edit] → [Edit Touch Area] → [Manual Edit] allows you to set the sizes of the touch switch and valid area individually.
☞ Page 1030 Adjusting the touch area of an object (size, position)



27.3.4 Superimposition of touch switches

For the touch switch superimposition specifications, refer to the following.
☞ Page 1057 Touch switch superimposition specifications

27.3.5 Precautions for using parts as touch switch shapes

When writing the project with only parts data edited to a GOT to which the project has already been written or deleting the parts data which has been written to the GOT, review the setting of the touch switch shape.
If the parts data has been updated, the data of all the touch switches and lamps which uses the updated parts needs to be updated. Therefore, saving the project data or opening the communication dialog may need longer time than usual.

27.4 Setting touch switches

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Use the following procedure to place a touch switch and configure the action settings.

Operating procedure

1. Select [Object] → [Switch] → the touch switch to be placed from the menu and click the intended position to place the touch switch.

☞ Page 1001 Placing figures and objects

2. Double-click the placed touch switch to display the setting dialog.
3. Configure the operation settings in each tab of the setting dialog.

Refer to the dialog of the corresponding touch switch.

☞ Page 1199 [Switch] dialog
☞ Page 1215 [Bit Switch] dialog
☞ Page 1217 [Word Switch] dialog
☞ Page 1220 [Go To Screen Switch] dialog
☞ Page 1227 [Change Station No. Switch] dialog
☞ Page 1230 [Special Function Switch] dialog
☞ Page 1249 [Key Window Display Switch] dialog
☞ Page 1251 [Key Code Switch] dialog

For the operations common to all objects or editing operations except operation settings, refer to the following.

☞ Page 1037 Settings common to objects

27.5 [Switch] dialog

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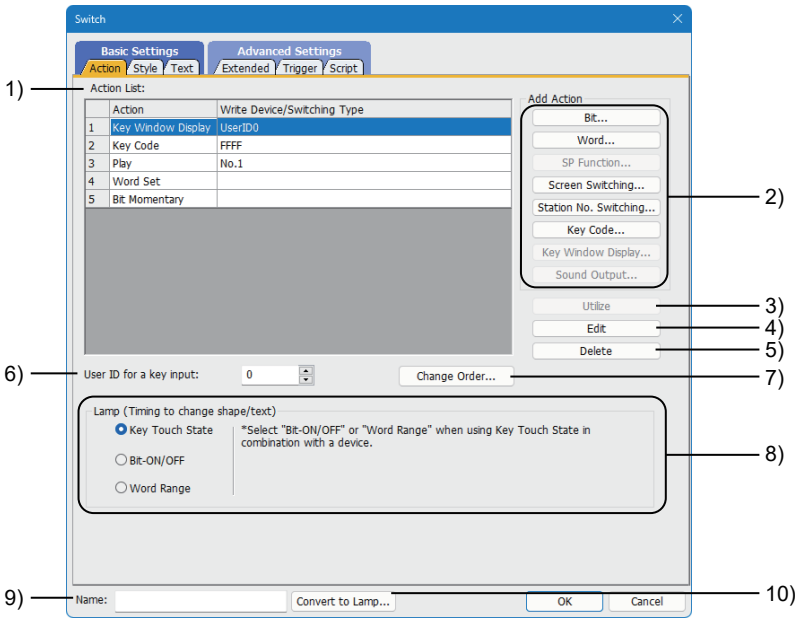
☞ Page 1199 [Action] tab
☞ Page 1257 [Style] tab
☞ Page 1260 [Text] tab
☞ Page 1266 [Extended] tab
☞ Page 1270 [Trigger] tab

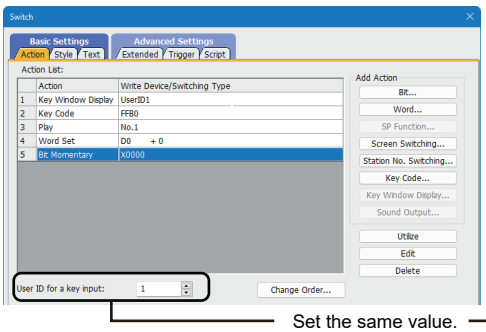
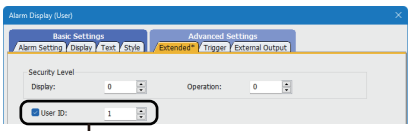
27.5.1 [Action] tab

For mobile screens, some setting items are not available.

☞ Page 2742 Usable functions



Item		Description
1)	[Action List]	Displays the actions assigned to the switch in the list. Actions are executed in the order set in [Action List]. To change the sorting order of actions, click the [Change Order] button and correct the order. The setting of each action can be changed in the edit dialog displayed by double-clicking the action in [Action List].
2)	[Add Action]	Click the button of the action to be added to the switch to set the action. The set action is added in [Action List]. ☞ Page 1202 [Bit] ☞ Page 1203 [Word] ☞ Page 1204 [Extended] ☞ Page 1204 [Screen Switching] ☞ Page 1205 [Station No. Switching] ☞ Page 1206 [Key Code] ☞ Page 1208 [Key Window Display] ☞ Page 1209 [Sound Output]
3)	[Utilize] button	Select an action from [Action List] and then click the [Utilize] button to copy the action to [Action List]. If you select an action that cannot be utilized, this button is grayed out and the setting is inaccessible.
4)	[Edit] button	Select an action to be edited from [Action List] and then click the [Edit] button to edit the set action.
5)	[Delete] button	Select an action to be deleted from [Action List] and then click the [Delete] button to delete the action.

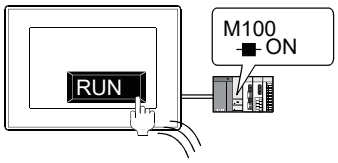
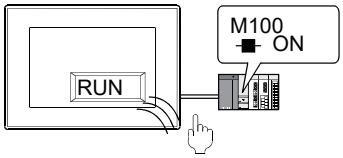
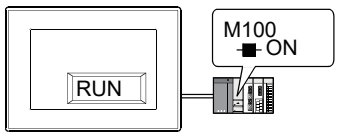
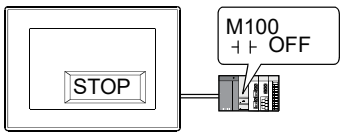
Item		Description
6)	[User ID for a key input]	Specify the user ID of the object to be operated using the key code set in the action list. The setting range is [0] to [65535]. Set [User ID for a key input] of the switch and [User ID] of the operation target object to be the same. Switch setting  Operation target object setting (example: alarm display)  Set the same value.
7)	[Change Order] button	To change the order of the actions set in [Action List], click this button to display the [Change Order] dialog and change the order. ☞ Page 1210 [Change Order] dialog
8)	[Lamp (Timing to change shape/text)]	Select how to switch touch switch images (shapes of on status and off status). For details, refer to the following. ☞ Page 1201 Action of [Lamp (Timing to change shape/text)]
9)	[Name]	Set the object name. The name is displayed in places such as the data browser and property sheet. The setting can also be changed in other tabs. Up to 100 characters can be entered.
10)	[Convert to Lamp] button	Converts the object type to the lamp. ☞ Page 1196 Converting the touch switch to lamp

Action of [Lamp (Timing to change shape/text)]

Select how to switch touch switch images (shapes of on status and off status).

To switch the touch switch image using the lamp on and lamp off status in combination with the key touch on and key touch off status, refer to the following.

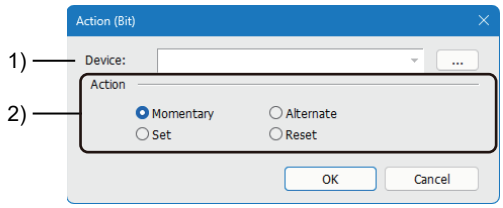
☞ Page 1257 [Style] tab

Item		Description
[Key Touch State]		The shape of the key touch on status is displayed while you press the touch switch. The shape of the key touch off status is displayed while you do not press the touch switch.  The shape of on status is displayed while you touch the touch switch.  The shape of off status is displayed regardless of the device status while you do not touch the touch switch.
[Bit-ON/OFF]		When the bit device set in [Device] turns on, the shape of the lamp off status is switched to the shape of the lamp on status. Select this item and set the device. ☞ Page 834 How to set devices, labels, and tags Example) Bit: When M100 is set  The shape of on status is displayed when M100 is on.  The shape of off status is displayed when M100 is off.
[Word Range]	-	When the word device set in [Device] is within the range specified in [ON Range], the shape of the lamp off status is switched to the shape of the lamp on status. After selecting this item, set the followings.
	[Data Type]	Select the data type of the word device.
	[Device]	Set a word device. ☞ Page 834 How to set devices, labels, and tags
	[ON Range]	After setting the specified word device, click the [Exp] button to set the switching range between the shape of the lamp on status and the shape of the lamp off status. ☞ Page 988 Color settings

[Bit]

Set the function to turn on and off a bit device for a switch.

Set it in the [Action (Bit)] dialog displayed by clicking the [Bit] button.



Item			Description
1)	[Device]		Set the device to which the value is written. ☞ Page 834 How to set devices, labels, and tags
2)	[Action]	-	Select the function to be performed for the bit device as the destination when you press the switch.
		[Momentary]	Keeps the bit device on while the switch is being touched. ☞ Page 1216 Touch switch action with the bit momentary
		[Alternate]	Switches the ON/OFF status of the bit device with each touch of the switch.
		[Set]	Turns on the bit device when the switch is touched.
		[Reset]	Turns off the bit device when the switch is touched.

Precautions

■Cause of the bit device remaining on

If the following events occur while you press the touch switch for which the bit momentary is set, the bit device may remain on even after you release the finger from the switch.

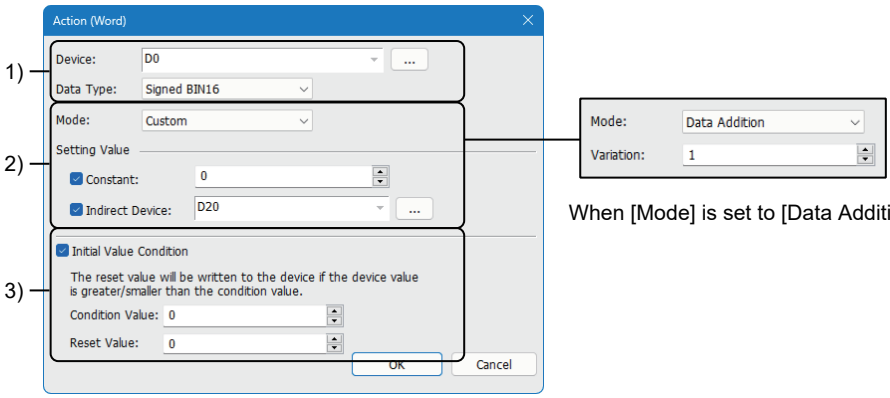
- Hardware failure of the GOT
- Power-off of the GOT
- Communication error with controllers

As appropriate, set the timeout period of the on-status duration for the bit device, and set the operating condition so that the controller forcibly turns off the bit device in the case of the timeout.

[Word]

Set the function to change a word device value for a switch.

Set it in the [Action (Word)] dialog displayed by clicking the [Word] button.



When [Mode] is set to [Custom]

When [Mode] is set to [Data Addition] or [Data Subtraction]

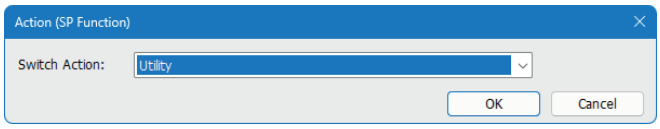
Item			Description
1)	[Device]		Set the word device to which a value is written. ☞ Page 834 How to set devices, labels, and tags
	[Data Type]		Select the data type of the values set in [Setting Value] and [Initial Value Condition]. ☞ Page 857 Data type of devices
2)	[Mode]		Set the writing mode for the specified word device. • [Custom] Select this item to write the value set in [Setting Value] to the specified word device. • [Data Addition] Select this item to add the value set in [Variation] to the value stored in the specified word device. • [Data Subtraction] Select this item to subtract the value set in [Variation] from the value stored in the specified word device.
	[Setting Value]	-	Set a value to be written to the specified word device when [Mode] is set to [Custom]. When [Constant] and [Indirect Device] are both selected, the value [Constant] + [Indirect Device] is written into the word device.
		[Constant]	Select this item and set a constant to write the constant to the specified word device. The setting range depends on the setting of [Data Type].
		[Indirect Device]	Select this item and specify an indirect device to write the value of the indirect device to the specified word device. ☞ Page 834 How to set devices, labels, and tags When the value set in [Indirect Device] exceeds the maximum value of the specified word device, the value is written with the excess rounded down. At this time, no system alarm occurs.
	[Variation]		Set this item when [Mode] is set to [Data Addition] or [Data Subtraction]. The setting range depends on the setting of [Data Type]. When [Mode] is set to [Data Addition], pressing the word switch adds the set value to the value stored in the specified word device. When [Mode] is set to [Data Subtraction], touching the word switch subtracts the set value from the value stored in the specified word device.
3)	[Initial Value Condition]	-	When the device value is above or below [Condition Value], [Reset Value] is written to the device. [When [Mode] is set to [Custom], select both [Constant] and [Indirect Device] to enable this setting.
		[Condition Value]	Set a condition value that is a trigger to write [Reset Value] to the specified word device. The setting range depends on the setting of [Data Type].
		[Reset Value]	Set a reset value. The setting range depends on the setting of [Data Type].

[Extended]

Set the function to switch the screen to the utility screen, add-on function screen, or other screens.

Select the function to be set for the switch in [Switch Action] in the [Action (SP Function)] dialog displayed by clicking the [Extended] button.

Multiple actions cannot be set when [Extended] is set as the action.



The settable actions and supported models are the same as those for special function switches.

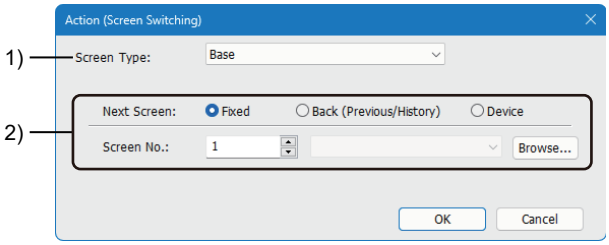
For details, refer to the following.

☞ Page 1231 Settable actions

[Screen Switching]

Set the screen switching function for a switch.

Set it in the [Action (Screen Switching)] dialog displayed by clicking the [Screen Switching] button.

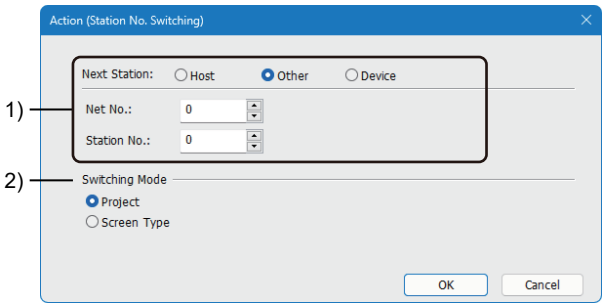


Item		Description
1)	[Screen Type]	Select the type of the screen to be switched to. The selectable items vary with the screen type. In either of the following cases, [(*)] is appended to the item selected for [Screen Type]. • [Close the window when switching base screens] is selected in the [Detail Setting] dialog in the [Environment Setting] window ([Screen Switching/Window]). • [Close the window when switching mobile screens] is selected in the [Detail Setting] dialog in the [GOT Mobile Setting] window ([Screen Switching/Window]).
2)	[Next Screen]	Select an action for screen switching.
		• [Fixed] Select this item to switch to the screen having the specified base screen number or window screen number. After selecting this item, set the screen number of the base screen or window screen as the destination screen in [Screen No.]. The screen can be selected from [Screen Image List] displayed by clicking the [Browse] button.
		• [Back (Previous/History)] You can select this item only when the screen after the switching is the base screen. Select this item to switch to the screen having the base screen number previously displayed. The switching action has the hierarchy mode and history mode. For details, refer to the following. ☞ Page 1223 Hierarchy mode and history mode
		• [Device] Select this item to switch to the base screen or the window screen having the specified screen number according to the on or off status or the current value of the specified device. Before specifying the device, select the data type of the device to be monitored. (Bit, Signed 16-bit binary data, or BCD16) After setting the device, click the [Detail Setting] button and configure the action settings for screen switching. ☞ Page 1221 [Details of Action] dialog

[Station No. Switching]

Set the station No. switching function for a switch.

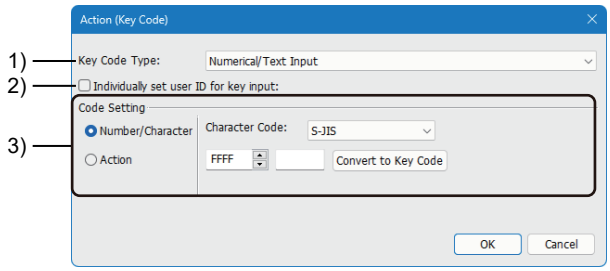
Set it in the [Action (Station No. Switching)] dialog displayed by clicking the [Station No. Switching] button.



Item		Description
1)	[Next Station]	Select an action for station number switching. • [Host] Select this item to monitor the station connected with the GOT. • [Other] Select this item to switch the monitoring target to another station. Set the destination network number in [Net No.] and the station number in [Station No.] in decimal. • [Device] Select this item to switch to another station according to the on or off status or the current value of the specified device. Before specifying the device, select the data type of the device to be monitored. (Bit, Signed 16-bit binary data, or BCD16) After specifying the device, click the [Detail Setting] button and configure the action settings. ☞ Page 1228 [Details of Action] dialog
2)	[Switching Mode]	Set the target to be switched. • [Project] Select this item to switch the whole project by the station number. • [Screen Type] Select this item to switch only the specified screen by the station number. When [Screen Type] is selected, select the screen after switching from [Screen Type].

[Key Code]

Set the code to be input to a numerical input object or a text input object with keys or code to operate an object.
Set it in the [Action (Key Code)] dialog displayed by clicking the [Key Code] button.



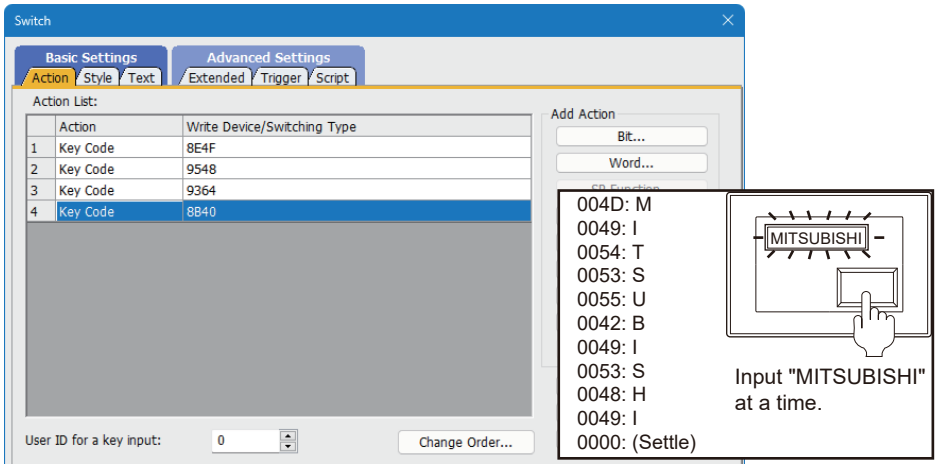
Item			Description
1)	[Key Code Type]		Specify the key code type. For the output conditions of the key code, refer to the following. ☞ Page 1253 Output conditions of key code For the settable key codes, refer to the following. ☞ Page 1253 Settable key codes
			• [Numerical/Text Input] Inputs a key code for the numerical input or text input where the cursor is displayed. ☞ Page 1306 Overview of the numerical display and numerical input objects ☞ Page 1308 How to use the numerical display and numerical input objects ☞ Page 1346 Overview of the text display and text input objects ☞ Page 1348 How to use the text display and text input objects
			• [Alarm Display] Inputs a key code for the alarm display (user), alarm display (system), or simple alarm display. ☞ Page 2132 Viewing alarm events (Alarm display) ☞ Page 1521 How to use the simple alarm display
			• [Recipe Display (Record List)] Inputs a key code for the recipe display (record list). ☞ Page 1551 Specifications of the recipe display (record list)
			• [Historical Trend Graph/Historical Data List] Inputs a key code for the historical trend graph or historical data list display. ☞ Page 1693 Specifications of the historical trend graph
			• [Document Display] Inputs a key code for the document display. ☞ Page 1821 How to use the document display (for Document Converter output files)
2)	[Individually set user ID for key input]		To specify the objects for the input individually, select this item and specify the user ID of the object for the input. Set the user ID set in this item and [User ID] of the input target object to be the same. When this item is not selected, the operation target is the user specified in [User ID for a key input] in the [Switch] dialog. The setting range is [0] to [65535].
3)	[Code Setting]	-	Select the action type of the key code. For the settable key codes, refer to the following. ☞ Page 1253 Settable key codes
		[Number/Character]	Set this item when [Numerical/Text Input] is selected for [Key Code Type]. Select this item to input numeric values or characters using the key code. Select the character code used from [Character Code], enter a numerical value or character in the input field, and click the [Convert to Key Code] button. The entered value or character is automatically converted to its key code. When [Not specify] is selected for [Character Code], no character code conversion is executed and the key code switch operates using the character code set in the linked text input.
		[Action]	Sets an action using its key code. Selecting [Switch window screens for text (screen no. specification)] displays a spin box. Specify the screen to be displayed. The setting range is [1] to [10].

■Specifying multiple key codes

Multiple key codes can be set to one switch.

Setting multiple key codes can create the switch that the character string can be input with a single touch of the switch.

For a single switch, key code actions whose [Key Code Type] is [Numerical/Text Input] and key code actions with other key code types cannot set.



When you arrange the switch, to which multiple key codes are set, on a user-created key window, only the first key code can be executed.

When multiple key codes are entered for alarms, only the first key code can be executed.

Precautions

If you set a key code shown below, the subsequent key codes become disabled.

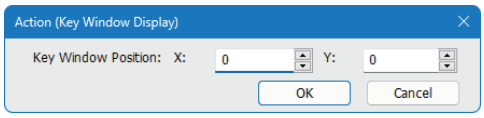
as the other key codes will not be executed if set after them.

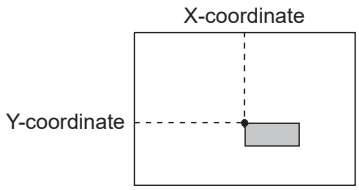
[Key Code Type]	Key code (HEX)	Description
[Numerical/Text Input]	000D	Writes to the device and moves the cursor.
	001B	Hides the cursor.
	0080	Moves the cursor to the right.
	0081	Moves the cursor to the left.
	0082	Moves the cursor up.
	0083	Moves the cursor down.
	0084	Converts the entry to kanji or Simplified Chinese characters.
	0085	Displays the previous option.
	0086	Displays the next option.
	0087	Select/Not convert
	0092	Moves the cursor in the user ID ascending order.
	0093	Moves the cursor in the user ID descending order.
[Alarm Display]	FFB4	Changes the status of the selected alarm to "Checked" (Check)
	FFB5	Changes all the alarm statuses to "Checked" (Check all)
	FFB6	Deletes the selected restored alarm (Delete).
	FFB7	Deletes all the restored alarms (Delete all).
	FFB8	Displays the detail/Moves to the lower hierarchy.
	FFB9	Resets the selected alarm data.
	FFBB	Saves the alarm details to the data storage.
	FFC2	Moves to the upper hierarchy.

[Key Window Display]

Set the key window display function for a switch.

Set it in the [Action (Key Window Display)] dialog displayed by clicking the [Key Window Display] button.



Item	Description
[Key Window Position]	Specify the position (top-left coordinate) where the key window is displayed. The maximum settable value is one dot smaller than the vertical or horizontal size of the GOT screen. • [X] Specify the coordinate value of the X axis. • [Y] Specify the coordinate value of the Y axis. 

■Setting required for key window display

To display a key window with a switch, set the following.

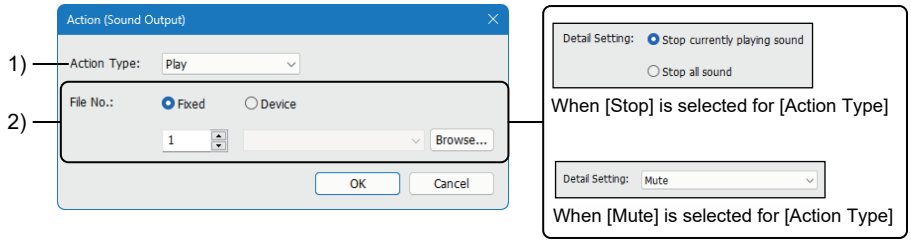
• Object having the same user ID as the one specified in [User ID for a key input] in the [Switch Action] tab

If the above is not set, the key window is not displayed even when the switch is touched.

[Sound Output]

Set the sound output function for a switch.

Set it in the [Action (Sound Output)] dialog displayed by clicking the [Sound Output] button.



Item		Description
1)	[Action Type]	Select an action of the sound output.
2)	[File No.]	Set the sound to be played when selecting [Play] for [Action Type]. • [Fixed] Select this item to specify a sound file number. After selecting this item, set the sound file number in the [Sound File List] dialog displayed by clicking the [Browse] button. The setting range is [1] to [500]. ☞ Page 2715 [Sound File List] dialog • [Device] Select this item to specify a sound file number with the value of a specified device. Select this item and set the device.
	[Detail Setting]	Set this item when selecting [Stop] or [Mute] for [Action Type].
		Set either of the following when selecting [Stop] for [Action Type]. • [Stop currently playing sound] Stops the current playback. The standby sound file plays subsequently. • [Stop all sound] Stops the current playback and cancels all standby sound files.
		Set either of the following when selecting [Mute] for [Action Type]. • [Mute] • [Unmute] • [Mute/unmute]

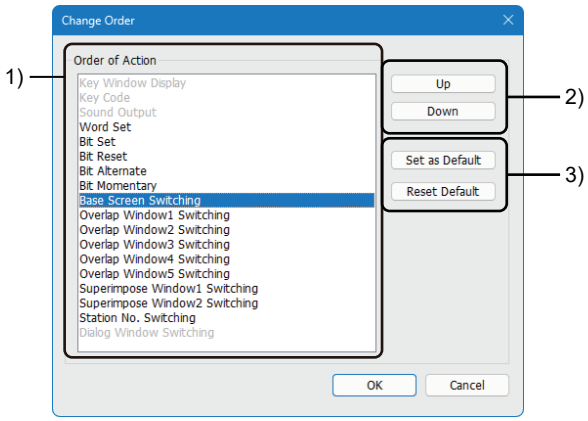
[Change Order] dialog

Set the execution order of actions in [Action List] in the [Switch] dialog ([Switch Action] tab).

The settable number and priority differ depending on the action type.

For details, refer to the following.

☞ Page 1211 Settable numbers and availabilities of order change of actions



Item		Description
1)	[Order of Action]	The actions are executed in the order from the top. The key code is executed first. Therefore the action order cannot be changed. You can change the order of the third and subsequent actions.
2)	[Up] button	Places the order of the action selected in [Order of Action] to one earlier.
	[Down] button	Places the order of the action selected in [Order of Action] to one later.
3)	[Set as Default] button	Sets the order currently set in [Order of Action] as default.
	[Reset Default] button	Restores the order in [Order of Action] to the default one.

■Settable numbers and availabilities of order change of actions

The following table lists the settable number and availability of order change of each action.

Default action order	Action type	Maximum settable value	Change of action order
1	Key window display	1	Unavailable
2	Key code	16	
3	Sound output	1	
4	Word set	20	Available
5	Bit set	20	
6	Bit reset	20	
7	Bit alternate	20	
8	Bit momentary	20	
9	Base screen switching	1	
10	Overlap window 1 screen switching	1	
11	Overlap window 2 screen switching	1	
12	Overlap window 3 screen switching	1	
13	Overlap window 4 screen switching	1	
14	Overlap window 5 screen switching	1	
15	Superimpose window 1 screen switching	1	
16	Superimpose window 2 screen switching	1	
17	Station number switching	9	
18	Dialog window screen switching	1	Unavailable This action is executed last.
Total		136	

- Reading/writing data from/to devices by using the touch switch are executed for all the set switch actions at once.
- The order in which the bit, word, and double-word devices are handled in each controller is determined by the specifications of the controller.

Accordingly, the actions (word set, bit set, bit reset, bit alternate, and bit momentary) that are set for the switch may not be executed in the user-specified order.

- If an error occurs while the GOT reads the data from the device, the GOT does not write the data to the device.
- If an error occurs while the GOT writes the data to the device, the GOT writes the data to the device for the other assigned actions.

Ex.

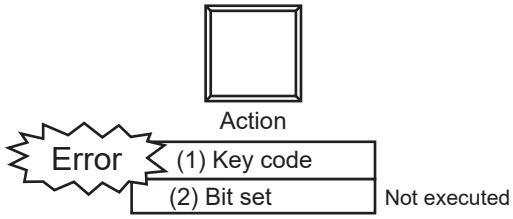
◇Action example 1

When the following actions and action order are set and an error occurs during the action of (1) Key code, the processing is interrupted.

Thus, the action of (2) Bit set is not executed.

(1)Key code: FFBBh (Save alarm contents to data storage)

(2) Bit set



◇Action example 2

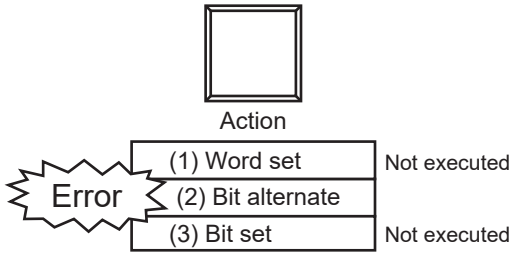
When the following actions and action order are set and an error occurs while the data (the previous value of the bit) is being read from the device for the action of (2) Bit alternate, the processing is interrupted.

Thus, both (1) Word set and (3) Bit set are not executed.

(1) Word set

(2) Bit alternate

(3) Bit set



◇Action example 3

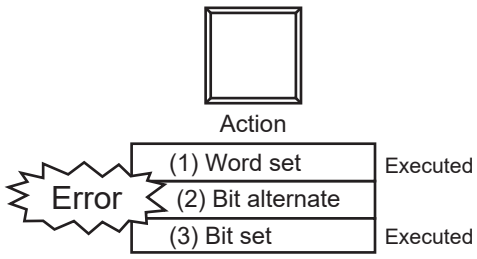
When the following actions and action order are set and an error occurs while the data (the alternated value of the bit) is being written to the device for the action of (2) Bit alternate, the processing is not interrupted.

Thus, both (1) Word set and (3) Bit set are executed.

(1) Word set

(2) Bit alternate

(3) Bit set



27.5.2 [Style] tab

The setting items in this tab are common to those in the setting dialog for each touch switch.
Refer to the following.
☞ Page 1257 [Style] tab

27.5.3 [Text] tab

The setting items in this tab are common to those in the setting dialog for each touch switch.
Refer to the following.
☞ Page 1260 [Text] tab

27.5.4 [Extended] tab

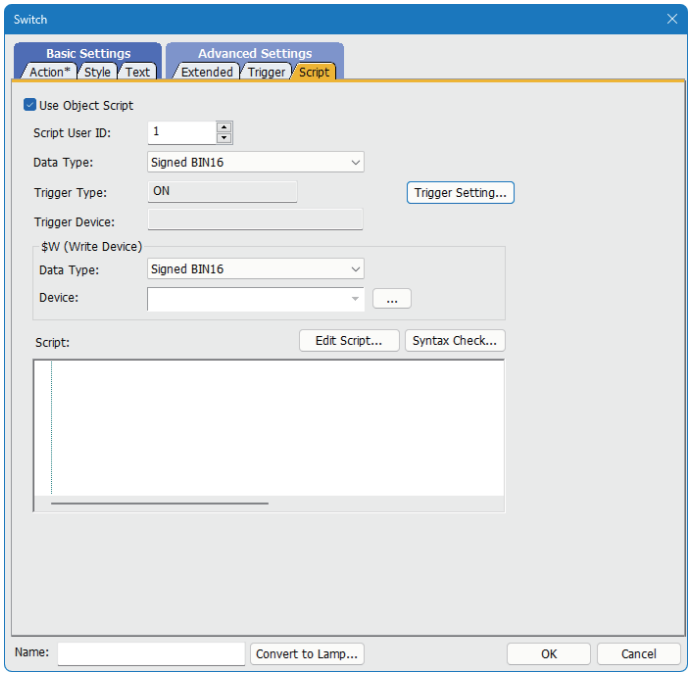
The setting items in this tab are common to those in the setting dialog for each touch switch.
Refer to the following.
☞ Page 1266 [Extended] tab

27.5.5 [Trigger] tab

The setting items in this tab are common to those in the setting dialog for each touch switch.
Refer to the following.
☞ Page 1270 [Trigger] tab

27.5.6 [Script] tab

This tab is not available for mobile screens.
For details on the script settings, refer to the following.
☞ Page 2325 Controlling operations with scripts ([Script])



Relationship between the object settings and object properties

Object settings can be read (referenced) or written (changed) using object properties.

The following shows the correspondence between readable/writable object properties and the setting items in the object setting dialog.

○: Available

×: Not available

—: No applicable setting item

Setting dialog		Object property			
Tab name	**Setting item**	**Property name**	**Read**	**Write**	**Timing for reflecting the setting change*1**
-	-	active	○	○	Upon the setting change
		x	○	○	When the screen is updated
		y	○	○	When the screen is updated
		width	○	×	×
		height	○	×	×
[Extended]	[Security Level] (display)	security	○	○	When the screen is updated
	[Security Level] (input)	input_security	○	○	Upon the setting change
	[Delay]	delay	○	○	When the screen is updated
	[One Shot] and [During Push] of [Buzzer]	beep	○	○	Upon the setting change

*1 For information on how long it takes for object property settings to be reflected on the screen, refer to the following page.

☞ Page 2456 Timing at which the setting change of an object property is reflected

27.6 [Bit Switch] dialog

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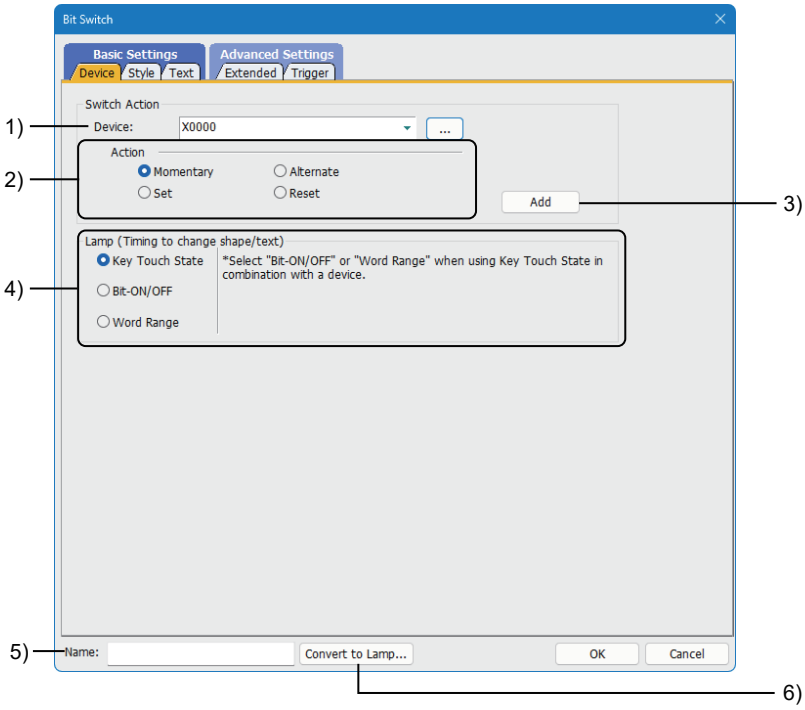
☞ Page 1215 [Device] tab
☞ Page 1257 [Style] tab
☞ Page 1260 [Text] tab
☞ Page 1266 [Extended] tab
☞ Page 1270 [Trigger] tab

27.6.1 [Device] tab



Item			Description
1)	[Device]		Set the device to which the value is written. ☞ Page 834 How to set devices, labels, and tags
2)	[Action]	-	Select the function to be performed for the bit device as the destination when you press the switch.
		[Momentary]	Keeps the bit device on while the switch is being touched. ☞ Page 1216 Touch switch action with the bit momentary
		[Alternate]	Switches the ON/OFF status of the bit device with each touch of the switch.
		[Set]	Turns on the bit device when the switch is touched.
		[Reset]	Turns off the bit device when the switch is touched.
3)	[Add] button		Switches to [Action] of [Switch]. ☞ Page 1199 [Action] tab
4)	[Lamp (Timing to change shape/text)]		Select how to switch touch switch images (shapes of on status and off status). ☞ Page 1201 Action of [Lamp (Timing to change shape/text)]
5)	[Name]		Set the object name. The name is displayed in places such as the data browser and property sheet. The setting can also be changed in other tabs. Up to 100 characters can be entered.
6)	[Convert to Lamp] button		Converts the object type to the lamp. ☞ Page 1196 Converting the touch switch to lamp

PART 7

Precautions

■Cause of the bit device remaining on

If the following events occur while you press the touch switch for which the bit momentary is set, the bit device may remain on even after you release the finger from the switch.

- Hardware failure of the GOT
- Power-off of the GOT
- Communication error with controllers

As appropriate, set the timeout period of the on-status duration for the bit device, and set the operating condition so that the controller forcibly turns off the bit device in the case of the timeout.

Touch switch action with the bit momentary

■Switching to the base screen or window screen

If the base screen switching is requested while you press the touch switch for which the bit momentary is set, the currently displayed base screen is switched to another base screen or window screen when you release the finger from the switch.

■When the operating condition of a touch switch being touched becomes unsatisfied

If the following cases occur while a touch switch is being touched, the set bit device turns off upon releasing the switch.

- The touch switch operating condition specified using [Operating Condition] becomes unsatisfied.
- The touch switch operating condition specified using [Control displaying/hiding] becomes unsatisfied.

■When the operating condition of a touch switch is unsatisfied

If you touch a touch switch while the bit device is on, the device turns off upon touching the switch even if its operating condition is unsatisfied.

Even if you select [Clear the input object] in the [Environmental Setting] window or the screen property, touching the switch turns off the device.

27.6.2 [Style] tab

The setting items in this tab are common to those in the setting dialog for each touch switch.

Refer to the following.

☞ Page 1257 [Style] tab

27.6.3 [Text] tab

The setting items in this tab are common to those in the setting dialog for each touch switch.

Refer to the following.

☞ Page 1260 [Text] tab

27.6.4 [Extended] tab

The setting items in this tab are common to those in the setting dialog for each touch switch.

Refer to the following.

☞ Page 1266 [Extended] tab

27.6.5 [Trigger] tab

The setting items in this tab are common to those in the setting dialog for each touch switch.

Refer to the following.

☞ Page 1270 [Trigger] tab

27.7 [Word Switch] dialog

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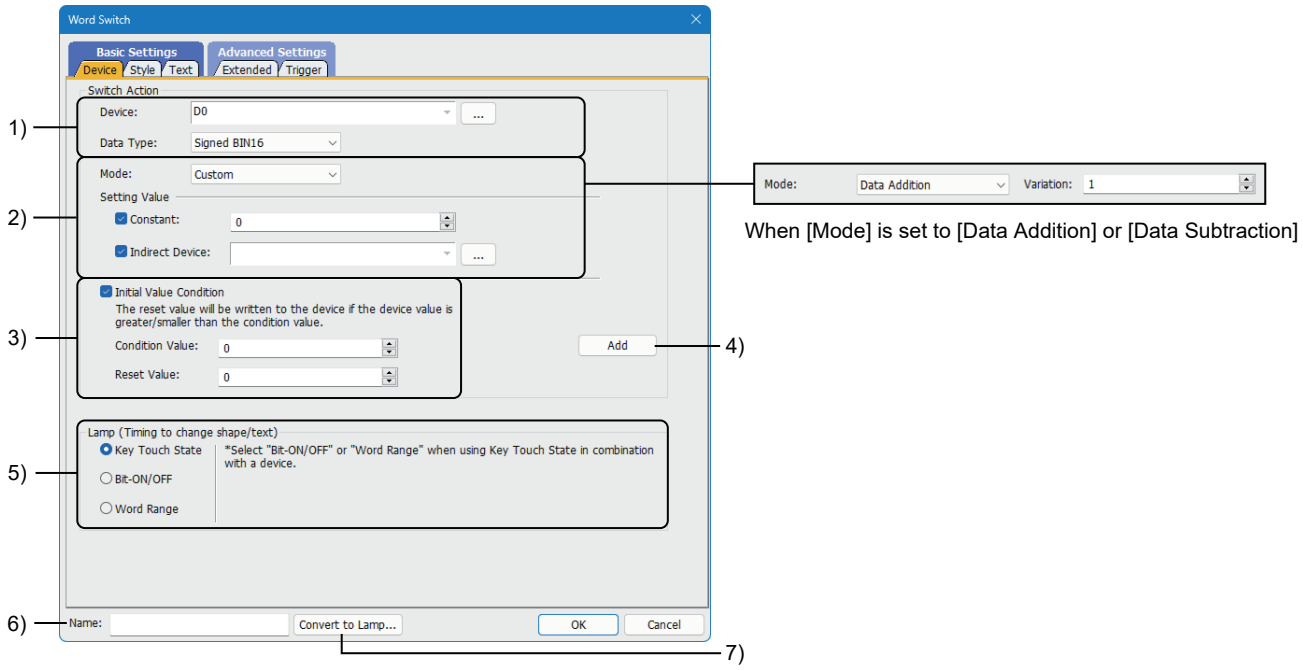
☞ Page 1217 [Device] tab
☞ Page 1257 [Style] tab
☞ Page 1260 [Text] tab
☞ Page 1266 [Extended] tab
☞ Page 1270 [Trigger] tab

27.7.1 [Device] tab



When [Mode] is set to [Data Addition] or [Data Subtraction]

When [Mode] is set to [Custom]

Item		Description
1)	[Device]	Set the word device to which a value is written. ☞ Page 834 How to set devices, labels, and tags
	[Data Type]	Select the data type of the values set in [Setting Value] and [Initial Value Condition]. ☞ Page 854 Settable devices in GT Designer3

PART 7

Item			Description
2)	[Mode]		Set the writing mode for the specified word device. • [Custom] Select this item to write the value set in [Setting Value] to the specified word device. • [Data Addition] Select this item to add the value set in [Variation] to the value stored in the specified word device. • [Data Subtraction] Select this item to subtract the value set in [Variation] from the value stored in the specified word device.
	[Setting Value]	-	Set a value to be written to the specified word device when [Mode] is set to [Custom]. When [Constant] and [Indirect Device] are both selected, the value [Constant] + [Indirect Device] is written into the word device.
		[Constant]	Select this item and set a constant to write the constant to the specified word device. The setting range depends on the setting of [Data Type].
		[Indirect Device]	Select this item and specify an indirect device to write the value of the indirect device to the specified word device. ☞ Page 834 How to set devices, labels, and tags When the value set in [Indirect Device] exceeds the maximum value of the specified word device, the value is written with the excess rounded down. At this time, no system alarm occurs.
	[Variation]		Set this item when [Mode] is set to [Data Addition] or [Data Subtraction]. The setting range depends on the setting of [Data Type]. When [Mode] is set to [Data Addition], pressing the word switch adds the set value to the value stored in the specified word device. When [Mode] is set to [Data Subtraction], touching the word switch subtracts the set value from the value stored in the specified word device.
3)	[Initial Value Condition]	-	When the device value is above or below [Condition Value], [Reset Value] is written to the device. [When [Mode] is set to [Custom], select both [Constant] and [Indirect Device] to enable this setting.
		[Condition Value]	Set a condition value that is a trigger to write [Reset Value] to the specified word device. The setting range depends on the setting of [Data Type].
		[Reset Value]	Set a reset value. The setting range depends on the setting of [Data Type].
4)	[Add] button		Switches to [Action] of [Switch]. ☞ Page 1199 [Action] tab
5)	[Lamp (Timing to change shape/text)]		Select how to switch touch switch images (shapes of on status and off status). ☞ Page 1201 Action of [Lamp (Timing to change shape/text)]
6)	[Name]		Set the object name. The name is displayed in places such as the data browser and property sheet. The setting can also be changed in other tabs. Up to 100 characters can be entered.
7)	[Convert to Lamp] button		Converts the object type to the lamp. ☞ Page 1196 Converting the touch switch to lamp

27.7.2 [Style] tab

The setting items in this tab are common to those in the setting dialog for each touch switch.
Refer to the following.
☞ Page 1257 [Style] tab

27.7.3 [Text] tab

The setting items in this tab are common to those in the setting dialog for each touch switch.
Refer to the following.
☞ Page 1260 [Text] tab

27.7.4 [Extended] tab

The setting items in this tab are common to those in the setting dialog for each touch switch.
Refer to the following.
☞ Page 1266 [Extended] tab

27.7.5 [Trigger] tab

The setting items in this tab are common to those in the setting dialog for each touch switch.
Refer to the following.
☞ Page 1270 [Trigger] tab

27.8 [Go To Screen Switch] dialog

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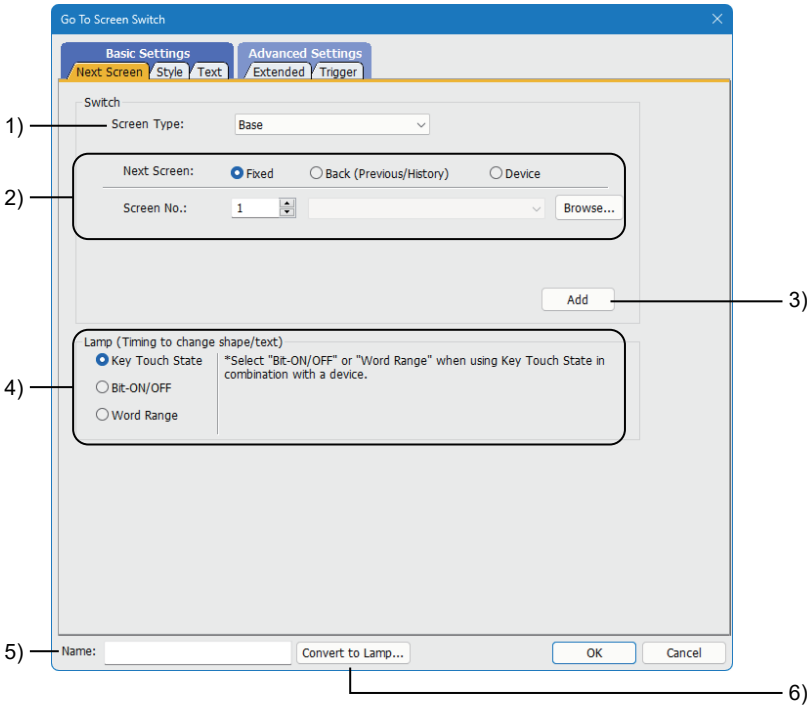
☞ Page 1220 [Next Screen] tab
☞ Page 1257 [Style] tab
☞ Page 1260 [Text] tab
☞ Page 1266 [Extended] tab
☞ Page 1270 [Trigger] tab

27.8.1 [Next Screen] tab



Item		Description
1)	[Screen Type]	Select the type of the screen to be switched to. The selectable items vary with the screen type. In either of the following cases, [(*)] is appended to the item selected for [Screen Type]. • [Close the window when switching base screens] is selected in the [Environment Setting] window ([Screen Switching/Window]). • [Close the window when switching mobile screens] is selected in the [GOT Mobile Setting] window ([Screen Switching/Window]).
2)	[Next Screen]	Select an action for screen switching.
		• [Fixed] Select this item to switch to the screen having the specified base screen number or window screen number. After selecting this item, set the base screen number or the window screen number. The screen can be selected from [Screen Image List] displayed by clicking the [Browse] button.
		• [Back (Previous/History)] You can select this item only when the screen type is the base screen. Select this item to switch to the screen having the base screen number previously displayed. The switching action has the hierarchy mode and history mode. For details, refer to the following. ☞ Page 1223 Hierarchy mode and history mode
		• [Device] Select this item to switch to the base screen or the window screen having the specified screen number according to the on or off status or the current value of the specified device. Before specifying the device, select the data type of the device to be monitored. After setting the device, click the [Detail Setting] button and configure the action settings for screen switching. ☞ Page 1221 [Details of Action] dialog

Item		Description
3)	[Add] button	Switches to [Action] of [Switch]. ☞ Page 1199 [Action] tab
4)	[Lamp (Timing to change shape/text)]	Select how to switch touch switch images (shapes of on status and off status). For details, refer to the following. ☞ Page 1201 Action of [Lamp (Timing to change shape/text)]
5)	[Name]	Set the object name. The name is displayed in places such as the data browser and property sheet. The setting can also be changed in other tabs. Up to 100 characters can be entered.
6)	[Convert to Lamp] button	Converts the object type to the lamp. ☞ Page 1196 Converting the touch switch to lamp

[Details of Action] dialog

This dialog is displayed when the [Detail Setting] button is clicked after [Device] is set.

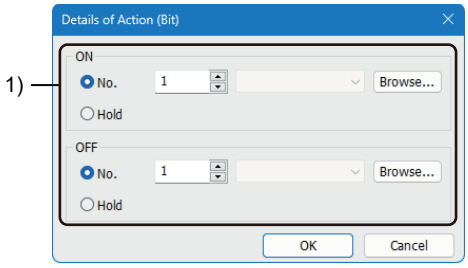
The displayed dialog differs depending on the device type.

☞ Page 1221 [Details of Action (Bit)] dialog

☞ Page 1222 [Details of Action (Word)] dialog

■[Details of Action (Bit)] dialog

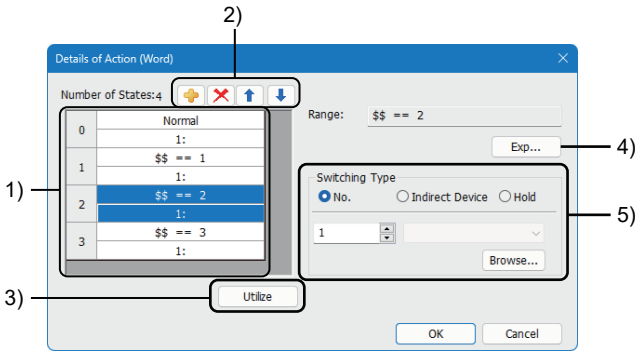
This dialog is displayed when a bit device is specified.



Item		Description
1)	[No.]	Select this item to switch to the base screen or window screen having the specified screen number according to the on or off status of the specified bit device. Set the destination screen number. The screen can be selected from [Screen Image List] displayed by clicking the [Browse] button.
	[Hold]	Select this item not to switch the screens when the specified bit device is on or off.

■[Details of Action (Word)] dialog

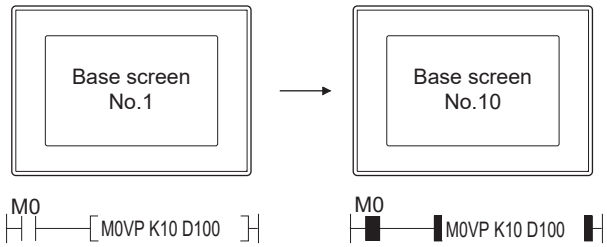
This dialog is displayed when a word device is specified.



Item		Description
1)	Preview list	Displays the set conditions in the list.
2)	Add button	Adds a new condition.
	Delete button	Deletes the condition selected in the preview list.
	Up button Down button	Changes the sorting order of the conditions in the preview list. The smaller the numerical value is, the higher the priority is.
3)	[Utilize] button	Creates a new condition utilizing the condition selected in the preview list.
4)	[Exp] button	Set the range of the word device value for screen switching using a conditional expression. ☞ Page 1043 [Edit Range] dialog
5)	[Switching Type]	Select the display type to switch the screen when the value of the specified word device satisfies the conditional expression set in [Range]. • [No.] The screen is switched to the base screen or the window screen having the specified number. The screen can be selected from [Screen Image List] displayed by clicking the [Browse] button. • [Indirect Device] The screen switches to the screen having the number equal to the value of the specified word device. • [Hold] The screen is not switched.

Point

In the sequence program, the value of the destination screen number is written as the value of the screen switching device. Base screens and window screens can be switched without using the screen switching function of the touch switch.

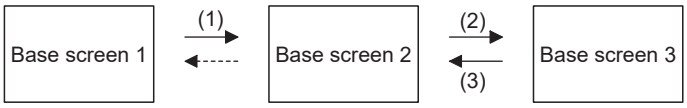
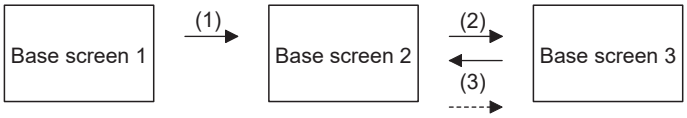


However, if the screen switching device for the base screen or window screen is the GOT internal device (GB, GD, GS), the screens cannot be switched with the sequence program.

Hierarchy mode and history mode

Selecting [Back (Previous/History)] for [Next Screen] allows you to use either of the following modes.

The mode is set for the whole project.

Mode	Description
Hierarchy mode (Default)	The screen returns to the base screen in the higher hierarchy when you touch the touch switch in the hierarchy mode. The screen can return to the base screen of up to the 10 level higher in the hierarchy. Example) After the screen is switched in the order of (1) → (2) → (3), the screen returns to the base screen 1 in the higher hierarchy by touching the previous screen display touch switch on the base screen 2. 
Historical mode	The screen returns to the immediately previous base screen when you press the touch switch. The screen can return to up to 10 previous base screens. Example) After the screen is switched in the order of (1) → (2) → (3), the screen returns to the immediately previous base screen 3 by pressing the previous screen display touch switch on the base screen 2. The screen returns to the base screen 2 then base screen 1 at every touch on the previous screen display touch switch on each screen. 

■How to switch the hierarchy mode and history mode

The default setting is the hierarchy mode.

Switch the modes with either of the following methods.

Switching method	Description
Setting the mode with GT Designer3	Set the mode by selecting [Back Screen Switching] in the window displayed by selecting [Common] → [GOT Environmental Setting] → [Screen Switching/Window]. You can switch between the hierarchy mode and the history mode. ☞ Page 530 Setting for switching screens to be displayed on the GOT ([Screen Switching/Window])
Switching to the history mode with the GOT internal device (GS450.b14)	Using the trigger action function, turn on the GOT internal device GS450.b14 to change the hierarchy mode to history mode. Once you turn on this bit, the operation is performed in [Historical] until you power off the GOT even if you turn off the bit. Turning off the bit cannot change the mode to the hierarchy mode. For application examples, refer to the following. ☞ Page 1225 Enabling the history information to be saved in the memory card with the GOT internal device (GS450.b13)

■Retaining the hierarchy mode and history mode information

When the GOT is powered off, the hierarchy and history information becomes invalid.

When the GOT is powered off and on again, the screen does not return to the screen displayed before the power off even you touch the previous screen display touch switch.

As for the history information, saving it in the memory card allows you to read it from the memory card next time you start the GOT.

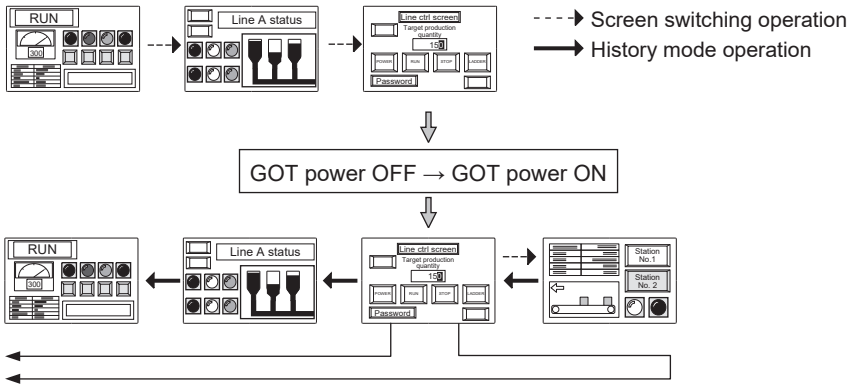
For details, refer to the following.

☞ Page 1224 Saving the history information in the memory card

Saving the history information in the memory card

In the history mode, the GOT can save a maximum of 10 screens in the history information to the memory card installed in the GOT.

Once you save the history information, touching the previous screen display touch switch can return the screen to the one displayed before the power off even after the GOT is powered off and on again.



Even after the GOT is powered on, the screen can be returned to the previous screen displayed before the power off.

The following shows how to save the history information in the memory card.

■Enabling the history information to be saved in the memory card in GT Designer3 settings

1. Select [Common] → [GOT Environmental Setting] → [Screen Switching/Windows] from the menu.
2. Select [History] in [Back Screen Switching], and then select [Store history to the memory card].

☞ Page 530 Setting for switching screens to be displayed on the GOT ([Screen Switching/Window])

■Enabling the history information to be saved in the memory card with the GOT internal device (GS450.b13)

In the history mode (when GS450.b14 is on), turning on the GOT internal device (GS450.b13) enables the history information to be saved in the memory card.

Even if you turn off GS450.b13, saving the history information in the memory card is not disabled.

Ex.

The following shows the setting example for switching the mode with the GOT internal device using a trigger action.

Set a trigger action for changing the mode to the history mode in the first row in the [Project] tab of the [Trigger Action] dialog. This changes the mode to the history mode after the GOT is powered on.

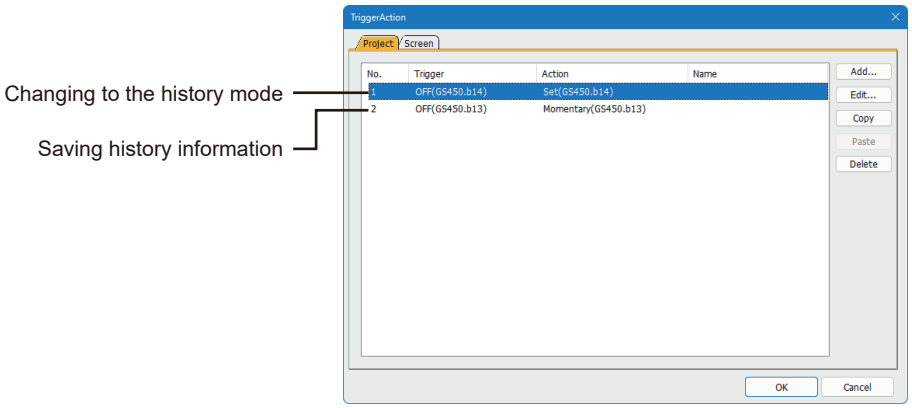
Then, set a trigger for saving the history information in the memory card.

For details on the trigger action, refer to the following.

☞ Page 2521 Operating a device as a trigger ([Trigger Action])

After screen transition is performed and then the mode is changed from the hierarchy mode to the history mode during monitoring, the GOT loses the screen information and thus the screen may not return according to the history.

If you use the history mode, set the history mode immediately after the GOT is powered on.



Precautions

When the history information is saved in the memory card, do not change the value of the screen switching device at the controller side while the GOT is powered off.

While the GOT is powered off, the history information is not saved. Therefore, the screen does not return according to the screen transition controlled on the controller side.

PART 7

27.8.2 [Style] tab

The setting items in this tab are common to those in the setting dialog for each touch switch.
Refer to the following.
☞ Page 1257 [Style] tab

27.8.3 [Text] tab

The setting items in this tab are common to those in the setting dialog for each touch switch.
Refer to the following.
☞ Page 1260 [Text] tab

27.8.4 [Extended] tab

The setting items in this tab are common to those in the setting dialog for each touch switch.
Refer to the following.
☞ Page 1266 [Extended] tab

27.8.5 [Trigger] tab

The setting items in this tab are common to those in the setting dialog for each touch switch.
Refer to the following.
☞ Page 1270 [Trigger] tab

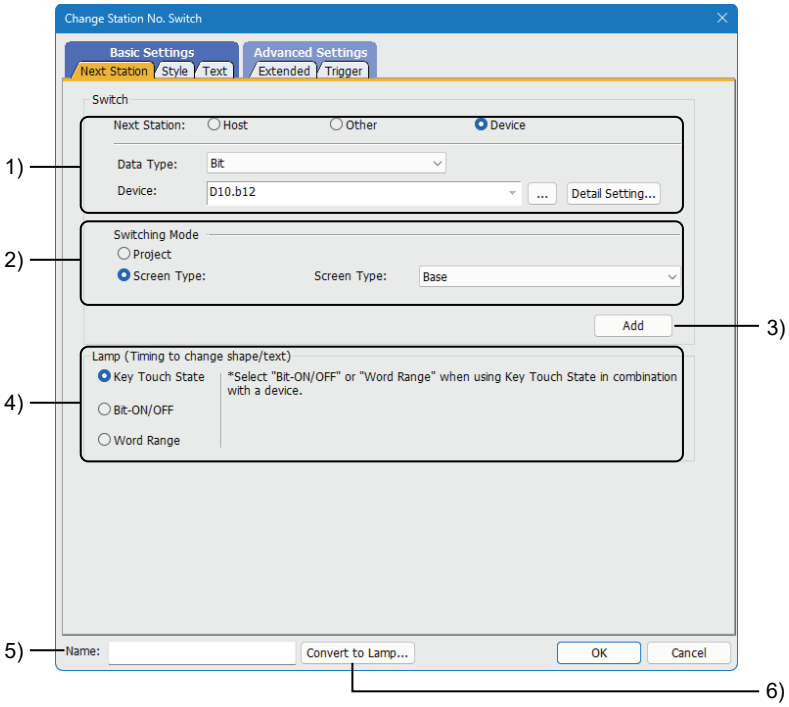
27.9 [Change Station No. Switch] dialog

GT37 SoftGOT3000

This switch cannot be placed on mobile screens.

☞ Page 1227 [Next Station] tab
☞ Page 1257 [Style] tab
☞ Page 1260 [Text] tab
☞ Page 1266 [Extended] tab
☞ Page 1270 [Trigger] tab

27.9.1 [Next Station] tab



Item		Description
1)	[Next Station]	Select an action for station number switching. • [Host] Select this item to monitor the station connected with the GOT. • [Other] Select this item to switch the monitoring target to another station. Set the destination network number in [Net No.] and the station number in [Station No.] in decimal. • [Device] Select this item to switch to another station according to the on or off status or the current value of the specified device. Before specifying the device, select the data type of the device to be monitored. (Bit, Signed 16-bit binary data, or BCD16) After specifying the device, click the [Detail Setting] button and configure the action settings. ☞ Page 1228 [Details of Action] dialog
2)	[Switching Mode]	Set the target to be switched. • [Project] Select this item to switch the whole project by the station number. • [Screen Type] Select this item to switch only the specified screen by the station number. When [Screen Type] is selected, select the screen after switching from [Screen Type].
3)	[Add] button	Switches to [Action] of [Switch]. ☞ Page 1199 [Action] tab
4)	[Lamp (Timing to change shape/text)]	Select how to switch touch switch images (shapes of on status and off status). For details, refer to the following. ☞ Page 1201 Action of [Lamp (Timing to change shape/text)]

PART 7

Item		Description
5)	[Name]	Set the object name. The name is displayed in places such as the data browser and property sheet. The setting can also be changed in other tabs. Up to 100 characters can be entered.
6)	[Convert to Lamp] button	Converts the object type to the lamp. ☞ Page 1196 Converting the touch switch to lamp

[Details of Action] dialog

This dialog is displayed when the [Detail Setting] button is clicked after [Device] is set.

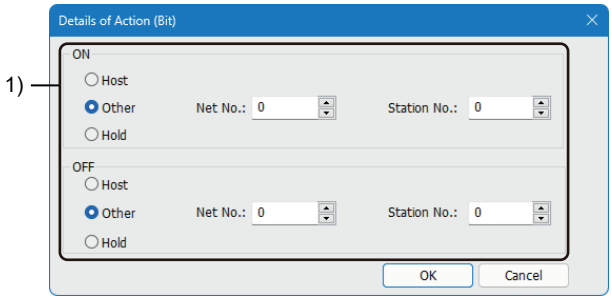
The displayed dialog differs depending on the device type.

☞ Page 1228 [Details of Action (Bit)] dialog

☞ Page 1228 [Details of Action (Word)] dialog

■[Details of Action (Bit)] dialog

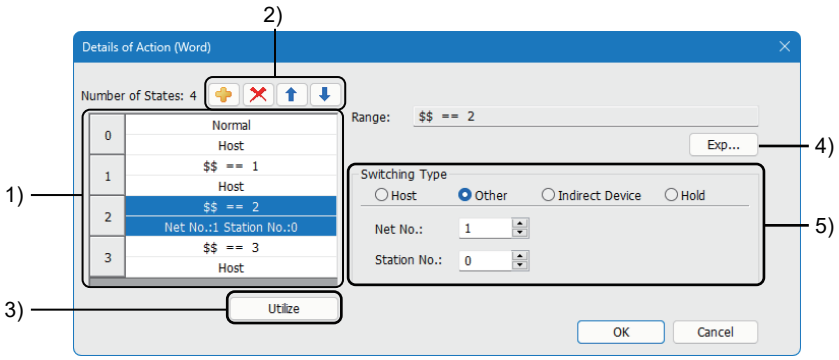
This dialog is displayed when a bit device is specified.



Item		Description
1)	[Host]	Select this item to monitor the controller connected with the GOT according to the on or off status of the specified bit device.
	[Other]	Select this item to switch the monitoring target to another station according to the on or off status of the specified bit device. Set the destination network number in [Net No.] and the station number in [Station No.] in decimal.
	[Hold]	Select this item so as not to switch the monitoring target according to the on or off status of the specified bit device.

■[Details of Action (Word)] dialog

This dialog is displayed when a word device is specified.



Item		Description
1)	Preview list	Displays the set conditions in the list.
2)	Add button	Adds a new condition.
	Delete button	Deletes the condition selected in the preview list.
	Up button Down button	Changes the sorting order of the conditions in the preview list. The smaller the numerical value is, the higher the priority is.
3)	[Utilize] button	Creates a new condition utilizing the condition selected in the preview list.
4)	[Exp] button	Set the range of the word device value for screen switching using a conditional expression. ☞ Page 1043 [Edit Range] dialog

Item		Description
5)	[Switching Type]	Select the switching type to switch the station number when the value of the specified word device satisfies the conditional expression set in [Exp]. • [Host] The controller connected to the GOT is monitored. • [Other] The monitoring target is switched to another station. Set the destination network number in [Net No.] and the station number in [Station No.] in decimal. • [Indirect Device] The monitoring target is switched to the one having the number equal to the value of the specified word device. • [Hold] The monitoring target is not switched.

27.9.2 [Style] tab

The setting items in this tab are common to those in the setting dialog for each touch switch.

Refer to the following.

☞ Page 1257 [Style] tab

27.9.3 [Text] tab

The setting items in this tab are common to those in the setting dialog for each touch switch.

Refer to the following.

☞ Page 1260 [Text] tab

27.9.4 [Extended] tab

The setting items in this tab are common to those in the setting dialog for each touch switch.

Refer to the following.

☞ Page 1266 [Extended] tab

27.9.5 [Trigger] tab

The setting items in this tab are common to those in the setting dialog for each touch switch.

Refer to the following.

☞ Page 1270 [Trigger] tab

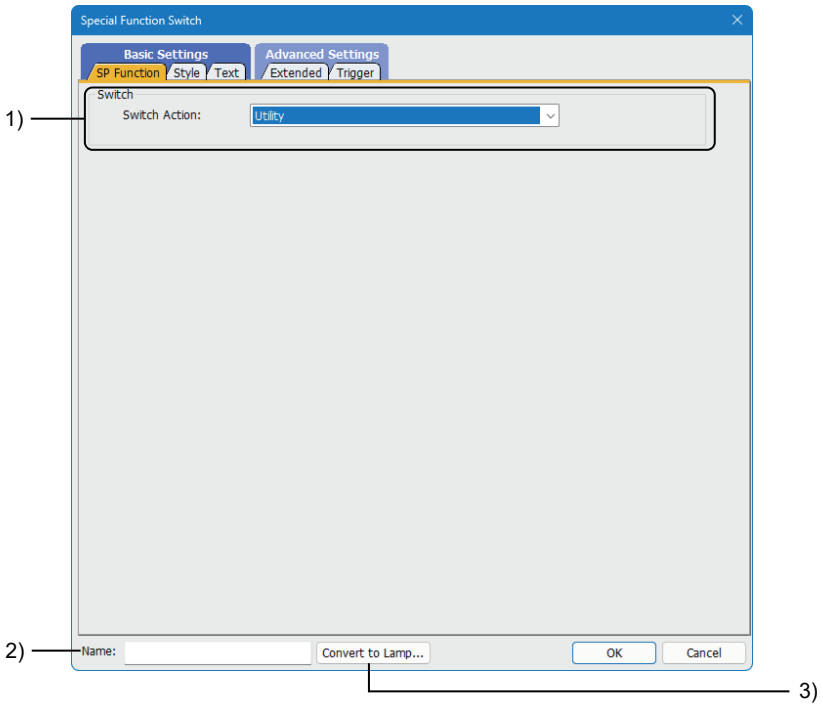
27.10 [Special Function Switch] dialog

GT37 SoftGOT3000

☞ Page 1230 [SP Function] tab
☞ Page 1257 [Style] tab
☞ Page 1260 [Text] tab
☞ Page 1266 [Extended] tab
☞ Page 1270 [Trigger] tab

27.10.1 [SP Function] tab

For mobile screens, some setting items are not available.
☞ Page 2742 Usable functions



Item		Description
1)	[Switch Action]	Select the utility screen or add-on function screen to be displayed when the switch is touched. For the settable actions and supported models, refer to the following. ☞ Page 1231 Settable actions Some functions are unavailable even those are set. For details, refer to the following manuals. 📖GT SoftGOT3000 User's Manual 📖GOT3000 Series User's Manual (Utility & Maintenance Functions)
2)	[Name]	Set the object name. The name is displayed in places such as the data browser and property sheet. The setting can also be changed in other tabs. Up to 100 characters can be entered.
3)	[Convert to Lamp] button	Converts the object type to the lamp. ☞ Page 1196 Converting the touch switch to lamp

Settable actions

The following table lists the actions that can be set for [Switch Action].

[Action]	Description	Model
[Utility]	Displays the utility.	GT37 SoftGOT3000
[Key Window]	Displays the key window used for the numerical input function and the text input function.	
[Start Hard Copy]	Outputs a hard copy to a file.	
[GOT Basic Setting Menu]	Displays the setup screen.	
[Brightness Adjustment]	Displays the intensity adjustment screen.	
[Password (Security Level)]	Displays the security level change screen. This setting is available only when the level authentication is selected. ☞ Page 2972 Protecting a project by registering users (Project security)	
[Time]	Displays the time setting screen.	
[Data Control]	Displays the data control screen.	
[Clean/Display Screen]	Displays the screen for cleaning the GOT screen.	
[Web Browser]	Displays the web browser window. ☞ Page 1233 [Web Browser] setting	GT37 SoftGOT3000
[Display]	Displays the [Display] screen of the utility.	GT37 SoftGOT3000
[Operation]	Displays the [Operation] screen of the utility.	
[Language]	Displays the [Language] screen of the utility.	
[Controller]	Displays the communication setting screen.	
[PC Remote Operation (Ethernet)]	Displays the personal computer screen on the GOT. ☞ Page 1236 Settings for [PC Remote Operation (Ethernet)]	GT37 SoftGOT3000
[Destination Authentication]	Displays the connection destination setting screen for the authentication screen. ☞ Page 1235 [Destination Authentication] settings	GT37 SoftGOT3000
[System Launcher]	Displays the system configuration screen of the system launcher. ☞ Page 1238 Settings for [System Launcher]	
[Sequence Program Monitor (iQ-R/iQ-L Ladder)]	Displays the screen of the sequence program monitor (iQ-R/iQ-L ladder). ☞ Page 1239 Settings for [Sequence Program Monitor (iQ-R/iQ-L Ladder)]	GT37 SoftGOT3000
[Sequence Program Monitor (iQ-F Ladder)]	Displays the screen of the sequence program monitor (iQ-F ladder). ☞ Page 1240 Settings for [Sequence Program Monitor (iQ-F Ladder)]	
[Sequence Program Monitor (Q/L Ladder)]	Displays the sequence program monitor (Q/L ladder) screen. ☞ Page 1241 Settings for [Sequence Program Monitor (Q/L Ladder)]	
[R Motion Monitor]	Displays the R motion monitor screen. ☞ Page 1242 Settings for [R Motion Monitor]	
[iQSS Utility]	Displays the iQSS utility screen. ☞ Page 1243 Settings for [iQSS Utility]	
[Backup/Restoration]	Displays the screen for backup and restoration. ☞ Page 1244 Settings for [Backup/Restoration]	GT37 SoftGOT3000
[USB Device Control]	Displays the USB device control screen.	
[CC-Link IE TSN/CC-Link IE Field Network diagnostics]	Displays the screen for the CC-Link IE TSN/CC-Link IE Field Network diagnostics. ☞ Page 1245 Settings for [CC-Link IE TSN/CC-Link IE Field Network diagnostics]	GT37 SoftGOT3000
[Maintenance Menu]	Displays the maintenance menu screen.	GT37 SoftGOT3000
[Batch Self Check]	Displays the self check result menu screen.	

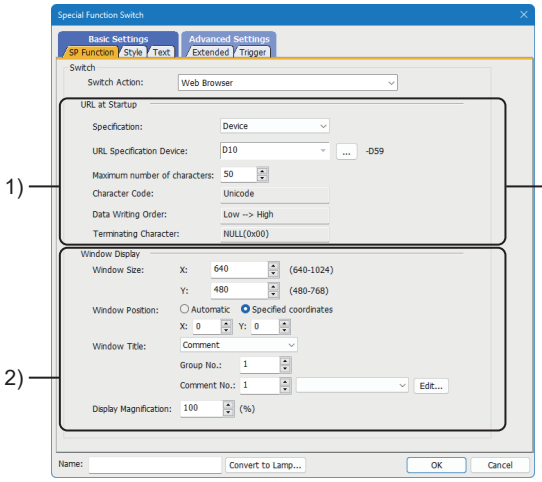
[Action]	Description	Model
[Network Status Display]	Displays the network status display screen.	GT37 SoftGOT3000
[System Alarm Display]	Displays the system alarms, and resets the GOT errors.	GT37 SoftGOT3000
[Recipe Information]	Displays the recipe information.	
[Recipe Data Operation]	Imports or exports recipe data. ☞ Page 1246 Settings for [Recipe Data Operation]	
[Logging information]	Displays the logging information.	
[Operation Log Information]	Displays the operation log information.	
[Operator Information Management]	Displays the operator information management screen when the operator authentication is enabled. ☞ Page 3038 Restricting display and operation on the GOT (Screen security)	
[Operator Management]	Displays the operator management screen when the operator authentication is enabled. ☞ Page 3038 Restricting display and operation on the GOT (Screen security)	
[Log-in/Log-out (Operator Authentication)]	Displays the login and logout screen when the operator authentication is enabled. ☞ Page 3038 Restricting display and operation on the GOT (Screen security)	
[Password Change (Operator Authentication)]	Displays the password change screen when the operator authentication is enabled. ☞ Page 3038 Restricting display and operation on the GOT (Screen security)	
[File Manager]	Displays the file manager screen.	GT37 SoftGOT3000
[Video File Manager]	Displays the video file manager screen. ☞ Page 1247 Settings for [Video File Manager]	

[Web Browser] setting

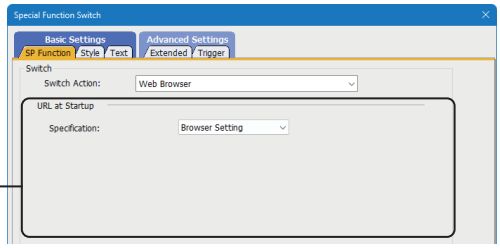
Set the operation and display of the web browser window opened by the special function switch.

For details on the web browser function, refer to the following.

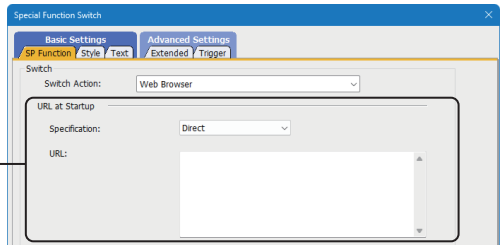
☞ Page 691 Setting the web browser function ([Web Browser])



When [Device] is selected for [Specification]



When [Browser Setting] is selected for [Switch Action]



When [Direct] is selected for [Specification]

Item			Description
1)	[URL at Startup]	—	Specify the URL of the page to be displayed when the web browser window is launched. Displayed items differ depending on the item set for [Specification].
		[Specification]	Select how to specify the URL. To specify a URL in the web browser window without using the special function switch, select [Browser Setting]. To specify a fixed URL, select [Direct] and set the URL. To specify a URL dynamically using devices while the GOT is operating, select [Device].
			When [Direct] or [Device] is selected, the URL to be entered must start with http:// or https://. If the URL does not start with http:// or https://, it is considered a format error and the website is not displayed. When [Browser Setting] is selected, the configured website URL is accessed. ☞ Page 709 [Web Browser] If a website URL is not configured, the startup URL when the web browser was previously launched is accessed. If a website URL is not configured and a valid URL does not exist, or if you start a web browser for the first time, a blank page is displayed.
		[URL]	This item appears when [Direct] is selected for [Specification]. Set a URL. Up to 512 characters can be set.
		[URL Specification Device]	This item appears when [Device] is selected for [Specification]. Set the start device for specifying the URL. The URL is specified using the number of devices set for [Maximum number of characters] from the start device. The data type is unsigned 16-bit binary.
		[Maximum number of characters]	This item appears when [Device] is selected for [Specification]. The setting range is [1] to [512].
		[Character Code]	This item appears when [Device] is selected for [Specification]. It is fixed to [Unicode].
		[Data Writing Order]	This item appears when [Device] is selected for [Specification]. It is fixed to [Low --> High].
		[Terminating Character]	This item appears when [Device] is selected for [Specification]. It is fixed to [NULL(0x00)].

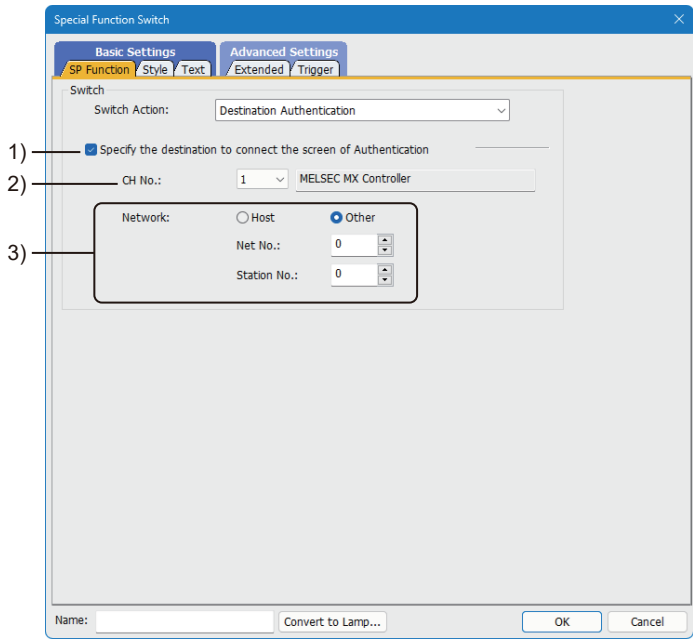
Item			Description
2)	[Window Display]	—	Set the size and display position of the web browser window when it is launched.
		[Window Size]	Set the sizes (vertical and horizontal) of the web browser window. The maximum settable value is the resolution size (vertical or horizontal) of the GOT.
		[Window Position]	Select the display position of the web browser window. When [Specified coordinates] is selected, set the coordinates of the display position in [X] and [Y]. The maximum settable value is the resolution size (vertical or horizontal) of the GOT.
		[Window Title]	Set the content to be displayed on the title bar of the web browser window. When [Comment] is selected, specify the comment to be displayed with [Group No.] and [Comment No.].
		[Display Magnification]	Select the display magnification of the page displayed in the web browser window. The setting range is [25]% to [200]%.

[Destination Authentication] settings

Set the connection destination for authentication using a special function switch.

To configure the destination authentication settings, set [MELSEC MX Controller] for [Controller Type] in the [Controller Setting] window.

☞ Page 729 [Controller Setting]



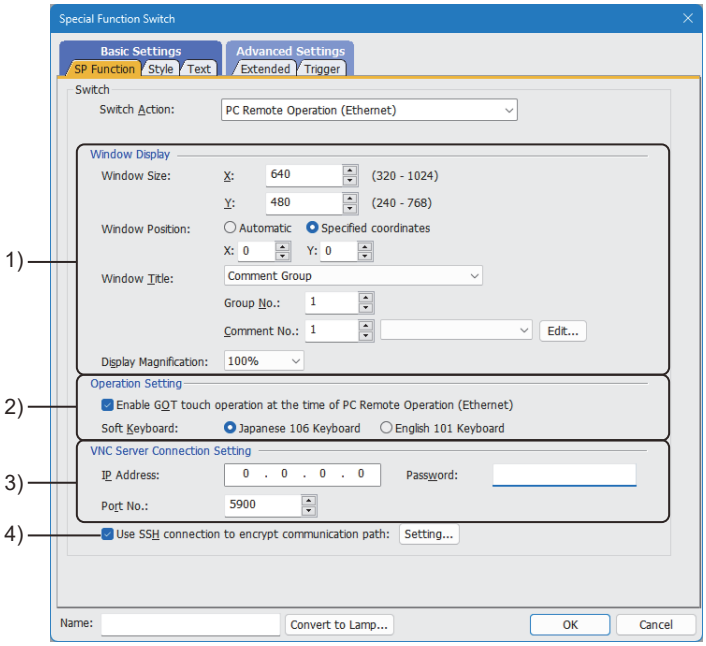
Item			Description
1)	[Specify the destination to connect the screen of Authentication]		Select this item to specify the connection destination for which authentication is performed or canceled.
2)	[CH No.]		Set the channel of the connection destination.
3)	[Network]	-	When [Other] is selected, set the network number and station number of the controller.
		[Net No.]	Set the network number of the controller.
		[Station No.]	Set the station number of the controller.

Settings for [PC Remote Operation (Ethernet)]

Set the personal computer screen on the GOT to be displayed.

For details on the remote personal computer operation function (Ethernet), refer to the following.

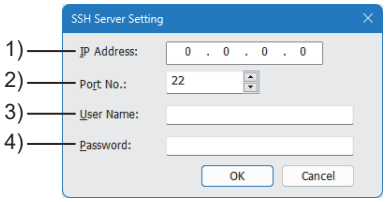
☞ Page 2613 Operating a personal computer by using the GOT (remote personal computer operation function (Ethernet))



Item			Description
1)	[Window Display]	-	Configure the window display settings on the remote personal computer screen.
		[Window Size]	Set the display size of the personal computer screen on the GOT in the window display mode. • [X]: The setting range is [320] to the horizontal resolution of the GOT. • [Y]: The setting range is [240] to the vertical resolution of the GOT.
		[Window Position]	Select the display position of the personal computer screen on the GOT in the window display mode. • [Automatic] The position of the overlap window displayed on the screen is automatically set as the window position of the remote personal computer operation (Ethernet). • [Specified coordinates] Set the top-left coordinates of the window position for the remote personal computer operation (Ethernet). If the window is placed beyond the screen, the coordinate is adjusted so that the whole window is displayed on the screen.
		[Window Title]	Select the title to be displayed in the title bar of the personal computer screen on the GOT. • [Display as "PC Remote Operation (Ethernet)"] Select [PC Remote Operation (Ethernet)] in the title bar. • [IP Address] Displays the IP address of the connected personal computer in the title bar. • [Comment Group] Displays the comment of a comment number specified in the title bar. Click the [Edit] button to edit the comment with the specified comment number. ☞ Page 3685 [Edit Comment] dialog
		[Display Magnification]	Select the display magnification of the personal computer screen on the GOT.
2)	[Operation Setting]	-	Configure the operation settings for the remote personal computer screen.
		[Enable GOT touch operation at the time of PC Remote Operation (Ethernet)]	Select this item to enable the touch operation on the GOT while the personal computer screen is displayed.
		[Soft Keyboard]	Select the soft keyboard type used on the personal computer screen.

Item			Description
3)	[VNC Server Connection Setting]	-	Configure the connection settings for the VNC server.
		[IP Address]	Set the IP address of the VNC server. The setting range is [0].[0].[0].[0] to [255].[255].[255].[255].
		[Password]	Set the password for connection with the VNC server. Up to 31 uppercase and lowercase alphabetic characters, numbers, one-byte spaces, and the symbols below are usable for a password. ! " # $ % & ' ( ) * + , ` - . / : ; < = > ? @ [\ ] ^ _ { | } ~
		[Port No.]	Set the port number for connection with the VNC server. The setting range is [1024] to [65535].
4)	[Use SSH connection to encrypt communication path]		Configure the SSH connection settings. ☞ Page 1237 [SSH Server Setting] dialog

■[SSH Server Setting] dialog



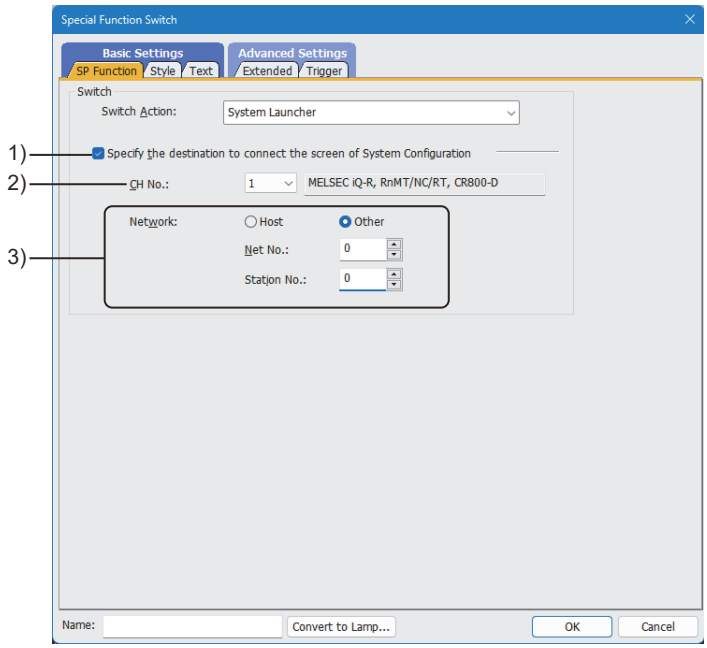
Item		Description
1)	[IP Address]	Set the IP address of the SSH server. The setting range is [0].[0].[0].[0] to [255].[255].[255].[255].
2)	[Port No.]	Set the SSH server port number. The setting range is [22] and [1024] to [65535].
3)	[User Name]	Set the user name for connection with the SSH server. Up to 32 uppercase and lowercase alphabetic characters, numbers, one-byte spaces, and the symbols below are usable for a user name. ! " # $ % & ' ( ) * + , ` - . / : ; < = > ? @ [\ ] ^ _ { | } ~
4)	[Password]	Set the password for connection with the SSH server. Up to 32 uppercase and lowercase alphabetic characters, numbers, one-byte spaces, and the symbols below are usable for a password. ! " # $ % & ' ( ) * + , ` - . / : ; < = > ? @ [\ ] ^ _ { | } ~

Settings for [System Launcher]

Set a controller connected when the system configuration screen of the system launcher is called up with a special function switch.

For details on the system launcher function, refer to the following.

GOT3000 Series User's Manual (Utility & Maintenance Functions)



Item			Description
1)	[Specify the destination to connect the screen of System Configuration]		Select this item to specify the connection destination for the system configuration screen.
2)	[CH No.]		Select the channel number of the controller to be monitored. Only the channel number whose controller is any of the following models can be selected. • [MELSEC iQ-R, RnMT/NC/RT, CR800-D] • [MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700] • [MELSEC-L] • [MELIPC]
3)	[Network]	-	When [Other] is selected, set the network number and station number of the controller.
		[Net No.]	Set the network number of the controller. The setting range is [0] to [255].
		[Station No.]	Set the station number of the controller. The setting range is [0] to [120].

Settings for [Sequence Program Monitor (iQ-R/iQ-L Ladder)]

Set the ladder search method by the one-touch ladder jump function.

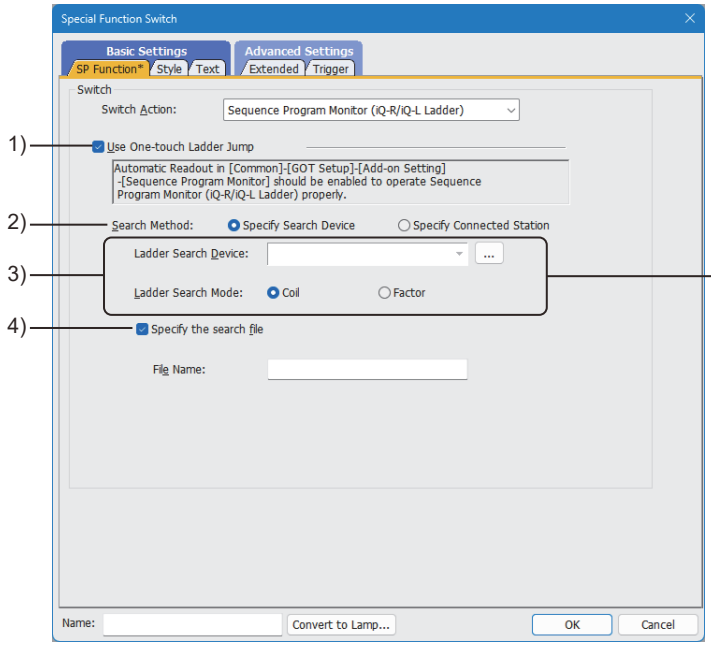
Before the ladder search setting, configure the following setting.

- Select [Common] → [GOT Setup] → [Add-on Setting] → [Sequence Program Monitor] from the menu.
- Select [Update the sequence program monitor setting], and then select [Automatically read out a sequence program] of [Operation when starting Sequence Program Monitor].

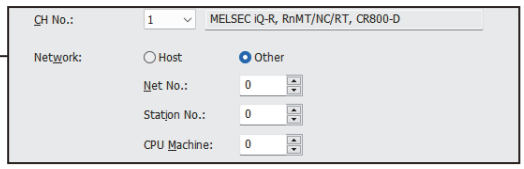
☞ Page 651 [Sequence Program Monitor]

For details on the sequence program monitor (iQ-R/iQ-L ladder) function, refer to the following.

GOT3000 Series User's Manual (Utility & Maintenance Functions)



Select [Specify Search Device] for the search method.



Select [Specify Connected Station] for the search method.

Item			Description
1)	[Use One-touch Ladder Jump]		Select this item when using the one-touch ladder jump function.
2)	[Search Method]		Select a search method used at the sequence program monitor (iQ-R/iQ-L ladder) startup. • Select [Specify Search Device] to search for files and devices. • Select [Specify Connected Station] to search for controllers and files.
3)	[Ladder Search Device]		When [Specify Search Device] is selected for [Search Method], set a device to be searched for at the sequence program monitor (iQ-R/iQ-L ladder) startup. ☞ Page 834 How to set devices, labels, and tags
	[Ladder Search Mode]		When [Specify Search Device] is selected for [Search Method], select the search mode.
	[CH No.]		When [Specify Connected Station] is selected for [Search Method], set a channel number to be searched. Only the channel number whose controller is any of the following models can be selected. • [MELSEC iQ-R, RnMT/NC/RT, CR800-D] • [MELSEC iQ-L] • [MELIPC] • Set a channel number to be searched for.
	[Network]	-	When [Specify Connected Station] is selected for [Search Method], set the controller to be searched. When [Other] is selected, set the network number, PLC station number, and CPU number of the controller.
		[Net No.]	Set the network number of the controller.
		[Station No.]	Set the station number of the controller.
		[CPU Machine]	Set the CPU number of the controller.
4)	[Specify the search file]		Select this item to specify the name of the program file to be searched for. A file whose name is up to 60 characters long can be searched for. A file whose name includes both two-byte and one-byte characters can also be searched for. A file whose name includes one-byte spaces or any symbol below cannot be searched for. (" \ / ; : ? < > | + = [ ] . ,)

PART 7

Settings for [Sequence Program Monitor (iQ-F Ladder)]

Set the ladder search method by the one-touch ladder jump function.

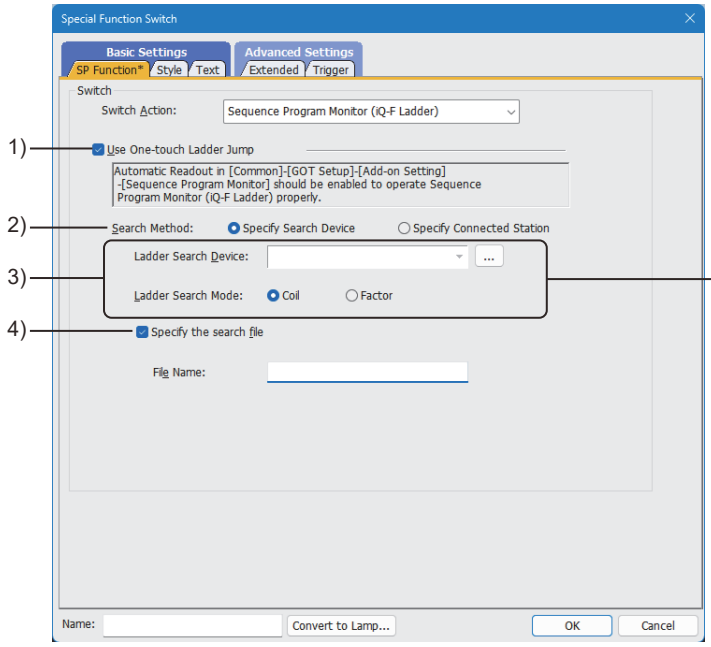
Before the ladder search setting, configure the following setting.

- Select [Common] → [GOT Setup] → [Add-on Setting] → [Sequence Program Monitor] from the menu.
- Select [Update the sequence program monitor setting], and then select [Automatically read out a sequence program] of [Operation when starting Sequence Program Monitor].

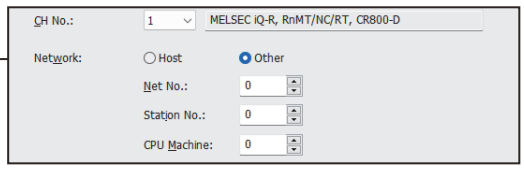
☞ Page 651 [Sequence Program Monitor]

For details on the sequence program monitor (iQ-F ladder) function, refer to the following.

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)



Select [Specify Search Device] for the search method.



Select [Specify Connected Station] for the search method.

Item			Description
1)	[Use One-touch Ladder Jump]		Select this item when using the one-touch ladder jump function.
2)	[Search Method]		Select a search method used at the sequence program monitor (iQ-F ladder) startup. • Select [Specify Search Device] to search for files and devices. • Select [Specify Connected Station] to search for controllers and files.
3)	[Ladder Search Device]		When [Specify Search Device] is selected for [Search Method], set a device to be searched for at the sequence program monitor (iQ-F ladder) startup. ☞ Page 834 How to set devices, labels, and tags
	[Ladder Search Mode]		When [Specify Search Device] is selected for [Search Method], select the search mode.
	[CH No.]		When [Specify Connected Station] is selected for [Search Method], set a channel number to be searched. Only the channel number whose controller is any of the following models can be selected. • [MELSEC iQ-R, RnMT/NC/RT, CR800-D] • [MELSEC iQ-L] • [MELSEC iQ-F] • [MELIPC] • Set a channel number to be searched for.
	[Network]	-	When [Specify Connected Station] is selected for [Search Method], set the controller to be searched. When [Other] is selected, set the network number, PLC station number, and CPU number of the controller.
		[Net No.]	Set the network number of the controller.
		[Station No.]	Set the station number of the controller.
		[CPU Machine]	Set the CPU number of the controller.
4)	[Specify the search file]		Select this item to specify the name of the program file to be searched for. A file whose name is up to 60 characters long can be searched for. A file whose name includes both two-byte and one-byte characters can also be searched for. A file whose name includes one-byte spaces or any symbol below cannot be searched for. (" \ / ; : ? < > | + = [ ] . ,)

Settings for [Sequence Program Monitor (Q/L Ladder)]

Set the ladder search method by the one-touch ladder jump function.

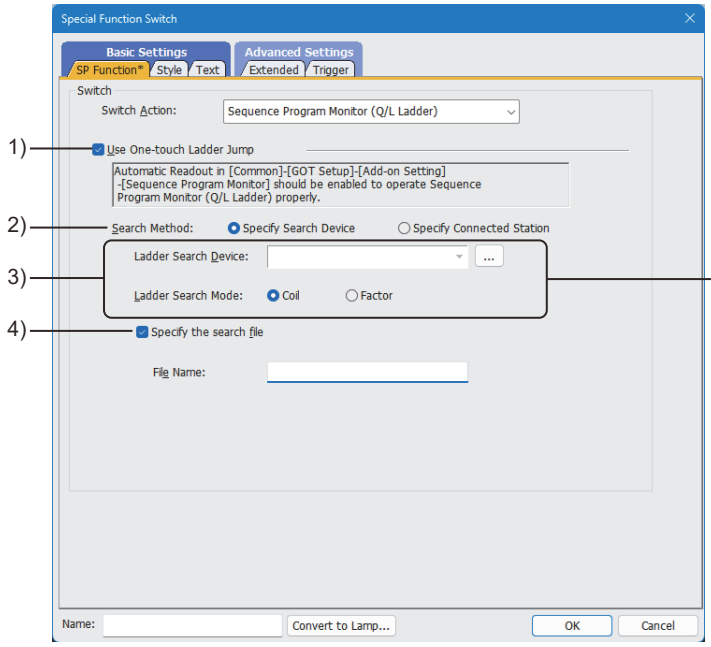
Before the ladder search setting, configure the following setting.

- Select [Common] → [GOT Setup] → [Add-on Setting] → [Sequence Program Monitor] from the menu.
- Select [Update the sequence program monitor setting], and then select [Automatically read out a sequence program] of [Operation when starting Sequence Program Monitor].

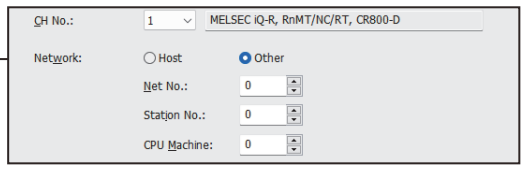
☞ Page 651 [Sequence Program Monitor]

For details on the sequence program monitor (Q/L ladder) function, refer to the following.

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)



Select [Specify Search Device] for the search method.



Select [Specify Connected Station] for the search method.

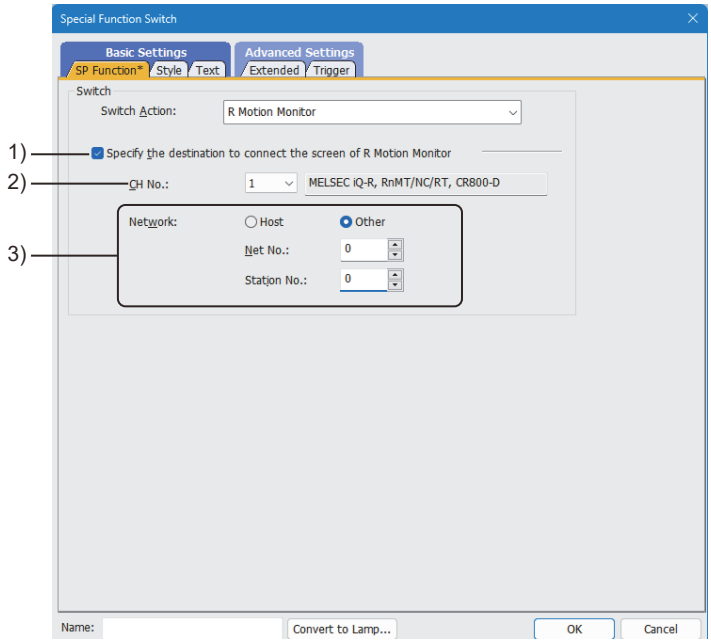
Item			Description
1)	[Use One-touch Ladder Jump]		Select this item when using the one-touch ladder jump function.
2)	[Search Method]		Select the search method at the sequence program monitor (Q/L ladder) startup. • Select [Specify Search Device] to search for files and devices. • Select [Specify Connected Station] to search for controllers and files.
3)	[Ladder Search Device]		When [Specify Search Device] is selected for [Search Method], set a device to be searched for at the sequence program monitor (Q/L ladder) startup. ☞ Page 834 How to set devices, labels, and tags
	[Ladder Search Mode]		When [Specify Search Device] is selected for [Search Method], select the search mode.
	[CH No.]		When [Specify Connected Station] is selected for [Search Method], set a channel number to be searched. Only the channel number whose controller is any of the following models can be selected. • [MELSEC iQ-R, RnMT/NC/RT, CR800-D] • [MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700] • [MELSEC-L] • [MELSEC-A] • [MELSEC-FX] • [MELIPC] • Set a channel number to be searched for.
	[Network]	-	When [Specify Connected Station] is selected for [Search Method], set the controller to be searched. When [Other] is selected, set the network number, PLC station number, and CPU number of the controller.
		[Net No.]	Set the network number of the controller.
		[Station No.]	Set the station number of the controller.
		[CPU Machine]	Set the CPU number of the controller.
4)	[Specify the search file]		Select this item to specify the name of the program file to be searched for. A file whose name is up to 60 characters long can be searched for. A file whose name includes both two-byte and one-byte characters can also be searched for. A file whose name includes one-byte spaces or any symbol below cannot be searched for. (" \ / ; : ? < > | + = [ ] . ,)

Settings for [R Motion Monitor]

Set a controller connected when the R motion monitor is started with a special function switch.

For details on the R motion monitor function, refer to the following.

GOT3000 Series User's Manual (Utility & Maintenance Functions)



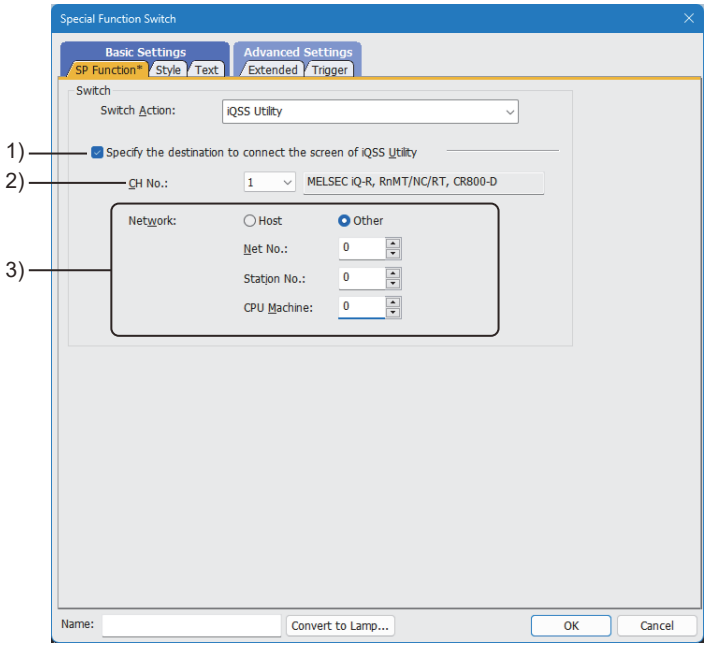
Item			Description
1)	[Specify the destination to connect the screen of R Motion Monitor]		Select this item to specify the connection destination for the R Motion monitor screen.
2)	[CH No.]		Select the channel number of the controller to be monitored. Only the channel number whose controller is any of the following models can be selected. • [MELSEC iQ-R, RnMT/NC/RT, CR800-D] • [MELIPC]
3)	[Network]	-	When [Other] is selected, set the network number and station number of the controller.
		[Net No.]	Set the network number of the controller to be monitored. The setting range is [0] to [255].
		[Station No.]	Set the PLC station number of the controller to be monitored. The setting range is [0] to [120].

Settings for [iQSS Utility]

Set a controller connected when the iQSS utility screen is called up with a special function switch.

For details on the iQSS utility function, refer to the following.

GOT3000 Series User's Manual (Utility & Maintenance Functions)



Item			Description
1)	[Specify the destination to connect the screen of iQSS Utility]		Select this item to specify the connection destination for the iQSS utility screen.
2)	[CH No.]		Select the channel number of the controller to be monitored. Only the channel number whose controller is any of the following models can be selected. • [MELSEC iQ-R, RnMT/NC/RT, CR800-D] • [MELSEC iQ-F] • [MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700] • [MELSEC-L] • [MELIPC]
3)	[Network]	-	When [Other] is selected, set the network number, station number, and CPU number of the controller.
		[Net No.]	Set the network number of the controller to be monitored. The setting range is [0] to [255].
		[Station No.]	Set the PLC station number of the controller to be monitored. The setting range is [0] to [120].
		[CPU Machine]	Set the CPU number of the controller to be monitored. The setting range is [0] to [4].

To use the iQSS utility special control, select [Specify the destination to connect the screen of iQSS Utility], and set the sensor device number to [Name].

Set [<iQSS=n>] (sensor device number) to [Name].

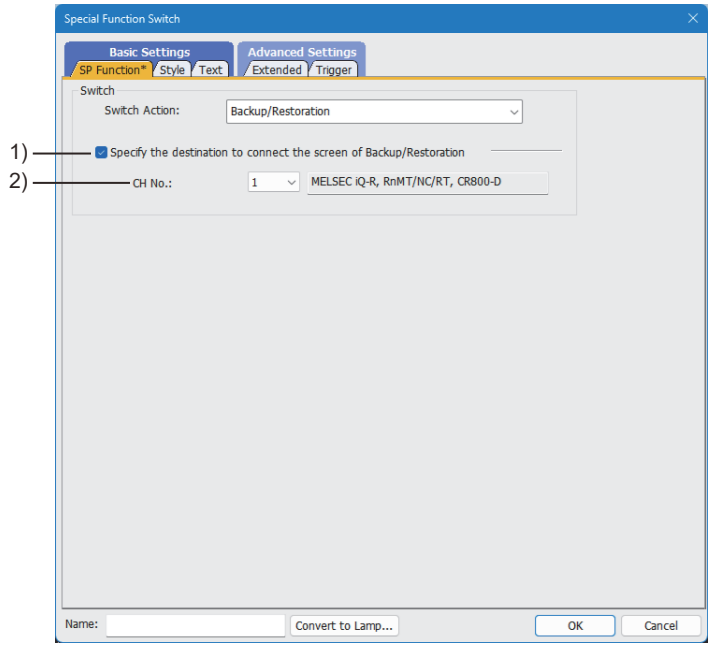
You can set 0 to 65534 to "n".

Settings for [Backup/Restoration]

Set a controller connected when the backup/restoration screen is called up with a special function switch.

For details on the backup/restoration function, refer to the following.

GOT3000 Series User's Manual (Utility & Maintenance Functions)



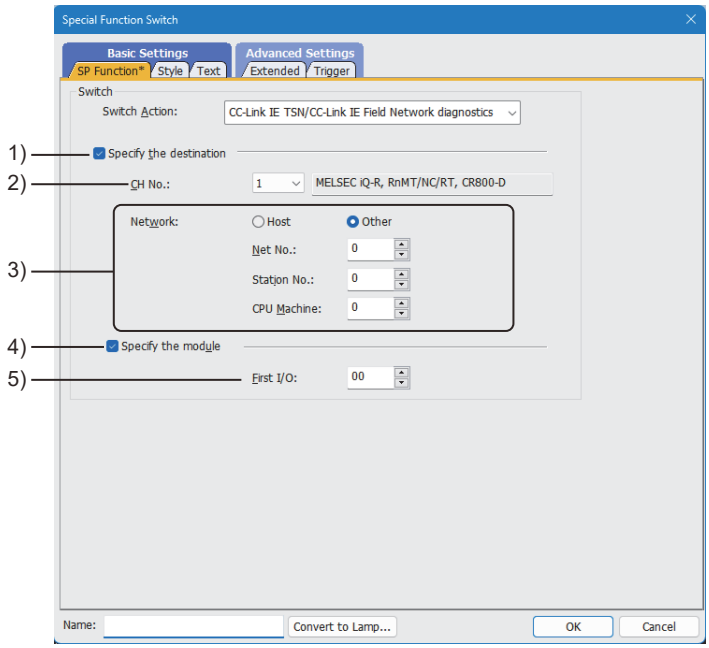
Item		Description
1)	[Specify the destination to connect the screen of Backup/Restoration]	Select this item to specify the connection destination for the backup/restoration screen.
2)	[CH No.]	Select the channel number of the controller to be monitored. Only the channel number whose controller is any of the following models can be selected. • [MELSEC iQ-R, RnMT/NC/RT, CR800-D] • [MELSEC iQ-F] • [MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700] • [MELSEC-L] • [MELSEC-FX] • [MELIPC]

Settings for [CC-Link IE TSN/CC-Link IE Field Network diagnostics]

Set a controller connected when the screen for the CC-Link IE TSN/CC-Link IE Field Network diagnostics is called up with a special function switch.

For details on the CC-Link IE TSN/CC-Link IE Field Network diagnostics, refer to the following.

GOT3000 Series User's Manual (Utility & Maintenance Functions)



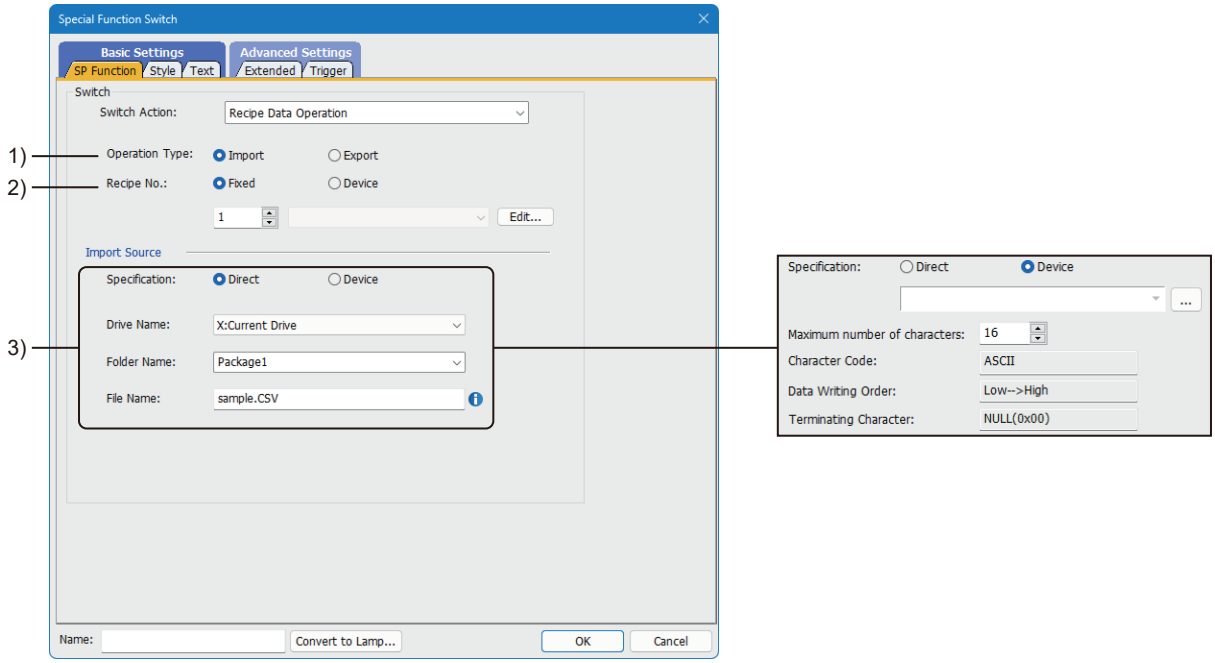
Item			Description
1)	[Specify the destination]		Select this item to specify the connection destination.
2)	[CH No.]		Select the channel number of the controller to be monitored. Only the channel number whose controller is any of the following models can be selected. • [MELSEC iQ-R, RnMT/NC/RT, CR800-D] • [MELSEC iQ-F] • [MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700] • [MELSEC-L] • [MELIPC]
3)	[Network]	-	When [Other] is selected, set the network number, station number, and CPU number of the controller.
		[Net No.]	Set the network number of the controller to be monitored. The setting range is [0] to [255].
		[Station No.]	Set the PLC station number of the controller to be monitored. The setting range is [0] to [120].
		[CPU Machine]	Set the CPU number of the controller to be monitored. The setting range is [0] to [4].
4)	[Specify the module]		Select this item to specify the module to be monitored.
5)	[First I/O]		Set the start I/O number of a controller to be monitored. The setting range is [00] to [FF].

Settings for [Recipe Data Operation]

Set the detailed settings to import or export recipe data.

For details on the recipe function, refer to the following.

☞ Page 2243 Writing or reading values to multiple devices ([Recipe])



Item			Description
1)	[Operation Type]		Set the operation to be performed when the touch switch is touched. • [Import] Imports data from the recipe file specified with [Import Source] into the recipe data specified with [Recipe No.]. • [Export] Exports the recipe data specified with [Recipe No.] to the recipe file specified with [Export Destination].
2)	[Recipe No.]		Select how to specify a recipe number. • [Fixed] Specifies the target recipe data with a specific recipe number. Select this item, and then specify the recipe number of the recipe data to be imported or exported. The setting range is [1] to [32767]. If recipe names are set for each recipe data, the target recipe data is selectable from among the recipe names as well. Click the [Edit] button to display the [Recipe] dialog. Configure the settings of recipe data as necessary. • [Device] Specifies the target recipe data with a device value. Select this item, and then specify a device. You can specify an unsigned 16-bit binary word device or word-specified bit device.
3)	[Import Source] [Export Destination]	-	When selecting [Import] for [Operation Type], set the import source file. When selecting [Export] for [Operation Type], set the export destination file.
		[Specification]	Select the method of specifying a recipe file as the import source or export destination. When selecting [Direct] for [Specification], specify the path to the recipe file. When selecting [Device] for [Specification], specify the device that stores the full path of the recipe file. You can specify an unsigned 16-bit binary word device.
		[Drive Name]	Set this item when selecting [Direct] for [Specification]. Select the drive in which the import source file or export destination file is stored.
		[Folder Name]	Set this item when selecting [Direct] for [Specification]. Specify the path to the import source folder or export destination folder.
		[File Name]	Set this item when selecting [Direct] for [Specification]. Set the file name of the import source file or export destination file. The recipe file must be in the binary format (*.G3P), Unicode text format (*.TXT), or CSV format (*.CSV).
		[Maximum number of characters]	Set this item when selecting [Device] for [Specification]. Set the number of characters required for specifying the path of the recipe file. The setting range is [8] to [78].

Settings for [Video File Manager]

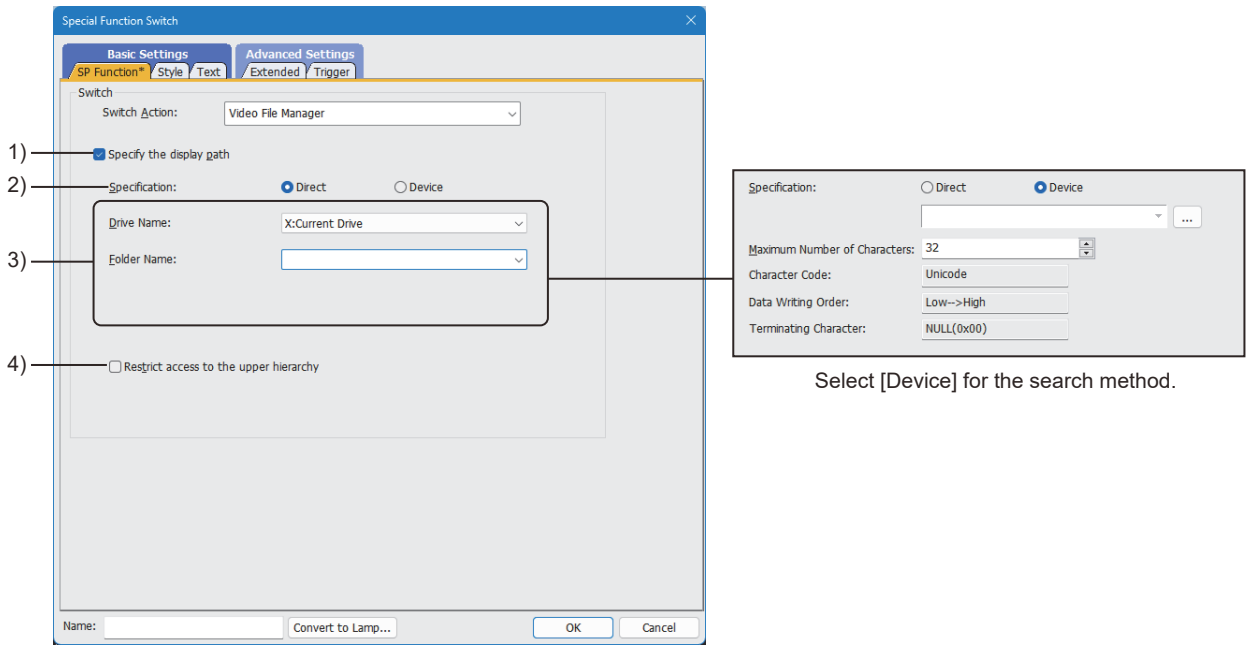
Set the folder to be displayed when the video file manager screen is called up with a special function switch.

To start the video file management screen, an operator with the operation rights for the following must perform authentication.

- Reading to the current drive
- Reading to and writing from drives other than the current drive

For details on the video file manager screen, refer to the following.

☞ Page 1858 Video file management screen



Select [Direct] for the search method.

Select [Device] for the search method.

Item		Description
1)	[Specify the display path]	Specify the folder to be displayed when the video file manager screen is called up.
2)	[Specification]	Select a method of specifying the folder to be displayed. • [Direct] Specify the folder path directly. • [Device] Specify the device that stores the full path of the folder. ☞ Page 834 How to set devices, labels, and tags
3)	[Drive Name]	Set this item when selecting [Direct] for [Specification]. For the available drives by GOT model, refer to the following. ☞ Page 81 Drive configuration and capacity of the GOT
	[Folder Name]	Set this item when selecting [Direct] for [Specification]. Specify the folder path. You can enter up to 72 characters, including the drive name.
	[Maximum number of characters]	Set this item when selecting [Device] for [Specification]. Set the number of characters required for specifying the path. The setting range is [1] to [72].
4)	[Restrict access to the upper hierarchy]	Disables the access to a parent folder from the folder that is displayed when the video file manager screen is called up.

27.10.2 [Style] tab

The setting items in this tab are common to those in the setting dialog for each touch switch.
Refer to the following.
☞ Page 1257 [Style] tab

27.10.3 [Text] tab

The setting items in this tab are common to those in the setting dialog for each touch switch.
Refer to the following.
☞ Page 1260 [Text] tab

27.10.4 [Extended] tab

The setting items in this tab are common to those in the setting dialog for each touch switch.
Refer to the following.
☞ Page 1266 [Extended] tab

27.10.5 [Trigger] tab

The setting items in this tab are common to those in the setting dialog for each touch switch.
Refer to the following.
☞ Page 1270 [Trigger] tab

27.11 [Key Window Display Switch] dialog

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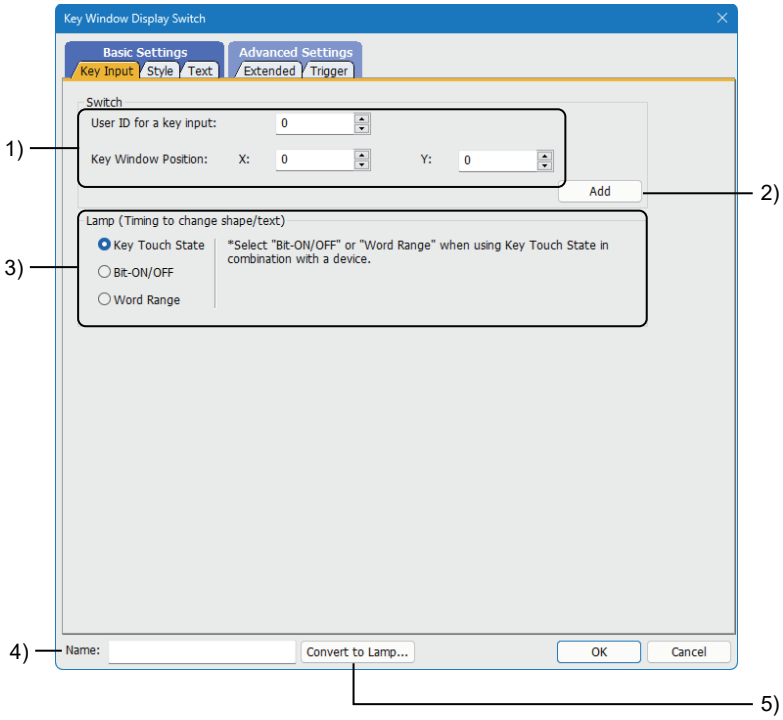
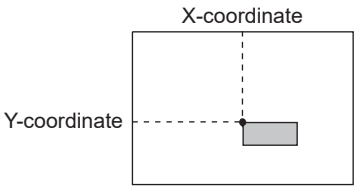
This switch cannot be placed on mobile screens.

☞ Page 1249 [Key Input] tab
☞ Page 1257 [Style] tab
☞ Page 1260 [Text] tab
☞ Page 1266 [Extended] tab
☞ Page 1270 [Trigger] tab

27.11.1 [Key Input] tab



Item		Description
1)	[User ID for a key input]	Set the user ID for the object on which the cursor is displayed when you touch the key window display switch. Set [User ID for a key input] of the switch and [User ID] of the operation target object to be the same.
	[Key Window Position]	Specify the position (top-left coordinate) where the key window is displayed. The maximum settable value is one dot smaller than the vertical or horizontal size of the GOT screen. • [X] Specify the coordinate value of the X axis. • [Y] Specify the coordinate value of the Y axis. 
2)	[Add] button	Switches to [Action] of [Switch]. ☞ Page 1199 [Action] tab
3)	[Lamp (Timing to change shape/text)]	Select how to switch touch switch images (shapes of on status and off status). For details, refer to the following. ☞ Page 1201 Action of [Lamp (Timing to change shape/text)]

Item		Description
4)	[Name]	Set the object name. The name is displayed in places such as the data browser and property sheet. The setting can also be changed in other tabs. Up to 100 characters can be entered.
5)	[Convert to Lamp] button	Converts the object type to the lamp. ☞ Page 1196 Converting the touch switch to lamp

27.11.2 [Style] tab

The setting items in this tab are common to those in the setting dialog for each touch switch.

Refer to the following.

☞ Page 1257 [Style] tab

27.11.3 [Text] tab

The setting items in this tab are common to those in the setting dialog for each touch switch.

Refer to the following.

☞ Page 1260 [Text] tab

27.11.4 [Extended] tab

The setting items in this tab are common to those in the setting dialog for each touch switch.

Refer to the following.

☞ Page 1266 [Extended] tab

27.11.5 [Trigger] tab

The setting items in this tab are common to those in the setting dialog for each touch switch.

Refer to the following.

☞ Page 1270 [Trigger] tab

27.12 [Key Code Switch] dialog

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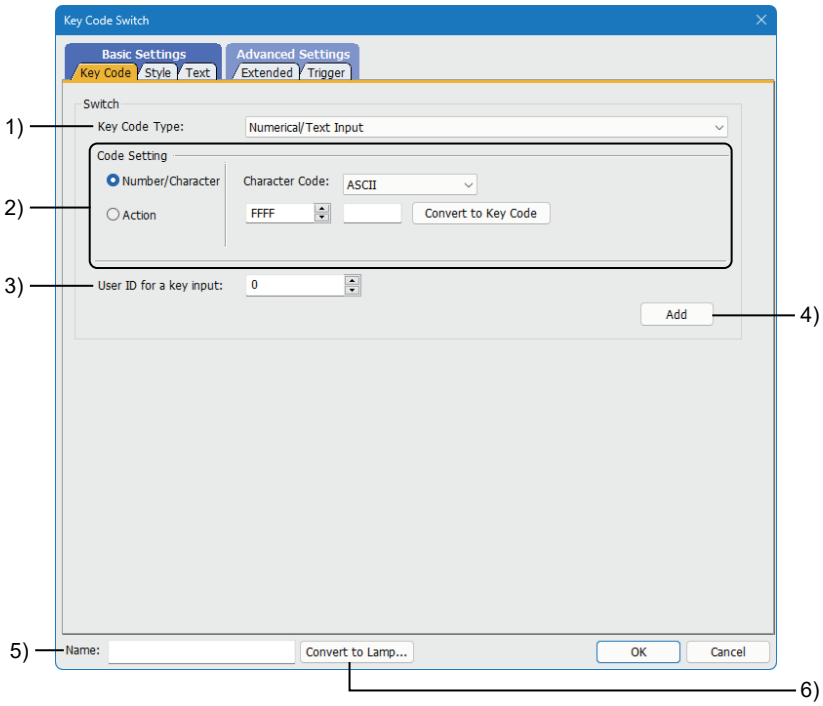
☞ Page 1251 [Key Code] tab
☞ Page 1257 [Style] tab
☞ Page 1260 [Text] tab
☞ Page 1266 [Extended] tab
☞ Page 1270 [Trigger] tab

27.12.1 [Key Code] tab

For mobile screens, some setting items are not available.

☞ Page 2742 Usable functions



PART 7

Item			Description
1)	[Key Code Type]		Specify the key code type. For the output conditions of the key code, refer to the following. ☞ Page 1253 Output conditions of key code For the settable key codes, refer to the following. ☞ Page 1253 Settable key codes
			• [Numerical/Text Input] Inputs a key code for the numerical input or text input where the cursor is displayed. ☞ Page 1306 Overview of the numerical display and numerical input objects ☞ Page 1308 How to use the numerical display and numerical input objects ☞ Page 1346 Overview of the text display and text input objects ☞ Page 1348 How to use the text display and text input objects
			• [Alarm Display] Inputs a key code for the alarm display (user), alarm display (system), or simple alarm display. ☞ Page 2132 Viewing alarm events (Alarm display) ☞ Page 1521 How to use the simple alarm display
			• [Recipe Display (Record List)] Inputs a key code for the recipe display (record list). ☞ Page 2246 Specifications of the recipe
			• [Historical Trend Graph/Historical Data List] Inputs a key code for the historical trend graph or historical data list display. ☞ Page 1693 Specifications of the historical trend graph
			• [Document Display] Inputs a key code for the document display. ☞ Page 1821 How to use the document display (for Document Converter output files)
			• [Screen Gesture] Inputs a key code for the screen gesture function. ☞ Page 502 Operating the monitor screen of the GOT using gestures (gesture function)
2)	[Code Setting]	-	Select the action type of the key code. For the settable key codes, refer to the following. ☞ Page 1253 Settable key codes
		[Number/Character]	Set this item when [Numerical/Text Input] is selected for [Key Code Type]. Select this item to input numeric values or characters using the key code. Select the character code used from [Character Code], enter a numerical value or character in the input field, and click the [Convert to Key Code] button. The entered value or character is automatically converted to its key code. When [Not specify] is selected for [Character Code], no character code conversion is executed and the key code switch operates using the character code set in the linked text input.
		[Action]	Sets an action using its key code. Selecting [Switch window screens for text (screen no. specification)] displays a spin box. Specify the screen to be displayed. The setting range is [1] to [10].
3)	[User ID for a key input]		Set the ID to specify the object for the key code input. The setting range is [0] to [65535]. Set [User ID for a key input] of the switch and [User ID] of the operation target object to be the same.
4)	[Add] button		Switches to [Action] of [Switch]. ☞ Page 1199 [Action] tab
5)	[Name]		Set the object name. The name is displayed in places such as the data browser and property sheet. The setting can also be changed in other tabs. Up to 100 characters can be entered.
6)	[Convert to Lamp] button		Converts the object type to the lamp. ☞ Page 1196 Converting the touch switch to lamp

Output conditions of key code

The following table lists the conditions for outputting the key code for each object.

Object name	Key code output condition
Historical data list	When only a single historical data list is placed on a single screen (including the called screen and window screen), the key code is output to it.
	When multiple historical data lists are placed on a single screen (including the called screen and window screen), if there is a historical data list having the same user ID as the specified user ID, the key code is output to it. If multiple historical data lists have the same user ID, the one with smaller object ID number is prioritized. When there is no historical data list having the same user ID as the one specified for the touch switch, the key code is output to the data list having the smallest object ID number.
Alarm (list, history)	When only a single alarm is placed on a single screen (including the called screen and window screen), the key code is output to it.
	When multiple alarms are placed on a single screen (including the called screen and window screen), if there is an alarm having the same user ID as the specified user ID, the key code is output to it. If multiple alarms have the same user ID, the one with smaller object ID number is prioritized. When there is no alarm having the same user ID as the one specified for the touch switch, the key code is output to the alarm having the smallest object ID number.
Numerical input	The key code is output to the numerical input where the cursor is displayed.
Text input	The key code is output to the text input where the cursor is displayed.

Settable key codes

The following shows the key codes that can be input for each [Code Setting].

☞ Page 1253 When [Code Setting] is [Number/Character]

☞ Page 1254 When [Code Setting] is [Action]

Precautions

Availability in the mobile screen differs depending on the key code.

If a key code already configured, which is not available on mobile screens, is copied and pasted on a mobile screen, the following operation is performed.

- Switch (for which [Key Code] is set in [Action])

The key code action in the action list is deleted.

- Key code switch

The key code type is changed to [Numerical/Text Input], and the key code is set to [FFFF].

■When [Code Setting] is [Number/Character]

○: Available in mobile screens.

—: Not available in mobile screens.

[Key Code Type]	Key code (HEX)	[Action]	Mobile screen
[Numerical/Text Input]	0030 to 0039 0041 to 0046	Numerical input	○
	0020 to 002C 002F 0047 to 007F	Text input (String code)	
	813F to EAA1	Text input (Shift JIS kanji code)	
	00A1 to 00DF	Text input (Shift JIS one-byte kana code)	

■When [Code Setting] is [Action]

○: Available in mobile screens.

—: Not available in mobile screens.

[Key Code Type]	Key code (HEX)	[Action]	Mobile screen
[Numerical/Text Input]	FFFF	None	○
	0008	Deletes the least significant digit and right-shifts all digits for one digit	
	000D	Writes to the device (execution)/Moves the cursor.	
	001B	Cancels the entry.	
	002D	"+/-" (reverse)/"-" (minus, hyphen)	
	002E	"." (dot, period)	
	0080	Moves the cursor to the right.	
	0081	Moves the cursor to the left.	
	0082	Moves the cursor up.	
	0083	Moves the cursor down.	
	0084	Converts the entry to kanji or Simplified Chinese characters.	
	0085	Displays the previous option.	
	0086	Displays the next option.	
	0087	Selection/Selects the next phrase.	
	0088	Deletes the value being input.	
	0089	Selects the previous phrase.	
	0090	Moves cursor to the right inside the object/extends the phrase.	
	0091	Moves cursor to the left inside the object/shortens the phrase.	
	0092	Moves the cursor in the user ID ascending order.	
	0093	Moves the cursor in the user ID descending order.	
	0094	Window screen switching for text (next)	
	0095	Window screen switching for text (previous)	
	009C	Window screen switching for text (specified screen number)	
	FFFA	Increment	○
	FFFB	Decrement	
[Alarm Display]	FFFF	None	○
	00F2	Scrolls one row up.	
	00F3	Scrolls one row down.	
	FFB0	Displays the cursor.	
	FFB1	Hides the cursor.	
	FFB2	Moves the cursor up.	
	FFB3	Moves the cursor down.	
	FFB4	Changes the status of the selected alarm to "Checked" (Check)	
	FFB5	Changes all the alarm statuses to "Checked" (Check all)	
	FFB6	Deletes the selected restored alarm (Delete).	
	FFB7	Deletes all the restored alarms (Delete all).	
	FFB8	Displays the detail information/Moves to the lower hierarchy.	
	FFB9	Resets the selected alarm data.	
	FFBB	Saves the alarm details to the memory card.	
	FFBC	Displays the ladder.	
	FFBD	Displays the ladder (sequence program monitor (Q/L ladder)).	
	FFBA	Displays the ladder (sequence program monitor (iQ-R/iQ-L ladder)).	
	FFC3	Displays the ladder (sequence program monitor (iQ-F Ladder)).	
	FFBE	Jumps to the position of the specified time.	
	FFBF	Displays the first alarm.	
	FFC2	Moves to the upper hierarchy.	

[Key Code Type]	Key code (HEX)	[Action]	Mobile screen
[Recipe Display (Record List)]	FFFF	None	—
	FFF0	Displays the cursor.	
	FFF1	Hides the cursor.	
	FFEF	Updates the list.	
	FFF4	Scrolls the list for the specified number of rows (up)	
	FFF5	Scrolls the list for the specified number of rows (down)	
	FFF6	Scrolls the list for one page (up)	
	FFF7	Scrolls the list for one page (down)	
	FFF2	Moves the cursor up.	
	FFF3	Moves the cursor down.	
	FFCA	Changes the record name.	
	FFCB	Reads the record.	
	FFCC	Writes the record.	
	FFCD	Verifies the record.	
	FFB6	Deletes the record.	
	FFCE	Cancels the recipe operation.	
[Historical Trend Graph/Historical Data List]	FFFF	None	○
	FFF0	Displays the cursor.	
	FFF1	Hides the cursor.	
	FFEF	Latest data	
	FFF2	Moves the graph cursor (next)/Moves the list cursor (up)	
	FFF3	Moves the graph cursor (back)/Moves the list cursor (down)	
	FFF4	Moves the graph (next)/Scrolls the list for the specified number of rows (up)	
	FFF5	Moves the graph (back)/Scrolls the list for the specified number of rows (down)	
	FFF6	Scrolls the graph for one page (next)/Scrolls the list for one page (up)	
	FFF7	Scrolls the graph for one page (back)/Scrolls the list page (down)	
	FFF8	Zooms in the time axis.	
	FFF9	Zooms out the time axis.	
	FFD0	Jumps to the top of the list.	
	FFD1	Jumps to the bottom of the list.	
	FFD4	Jumps to the position of the specified time.	
[Document Display]	FFFF	None	—
	FFE0	Next page	
	FFE1	Previous page	
	FFE2	Zoom in	
	FFE3	Zoom out	
	FFE4	Up scroll	
	FFE5	Down scroll	
	FFE6	Left scroll	
	FFE7	Right scroll	
[Digital Image Display (File Playback)]	FFA0	Stop playback/Stop recording	—
	FFA1	Start recording	
	FFA2	Play/File playback mode	
	FFA3	Pause	
	FFA4	Play in slow motion	
	FFA5	Fast forward	
	FFA7	Jump back to beginning	
	FFA8	Camera/PC image display mode	
[Screen Gesture]	FFFF	None	—
	FF90	Switching to screen gesture mode	
	FF91	Full scale display (100% display)	

27.12.2 [Style] tab

The setting items in this tab are common to those in the setting dialog for each touch switch.
Refer to the following.
☞ Page 1257 [Style] tab

27.12.3 [Text] tab

The setting items in this tab are common to those in the setting dialog for each touch switch.
Refer to the following.
☞ Page 1260 [Text] tab

27.12.4 [Extended] tab

The setting items in this tab are common to those in the setting dialog for each touch switch.
Refer to the following.
☞ Page 1266 [Extended] tab

27.12.5 [Trigger] tab

The setting items in this tab are common to those in the setting dialog for each touch switch.
Refer to the following.
☞ Page 1270 [Trigger] tab

27.13 Settings common to touch switches

The setting items in the following tabs are common to setting dialogs for all touch switches.

In this section, the [Switch] dialog is used as an example to explain the setting items in the common setting tabs.

☞ Page 1257 [Style] tab
☞ Page 1260 [Text] tab
☞ Page 1266 [Extended] tab
☞ Page 1270 [Trigger] tab

27.13.1 [Style] tab

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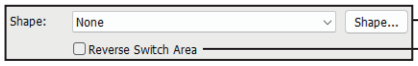
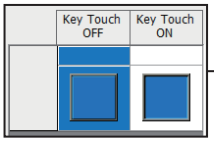
For mobile screens, some setting items are not available.

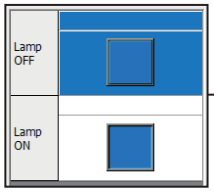
☞ Page 2742 Usable functions



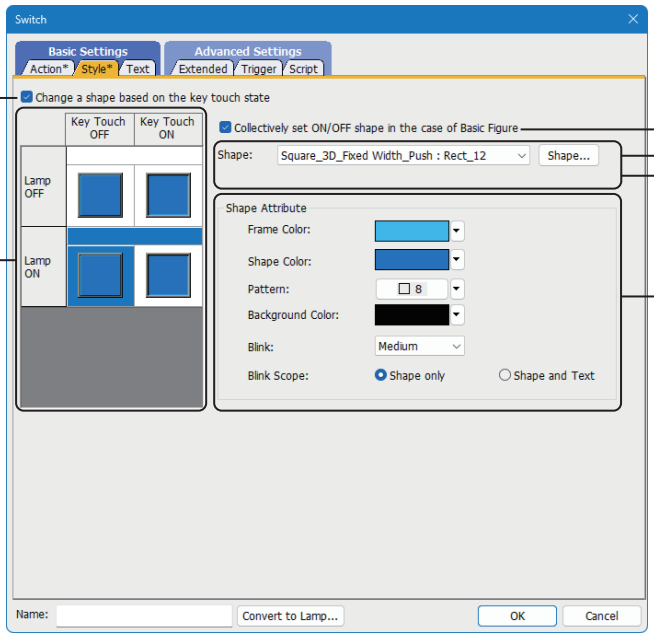
When [None] is selected for [Shape]



When [Key Touch State] is selected for [Lamp (Timing to change shape/text)]

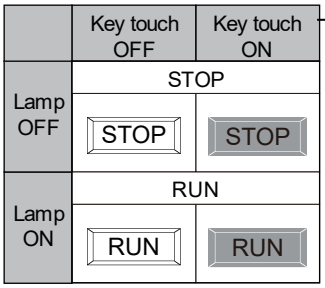
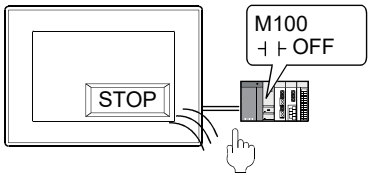
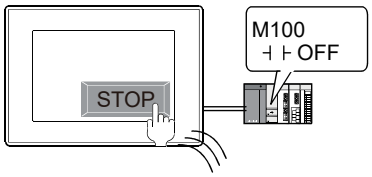
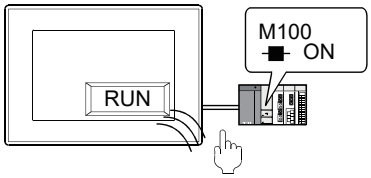
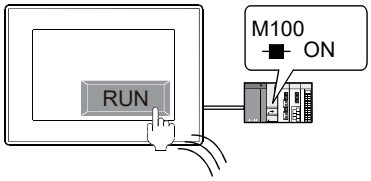


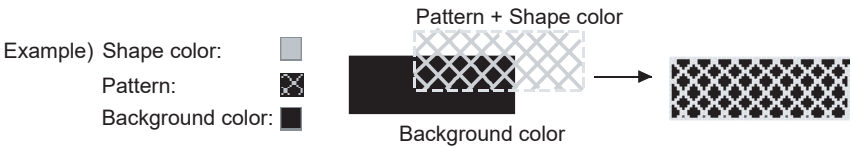
When [Bit-ON/OFF]/[Word Range] is selected for [Lamp (Timing to change shape/text)] ([Change a shape based on the key touch state] is not selected)



When [Bit-ON/OFF]/[Word Range] is selected for [Lamp (Timing to change shape/text)] ([Change a shape based on the key touch state] is selected)

PART 7

Item		Description
1)	[Change a shape based on the key touch state]	This item is available when [Bit-ON/OFF] or [Word Range] is selected for [Lamp (Timing to change shape/text)]. You can set four different images using the lamp on and lamp off status in combination with the key touch on and key touch off status. According to the key touch on and key touch off status, the shape can be switched. However, the text cannot be switched. The following shows an example of the combination of image switching by the device status with shape switching by key touch status.  Preview list The touch switch images set in the [Style] tab and [Text] tab are displayed. (1) While M100 is off and you do not touch the touch switch  (2) While M100 is off and you touch the touch switch  (3) While M100 is on and you do not touch the touch switch  (4) While M100 is on and you touch the touch switch 
2)	Preview list	Preview images of the touch switch are displayed. For the images when the device turns on or off, the touch switch is touched twice, and the touch switch does not function, you can configure settings individually. Select the image to set the style from the preview list, and set each setting item.
		The status of [Press Twice] is displayed only when [Press Twice] is set in [Delay] in the [SP Function] tab. The status of [When switch does not work] is displayed only when [Set the style and text settings for a switch in nonoperating state] is set in the [Extend] tab.
3)	[Collectively set ON/OFF shape in the case of Basic Figure]	This item appears when [Basic Figure] is selected on the [Image List] screen that appears when the [Shape] button is clicked. Select this item to use the same shape for when the key touch is on and off. Select this item to collectively change the shapes of the touch switches except [Press Twice].
4)	[Shape]	Set the shape of the touch switch. To use a readily available design set, select one from the list box. To set a shape to be used individually, click the [Shape] button and select a shape in the [Image List] screen. ☞ Page 1045 [Image List] dialog (shape) When a basic figure is set on the touch switch, reducing the touch switch in size may not display the figure properly.
5)	[Reverse Switch Area]	This item is settable when an image in a state other than [Press Twice] and [When switch does not work] is selected in the preview list and [Shape] is set to [None]. When [Enable the antialiasing] is selected in [Basic Setting] in the [Type Setting] dialog, this setting is grayed out and cannot be configured. The color of the touch switch is inverted. When [Change a shape based on the key touch state] is selected, the touch switch is reversely displayed by switching between the key touch on and key touch off status.

Item			Description
6)	[Shape Attribute]	-	Select a lamp color for the touch switch shape.
		[Frame Color]	Select a frame color for the touch switch shape.
		[Shape Color] [Pattern] [Background Color]	Select a fill color, pattern, and background color for the touch switch shape. The pattern is displayed in the shape color on the colored background. 
		[Blink]	This item is not displayed when the image for [Key Touch OFF], [Lamp OFF], or [Key Touch OFF] + [Lamp OFF] is selected in the preview list. It is displayed when [None] is selected for [Shape] and [Reverse Switch Area] is selected. Select the blinking speed of the touch switch.
		[Blink Scope]	Select the blink scope.

27.13.2 [Text] tab

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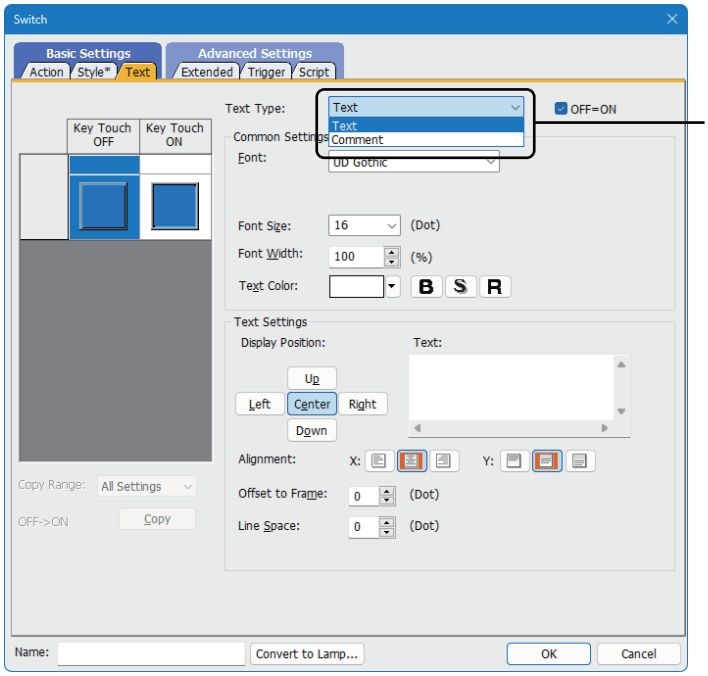
For mobile screens, some setting items are not available.

☞ Page 2742 Usable functions

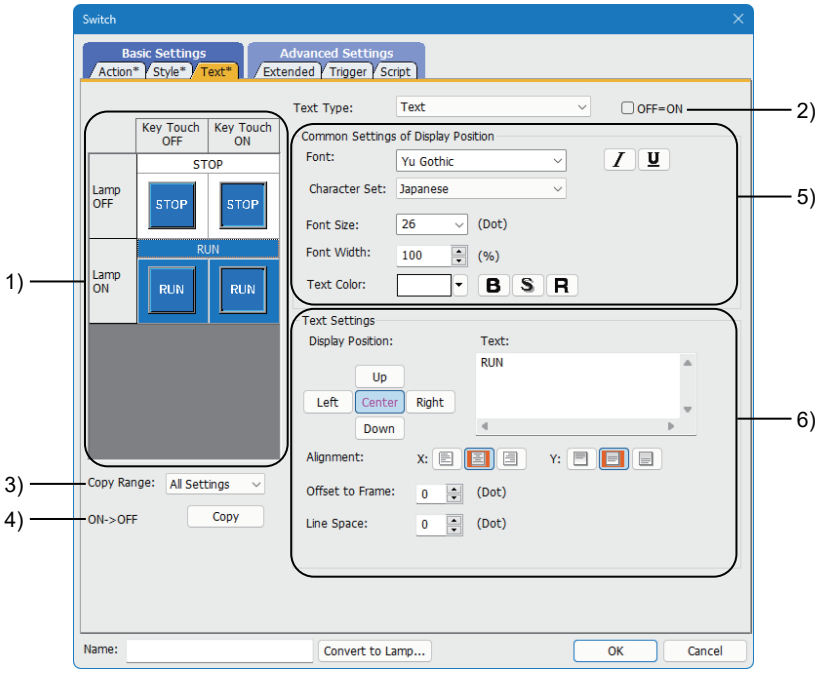
Set the text to be displayed on the touch switch.

The displayed text can be set by direct input or by specification from the registered comments.

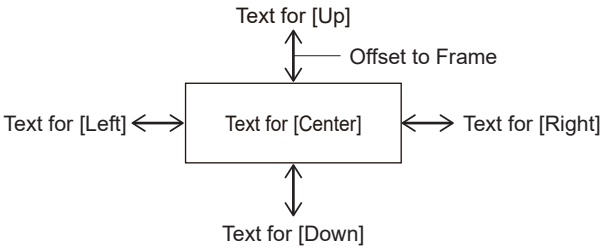


Item			Description
1)	[Text Type]	[Text]	Directly enter the text to be displayed. The text can be displayed in five positions (top, bottom, left, right, and center) on the object. Text for [Up] Text for [Left] Text for [Center] Text for [Right] Text for [Down] For the setting method, refer to the following. ☞ Page 1261 [Text] If characters have already been entered in the [Text] field, switching the text type from [Text] to [Comment] enables you to register the entered characters in a comment group. For instruction on registering a comment group, refer to the following. ☞ Page 811 Registering the characters in the [Text] field to a comment group
		[Comment]	Set the text to be displayed using a comment set in a comment group. Only one text can be displayed within the object. Text For the setting method, refer to the following. ☞ Page 1263 [Comment] For the comment group settings, refer to the following. ☞ Page 776 Comment setting ([Comment])

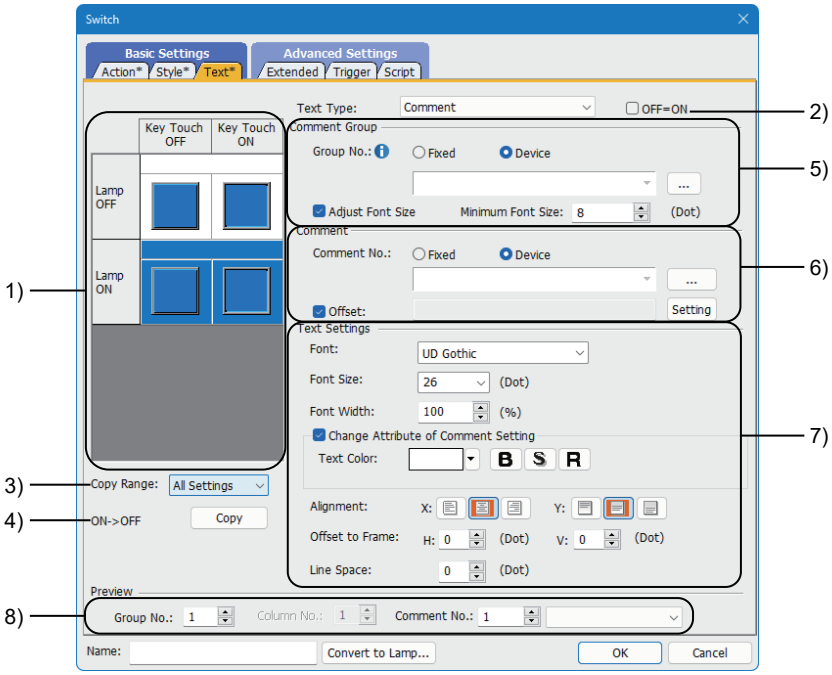
[Text]



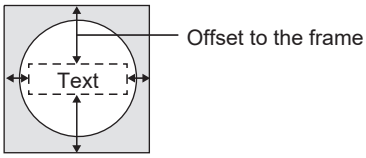
Item			Description
1)	Preview list		Preview images of the touch switch are displayed. For the images when the device turns on or off, the touch switch is touched twice, and the touch switch does not function, you can configure settings individually. Select the image to set the comment from the preview list, and set each setting item. Select [OFF=ON] to set the same comment for both when the switch is on and off.
			The status of [Press Twice] is displayed only when [Press Twice] is set in [Delay] in the [SP Function] tab. The status of [When switch does not work] is displayed only when [Set the style and text settings for a switch in nonoperating state] is set in the [Extend] tab.
2)	[OFF=ON]		Applies the same setting to both when the switch is on or off.
3)	[Copy Range]		Set the range to be copied for when the setting for on is copied to the setting for off or when the setting for off is copied to the setting for on.
4)	[OFF→ON] [ON→OFF]		Click the [Copy] button to copy the setting for on to the setting for off or copy the setting for off to the setting for on.
5)	[Common Settings of Display Position]	-	To display a text in the top, bottom, left, right, and center of the object, configure the settings common to each display position.
		[Font]	Select the font of the displayed text. When a Windows font is selected, italicizing and underlining text are available.
		[Character Set]	When a Windows font is selected for [Font], select a character set to be used.
		[Font Size]	Select a text size. The setting range is [8] dots to [540] dots.
		[Font Width]	Set a horizontal text size. The horizontal size is specified with the magnification relative to [Font Size] (vertical text size). The setting range is [6]% to [1600]%. Note that the size per character is always within the range of [8] dots to [540] dots.
		[Text Color]	Set the color and style of the text. Only one style ([Bold], [Solid], or [Raised]) is settable. When selecting [Solid] or [Raised], set the color of the shadow.

Item			Description
6)	[Display Position]	-	Set [Text], [Alignment], [Offset to Frame], and [Line Space] for each display position. After selecting a display position of the text for [Display Position], set the following items.
		[Text]	Enter the text to be displayed. Up to 1024 characters can be set. Use the Enter key to insert a line feed. A line feed is counted as two characters.
		[Alignment]	Set the alignment position of the text.
		[Offset to Frame]	This setting is invalid when [Center] is selected for [Display Position]. Set a space between the object and the text. The setting range is [0] dots to [100] dots. 
		[Line Space]	Set the space between lines. The setting range is [0] dots to [128] dots.

[Comment]



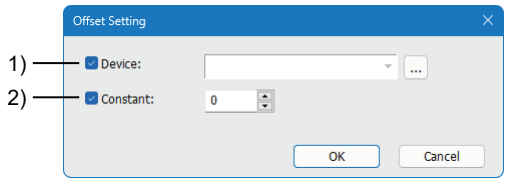
Item			Description
1)	Preview list		Preview images of the touch switch are displayed. For the images when the device turns on or off, the touch switch is touched twice, and the touch switch does not function, you can configure settings individually. Select the image to set the comment from the preview list, and set each setting item. Select [OFF=ON] to set the same comment for both when the switch is on and off.
			The status of [Press Twice] is displayed only when [Press Twice] is set in [Delay] in the [SP Function] tab. The status of [When switch does not work] is displayed only when [Set the style and text settings for a switch in nonoperating state] is set in the [Extend] tab.
2)	[OFF=ON]		Applies the same setting to both when the switch is on or off.
3)	[Copy Range]		Set the range to be copied for when the setting for on is copied to the setting for off or when the setting for off is copied to the setting for on.
4)	[OFF→ON] [ON→OFF]		Click the [Copy] button to copy the setting for on to the setting for off or copy the setting for off to the setting for on.
5)	[Group No.]	—	Set the group number of the comment group to be used.
		[Fixed]	Select this item to use the specified comment group. After selecting, enter a comment group number.
		[Device]	Select this item to use the comment group number corresponding to the value of the device to be set. Select this item and set the device. ☞ Page 834 How to set devices, labels, and tags
	[Adjust Font Size]		Adjusts the font size automatically according to the object size. When this item is deselected, a line feed is automatically inserted.
	[Minimum Font Size]		Set the minimum font size applied when the font size is automatically adjusted. The setting range is [8] dots to [540] dots.

Item			Description
6)	[Comment No.]	—	Select the image to set the comment from the preview list, and then set the comment number of the comment to be used.
		[Fixed]	Select this item to use the specified comment. Select this item, and enter a comment number. If [0] is specified, no comment is displayed. To edit the comment to be displayed, click the [Edit] button to display the [Edit Comment] dialog. If an unregistered comment group number or comment number is set, create a new comment. ☞ Page 3685 [Edit Comment] dialog
		[Device]	Select this item to use the comment number corresponding to the value of the device to be set. Select this item and set the device.
	[Offset]		This setting is available only when [Device] is selected for [Comment No.]. Select this item to control the offset of the comment number dynamically using the offset device or add a constant. ☞ Page 834 How to set devices, labels, and tags Click the [Setting] button, and set the offset in the [Offset Setting] dialog. ☞ Page 1265 [Offset Setting] dialog
7)	[Font]		Select the image to set the comment from the preview list, and then select a font for the text to be displayed. [Windows Font] is selectable when [Group No.] is set to [Fixed]. Displays text in the font specified with [Windows Font] in the [Comment Group Property] dialog.
	[Windows Font Setting] button		This item appears when [Windows Font] is selected for [Font]. The [Comment Group Property] dialog for the group number specified by [Group No.] is displayed. Set [Windows Font] and [Character Set] for the target column of the comment group. ☞ Page 797 [Comment Group Property] dialog
	[Font Size]		Set a vertical text size. The setting range is [8] dots to [540] dots.
	[Font Width]		Set a horizontal text size. The horizontal size is specified with the magnification relative to [Font Size] (vertical text size). The setting range is [6]% to [1600]%. Note that the size per character is always within the range of [8] dots to [540] dots.
	[Change Attribute of Comment Setting]	—	Select this item to set the color and style of the text to be displayed on the object without using the attribute set in the [Comment List] window. When selecting this item, configure the following settings.
		[Text Color]	Set the color and style of the text. Only one style ([Bold], [Solid], or [Raised]) is settable. When selecting [Solid] or [Raised], set the color of the shadow.
	[Alignment]		Select the horizontal position (left-aligned, centered, or right-aligned) and vertical position (top-aligned, centered, or bottom-aligned) of the text.
	[Offset to Frame]		This setting is invalid when the center alignment is selected for [Alignment]. Set the space between the object frame and the text. The setting range is [0] dots to [100] dots. 
	[Line Space]		Set a space between lines in units of dots. The setting range is [0] dots to [128] dots.
8)	[Preview]	-	Set the text to be previewed as a sample on the screen editor.
		[Group No.]	Set this item when selecting [Device] for [Group No.]. Set the group number of the comment. When [Fixed] is selected for [Group No.] of [Comment Group], the group number is fixed to the value set in [Comment Group].
		[Column No.]	Set the comment column number.
		[Comment No.]	Set this item when selecting [Device] for [Comment No.]. Set the comment number. When [Fixed] is selected for [Comment No.] in [Comment], the comment number is fixed to the value set in [Comment].

■[Offset Setting] dialog

Specify how to add values to the value of the device specified in [Comment No.].

When both [Device] and [Constant] are selected, the total value of [Device] and [Constant] is added.



Item		Description
1)	[Device]	Set this item to add the value of the offset device to the value of the device specified in [Comment No.].
2)	[Constant]	Set this item to add the constant to the value of the device specified in [Comment No.]. The setting range is [-32768] to [32767].

27.13.3 [Extended] tab

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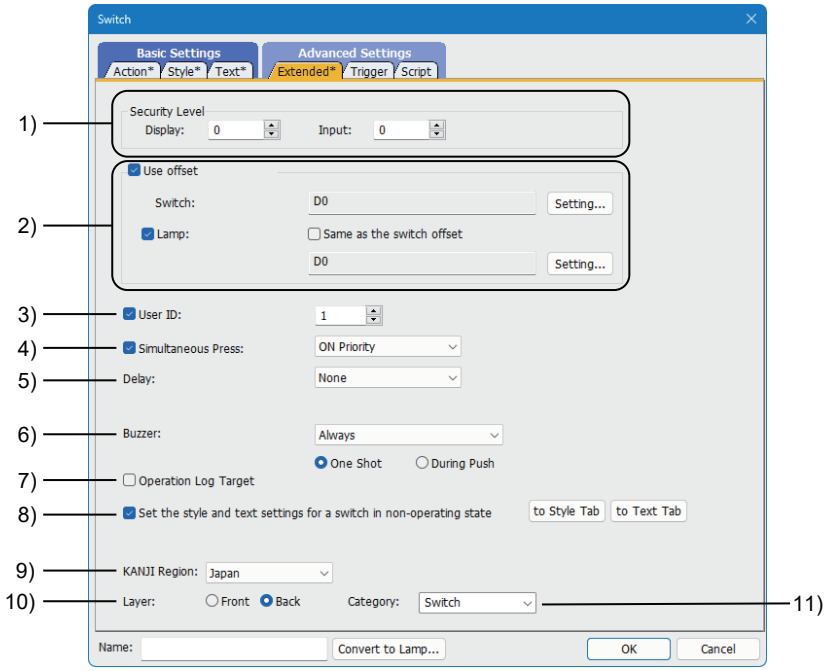
For mobile screens, some setting items are not available.

☞ Page 2742 Usable functions



Item			Description
1)	[Security Level]		Set the security level. The setting range is [0] to [15]. If you do not use the security function of the GOT, select [0]. ☞ Page 3038 Restricting display and operation on the GOT (Screen security) The set value of [Input] must be greater than that of [Display].
2)	[Use offset]	-	This item is not displayed in the [Special Function Switch] dialog. Configure the settings to monitor the statuses of multiple devices by switching between them with a single device. After selecting this item, set the offset device. The monitored device is the one with the offset device value added to the device to be offset for each touch switch. The following shows the target devices. • [Switch] dialog The devices of the actions set in the [Action] tab are offset. • [Bit Switch] dialog [Device] in the [Device] tab is offset. • [Word Switch] dialog [Device] and [Indirect Device] in the [Device] tab are offset. • [Go To Screen Switch] dialog [Device] in the [Device] tab is offset. • [Change Station No. Switch] dialog [Device] in the [Next Screen] tab is offset. • [Key Window Display Switch] dialog [Device] in the [Key Input] tab is offset. ☞ Page 96 Offset
		[Switch]	Set the offset device for the switch function. ☞ Page 834 How to set devices, labels, and tags
		[Lamp]	This item is available when [Bit-ON/OFF] or [Word Range] is selected for [Lamp (Timing to change shape/text)]. Set the offset device for the lamp function. ☞ Page 834 How to set devices, labels, and tags • [Same as the switch offset] Uses the offset device set for [Switch].

Item			Description
3)	[User ID]		This item is not displayed in the [Key Window Display Switch] or [Key Code Switch] dialog. Select this item to set the user ID. The setting range is [1] to [65535]. Setting the user ID enables you to identify the objects used in the operation logs. ☞ Page 1909 Configuring the settings for collecting the GOT operation history ([Operation Log]) When multiple objects are set on the same screen editor, the target object may not operate. To make sure that the target object operates, match the user ID with the user ID of the target object.
4)	[Simultaneous Press]		Select this item to disable the simultaneous press. When this item is selected, select whether to prioritize the on state or off state when multiple touch switches are simultaneously pressed. For details, refer to the following. ☞ Page 1195 Simultaneous press prohibition function ☞ Page 1268 Operation of [Simultaneous Press]
5)	[Delay]		Set the wait time (delay time) from the touch operation to execution of the action. • [None] Select this item to set no delay. • [ON] Select this item to allow the switch to turn on by pressing the touch switch for the set time. This setting prevents incorrect operation. • [OFF] Select this item to allow the switch to turn off after the set time passes since the touch switch is turned off. The switch is on during the set time. • [Press Twice] Select this item to allow the switch to function after you touch the touch switch once and then touch again within the set time. After selecting this item, configure the settings for [Press Twice] in the [Style] tab and the [Text] tab. Click the [To Style tab] and [To Text tab] buttons, and set [Press Twice] in the preview list. After selecting the delay, set the delay time. • [Delay Time] The setting range is [1] to [5]. For details on the delay operation, refer to the following. ☞ Page 1269 Action of [Delay]
6)	[Buzzer]	-	Select the timing of the buzzer when you press the touch switch. • [Always] The buzzer is sounded every time you touch the touch switch. • [Only if conditions are met] The buzzer is sounded only when you touch the touch switch with the operating condition satisfied. • [None] The buzzer is not sounded even when you touch the touch switch.
		[One Shot]	Set this item when [Always] or [Only if conditions are met] is selected. When this item is selected, the buzzer is sounded only at the moment you touch the touch switch.
		[During Push]	Set this item when [Always] or [Only if conditions are met] is selected. When this item is selected, the buzzer is kept sounding while you touch the touch switch.
7)	[Operation Log Target]		This item is not displayed in the [Key Window Display Switch] or [Key Code Switch] dialog. Select this item to record the operation log of the set object. ☞ Page 1909 Configuring the settings for collecting the GOT operation history ([Operation Log])
8)	[Set the style and text settings for a switch in non-operating state]		Select this item to set how the touch switch is displayed when the operating condition in the [Trigger] tab is not satisfied or when the touch switch does not function due to the unsatisfied security level. • [To Style tab] button Displays the [Style] tab. Set the shape displayed when the touch switch does not function. ☞ Page 1257 [Style] tab • [To Text tab] button Displays the [Text] tab. Set the text displayed when the touch switch does not function. ☞ Page 1260 [Text] tab
9)	[KANJI Region]		Select the KANJI region of the displayed text. ☞ Page 76 KANJI region This item is enabled when one of the following fonts is selected for [Font] in the [Text] tab. • [UD Gothic] • [UD Mincho] • [UDP Gothic] • [UDP Mincho]
10)	[Layer]		Select the layer to place the object. ☞ Page 1055 Superimposition of figures and objects
11)	[Category]		Select the category to assign the object. ☞ Page 1121 Managing figures and objects by category

Operation of [Simultaneous Press]

■Touch switches that support disabling the simultaneous press

All touch switches support disabling the simultaneous press.

In the following cases, [Simultaneous Press] is selected, and the on/off priority is fixed to [ON Priority].

Touch switch type	Setting
Special function switch	The setting is always fixed to [ON Priority]. The setting is also applied to a switch to which [SP Function] is added as a switch action.

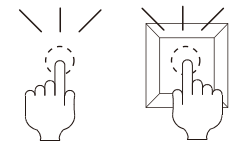
■Slide operation and simultaneous press

When you slide the finger from the touch key invalid area to the touch key valid area, the GOT recognizes the operation as touching multiple areas simultaneously.

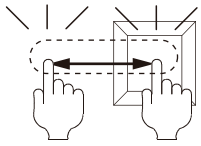
The GOT cannot distinguish between sliding the finger across multiple areas and touching multiple areas simultaneously using two fingers.

Therefore, the GOT recognizes sliding the finger from the touch key invalid area to the touch key valid area as touching multiple areas simultaneously.

Due to the same reason, the GOT recognizes sliding the finger from the touch key valid area to the touch key invalid area as the simultaneous press.

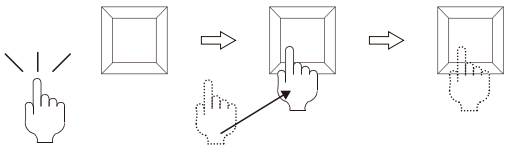
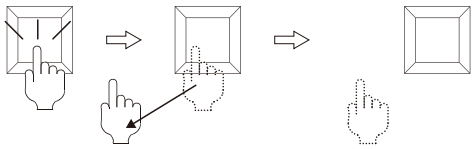
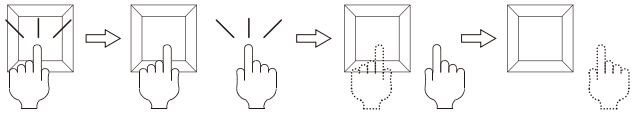


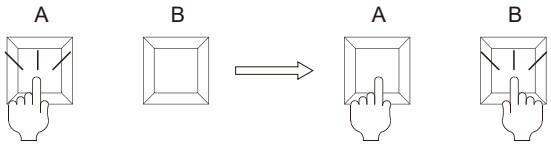
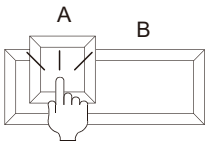
Touch the valid area and invalid area of the touch key simultaneously.



Slide the finger across the valid area to/from the invalid area of the touch key.

■Action for [ON Priority] and [OFF Priority]

Touch switch operation	Touch switch action	
	[ON Priority]	[OFF Priority]
• Slide operation from touch invalid area to the touch area 1. Touch an area outside the touch area of the touch switch. 2. Slide the finger to the touch area of the touch switch. 3. Release the finger from the touch switch. 	At operation 1.: Remains off. At operation 2.: Turns on. At operation 3.: Turns off.	At operation 1.: Remains off. At operation 2.: Remains off. At operation 3.: Remains off.
• Slide operation from touch area to area outside the touch area 1. Touch the touch area of the touch switch. 2. Slide the finger to an area outside the touch area of the touch switch. 3. Release the finger from the GOT screen. 	At operation 1.: Turns on. At operation 2.: Remains on. At operation 3.: Turns off.	At operation 1.: Turns on. At operation 2.: Turns off. At operation 3.: Remains off.
• When any other area in the screen is touched while a touch switch for which the simultaneous press is disabled is touched 1. Touch the touch switch. 2. Touch the area where no object is arranged. 3. Release the finger from the touch switch. 4. Release the finger from the area where no object is arranged. 	At operation 1.: Turns on. At operation 2.: Remains on. At operation 3.: Remains on. At operation 4.: Turns off.	At operation 1.: Turns on. At operation 2.: Turns off. At operation 3.: Remains off. At operation 4.: Remains off.

Touch switch operation	Touch switch action	
	[ON Priority]	[OFF Priority]
• When any other touch switch is touched while a touch switch for which the simultaneous press is disabled is touched 1. Touch the touch switch A for which the simultaneous press is disabled. 2. Touch the touch switch B. The touch switch action is the same whether the simultaneous press is enabled or disabled for touch switch B. 	Action of touch switch A At operation 1.: Turns on. At operation 2.: Remains on. Action of touch switch B At operation 1.: Remains off. At operation 2.: Remains off.	Action of touch switch A At operation 1.: Turns on. At operation 2.: Turns off. Action of touch switch B At operation 1.: Remains off. At operation 2.: Remains off.
• When multiple touch switches overlap with each other Arrange the touch switch A for which the simultaneous press is disabled on the front layer and the touch switch B for which the simultaneous press is enabled on the back layer. Then, touch the area where the touch switches overlap with each other. 	Action of touch switch A At operation 1.: Remains off. Action of touch switch B At operation 1.: Turns on.	

Action of [Delay]

■When [Press Twice] is set

If the touch switch has been pressed only once and another monitor screen is operated, [Press Twice] does not function properly.

■When [Press Twice] and the operation repeat are set

The operation repeat is invalid at the first press.

The operation repeat is valid at the second press.

27.13.4 [Trigger] tab

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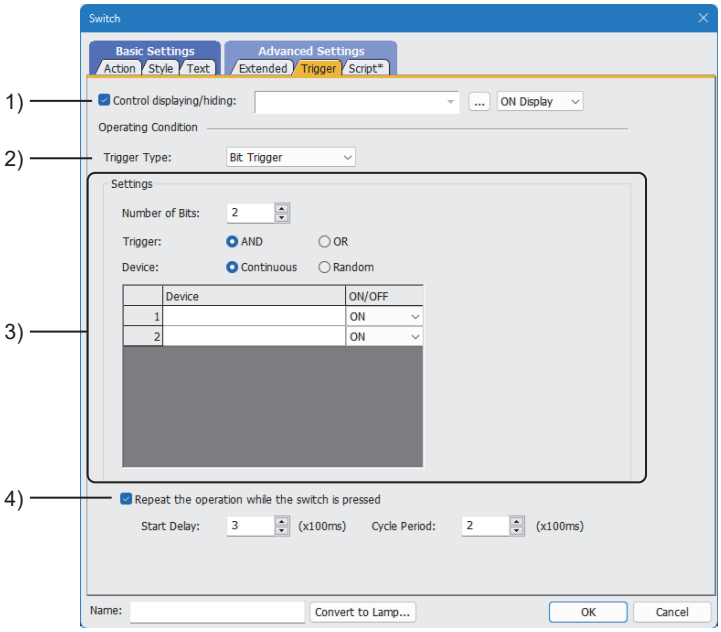
For mobile screens, some setting items are not available.

Set the trigger condition to display the object.



Item			Description
1)	[Control displaying/hiding]		Enables the setting to display the object only when requirements are met. Set the following as requirements. • Control device (bit device or bit-specified word device) • When to display: When the control device is on or off
2)	[Trigger Type]		Select the condition of displaying the object. For details on the trigger types, refer to the following. ☞ Page 969 Trigger types settable for the object display condition
3)	[Settings]		For the settings of each item, refer to the following. ☞ Page 968 Trigger type settings
4)	[Repeat the operation while the switch is pressed]	-	This item is not displayed in the [Special Function Switch] dialog, [Change Station No. Switch] dialog, or [Special Function Switch] dialog. Select this item to allow the switch to repeat the same operation while you press the touch switch. For precautions on setting [Repeat the operation while the switch is pressed], refer to the following. ☞ Page 1271 Action of [Repeat the operation while the switch is pressed]
		[Start Deley]	Set the time period from when you press the touch switch to when the operation repeat starts. The setting range is [1] to [20].
		[Cycle Period]	Set the cycle for the operation repeat. The setting range is [1] to [10].

Action of [Repeat the operation while the switch is pressed]

The following shows the precautions on setting [Repeat the operation while the switch is pressed].

■Supported touch switch types and precautions

The following shows the touch switches that support the operation repeat and the precautions.

Touch switch type	Precautions
Switch	When the operation repeat is set for the switch, do not set the special function, the screen switching function, or the station No. switching function. If the special function, the screen switching function, or the station No. switching function is set, the operation repeat setting is invalid.
Bit switch	If bit momentary is set for the action, the operation repeat setting is invalid.
Word switch	None
Key window display switch	In the following cases, the operation repeat is aborted. • A key window is displayed while the operation is repeated. • A key window is already displayed.
Key code switch	If a dialog window is displayed while the operation is repeated, the operation repeat is aborted.

■Touching simultaneously multiple touch switches for which the operation repeat is set

When multiple touch switches are touched simultaneously for which the operation repeat is set, only the operation of the last touched switch is repeated.

■Irregular operation repeat cycle

When communication time is longer than the preset operation repeat cycle, the cycle may be irregular.

To correct the cycle, take measures including setting a longer time for start delay or repeat cycle or reducing the number of monitor target devices.

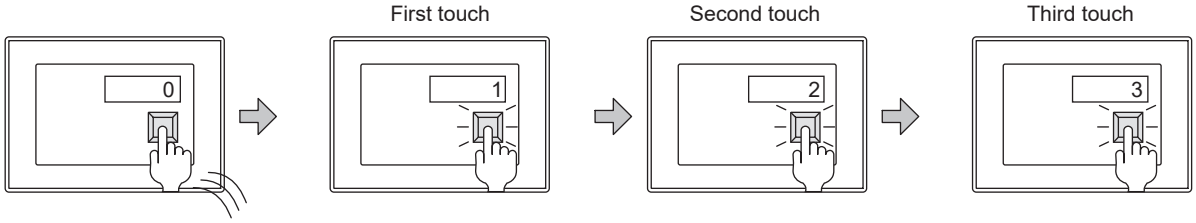
Ex.

When the operation repeat is applied to the word switch that adds one to the device value

Setting item	Setting
Device	D100
Constant	0
Indirect device	D100

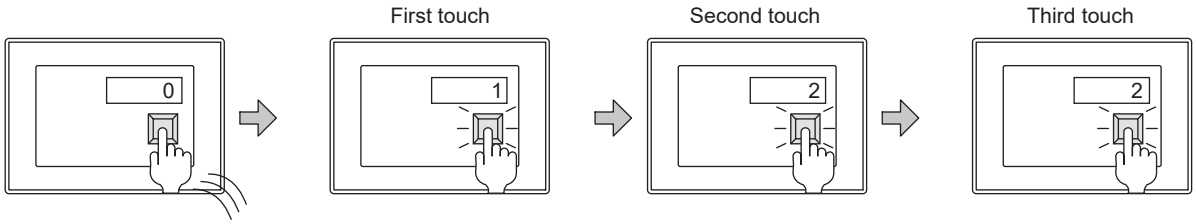
• When the operation is repeated normally

Every time the touch switch is operated, one is added to the device value.



• When the operation repeat cycle is irregular

Even if the touch switch is operated, the device value may not be increased.



■Abort of the operation repeat

If a dialog window is displayed while the operation is repeated, the operation repeat is aborted.

■Duration of touch on the touch switch and the process of writing to the device

While the value is written to the device, the GOT recognizes that the touch switch is touched.
Thus, even if the finger is released from the touch switch within the preset start delay time, a long device writing process may cause the GOT to recognize that the switch is pressed longer than the start delay time, and which may repeat the operation.
In this case, set a longer start delay time.

■Switching action while the touch switch is touched

Security switching, language switching, or station number switching is not executed while the touch switch is touched.
When the trigger device value for security switching, language switching, or station number switching has been changed while the touch switch is touched, the switching is executed when the finger is released from the switch.

27.14 Relevant settings

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Set the relevant settings other than the specific settings for the touch switch as required.
The following shows the relevant settings.
☞ Page 1273 GOT environmental settings ([Screen Switching/Windows])
☞ Page 1273 GOT environmental settings (key window), screen property
☞ Page 1274 GOT environmental settings (System information)
☞ Page 1274 Sound file list
☞ Page 1274 GOT internal device

27.14.1 GOT environmental settings ([Screen Switching/Windows])

Select [Common] → [GOT Environmental Setting] → [Screen Switching/Windows] from the menu to display the [Environmental Setting] window.
☞ Page 530 Setting for switching screens to be displayed on the GOT ([Screen Switching/Window])

Function	Setting item
Setting the screen switching timing when you touch the Go To Screen switch. (ON synchronous/OFF synchronous)	[Operation Timing]

27.14.2 GOT environmental settings (key window), screen property

Set the following functions for each project (GOT environmental settings) or for each screen (screen property).
☞ Page 558 Setting key windows of the GOT ([Key Window])
• Settings for each project (GOT environmental settings)
Select [Common] → [GOT Environmental Setting] → [Key Window] from the menu to display the [Environmental Setting] window.
• Settings for each screen (screen property)
Select the screen editor on which the key window is to be set and select [Screen] → [Screen Property] from the menu to display the screen properties.

Function	Setting item
Displaying the key window when the operating condition is satisfied	Set this function in the following item in the [SP Function] tab or [Key Window Advanced Setting] tab. • [Key Window]
Displaying the key window when the screen is switched	Set this function in the following item in the [SP Function] tab or [Key Window Advanced Setting] tab. • [Display the key window]
Displaying the cursor when the screen is switched	Set this function in the following item in the [SP Function] tab or [Key Window Advanced Setting] tab. • [Display the cursor]
Displaying the cursor when the operating condition is satisfied	Set this function in the following item in the [SP Function] tab or [Key Window Advanced Setting] tab. • [Cursor]
Deleting the key window and cursor when the operating condition is not satisfied	Set this function in the following item in the [SP Function] tab or [Key Window Advanced Setting] tab. • [Clear the key window and the cursor] in [When operating conditions are not satisfied]

PART 7

27.14.3 GOT environmental settings (System information)

Select [Common] → [GOT Environmental Setting] → [System Information] from the menu to display the [Environmental Setting] window.

☞ Page 576 Setting a device which controls the GOT operations or notifies the GOT status ([System Information])

Function	Setting item
Notifying the key codes set to the input keys when there is an input using a text input, touch switch, or other objects	[Key Code Input]
Disabling the key input (Read device: System signal 1-1.b9)	[System Signal 1-1]
Notifying a key input (Write device: System signal 2-1.b3)	[System Signal 2-1]

27.14.4 Sound file list

Select [Common] → [Sound] → [Sound File List] from the menu to display the setting dialog.

☞ Page 2719 [Touch Key Sound Setting] dialog

Function	Setting item
Using a sound file for the sound generated when you press the touch switch. (The sound file must be registered.)	[Use a sound file for touch key sound]
Stopping the current playback and all the standby sound files and playing the touch key sound when the touch switch is touched.	[Give top priority to touch key sound]

27.14.5 GOT internal device

☞ Page 3581 GOT special register (GS)

Function	Setting item
Setting the operation timing of the touch switch in which the bit set, bit reset, or bit alternate action and the screen switching or station number switching action are set.	GS450.b12
Saving the history of screen transitions to the memory card.	GS450.b13
Changing the operation when the screen of the touch switch is switched from the hierarchy mode to the history mode.	GS450.b14

Setting the bit device operation together with screen switching and station number switching

When the bit device operation (set, reset, or alternate action) is set together with the screen switching or station number switching, the timing of the screen switching and station number switching differs depending on the status (on or off) of GS450.b12 as shown below.

Set GS450.b12 with the trigger action function or script function before the first action of the touch switch after the GOT startup.

Setting item	GS450.b12	
	ON	OFF
Screen switching or Station number switching + Bit set	When the finger is released from the touch switch	When the finger presses the touch switch
Screen switching or Station number switching + Bit reset	When the finger is released from the touch switch	When the finger presses the touch switch
Screen switching or Station number switching + Bit alternate	When the finger is released from the touch switch	When the finger presses the touch switch
Screen switching or Station number switching + Bit momentary	When the finger is released from the touch switch	
Screen switching or Station number switching + Word	When the finger presses the touch switch	When the finger presses the touch switch

Ex.

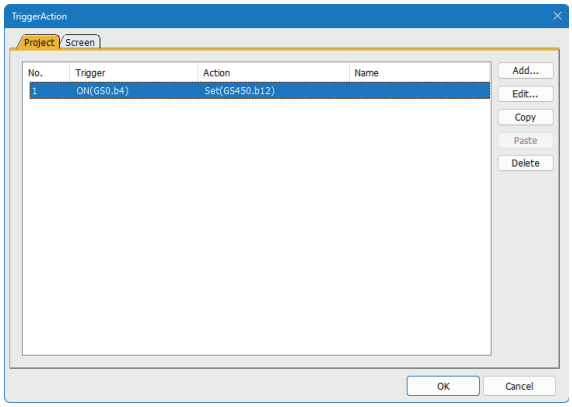
Example in which GS450.b12 automatically turns on after the GOT is powered on by using the trigger action

Set the GOT internal device (Always ON device: GS0.b4) as a trigger in the first row in the [Project] tab of the [Trigger Action] dialog so that GS450.b12 is on when the trigger is on.

After the GOT is powered on, the trigger action turns on GS450.b12.

For details on the trigger action, refer to the following.

☞ Page 2521 Operating a device as a trigger ([Trigger Action])



The following shows the operation when the following actions are set simultaneously for the touch switch.

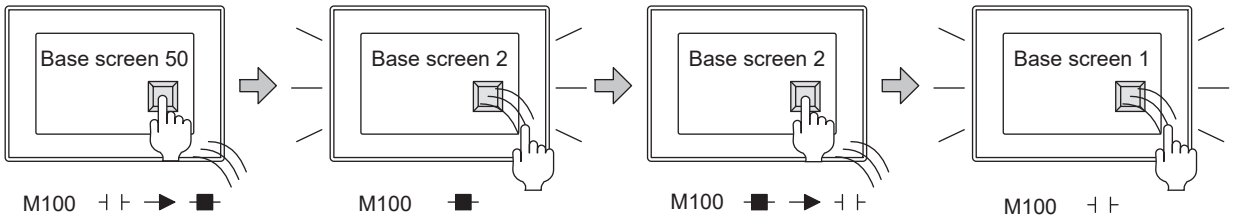
Bit alternate: M100

Screen switching: The screen switches to base screen 2 when M100 is on.

Screen switching: The screen switches to base screen 1 when M100 is off.

■Switching action when GS450.b12 is on

After the bit set, bit reset, or bit alternate action is executed, the screen or the station number is switched when you release the finger from the switch. The GOT operates with the value after the bit set, bit reset, or bit alternate action.



M100 turns on when the finger touches the touch switch.

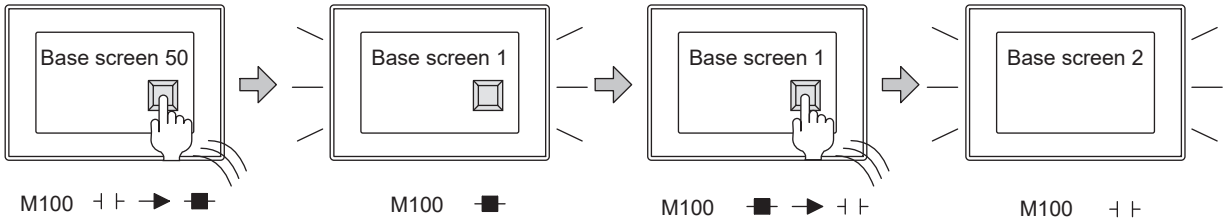
The screen switches when the finger is released from the touch switch.

M100 turns off when the finger touches the touch switch

The screen switches when the finger is released from the touch switch.

■Switching action when GS450.b12 is off

At the same timing as the bit set, bit reset, or bit alternate action, the screen or the station number is switched. The GOT operates with the value before the bit set, bit reset, or bit alternate action.



M100 turns on and the screen switches when the finger touches the touch switch. (The GOT operates with the value (M100: OFF) before the bit alternate.)

M100 turns off and the screen switches when the finger touches the touch switch. (The GOT operates with the value (M100: ON) before the bit alternate.)

PART 7

28 Placing a lamp

☞ Page 1277 Overview of lamps
☞ Page 1278 Specifications of Lamps
☞ Page 1279 How to use the lamp
☞ Page 1282 [Bit Lamp] dialog
☞ Page 1292 [Word Lamp] dialog
☞ Page 1304 [Lamp Area] dialog

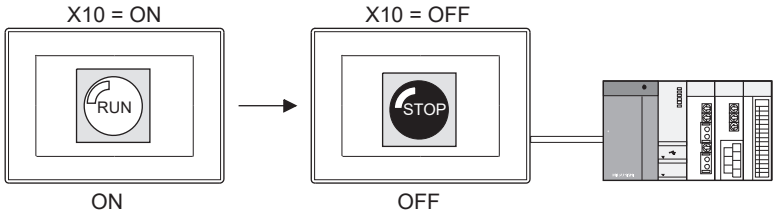
28.1 Overview of lamps

GT37 SoftGOT3000

This function monitors device values, and notifies the status of controllers with lamp indication.
There are three types of lamps: bit lamps, word lamps, and lamp areas.

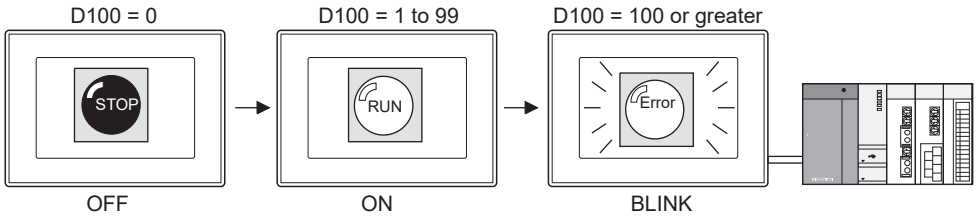
28.1.1 Bit lamp

A bit lamp turns on or off according to the status of the applicable bit device.
☞ Page 1282 [Bit Lamp] dialog



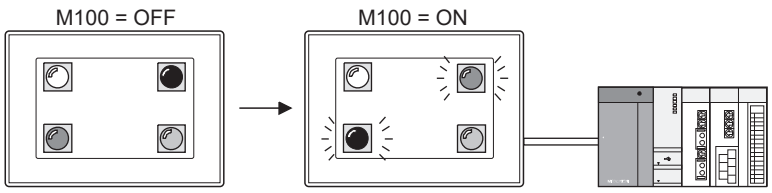
28.1.2 Word lamp

A word lamp changes its color according to the value of the applicable word device.
☞ Page 1292 [Word Lamp] dialog



28.1.3 Lamp area

The figures and objects in the lamp area are switched between two colors in units of dots according to the status of the applicable bit device.
☞ Page 1304 [Lamp Area] dialog



PART 7

28.2 Specifications of Lamps

GT37 SoftGOT3000

The following shows the specifications of the lamp.

28.2.1 Maximum number of objects that can be placed on one screen

A total of 1024 lamps and other objects can be placed on one base screen, while 512 can be placed on one window screen.

28.2.2 Minimum size of the lamp

The minimum size of the lamp is 2 dots (height) × 2 dots (width).

When the basic figure is set on the lamp, reducing the lamp in size may not display the figure properly.

28.2.3 Difference between the lamp and the figure to which a lamp attribute is set

When the lamp attribute is set to the figure, the color of the figure can also be changed like the lamp by turning on the bit device.

☞ Page 1131 Figures

For a figure having the lamp attribute, only the color of the figure can be changed by turning on the applicable bit device.

Use a lamp to set text or other items on a figure.

28.3 How to use the lamp

GT37 SoftGOT3000

The following shows how to use the lamp.

28.3.1 Placing a lamp

Place a lamp on a screen editor.

☞ Page 1001 Placing figures and objects

28.3.2 Editing a lamp

Edit a lamp on the screen editor.

☞ Page 1037 Settings common to objects

28.3.3 Setting the actions of the lamp

Set the actions of the lamp placed on the screen editor.

- Common settings for objects

☞ Page 1032 Settings common to figures and objects

- Settings of lamps

☞ Page 1282 [Bit Lamp] dialog
☞ Page 1292 [Word Lamp] dialog
☞ Page 1304 [Lamp Area] dialog

28.3.4 Converting a lamp to a touch switch

Click the [Convert to Switch] button in the [Bit Lamp] or [Word Lamp] dialog to convert the lamp to the touch switch.

Settings to be deleted

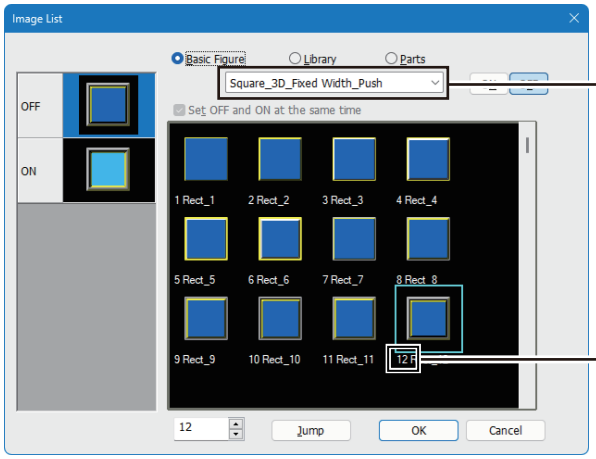
When the lamp is converted to the touch switch, settings that do not exist in the touch switch are deleted.
Settings that only exist in the touch switch are configured with the default values of the touch switch.

Converting a basic figure

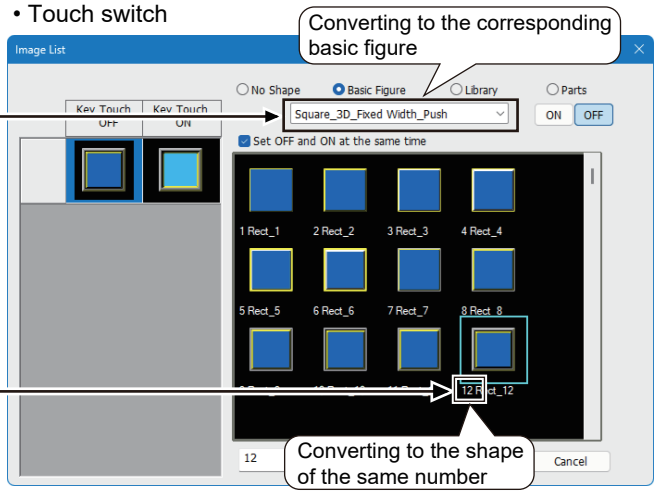
If the basic figure set for a lamp is applicable to a touch switch, the basic figure is converted to the corresponding figure with the same number for the switch.

Ex.
Converting the lamp to the touch switch when the basic figure [Square_3D_Fixed Width_Push] is set for the lamp

• Lamp



• Touch switch



Even if the basic figures for the lamp and the touch switch have the same number, the figures may differ from each other.
Check the basic figure used for the touch switch after the conversion.

Object size at conversion

When a lamp is converted to a touch switch, if they are incompatible in size, the touch switch is adjusted to an applicable size.

Converting a touch switch back to a lamp

To convert a touch switch back to a lamp, select [Edit] → [Undo] from the menu.
Even if the touch switch has been converted back to the lamp, the previous settings cannot be restored.
To cancel the conversion after clicking the [Convert to Switch] button, click the [Cancel] button instead of the [OK] button.

Type of the touch switch to be converted to

Both a bit lamp and a word lamp are converted to a switch.

28.3.5 Switching the specified two colors of figures and objects using the lamp area

To use the lamp area, configure the following settings for the figures and objects in the applicable area.

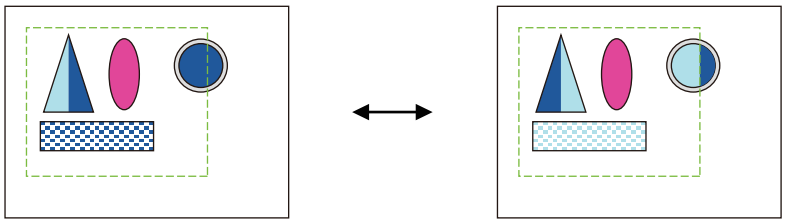
Applicable lamp area

The colors are switched within the lamp area regardless of the shape of the figures and objects.

The lamp area is only applicable to the figures and objects in that area.

Specify the applicable lamp area so that the figures and objects are within the dotted frame of the lamp area.

Example) When ■ and ■ are set for [Color Setting] of the lamp area



Layer for placement

A lamp area and the figures and objects in the area must be placed in the same layer.

Placement order

The figures and objects in a lamp area must be placed behind the area.

If the figure and object are placed ahead of the lamp area, they are placed behind the lamp area.

To change the placement order, right-click on the selected figure or object and select [Stacking Order].

Setting the switching color of the lamp area as the transparent color of the front layer

When [Enable the antialiasing] is deselected in the [Type Setting] dialog ([Basic Setting]), [Front Layer Transparent Color] can be set.

☞ Page 519 [Basic Setting]

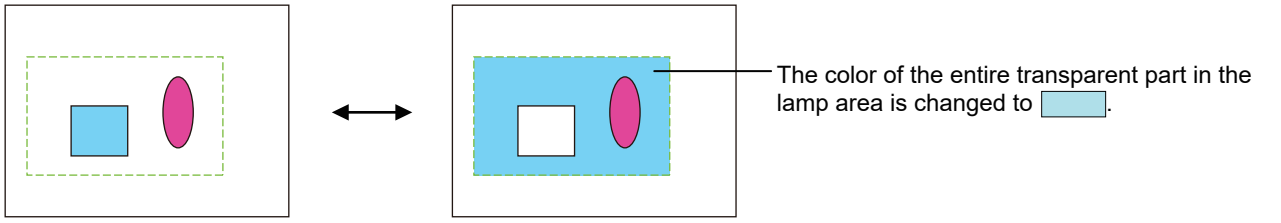
On the front layer to which the lamp area is applied, when either [Color 1] or [Color 2] in [Color Setting] is set to the same color as [Front Layer Transparent Color], the transparent color (The back layer is displayed.) and the other color are switched.

The colors are switched not only for the figures or objects, but also for the whole lamp area.

For details of [Front Layer Transparent Color], refer to the following.

☞ Page 313 Base screen properties

Example) When ■ and ■ are set for [Color Setting] of the lamp area and ■ is set for [Front Layer Transparent]



Checking the action of the lamp area in the preview window or the screen editor

The preview window and screen editor cannot be used to check that the colors are switched for the lamp area.

Precautions for the lamp area

The lamp area is used to switch specified colors.

If antialiasing or gradation is set for a figure in the lamp area, unintended color switching may occur.

28.4 [Bit Lamp] dialog

GT37 SoftGOT3000

A bit lamp turns on or off according to the status of the bit device.

Window

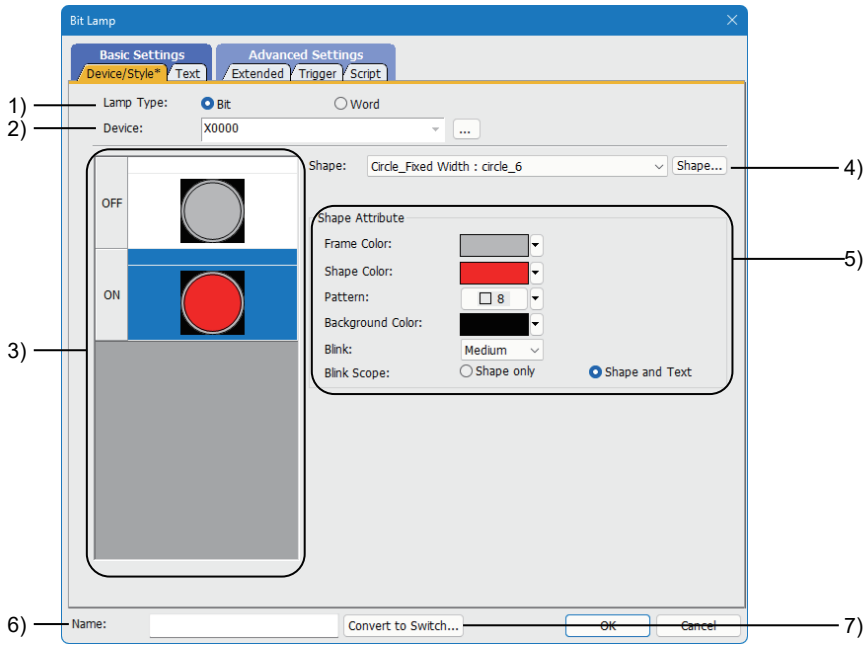
1. Select [Object] → [Lamp] → [Bit Lamp] from the menu.
2. Click the position to place a bit lamp.
3. Double-click the bit lamp to display the setting dialog.

☞ Page 1283 [Device/Style] tab
☞ Page 1284 [Text] tab
☞ Page 1289 [Extended] tab
☞ Page 1290 [Trigger] tab
☞ Page 1291 [Script] tab

28.4.1 [Device/Style] tab

GT37 SoftGOT3000

Set a device to be monitored and the lamp shape (figure and color) for the on and off states of the device.



Item			Description
1)	[Lamp Type]		Select the lamp type.
2)	[Device]		Set a device to be monitored. ☞ Page 834 How to set devices, labels, and tags
3)	Preview list		The images of the configured lamp in the ON and OFF states are displayed.
4)	[Shape]		Set the shape of the lamp. To select a shape other than those in the list box, click the [Shape] button. ☞ Page 1045 [Image List] dialog (shape)
5)	[Shape Attribute]	[Frame Color]	Select the frame color for the lamp.
		[Shape Color]	Select the shape color for the lamp. Changing the shape color individually enables different colors of the configured lamp shape.
		[Pattern] [Background Color]	Select the pattern and background color for the lamp. The pattern is displayed in the shape color on the colored background. Example) Shape color: Pattern: Background color: Pattern + Shape color Background color
		[Blink]	Select the blinking speed of the lamp.
		[Blink Scope]	Select the blink scope.
6)	[Name]		Set the object name. The name is displayed in places such as the data browser and property sheet. The setting can also be changed in other tabs. Up to 100 characters can be set.
7)	[Convert to Switch] button		Converts the object type to the touch switch. ☞ Page 1279 How to use the lamp

PART 7

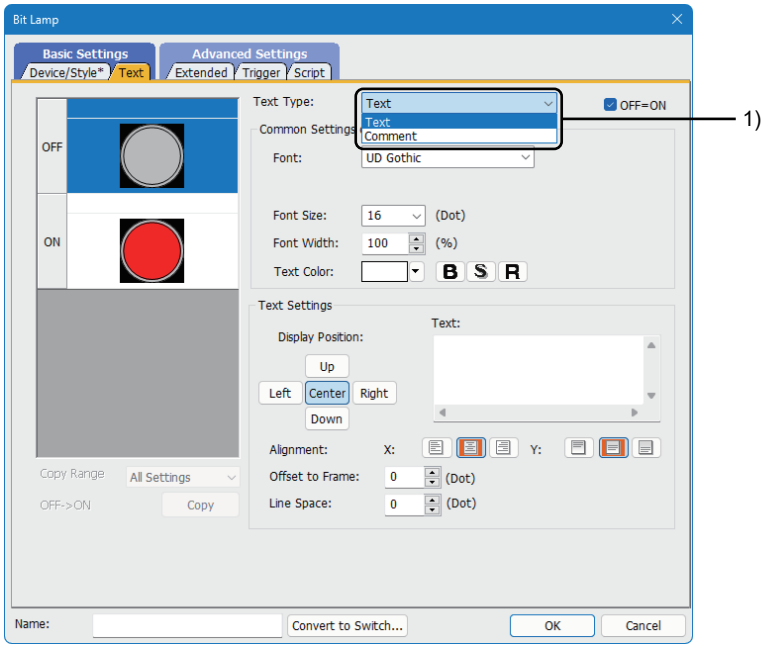
28.4.2 [Text] tab

GT37 SoftGOT3000

For mobile screens, some setting items are not available.

☞ Page 2742 Usable functions

Select the text type to use the directly input texts or the comments set in a comment group as a text.



Item			Description
1)	[Text Type]	[Text]	Directly enter the text to be displayed. If characters have already been entered in the [Text] field, switching the text type from [Text] to [Comment] enables you to register the entered characters in a comment group. For instruction on registering a comment group, refer to the following. ☞ Page 811 Registering the characters in the [Text] field to a comment group
		[Comment]	Displays a comment of the specified comment group on the object.

For the comment group settings, refer to the following.

☞ Page 776 Comment setting ([Comment])

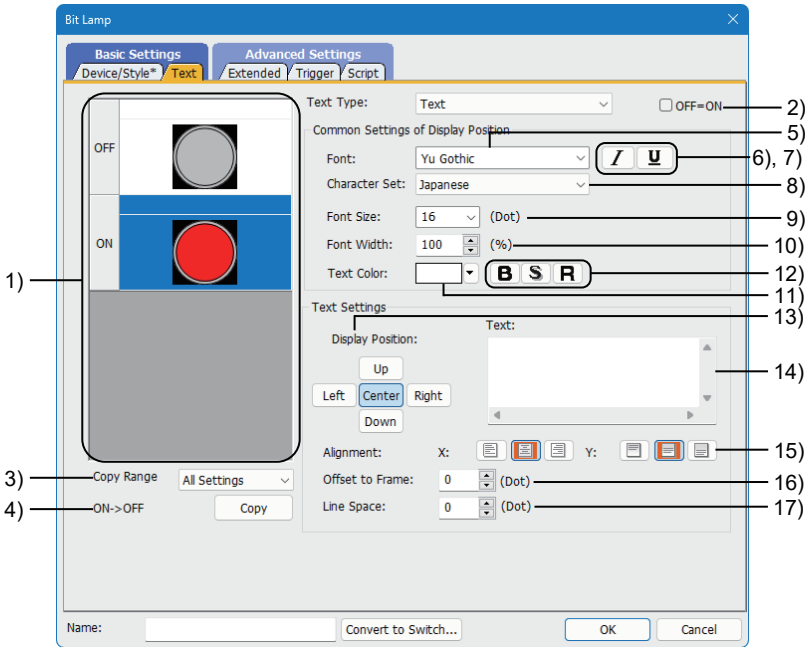
Setting items vary depending on the selected text type.

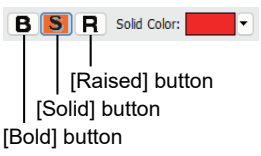
For the setting items for each text type, refer to the following.

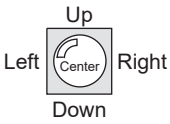
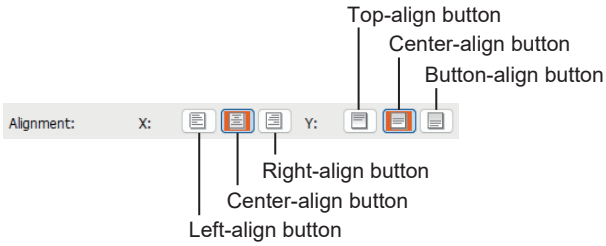
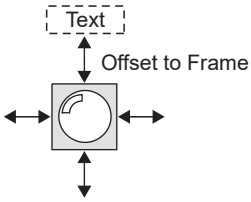
☞ Page 1285 [Text]

☞ Page 1287 [Comment]

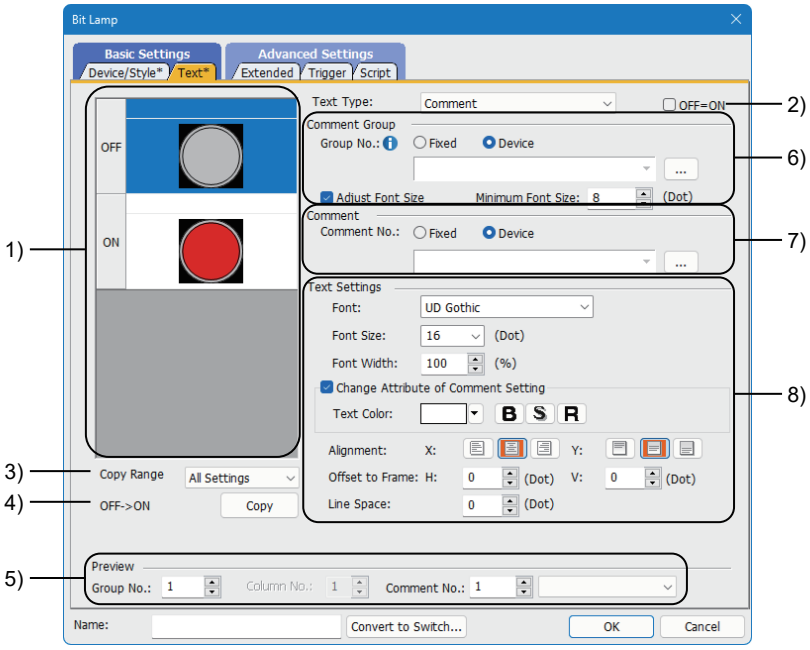
[Text]



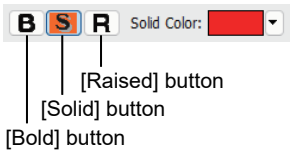
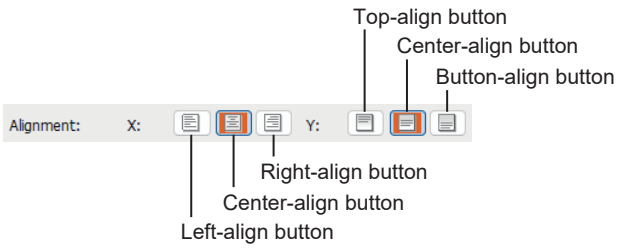
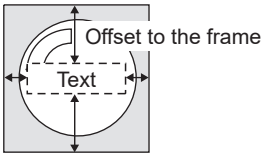
Item		Description
1)	Preview list	The images of the configured lamp in the ON and OFF states are displayed.
2)	[OFF=ON]	Applies the same setting to both when the switch is on or off.
3)	[Copy Range]	Set the copy range. • [All Settings]: Copies all the text settings. • [Text Only]: Copies the text only.
4)	[OFF→ON] [ON→OFF]	Copies the text settings. • [OFF→ON]: Copies the setting for the OFF status to the setting for the ON status with the [Copy] button. • [ON→OFF]: Copies the setting for the ON status to the setting for the OFF status with the [Copy] button.
5)	[Font]	Select the font of the displayed text. ☞ Page 74 Specifications of displayable characters
6)	[Italic] button	Italicizes the text. This item is displayed when a Windows font is selected for [Font].
7)	[Underline] button	Underlines the text. This item is displayed when a Windows font is selected for [Font].
8)	[Character Set]	Set the language. This item is displayed when a Windows font is selected for [Font].
9)	[Font Size]	Set a vertical text size. The setting range is [8] dots to [540] dots.
10)	[Font Width]	Set a horizontal text size. The horizontal size is specified with the magnification relative to [Font Size] (vertical text size). The setting range is [6]% to [1600]%.
11)	[Text Color]	Set the color of the text to be displayed on the object. For details on the color, refer to the following. ☞ Page 988 Color settings
12)	Text style	Set a text style. Only one of the styles ([Bold], [Solid], or [Raised]) is settable.  • [Bold] button: Displays the text in bold. • [Solid] button: Displays the text with a shadow. • [Raised] button: Displays the text embossed. • [Solid Color]: When [Solid] or [Raised] is selected as the text style, set the color of the shadow.

Item		Description
13)	[Display Position]	Set the position of the text to be displayed on the object. A different text is settable for each position (center, up, down, left, and right). • [Center] button: Displays the text at the center of the object. • [Up] button: Displays the text on the upper side of the object. • [Down] button: Displays the text on the lower side of the object. • [Left] button: Displays the text on the left side of the object. • [Right] button: Displays the text on the right side of the object. 
14)	[Text]	Input the text to be displayed. Up to 1024 characters can be set. A line feed is counted as two characters.
15)	[Alignment]	Select the horizontal position (left-aligned, centered, or right-aligned) and vertical position (top-aligned, centered, or bottom-aligned) of the text. 
16)	[Offset to Frame]	Set the space between the object frame and the text. The setting range is [0] dots to [100] dots. 
17)	[Line Space]	Set the space between lines. The setting range is [0] dots to [128] dots.

[Comment]



Item			Description
1)	Preview list		The images of the configured lamp in the ON and OFF states are displayed.
2)	[OFF=ON]		Applies the same setting to both when the switch is on or off.
3)	[Copy Range]		Set the copy range. • [All Settings]: Copies all the text settings. • [Text Only]: Copies the text only.
4)	[OFF→ON] [ON→OFF]		Copies the text settings. • [OFF→ON]: Copies the setting for the OFF status to the setting for the ON status with the [Copy] button. • [ON→OFF]: Copies the setting for the ON status to the setting for the OFF status with the [Copy] button.
5)	[Preview]	[Group No.]	Set the group number of the comment displayed on the GT Designer3 screen. When [Fixed] is selected for [Group No.] of [Comment Group], the group number is fixed to the value set in [Comment Group].
		[Column No.]	Set the comment column number of the comment displayed on the GT Designer3 screen.
		[Comment No.]	Set the comment number of the comment to be previewed on GT Designer3. When [Fixed] is selected for [Comment No.] in [Comment], the comment number is fixed to the value set in [Comment].
6)	[Comment Group]	[Group No.]	Set the group number of the comment group to be used. • [Fixed] Select this item to use the specified comment group. After selecting, enter a comment group number. • [Device] Select this item to use the comment group number corresponding to the value of the device to be set. Select this item and set the device. ☞ Page 834 How to set devices, labels, and tags
		[Adjust Font Size]	Adjusts the font size automatically according to the object size. When this item is deselected, the line feed is automatically applied to the text.
		[Minimum Font Size]	Set the minimum font size applied when the font size is automatically adjusted. The setting range is [8] dots to [540] dots.
7)	[Comment]	[Comment No.]	Set the comment number of the comment to be used. • [Fixed] Select this item to use the specified comment. Select this item, and enter a comment number. To edit the comment to be displayed, click the [Edit] button to display the [Edit Comment] dialog. ☞ Page 3685 [Edit Comment] dialog • [Device] Select this item to use the comment number corresponding to the value of the device to be set. Select this item and set the device.

Item			Description
8)	[Text]	[Font]	Select the font of the displayed text. ☞ Page 74 Specifications of displayable characters [Windows Font] is selectable when [Group No.] is set to [Fixed]. Displays text in the font specified with [Windows Font] in the [Comment Group Property] dialog.
		[Windows Font Setting] button	This item appears when [Windows Font] is selected for [Font]. The [Comment Group Property] dialog for the group number specified by [Group No.] is displayed. Set [Windows Font] and [Character Set] for the target column of the comment group. ☞ Page 797 [Comment Group Property] dialog
		[Font Size]	Set a vertical text size. The setting range is [8] dots to [540] dots.
		[Font Width]	Set a horizontal text size. The horizontal size is specified with the magnification relative to [Font Size] (vertical text size). The setting range is [6]% to [1600]%.
		[Change Attribute of Comment Setting]	Set the color and style of the text to be displayed on the object without using the attribute set in the [Comment List] window.
		[Text Color]	Set the color of the text to be displayed on the object. For details on the color, refer to the following. ☞ Page 988 Color settings
		Text style	Set a text style. Only one of the styles ([Bold], [Solid], or [Raised]) is settable.  • [Bold] button: Displays the text in bold. • [Solid] button: Displays the text with a shadow. • [Raised] button: Displays the text embossed. • [Solid Color]: When [Solid] or [Raised] is selected as the text style, set the color of the shadow.
		[Alignment]	Select the horizontal position (left-aligned, centered, or right-aligned) and vertical position (top-aligned, centered, or bottom-aligned) of the text. 
		[Offset to Frame]	Set the space between the object frame and the text. The setting range is [0] dots to [100] dots. 
		[Line Space]	Set the space between lines. The setting range is [0] dots to [128] dots.

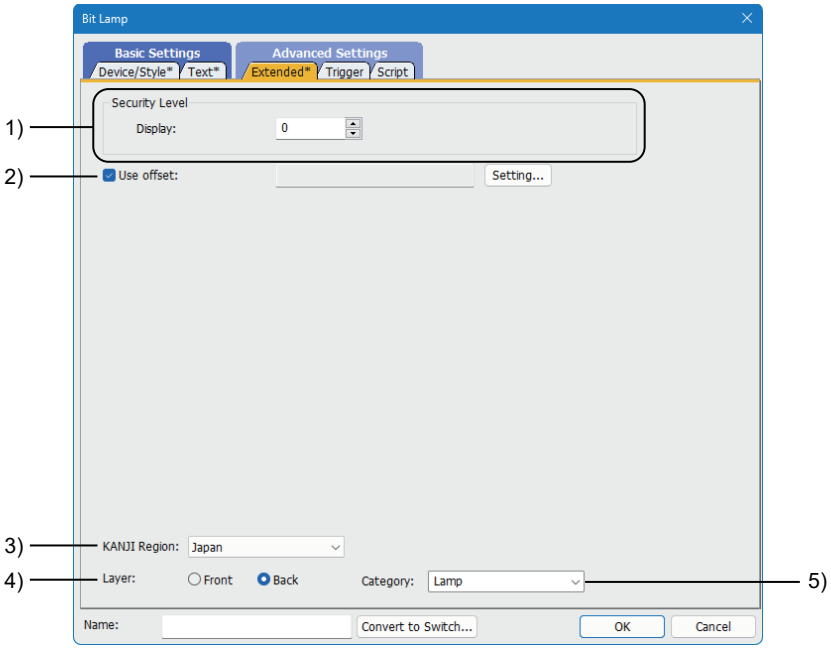
28.4.3 [Extended] tab

GT37 SoftGOT3000

For mobile screens, some setting items are not available.

☞ Page 2742 Usable functions

Set the security level, offset, layer, category, and KANJI region.



Item		Description
1)	[Security Level]	Set the security level. The setting range is [0] to [15]. If you do not use the security function of the GOT, select [0]. ☞ Page 3038 Restricting display and operation on the GOT (Screen security)
2)	[Use offset]	Configure the settings to monitor the statuses of multiple devices by switching between them with a single device. After selecting this item, set the offset device. The monitored device is the one with the offset device value added to the device set in [Device] in the [Device/Style] tab. ☞ Page 963 Offset
3)	[KANJI Region]	Select the KANJI region of the displayed text. ☞ Page 76 KANJI region This item is enabled when one of the following options is selected for [Font] in the [Text] tab. • [UD Gothic] • [UD Mincho] • [UDP Gothic] • [UDP Mincho]
4)	[Layer]	Select the layer to place the object. ☞ Page 65 Layer
5)	[Category]	Select the category to assign the object. ☞ Page 1121 Managing figures and objects by category

28.4.4 [Trigger] tab

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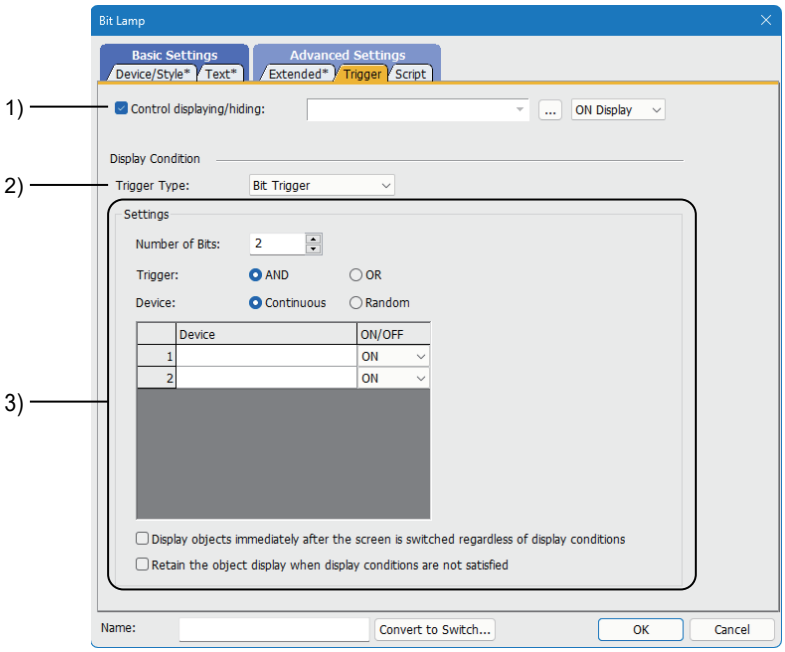
Set the trigger condition to display the object.



Item		Description
1)	[Control displaying/hiding]	Enables the setting to display the object only when requirements are met. Set the following as requirements. • Bit device for control • When to display: When the bit device for control is on or off
2)	[Trigger Type]	Select a trigger condition to display the object. For details on the trigger types, refer to the following. ☞ Page 969 Trigger types settable for the object display condition
3)	[Settings]	For the settings of each item, refer to the following. ☞ Page 969 Trigger types settable for the object display condition

28.4.5 [Script] tab

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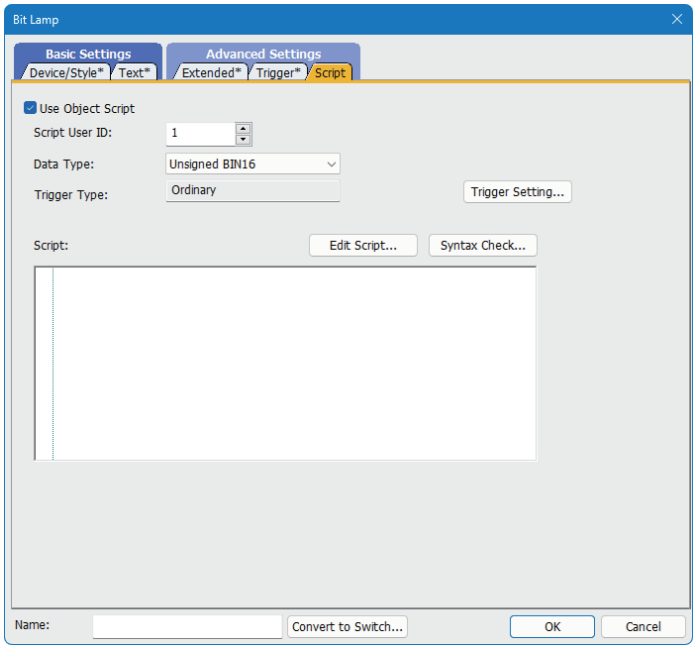
For the script settings, refer to the following.

☞ Page 2447 Object script



Relationship between the object settings and object properties

Object settings can be read (referenced) or written (changed) using object properties.

The following shows the correspondence between readable/writable object properties and the setting items in the object setting dialog.

○: Available

×: Not available

—: No applicable setting item

Setting dialog		Object property			
Tab name	Setting item	Property name	Read	Write	Timing for reflecting the setting change*1
—	—	active	○	○	Upon the setting change
		x	○	○	When the screen is updated
		y	○	○	When the screen is updated
		width	○	×	×
		height	○	×	×
[Extended]	[Security Level]	security	○	○	When the screen is updated

*1 For information on how long it takes for object property settings to be reflected on the screen, refer to the following page.

☞ Page 2456 Timing at which the setting change of an object property is reflected

PART 7

28.5 [Word Lamp] dialog

GT37 SoftGOT3000

A word lamp changes its color according to the value of the word device.

Window

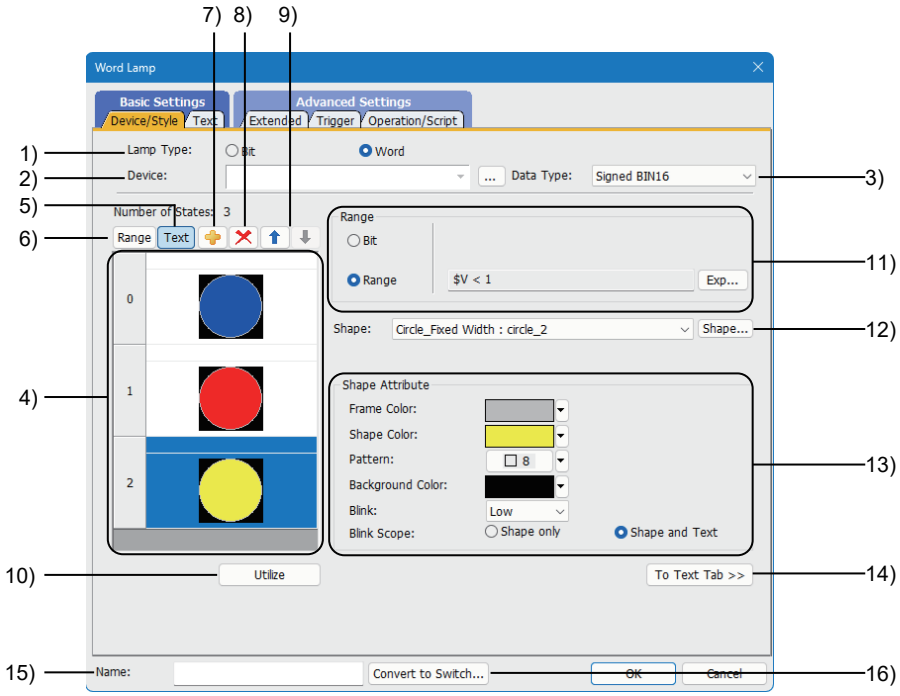
1. Select [Object] → [Lamp] → [Word Lamp] from the menu.
2. Click the position to place a word lamp.
3. Double-click the word lamp to display the setting dialog.

☞ Page 1292 [Device/Style] tab
☞ Page 1294 [Text] tab
☞ Page 1299 [Extended] tab
☞ Page 1300 [Trigger] tab
☞ Page 1301 [Operation/Script] tab

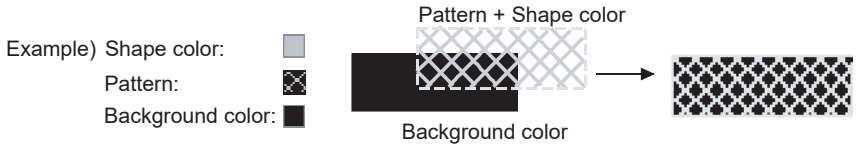
28.5.1 [Device/Style] tab

GT37 SoftGOT3000

Set a device to be monitored and the lamp shape (figure and color) corresponding to the device value.



Item		Description
1)	[Lamp Type]	Select the lamp type.
2)	[Device]	Set a device to be monitored. ☞ Page 834 How to set devices, labels, and tags
3)	[Data Type]	Select the data type of the word device.
4)	Preview list	The images of the configured lamp in the ON and OFF states are displayed.
5)	[Text] button	Displays the preview list in text.
6)	[Range] button	Displays the preview list in range.
7)	Add button	Adds a new condition.
8)	Delete button	Deletes the selected condition.

Item			Description
9)	Up button Down button		Changes the priority order of the conditions in the preview list.
10)	[Utilize] button		Utilizes the selected condition to create a new condition.
11)	[Range]		Set the condition to change the display attributes. When setting the word device value as the condition, click the [Exp] button to display the [Edit Range] dialog, and then set the conditional expression. For details on the conditions, refer to the following. ☞ Page 1038 Control with conditions
12)	[Shape]		Set the shape of the lamp. To select a shape other than those in the list box, click the [Shape] button. ☞ Page 1045 [Image List] dialog (shape)
13)	[Shape Attribute]	[Frame Color]	Select the frame color for the lamp.
		[Shape Color]	Select the shape color for the lamp. Changing the shape color individually enables different colors of the configured lamp shape.
		[Pattern] [Background Color]	Select the pattern and background color for the lamp. The pattern is displayed in the shape color on the colored background. 
		[Blink]	Select the blinking speed of the lamp.
		[Blink Scope]	Select the blink scope.
14)	[To Text Tab] button		Displays the [Text] tab.
15)	[Name]		Set the object name. The name is displayed in places such as the data browser and property sheet. The setting can also be changed in other tabs. Up to 100 characters can be set.
16)	[Convert to Switch] button		Converts the object type to the touch switch. ☞ Page 1279 How to use the lamp

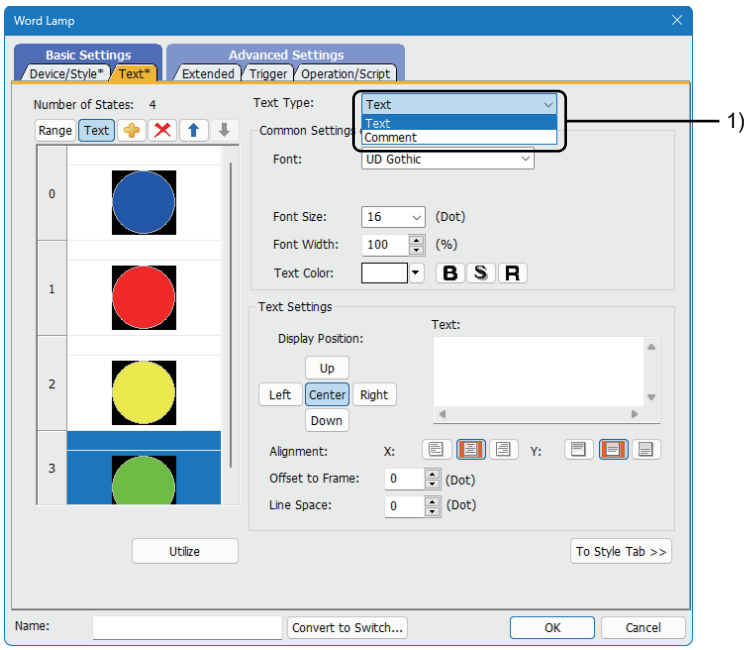
28.5.2 [Text] tab

GT37 SoftGOT3000

For mobile screens, some setting items are not available.

☞ Page 2742 Usable functions

Select the text type to use the directly input texts or the comments set in a comment group as a text.



Item			Description
1)	[Text Type]	[Text]	Directly enter the text to be displayed. If characters have already been entered in the [Text] field, switching the text type from [Text] to [Comment] enables you to register the entered characters in a comment group. For instruction on registering a comment group, refer to the following. ☞ Page 811 Registering the characters in the [Text] field to a comment group
		[Comment]	Displays a comment of the specified comment group on the object.

For the comment group settings, refer to the following.

☞ Page 776 Comment setting ([Comment])

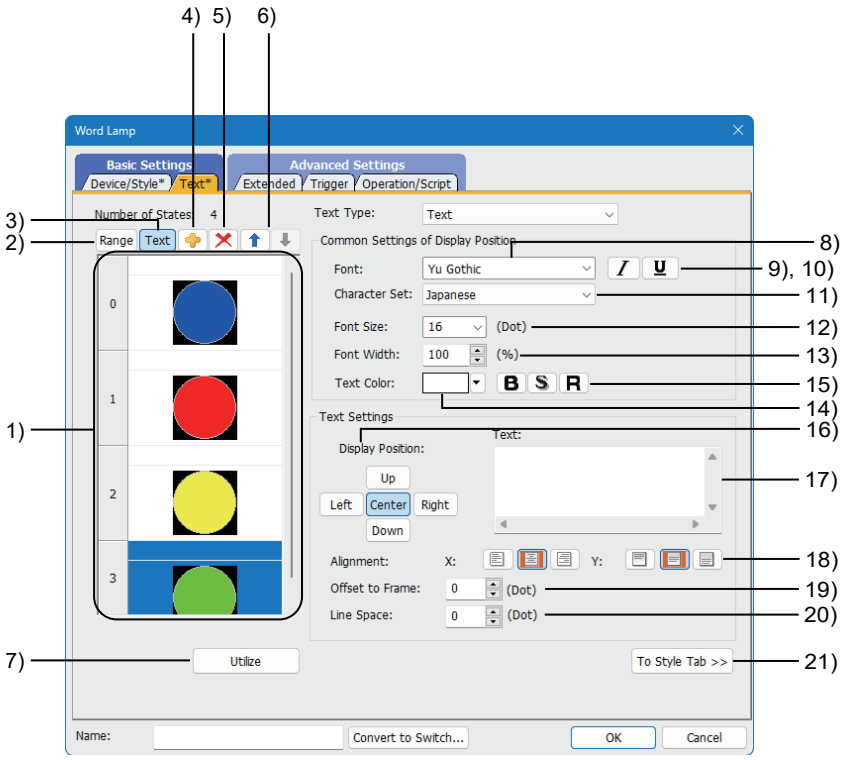
Setting items vary depending on the selected text type.

For the setting items for each text type, refer to the following.

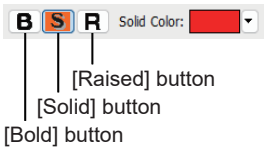
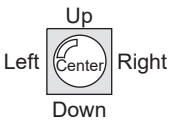
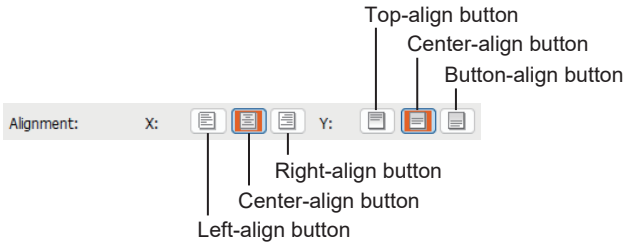
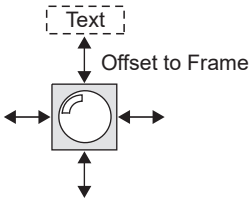
☞ Page 1295 [Text]

☞ Page 1297 [Comment]

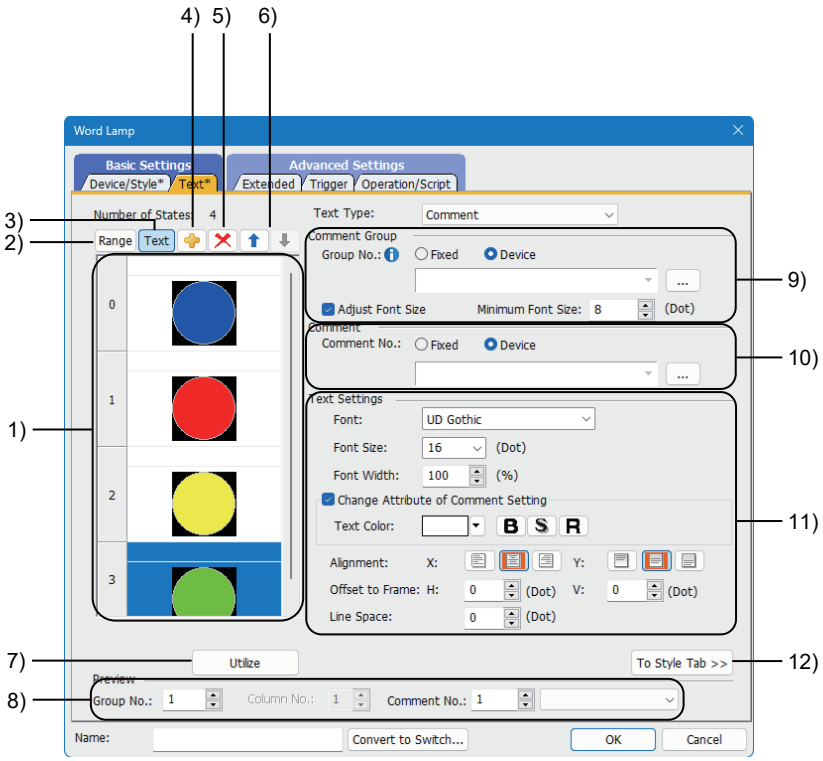
[Text]



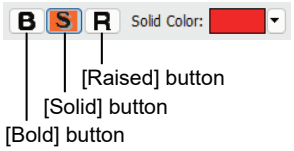
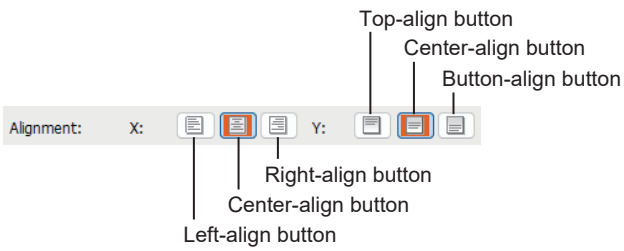
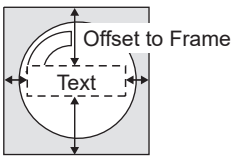
Item		Description
1)	Preview list	The images of the configured lamp in the ON and OFF states are displayed.
2)	[Range] button	Displays the preview list in range.
3)	[Text] button	Displays the preview list in text.
4)	Add button	Adds a new condition.
5)	Delete button	Deletes the selected condition.
6)	Up button Down button	Changes the priority order of the conditions in the preview list.
7)	[Utilize] button	Utilizes the selected condition to create a new condition.
8)	[Font]	Select the font of the displayed text. ☞ Page 74 Specifications of displayable characters
9)	[Italic] button	Italicizes the text. This item is displayed when a Windows font is selected for [Font].
10)	[Underline] button	Underlines the text. This item is displayed when a Windows font is selected for [Font].
11)	[Character Set]	Set the language. This item is displayed when a Windows font is selected for [Font].
12)	[Font Size]	Set a vertical text size. The setting range is [8] dots to [540] dots.
13)	[Font Width]	Set a horizontal text size. The horizontal size is specified with the magnification relative to [Font Size] (vertical text size). The setting range is [6]% to [1600]%.
14)	[Text Color]	Set the color of the text to be displayed on the object. For details on the color, refer to the following. ☞ Page 988 Color settings

Item		Description
15)	Text style	Set a text style. Only one of the styles ([Bold], [Solid], or [Raised]) is settable.  • [Bold] button: Displays the text in bold. • [Solid] button: Displays the text with a shadow. • [Raised] button: Displays the text embossed. • [Solid Color]: When [Solid] or [Raised] is selected as the text style, set the color of the shadow.
16)	[Display Position]	Set the position of the text to be displayed on the object. A different text is settable for each position (center, up, down, left, and right). • [Center] button: Displays the text at the center of the object. • [Up] button: Displays the text on the upper side of the object. • [Down] button: Displays the text on the lower side of the object. • [Left] button: Displays the text on the left side of the object. • [Right] button: Displays the text on the right side of the object. 
17)	[Text]	Input the text to be displayed. Up to 1024 characters can be set. A line feed is counted as two characters.
18)	[Alignment]	Select the horizontal position (left-aligned, centered, or right-aligned) and vertical position (top-aligned, centered, or bottom-aligned) of the text. 
19)	[Offset to Frame]	Set the space between the object frame and the text. The setting range is [0] dots to [100] dots. 
20)	[Line Space]	Set the space between lines. The setting range is [0] dots to [128] dots.
21)	[To Style Tab] button	Moves to the [Device/Style] tab.

[Comment]



Item			Description
1)	Preview list		The images of the configured lamp in the ON and OFF states are displayed.
2)	[Range] button		Displays the preview list in range.
3)	[Text] button		Displays the preview list in text.
4)	Add button		Adds a new condition.
5)	Delete button		Deletes the selected condition.
6)	Up button, down button		Changes the priority order of the conditions in the preview list.
7)	[Utilize] button		Utilizes the selected condition to create a new condition.
8)	[Preview]	[Group No.]	Set the group number of the comment displayed on the GT Designer3 screen. When [Fixed] is selected for [Group No.] of [Comment Group], the group number is fixed to the value set in [Comment Group].
		[Column No.]	Set the comment column number of the comment displayed on the GT Designer3 screen.
		[Comment No.]	Set the comment number of the comment to be previewed on GT Designer3. When [Fixed] is selected for [Comment No.] in [Comment], the comment number is fixed to the value set in [Comment].
9)	[Comment Group]	[Group No.]	Set the group number of the comment group to be used. • [Fixed] Select this item to use the specified comment group. After selecting, enter a comment group number. • [Device] Select this item to use the comment group number corresponding to the value of the device to be set. Select this item and set the device. ☞ Page 834 How to set devices, labels, and tags
		[Adjust Font Size]	Adjusts the font size automatically according to the object size. When this item is deselected, the line feed is automatically applied to the text.
		[Minimum Font Size]	Set the minimum font size applied when the font size is automatically adjusted. The setting range is [8] dots to [540] dots.

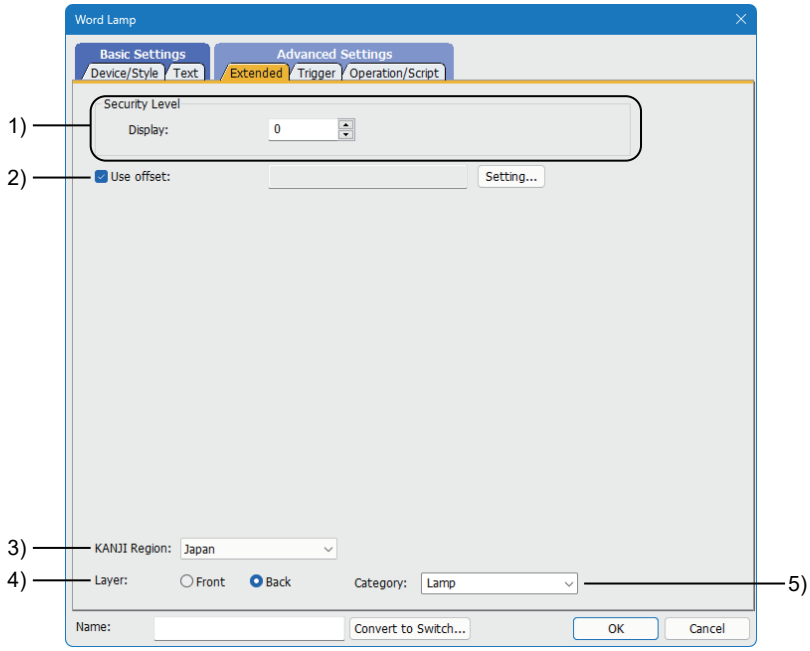
Item			Description
10)	[Comment]	[Comment No.]	Set the comment number of the comment to be used. • [Fixed] Select this item to use the specified comment. Select this item, and enter a comment number. To edit the comment to be displayed, click the [Edit] button to display the [Edit Comment] dialog. ☞ Page 3685 [Edit Comment] dialog • [Device] Select this item to use the comment number corresponding to the value of the device to be set. Select this item and set the device.
11)	[Text Settings]	[Font]	Select the font of the displayed text. ☞ Page 74 Specifications of displayable characters [Windows Font] is selectable when [Group No.] is set to [Fixed]. Displays text in the font specified with [Windows Font] in the [Comment Group Property] dialog.
		[Windows Font Setting] button	This item appears when [Windows Font] is selected for [Font]. The [Comment Group Property] dialog for the group number specified by [Group No.] is displayed. Set [Windows Font] and [Character Set] for the target column of the comment group. ☞ Page 797 [Comment Group Property] dialog
		[Font Size]	Set a vertical text size. The setting range is [8] dots to [540] dots.
		[Font Width]	Set a horizontal text size. The horizontal size is specified with the magnification relative to [Font Size] (vertical text size). The setting range is [6]% to [1600]%.
		[Change Attribute of Comment Setting]	Set the color and style of the text to be displayed on the object without using the attribute set in the [Comment List] window.
		[Text Color]	Set the color of the text to be displayed on the object. For details on the color, refer to the following. ☞ Page 988 Color settings
		Text style	Set a text style. Only one of the styles ([Bold], [Solid], or [Raised]) is settable.  • [Bold] button: Displays the text in bold. • [Solid] button: Displays the text with a shadow. • [Raised] button: Displays the text embossed. • [Solid Color]: When [Solid] or [Raised] is selected as the text style, set the color of the shadow.
		[Alignment]	Select the horizontal position (left-aligned, centered, or right-aligned) and vertical position (top-aligned, centered, or bottom-aligned) of the text. 
		[Offset to Frame]	Set the space between the object frame and the text. The setting range is [0] dots to [100] dots. 
		[Line Space]	Set the space between lines. The setting range is [0] dots to [128] dots.
12)	[To Style Tab] button		Moves to the [Device/Style] tab.

28.5.3 [Extended] tab

GT37 SoftGOT3000

For mobile screens, some setting items are not available.

☞ Page 2742 Usable functions



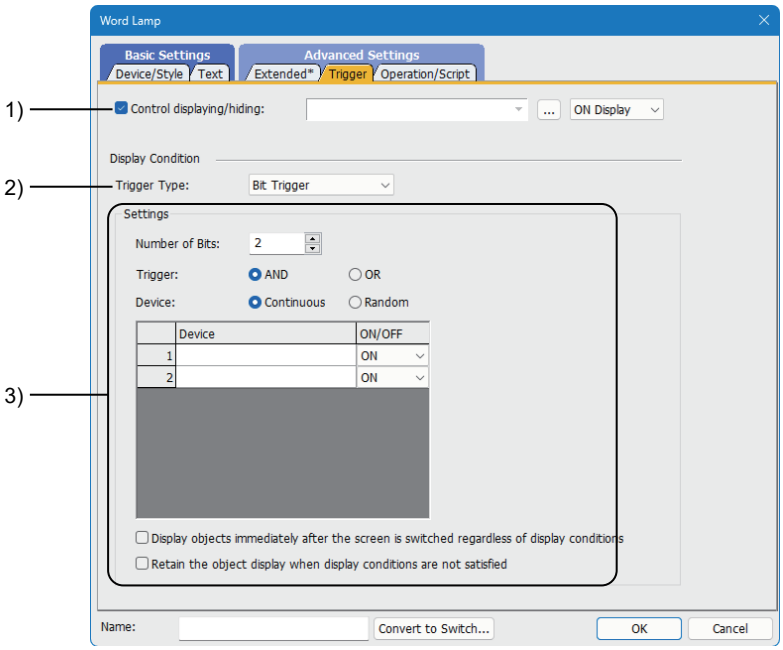
Item		Description
1)	[Security Level]	Set the security level. The setting range is [0] to [15]. If you do not use the security function of the GOT, select [0]. ☞ 90 Restricting display and operation on the GOT (Screen security)
2)	[Use offset]	Configure the settings to monitor the statuses of multiple devices by switching between them with a single device. After selecting this item, set the offset device. The monitored device is the one with the offset device value added to the device set in [Device] in the [Device/Style] tab. ☞ Page 963 Offset
3)	[KANJI Region]	Select the KANJI region of the displayed text. ☞ Page 76 KANJI region This item is enabled when one of the following options is selected for [Font] in the [Text] tab. • [UD Gothic] • [UD Mincho] • [UDP Gothic] • [UDP Mincho]
4)	[Layer]	Select the layer to place the object. ☞ Page 65 Layer
5)	[Category]	Select the category to assign the object. ☞ Page 1121 Managing figures and objects by category

PART 7

28.5.4 [Trigger] tab

GT37 SoftGOT3000

Set the trigger condition to display the object.



Item		Description
1)	[Control displaying/hiding]	Enables the setting to display the object only when requirements are met. Set the following as requirements. • Bit device for control • When to display: When the bit device for control is on or off
2)	[Trigger Type]	Select a trigger condition to display the object. For details on the trigger types, refer to the following. ☞ Page 969 Trigger types settable for the object display condition
3)	[Settings]	For the settings of each item, refer to the following. ☞ Page 968 Trigger type settings

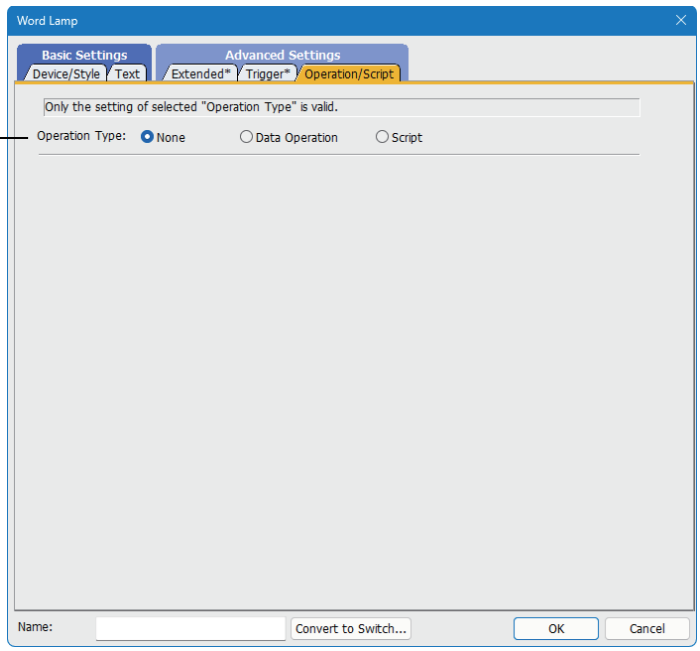
28.5.5 [Operation/Script] tab

GT37 SoftGOT3000

For mobile screens, some setting items are not available.

☞ Page 2742 Usable functions

Set an expression when you perform monitoring with the data operation function or the script function.

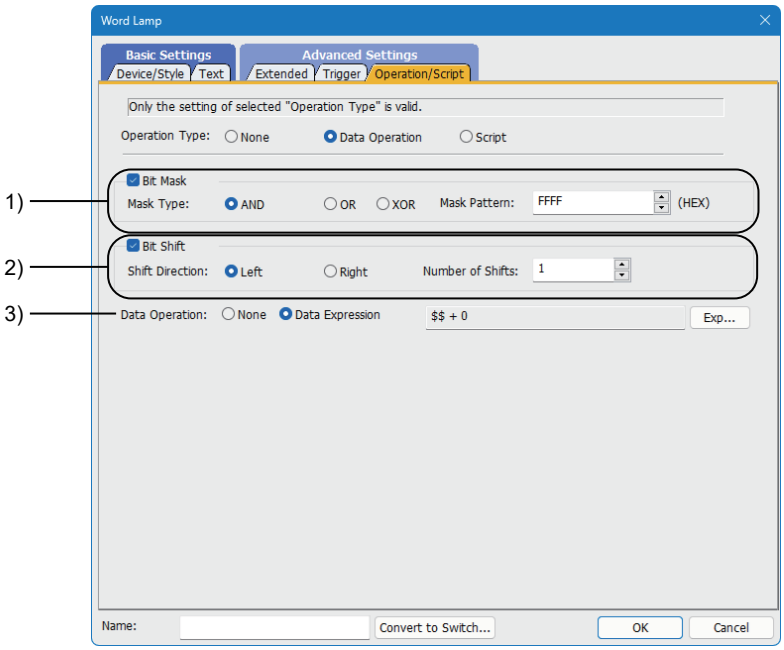


Item			Description
1)	[Operation Type]	[None]	Does not use the data operation function and the script function.
		[Data Operation]	Set the expression used for the data operation function. ☞ Page 1302 [Data Operation]
		[Script]	Set the expressions for the script function. ☞ Page 1303 [Script]

[Data Operation]

For details on the data operation settings, refer to the following.

☞ Page 1053 How to set the data operation

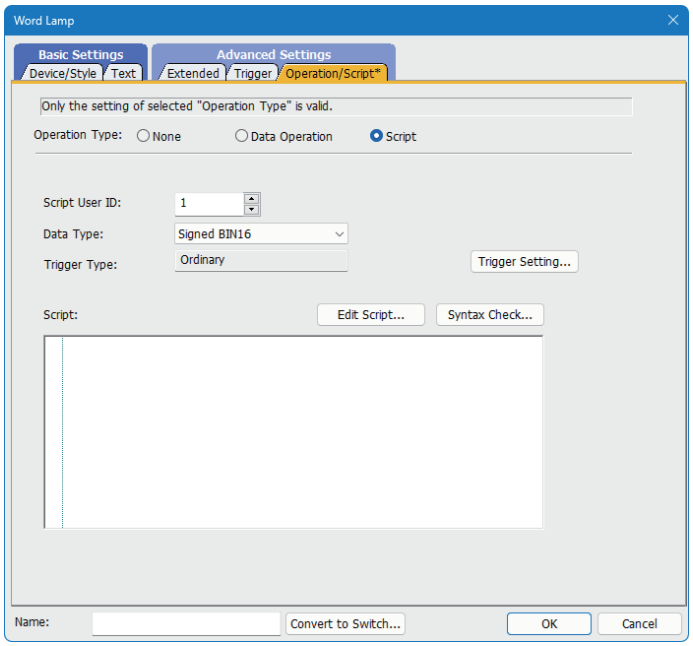


Item			Description
1)	[Bit Mask]	—	Set the operation of mask processing.
		[Mask Type]	Select the type of mask processing. • [AND]: Logical AND • [OR]: Logical OR • [XOR]: Exclusive OR
		[Mask Pattern]	Set a pattern value to mask in hexadecimal. The setting range depends on the setting of [Data Type] in the [Device/Style] tab.
2)	[Bit Shift]	—	Set the operation of shift processing.
		[Shift Direction]	Select a shifting direction.
		[Number of Shifts]	Set the number of bits to be shifted. The setting range depends on the setting of [Data Type] in the [Device/Style] tab.
3)	[Data Operation]	—	Set the format of the expression.
		[None]	Does not perform the data operation by using the expression.
		[Data Expression]	Performs the data operation by using the expression. Click the [Exp] button to set an expression in the [Edit Data Expression] dialog. ☞ Page 1054 [Edit Data Expression] dialog

[Script]

For the script settings, refer to the following.

☞ Page 2447 Object script



■Relationship between the object settings and object properties

Object settings can be read (referenced) or written (changed) using object properties.

The following shows the correspondence between readable/writable object properties and the setting items in the object setting dialog.

○: Available

×: Not available

—: No applicable setting item

Setting dialog		Object property			
Tab name	**Setting item**	**Property name**	**Read**	**Write**	**Timing for reflecting the setting change*1**
—	—	active	○	○	Upon the setting change
		x	○	○	When the screen is updated
		y	○	○	When the screen is updated
		width	○	×	×
		height	○	×	×
[Extended]	[Security Level]	security	○	○	When the screen is updated

*1 For information on how long it takes for object property settings to be reflected on the screen, refer to the following page.

☞ Page 2456 Timing at which the setting change of an object property is reflected

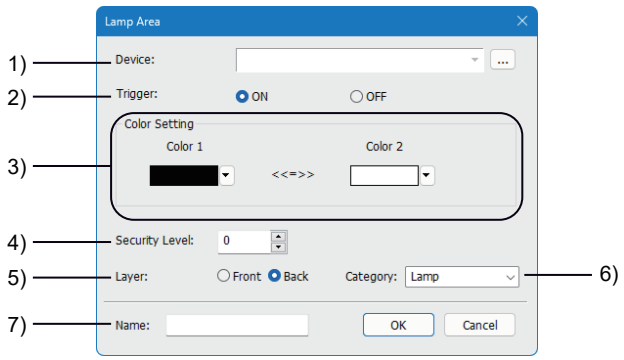
28.6 [Lamp Area] dialog

GT37 SoftGOT3000

The figures and objects in the lamp area are switched between two colors in units of dots according to the status of the applicable bit device.

Window

1. Select [Object] → [Lamp] → [Lamp Area] from the menu.
2. Click the position to place a lamp area.
3. Adjust the dotted frame to specify the applicable lamp area.
4. Double-click the lamp area to display the setting dialog.



Item		Description
1)	[Device]	Set a device to be monitored. ☞ Page 834 How to set devices, labels, and tags
2)	[Trigger]	Select the ON or OFF status of the bit device as the trigger condition to switch the colors.
3)	[Color Setting]	Set [Color 1] and [Color 2] as the two target colors to be switched when the condition is satisfied. The set colors are switched every time the condition is satisfied.
4)	[Security Level]	Set the security level. The setting range is [0] to [15]. If you do not use the security function of the GOT, select [0]. ☞ Page 3038 Restricting display and operation on the GOT (Screen security)
5)	[Layer]	Select a layer on which the object is placed. Select the same layer as that of the figure and object to which the lamp area is applied. ☞ Page 65 Layer
6)	[Category]	Select the category to assign the object. ☞ Page 1121 Managing figures and objects by category
7)	[Name]	Set the object name. The name is displayed in places such as the data browser and property sheet. Up to 100 characters can be set.

29 Placing a numerical display or numerical input object

☞ Page 1306 Overview of the numerical display and numerical input objects
☞ Page 1308 How to use the numerical display and numerical input objects
☞ Page 1314 Specifications of the numerical display and numerical input objects
☞ Page 1316 Configuring the settings for a numerical display or numerical input object
☞ Page 1317 [Numerical Display] dialog
☞ Page 1328 [Numerical Input] dialog
☞ Page 1342 Relevant settings

29.1 Overview of the numerical display and numerical input objects

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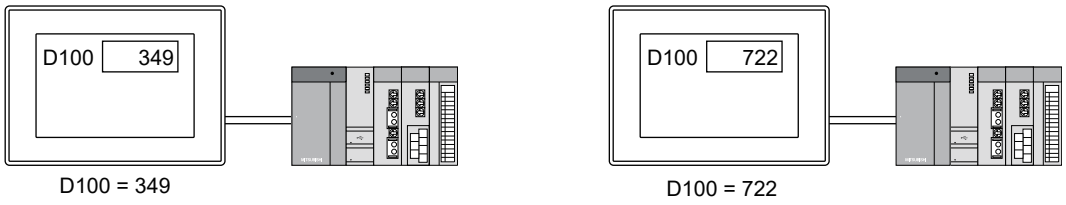
29.1.1 Numerical display

With this function, the data stored in devices are displayed numerically on the GOT.



29.1.2 Numerical input

With this function, values entered into the GOT are written into devices.

Two methods are available for numerical input.

☞ Page 1306 Entering values with keys for entries

☞ Page 1307 Entering the numerical values read with a barcode reader or RFID reader

Entering values with keys for entries

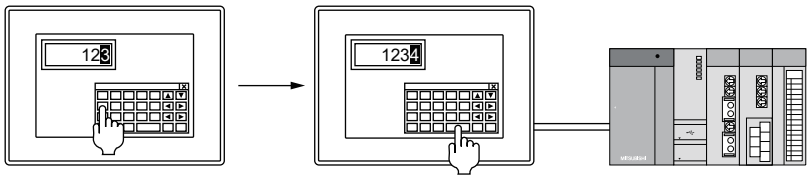
A value can be entered on a key window or using key code switches.

■Entering from a key window

A value can be entered on the key window displayed by touching the numerical input object placed on the base screen.

For the key window, refer to the following.

☞ Page 558 Setting key windows of the GOT ([Key Window])

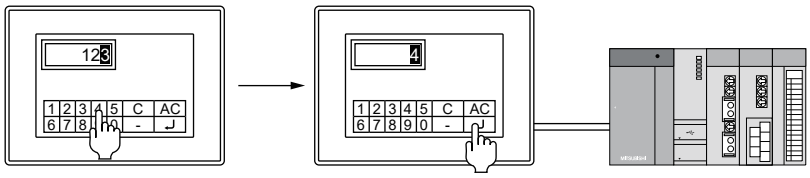


■Using key code switches placed on the screen

A value can be entered by using the key code switches placed on the base screen without displaying a key window.

For key code switches, refer to the following.

☞ Page 1251 [Key Code Switch] dialog



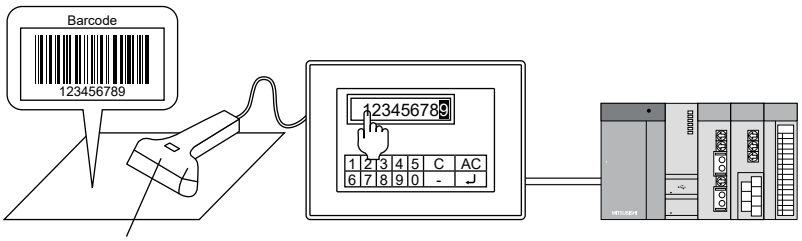
Entering the numerical values read with a barcode reader or RFID reader

A value can be entered with a barcode reader or RFID reader.

When entering data with a barcode reader or RFID reader, set the barcode function or RFID function.

☞ Page 2564 Using a barcode reader with the GOT (barcode function)

☞ Page 2588 Using an RFID with the GOT (RFID function)



Barcode reader

The corresponding numerical value is input in a touched numerical input.

Precautions

Item	Description
Reading data with a barcode reader or RFID reader during entry on the key window	Depending on the operation, the read data may not be entered. • While displaying dialog windows The data read with a barcode reader or RFID reader cannot be entered. • While not displaying dialog windows The value being entered on the key window is discarded, and the data read with a barcode reader or RFID reader is entered.
Performing key touch operations while the data read with a barcode reader or RFID reader is being entered	While the data read with a barcode reader or RFID reader is being entered, key touch operations are invalid and the data read with a barcode reader or RFID reader is entered.
When data is not numerical values or insufficient for the specified start position	When the data read with a barcode reader or RFID reader is applicable to the following cases, the data is not entered. • Other than numerical values • The format of the data is different from the setting of [Format] • The data is insufficient for the setting of [Start Position].

29.2 How to use the numerical display and numerical input objects

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☞ Page 1308 Superimposing on a level object
☞ Page 1308 Specifying the destination to which the cursor moves after the confirmation of a numerical value entry
☞ Page 1312 Specifying the input range for a numerical input
☞ Page 1312 Checking the input range while entering numerical values
☞ Page 1313 Displaying character strings instead of numerics

For the basic usage of the numerical display and numerical input objects, refer to the following.

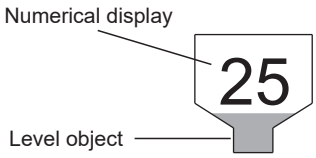
☞ Page 1306 Overview of the numerical display and numerical input objects

For information on how to place a numerical display or numerical input object, refer to the following.

☞ Page 1316 Configuring the settings for a numerical display or numerical input object

29.2.1 Superimposing on a level object

A numerical display or numerical input object can be superimposed on a level object.



For restrictions on superimposition on a level object, refer to the following.

☞ Page 1761 Placing a level object

29.2.2 Specifying the destination to which the cursor moves after the confirmation of a numerical value entry

When [User ID] is set, the destination to which the cursor moves after the confirmation of a numerical value entry can be specified.

[User ID] can be set only when the numerical input object is used.

☞ Page 1335 [Extended] tab

About [User ID]

The user ID is a number to identify the object.

When [User ID] is set, the following setting and operations are enabled.

☞ Page 1308 Setting the display position of the cursor when the screen is switched or the enter key is pressed
☞ Page 1309 Checking the timing for confirming numerical input with the system information
☞ Page 1310 Moving the cursor in ascending or descending order of user ID number
☞ Page 1310 Specifying objects that were used with operation logs

■Setting the display position of the cursor when the screen is switched or the enter key is pressed

In the [Environmental Setting] window ([Key Window]) or the screen property, the display position of the cursor when the screen is switched or the enter key is pressed can be set.

For details, refer to the following.

☞ Page 558 Setting key windows of the GOT ([Key Window])
☞ Page 313 Changing screen property

■Checking the timing for confirming numerical input with the system information

When an entered value is confirmed with the numerical input function, the corresponding user ID number is written in [Numeric Value Input Number] of [System Information], and the Numeric Value Input signal (System information 2-1.b4) turns on.

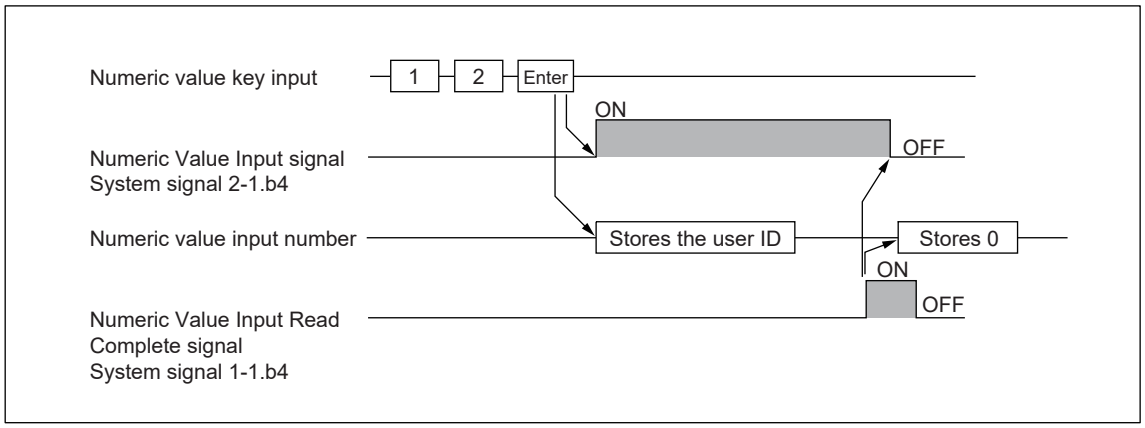
When deleting the user ID written to the numeric value input number or turning off the Numeric Value Input signal (System signal 2-1.b4), turn on the Numeric Value Input Read Complete signal (System signal 1-1.b4).

After clearing, turn off the Numeric Value Input Read Complete signal (System signal 1-1.b4).

Otherwise user ID numbers cannot be stored and bit devices cannot turn on even when numerical value entries are confirmed.

For details on the system information, refer to the following.

☞ Page 576 Setting a device which controls the GOT operations or notifies the GOT status ([System Information])



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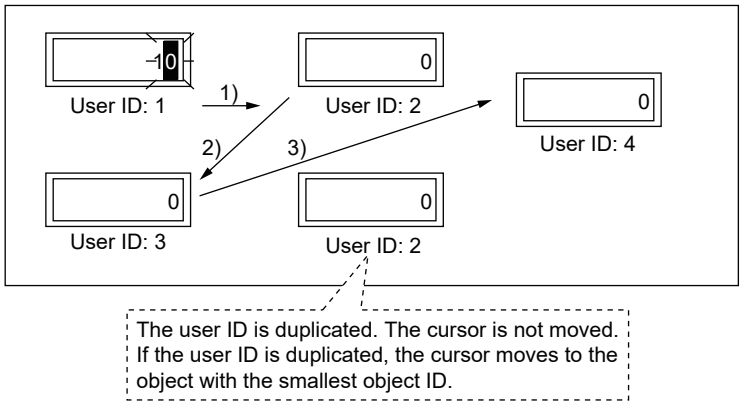
■Moving the cursor in ascending or descending order of user ID number

When the following key code switches are used, the cursor can be moved in ascending or descending order of user ID number.

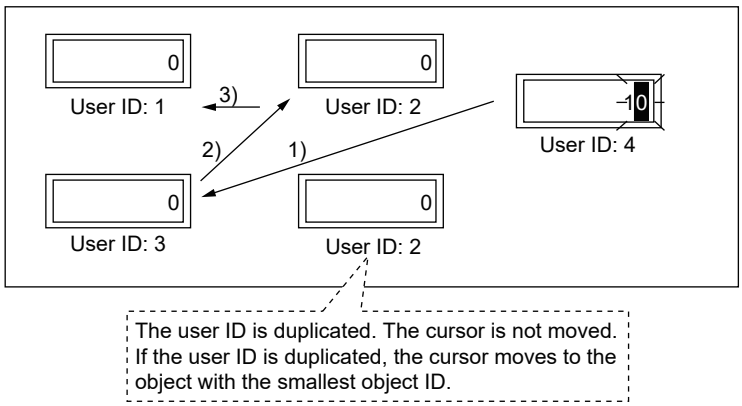
• User ID ascending order movement of cursor (key code: 0092h)



The cursor is moved in order of 1) → 2) → 3).

After 3), the cursor does not move because the destination user ID number does not exist.

• User ID descending order movement of cursor (key code: 0093h)



The cursor is moved in order of 1) → 2) → 3).

After 3), the cursor does not move because the destination user ID number does not exist.

For details on key code switches, refer to the following.

☞ Page 1251 [Key Code Switch] dialog

■Specifying objects that were used with operation logs

When input is performed with an object, the user ID is also recorded in the operation log.

Setting a user ID to the object enables you to identify the manipulated object.

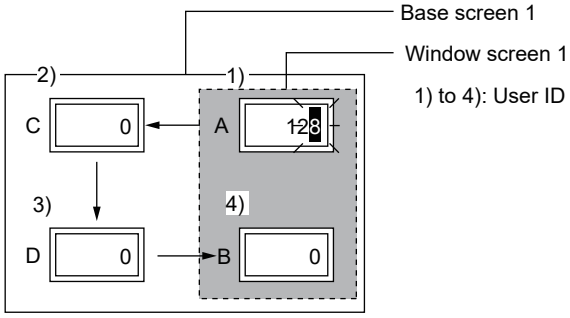
☞ Page 1909 Configuring the settings for collecting the GOT operation history ([Operation Log])

User ID setting

When controlling the cursor using user ID numbers, assign different user ID numbers to each object.
Also, when using overlay screens or superimpose windows, set screens in a way that different user ID numbers are assigned to each object.
When the same user ID number is assigned to different objects, the cursor operation may not perform normally.

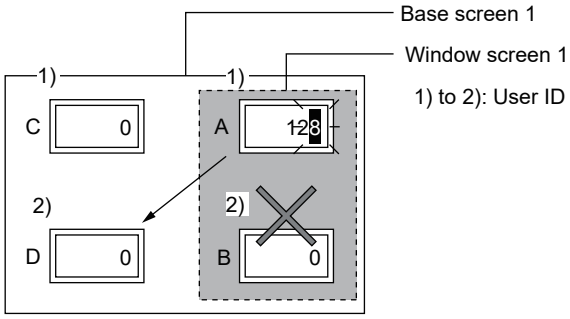
■When assigning different user ID numbers to each object

Even if a set overlay screen object or superimpose window is used, the cursor operation using user ID numbers is performed normally.



■When assigning the same user ID number

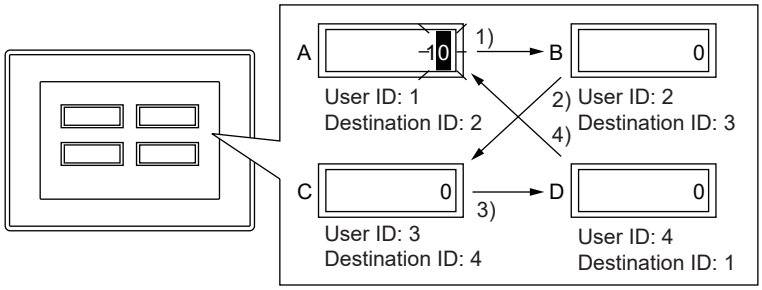
If objects having the same user ID exist on the screen (including set overlay screen objects and superimpose windows), the cursor operation using user ID numbers may not perform normally.



Relation between user ID and destination ID

Move the cursor to the object that has the same user ID number as the move destination ID number of the active object.
☞ Page 1335 [Extended] tab

Ex.
Moving the cursor using the destination ID number



29.2.3 Specifying the input range for a numerical input

The range of values to be entered with a numerical input object can be specified.

Set the condition for the input rage in the [Numerical Input] dialog ([Input Case] tab).

☞ Page 1334 [Input case] tab

29.2.4 Checking the input range while entering numerical values

Display the [Display Detail Setting] dialog from the [Environmental Setting] window ([Key Window]) or screen property, and select [Check the input range while entering numerical values] to check the range while inputting numerical values.

For details, refer to the following.

☞ Page 558 Setting key windows of the GOT ([Key Window])

☞ Page 313 Changing screen property

Set the condition for the input rage in the [Numerical Input] dialog ([Input Case] tab).

☞ Page 1334 [Input case] tab

Number of conditions that can be set

One condition can be set.

If two or more conditions are set, the input range is checked when the entry is confirmed, not when numerical values are being entered.

Settable conditional expressions

Set either of the following patterns.

If a conditional expression is not set using the following patterns, the input range is checked when the entry is confirmed.

Settable pattern for a conditional expression	Description of the symbol
$W < A $W <= A	• $W: Device set with a numerical input object • A: Constant, another device (positive value (+) only)
A < $W < B A <= $W < B A < $W <= B A <= $W <= B	• $W: Device set with a numerical input object • A: Constant, another device • B: Constant, another device (positive value (+) only)

Precautions during input

Item	Description
Inputting a negative value	To enter a negative value, first enter a minus sign (-), then enter a numerical value.
Inputting a decimal point	If the decimal point automatic adjustment is disabled and no data operation is set, the fractional portion is rounded down.
Timing of range check for lower limits	The input range is checked when the entry is confirmed.
Comparing with devices	In a case where comparison with a device is made, a message is displayed when the device value cannot be read.
Moving the cursor	When the cursor in the object is moved while a numerical value is entered, the range is not checked while the numerical value is entered. The input range is checked when the entry is confirmed. To have the range checked while entering a numerical value, hide the cursor (cancel the input status of the numerical input), and then execute the numerical input again.

29.2.5 Displaying character strings instead of numerics

Character strings can be displayed instead of numerics.

By setting conditions, you can display a character string when the device value is within a certain range, and change the character string according to changes in the device value.

The character string is set in the [Numerical Input] dialog or in the [Style] tab of the [Numerical Display] dialog.

☞ Page 1317 [Numerical Display] dialog

☞ Page 1328 [Numerical Input] dialog

29.3 Specifications of the numerical display and numerical input objects

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☞ Page 1314 Maximum number of objects that can be placed on one screen
☞ Page 1314 Numerical display when a data operation error occurs
☞ Page 1315 Operation when a numerical input object is placed on the base screen and a window screen
☞ Page 1315 Entering a space or symbol
☞ Page 1315 Entering an integer

29.3.1 Maximum number of objects that can be placed on one screen

A total of 1024 numerical displays, numerical inputs, and other objects can be placed on one base screen, while 512 can be placed on one window screen.

29.3.2 Numerical display when a data operation error occurs

If there is any of the following errors in an operation of the displayed data, the object displays the number of hyphens corresponding to the number of displayed digits.

- BCD-BIN conversion error
- Division by zero error
- 64-bit operation overflow

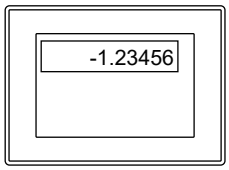
While the object displays hyphens, touch the input value area to display 0 in the area.

Display of a value containing a symbol or decimal point

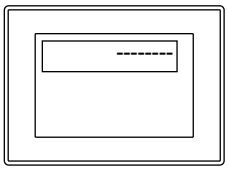
A symbol and a decimal point, which are contained in a value, are also displayed as hyphens.

Ex.

When the settings are configured as follows: display format: real, number of displayed digits: 8 (fractional portion: 5), and right alignment



Normal display



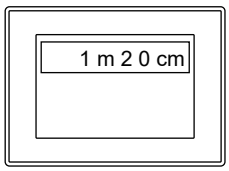
Display at an error occurrence

Display when characters and numerics are displayed together

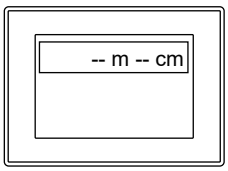
Of a character string specified as [Format String], numerics are displayed as hyphens, and characters are displayed as they are.

Ex.

When the settings are configured as follows: display format: decimal, specified character string: ##m##cm, and right alignment



Normal display



Display at an error occurrence

29.3.3 Operation when a numerical input object is placed on the base screen and a window screen

If a numerical input object is placed on both a base screen and an overlap window, displaying a cursor for input using a method other than a touch operation (special function switch to display the key window, etc.) displays the cursor on the overlap window.

To display the cursor for the numerical input on the base screen, press the numerical input on the base screen.

29.3.4 Entering a space or symbol

If you enter only a space or symbol using a numerical input object and then touch the Enter key, the entry is cancelled.

To enter only a space or symbol as a device value, use the text input.

☞ Page 1345 Placing a text display or text input object

29.3.5 Entering an integer

When you enter an integer using a numerical input object in a device that satisfies all the following conditions, the value to be stored in the device and the value to be displayed on the GOT differ.

- [Data Type] in the [Device] tab is set to [Real(32bit)].
- [Format] in the [Device] tab is set to [Binary] or [Hexadecimal].

Ex.

Entering 1 (integer) in the device for which [Data Type] is set to [Real(32bit)] and [Format] is set to [Hexadecimal]

- Value to be stored in the device: 1 (integer)
- Value to be displayed on the GOT: 0

29.4 Configuring the settings for a numerical display or numerical input object

Use the following procedure to place a numerical display or numerical input, and configure the operation settings.

Configuring the settings for a numerical display object

Operating procedure

1. Select [Object] → [Numerical Display/Input] → [Numerical Display] from the menu.
2. Click the position to place a numerical display object.

☞ Page 1001 Placing figures and objects

3. Double-click the object to display the setting dialog.
4. Configure the operation settings in each tab of the [Numerical Display] dialog.

☞ Page 1317 [Numerical Display] dialog

For the operations common to all objects or editing operations except operation settings, refer to the following.

☞ Page 988 Color settings

Configuring the settings for a numerical input object

Operating procedure

1. Select [Object] → [Numerical Display/Input] → [Numerical Input] from the menu.
2. Click the position to place a numerical input object.

☞ Page 1001 Placing figures and objects

3. Double-click the object to display the setting dialog.
4. Configure the operation settings in each tab of the [Numerical Input] dialog.

☞ Page 1328 [Numerical Input] dialog

For the operations common to all objects or editing operations except operation settings, refer to the following.

☞ Page 988 Color settings

29.5 [Numerical Display] dialog

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☞ Page 1317 [Device] tab
☞ Page 1321 [Style] tab
☞ Page 1323 [Extended] tab
☞ Page 1324 [Trigger] tab
☞ Page 1325 [Operation/Script] tab

29.5.1 [Device] tab

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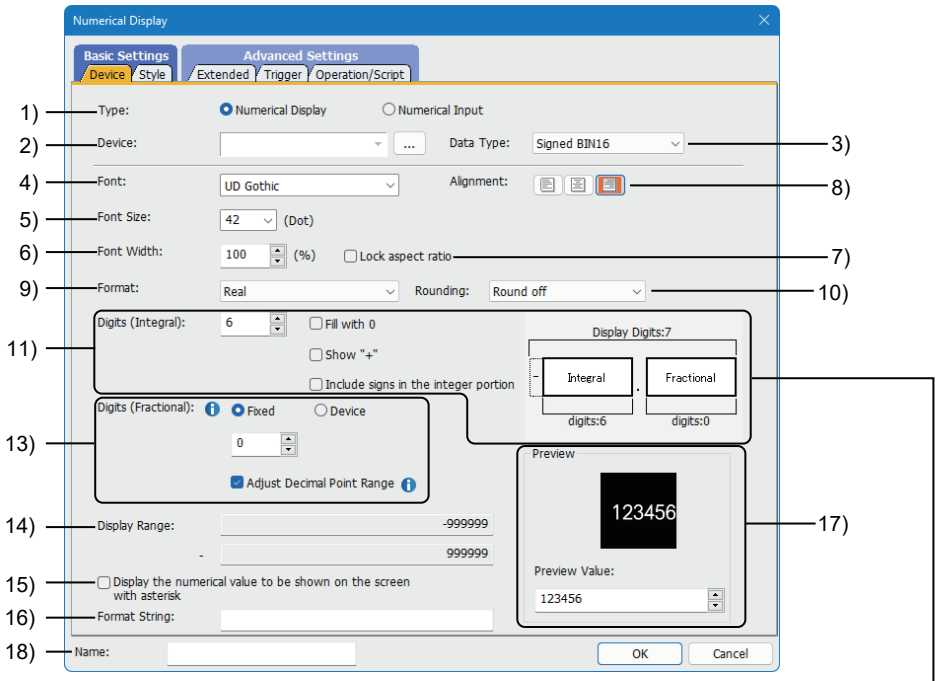
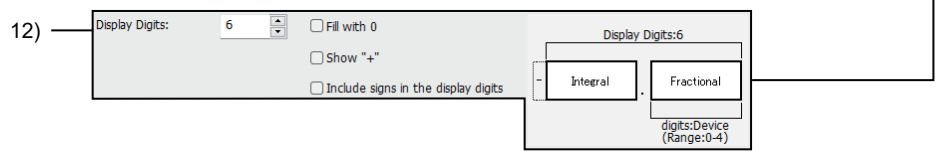
For mobile screens, some setting items are not available.

☞ Page 2742 Usable functions



When [Fixed] is selected for [Digits (Fractional)]



When [Device] is selected for [Digits (Fractional)]

Item		Description
1)	[Type]	Select the function to be used.
2)	[Device]	Set a device to be monitored. ☞ Page 834 How to set devices, labels, and tags
3)	[Data Type]	Select the data type of the device.
4)	[Font]	Select the font of the numerical value to be displayed. ☞ Page 74 Specifications of displayable characters
5)	[Font Size]	Set the vertical size of the numerical value. The setting range is [8] dots to [540] dots.

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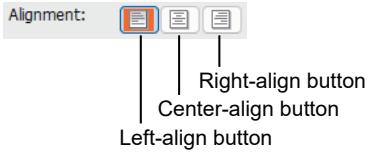
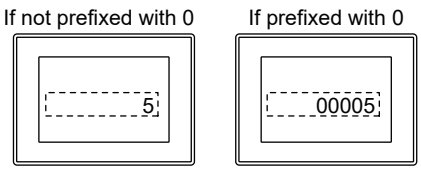
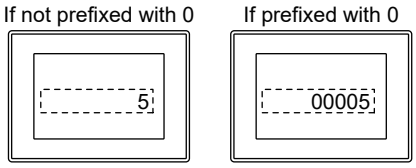
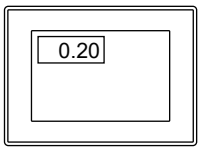
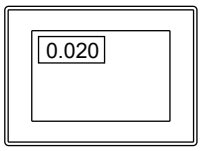
Item			Description
6)	[Font Width]		Set the horizontal size of the numerical value. The horizontal size is specified with the magnification relative to [Font Size] (vertical text size). The setting range is [6]% to [1600]%.
7)	[Lock aspect ratio]		The aspect ratio of the numerical value is retained even when the numerical value is resized by manipulation of the handle on the screen editor.
8)	[Alignment]		Set the horizontal position (left-aligned, centered, or right-aligned) of the numerical value. 
9)	[Format]		Select the display type of the device to be monitored. The selectable items vary with the data type of the device. For details, refer to the following. ☞ Page 1320 Selectable range for [Format]
10)	[Rounding]		This item is displayed when [Format] is set to [Real]. If there is a numerical value that have digits to the right of the digit set for [Digits (Fractional)], select the processing method.
11)	[Digits (Integral)]	—	This item is displayed when [Digits (Fractional)] is set to [Fixed]. Set the number of digits of the integer part to be displayed. The setting range depends on the setting of [Format]. • [Signed Decimal] or [Unsigned Decimal]: [1] to [21] • [Hexadecimal]: [1] to [16] • [Octal]: [1] to [6] • [Binary] or [Real]: [1] to [32]
		[Fill with 0]	This item is enabled when [Alignment] is set to right alignment. The numerical value is prefixed with 0 according to the setting value of [Digits (Integral)]. Example) When setting [5] for [Digits (Integral)]  When [Format] is set to [Binary], the GOT displays the numerical value prefixed with 0, regardless of the setting of [Fill with 0].
		[Show "+"]	This item is displayed when [Format] is set to [Signed Decimal] or [Real]. When the numerical value is positive number, [+] is prefixed to the numerical value.
		[Include signs in the integer portion]	This item is displayed when [Digits (Fractional)] is set to [Fixed], and [Format] is set to either of the following items. • [Signed Decimal] • [Real] A sign is displayed as one of the digits of the integer part.
12)	[Display Digits]	—	This item is displayed when [Format] is set to [Real], and [Digits (Fractional)] is set to [Device]. Set the total number of digits of the integer part and fractional part to be displayed. The setting range is [1] to [32].
		[Fill with 0]	This item is enabled when [Alignment] is set to right alignment. The numerical value is prefixed with 0 according to the setting value of [Display Digits]. Example) When setting [Display Digits] to [5] 
		[Show "+"]	This item is displayed when [Format] is set to [Signed Decimal] or [Real]. When the numerical value is positive number, [+] is prefixed to the numerical value.
		[Include signs in the display digits]	This item is displayed when [Format] is set to [Real], and [Digits (Fractional)] is set to [Device]. A sign is displayed as one of the digits to be displayed.

Item			Description
13)	[Digits (Fractional)]	—	This item is displayed when [Format] is set to [Real]. Select a method to specify the number of decimal places, and specify the number of decimal places to be displayed. The following shows selectable items. • [Fixed] Enter the number of decimal places. The setting range is [0] to [30]. • [Device] Set a device to specify the number of decimal places. The number of decimal places changes based on the device value. The data type of the device is unsigned 16-bit binary. Set the device value as follows. X > Y + 1 X: Value set for [Display Digits] Y: Device value to specify the number of decimal places If the device value is outside the valid range, 0 is assumed.
		[Adjust Decimal Point Range]	This item is displayed when [Format] is set to [Real], and [Data Type] is set to other than the following items. • [Real(32bit)] • [Real(64bit)] (When a value other than binary floating values is held in the monitor target device) the integer device value is displayed as a value with the decimal point. Example) Number of the digits to the right of the decimal point: 2 Controller device value: 20  The value is displayed as 0.20 on the GOT. Example) Number of the digits to the right of the decimal point: 3 Controller device value: 20  The value is displayed as 0.020 on the GOT. Automatic adjustment is performed for the following devices. • Monitored device • [$V] and [Other Device] used in the conditional expression for display attributes in the [Style] tab • [$$] and [Other Device] used for data operation in the [Operation/Script] tab
			When the data type is 64-bit and either of the following conditions is satisfied, 14 digits in the fractional portion are significant after automatic adjustment. • Data operation is set. • Object internal variables are used. ☞ Page 1050 Operating expression In the conditional expression for display attributes, 14 digits in the fractional portion are significant, and operation is performed with the value before automatic adjustment.
14)	[Display Range]		Displays the maximum/minimum value which can be displayed on the screen.
15)	[Display the numerical value to be shown on the screen with asterisk]		This item is displayed when [Font] is set to other than [7-Segment Font]. The numerical value, sign, and decimal point to be displayed on the screen are displayed with asterisks. The character string (except #) set for [Format String] is not displayed in asterisk. When saved as an operation log, the text is saved not as an asterisk but as a numerical value.
16)	[Format String]		This item is displayed when [Font] is set to other than [7-Segment Font]. Characters (such as alphanumeric characters, kanji, or symbols) are displayed in the numerical display object. Enter #s to the positions where the digits of a numerical value are to be displayed. The #s entered in setting this item are replaced with the digits of the device value. Each # is replaced with the digit of the value in the same position counted from the right. If the number of the digits of the device value is larger than that of #s, the digits overflowing from the left are not displayed. The digits of a real number to the right of the decimal point are processed according to the setting for [Rounding]. The sign included in the device value is also processed in the same way that processes the numerical value. For display examples, refer to the following. ☞ Page 1320 Display examples when a format string is set When a character is entered in the field for [Format String], the following setting changes occur. • The settings of [Digits (Integral)] and [Display Digits] become invalid. • The setting of [Alignment] becomes invalid and is changed to right alignment.
17)	[Preview]	—	Displays the preview of the screen.
		[Preview Value]	Set the numerical value to be displayed in the preview.

Item		Description
18)	[Name]	Set the object name. The name is displayed in places such as the data browser and property sheet. The setting can also be changed in other tabs. Up to 100 characters can be set.

Selectable range for [Format]

○: Supported, —:Not supported

[Data Type]	[Format]					
	[Signed Decimal]	[Unsigned Decimal]	[Hexadecimal]	[Octal]	[Binary]	[Real]
[Signed BIN8]	○	○	○	○	○	○
[Unsigned BIN8]	○	○	○	○	○	○
[Signed BIN16]	○	○	○	○	○	○
[Unsigned BIN16]	○	○	○	○	○	○
[Signed BIN32]	○	○	○	—	○	○
[Unsigned BIN32]	○	○	○	—	○	○
[Signed BIN64]	○	○	○	—	—	○
[Unsigned BIN64]	○	○	○	—	—	○
[BCD16]	○	○	○	○	○	○
[BCD32]	○	○	○	—	○	○
[BCD64]	○	○	○	—	—	○
[Real(32bit)]	○	○	○	—	○	○
[Real(64bit)]	○	○	○	—	—	○

Display examples when a format string is set

Ex.

When the setting for [Format] is not [Real]

Format string	Digits in the fractional portion	Device value	Display
##m##cm	—	1234	12m34cm
		123	1m23cm
		12345	23m45cm
		-123	-1m23cm

Ex.

When setting [Real] for [Format] and [Round off] for [Rounding]

Format string	Digits in the fractional portion	Device value	Display	Description
##m##cm	0	12.345	m12cm	Since [Digits (Fractional)] is 0, only the integer part is displayed.
	2		12m35cm	Since [Digits (Fractional)] is 2, the digits from the integer part to the second decimal place are displayed. The device value is rounded off to the third decimal place.
####cm	2	12.344	1234cm	Since [Digits (Fractional)] is 2, the device value is rounded off to the third decimal place.
		12.345	1235cm	
##.##cm	2	12.344	12.34cm	
		12.345	12.35cm	

29.5.2 [Style] tab

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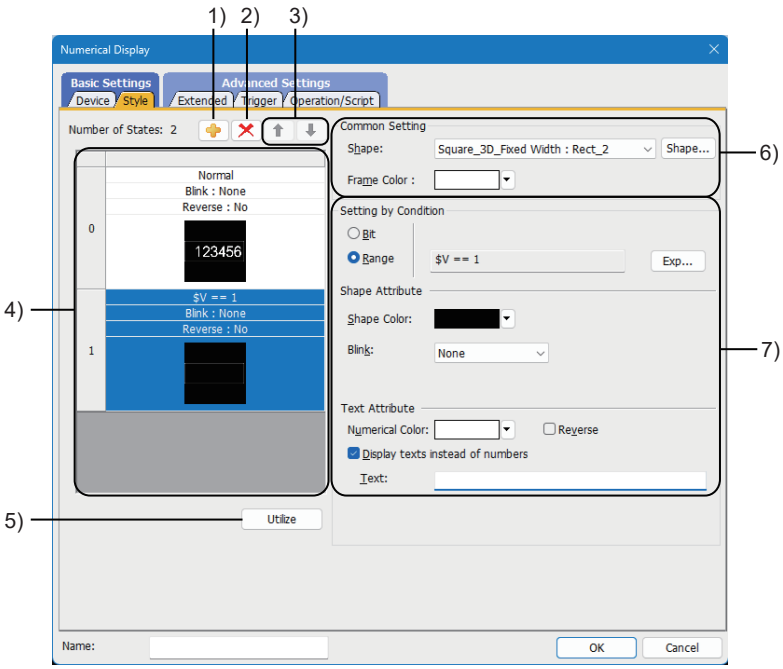
For mobile screens, some setting items are not available.

☞ Page 2742 Usable functions

For the conditions, refer to the following.

☞ Page 1038 Control with conditions



Item			Description
1)	Add button		Adds a new condition.
2)	Delete button		Deletes the selected condition.
3)	Up button Down button		Changes the priority order of the conditions in the preview list.
4)	Preview list		Displays the status set for each condition.
5)	[Utilize] button		Utilizes the selected condition to create a new condition.
6)	[Common Setting]	—	This setting is applied regardless of the satisfied condition.
		[Shape]	Select the shape to be set for the object from the list or with the [Shape] button. ☞ Page 1044 Object shape When the text to be displayed overlaps the shape frame area, the text cannot be displayed normally. Configure the settings so that the text and the shape frame area do not overlap. View in GT Designer3 → View on the GOT 123456 → 2345(Frame shape area Characters which overlap with the frame shape area are not displayed.
		[Frame Color]	Select a frame color for the shape. ☞ Page 988 Color settings

PART 7

Item				Description
7)	[Setting by Condition]	—		Set the condition to be satisfied for the conditions selected in the preview list. When setting the word device value as the condition, click the [Exp] button to display the [Edit Range] dialog, and then set the conditional expression. For details on the conditions, refer to the following. ☞ Page 1038 Control with conditions The following setting items can be changed for each condition.
		[Shape Attribute]	[Shape Color]	Select the shape color. ☞ Page 988 Color settings
			[Blink]	Select the blinking speed of the numerical value and shape.
			[Blink Scope]	Select the area to be blinked.
		[Text Attribute]	[Numerical Color]	Set the color of the numerical value. ☞ Page 988 Color settings
			[Reverse]	Inverts the color of the numerical value.
			[Display texts instead of numbers]	Set the character string to be displayed instead of numerics. Up to 40 characters can be set. If you input 40 two-byte characters, the text may be truncated.

29.5.3 [Extended] tab

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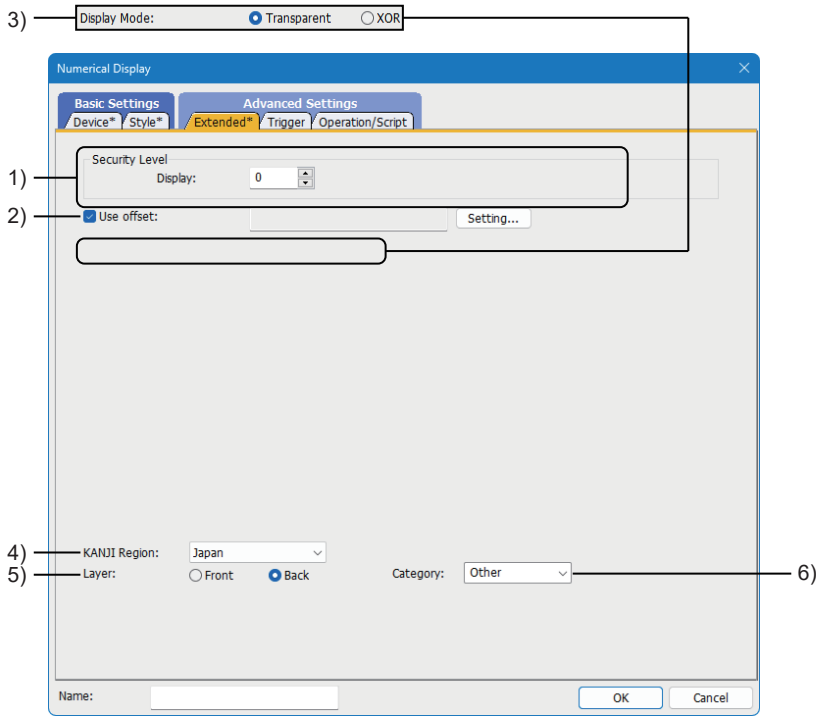
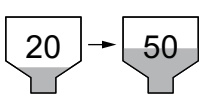
For mobile screens, some setting items are not available.

☞ Page 2742 Usable functions



Item		Description	
1)	[Security Level]	Set the security level. The setting range is [0] to [15]. If you do not use the security function of the GOT, select [0]. ☞ Page 3038 Restricting display and operation on the GOT (Screen security)	
2)	[Use offset]	Configure the settings to monitor the statuses of multiple devices by switching between them with a single device. After selecting this item, set the offset device. ☞ Page 963 Offset	
3)	[Display Mode]	Display mode when the numerical display object is superimposed on a level object. This setting is not displayed when [Enable the antialiasing] is selected in the [Type Setting] dialog ([Basic Setting]). The operation when [Transparent] is selected is applied. ☞ Page 519 [Type Setting] dialog	
		[Transparent]	Displays the numerical value on the level object.
		[XOR]	The numerical value in a numerical display object is integrated into the XOR synthesis with a level color, to be able to be distinguished from the level object. 
4)	[KANJI Region]	Select the KANJI region of the displayed text. ☞ Page 76 KANJI region This item is displayed when [Format String] is set in the [Device] tab or when [Display texts instead of numbers] is set in the [Style] tab.	
5)	[Layer]	Select the layer to place the object. ☞ Page 65 Layer	
6)	[Category]	Select the category to assign the object. ☞ Page 1092 Efficient Drawing with Templates	

29.5.4 [Trigger] tab

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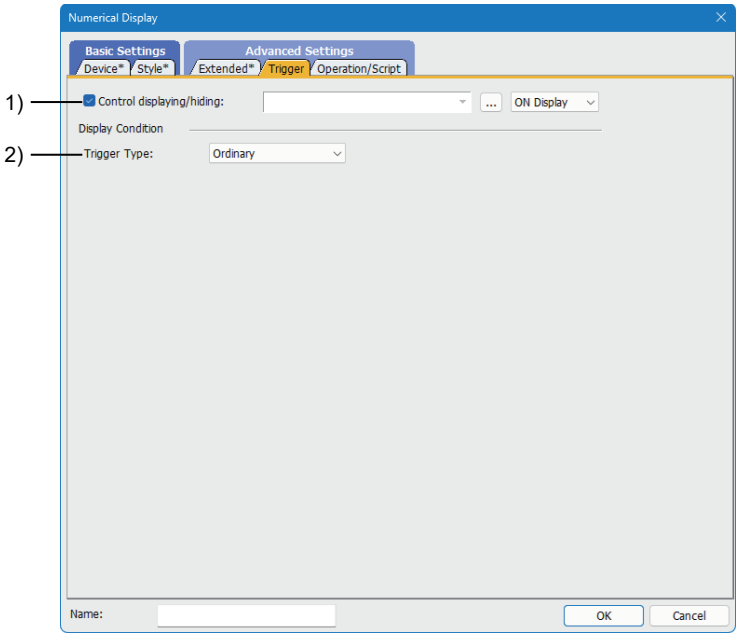

Item		Description
1)	[Control displaying/hiding]	Enables the setting to display the object only when requirements are met. Set the following as requirements. • Bit device for control • When to display: When the bit device for control is on or off
2)	[Trigger Type]	Select a trigger condition to display the object. For details on the trigger types, refer to the following. ☞ Page 969 Trigger types settable for the object display condition

29.5.5 [Operation/Script] tab

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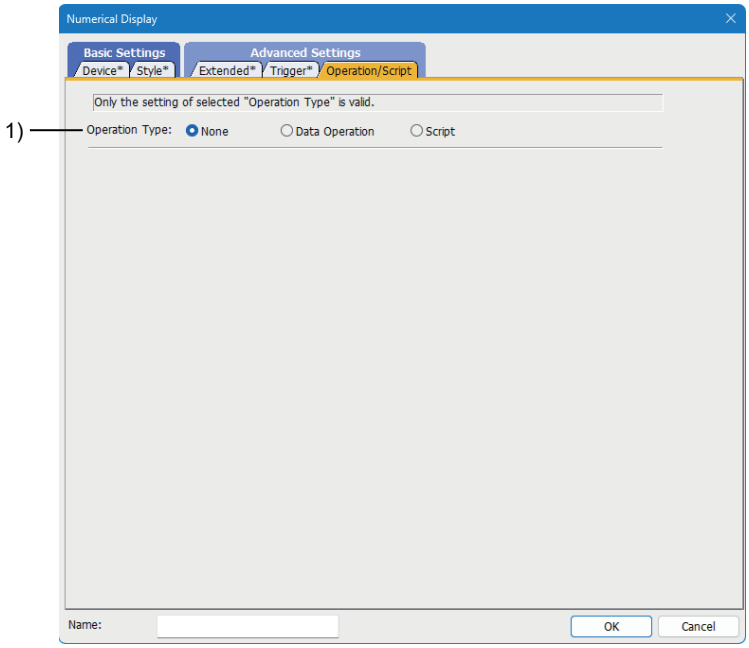
For mobile screens, some setting items are not available.

☞ Page 2742 Usable functions

Set an expression for monitoring using the data operation function or the script function.



Item			Description
1)	[Operation Type]	[None]	The data operation function and the script function are not used.
		[Data Operation]	Set the expression used for the data operation function. ☞ Page 1326 [Data Operation]
		[Script]	Set the expressions for the script function. ☞ Page 1327 [Script]

PART 7

[Data Operation]

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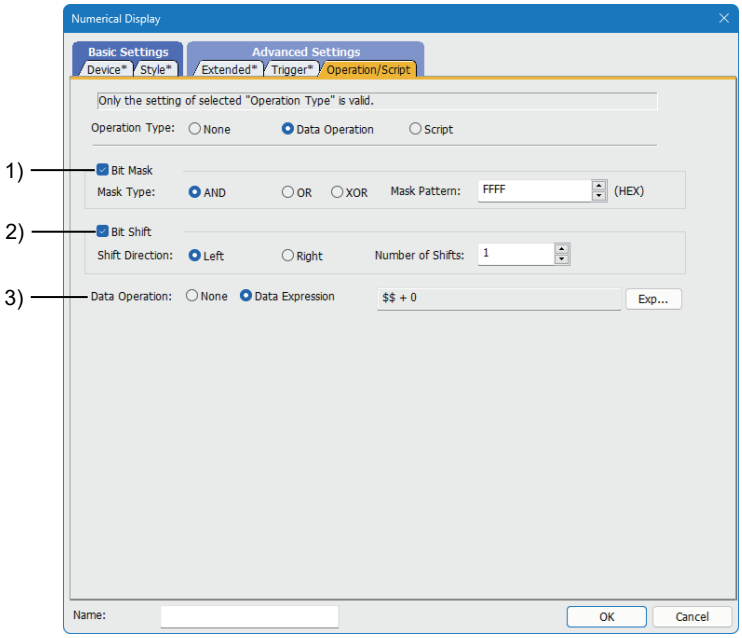
For details on the data operation settings, refer to the following.

☞ Page 1049 Data operation



Item			Description
1)	[Bit Mask]	—	Set the operation of mask processing.
		[Mask Type]	Select the type of mask processing. The following shows selectable items. • [AND]: Logical AND • [OR]: Logical OR • [XOR]: Exclusive OR
		[Mask Pattern]	Set a pattern value to mask in hexadecimal. The setting range depends on the setting of [Data Type] in the [Device] tab.
2)	[Bit Shift]	—	Set the operation of shift processing.
		[Shift Direction]	Select a shifting direction.
		[Number of Shifts]	Set the number of bits to be shifted. The setting range depends on the setting of [Data Type] in the [Device] tab.
3)	[Data Operation]	—	Set the format of the expression.
		[None]	Does not perform the data operation by using the expression.
		[Data Expression]	Performs the data operation by using the expression. Click the [Exp] button to set an expression in the [Edit Data Expression] dialog. ☞ Page 1054 [Edit Data Expression] dialog

[Script]

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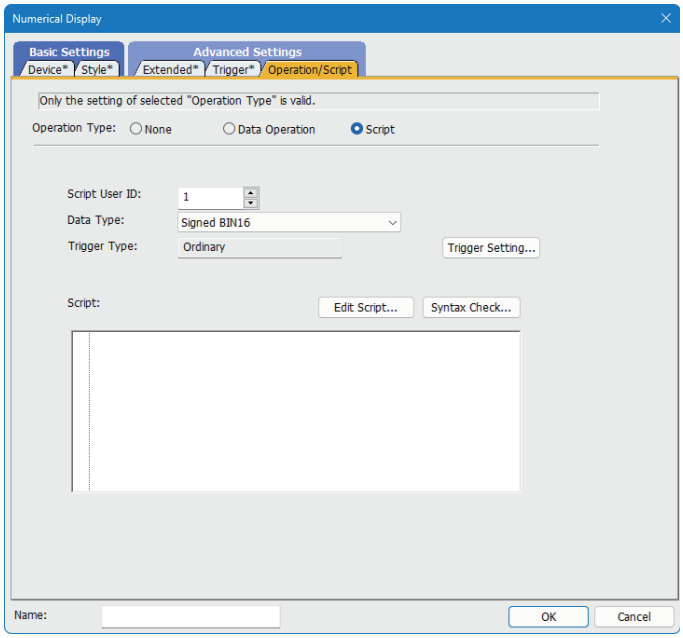
For details on the script settings, refer to the following.

☞ Page 2447 Object script



■Relationship between the object settings and object properties

Object settings can be read (referenced) or written (changed) using object properties.

The following shows the correspondence between readable/writable object properties and the setting items in the object setting dialog.

○: Available

×: Not available

—: No applicable setting item

Setting dialog		Object property			
Tab name	Setting item	Property name	Read	Write	Timing for reflecting the setting change*1
—	—	active	○	○	Upon the setting change
		x	○	○	When the screen is updated
		y	○	○	When the screen is updated
		width	○	×	×
		height	○	×	×
		text_width	○	○	When the object is updated
		text_height	○	○	When the object is updated
[Device]	[Alignment]	arrange	○	○	When the object is updated
	[Digits (Fractional)]	decimal_point	○*2	○*2	Upon the setting change
[Style]	[Frame Color]	frame_color	○	×	×
	[Shape Color]	plate_color	○	○	When the object is updated
	[Reverse]	highlight	○	○	When the object is updated
	[Blink] [Blink Scope]	blink	○	○	When the object is updated
	[Numerical Color]	text_color	○	○	When the object is updated
[Extended]	[Security Level]	security	○	○	When the screen is updated
	[Display Mode]	draw_mode	○	○	When the object is updated

*1 For information on how long it takes for object property settings to be reflected on the screen, refer to the following page.
☞ Page 2456 Timing at which the setting change of an object property is reflected

*2 Not available when [Device] is selected for [Digits (Fractional)].

29.6 [Numerical Input] dialog

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☞ Page 1328 [Device] tab
☞ Page 1332 [Style] tab
☞ Page 1334 [Input case] tab
☞ Page 1335 [Extended] tab
☞ Page 1337 [Trigger] tab
☞ Page 1338 [Operation/Script] tab

29.6.1 [Device] tab

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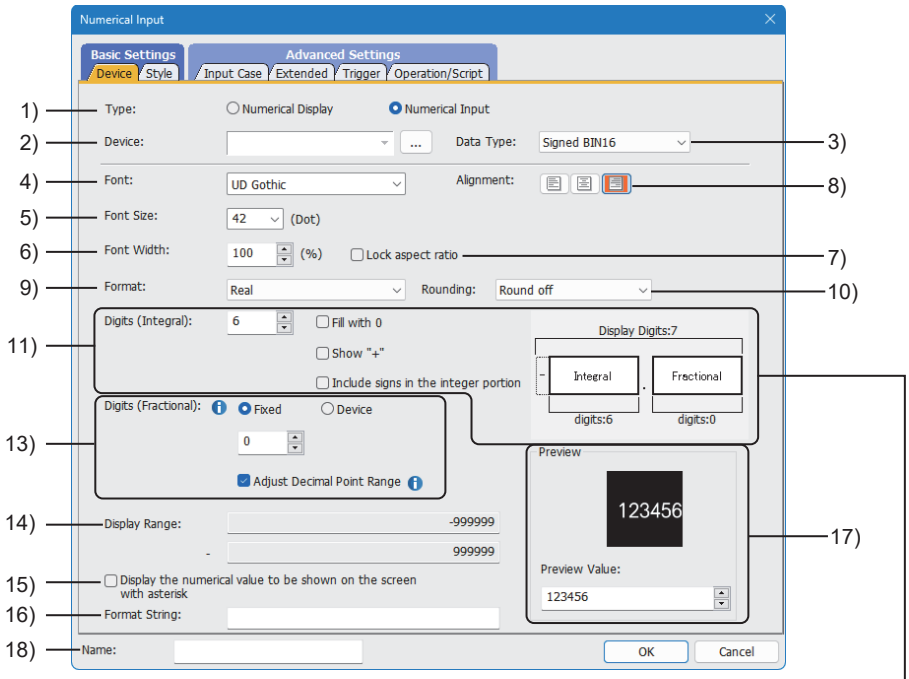
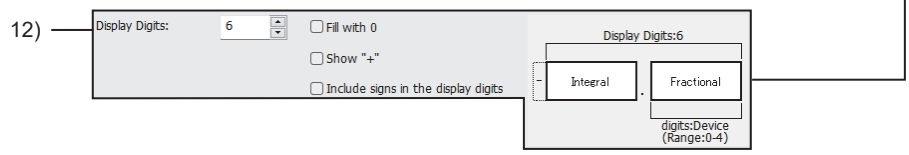
For mobile screens, some setting items are not available.

☞ Page 2742 Usable functions

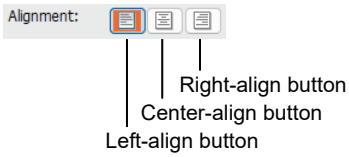
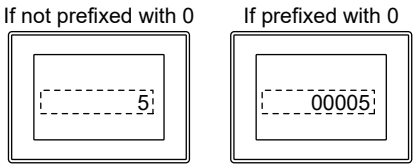
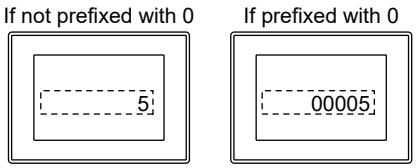


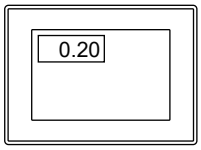
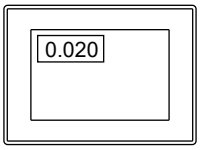
When [Fixed] is selected for [Digits (Fractional)]



When [Device] is selected for [Digits (Fractional)]

Item		Description
1)	[Type]	Select the function to be used.
2)	[Device]	Set a device to be monitored. ☞ Page 834 How to set devices, labels, and tags
3)	[Data Type]	Select the data type of the device.
4)	[Font]	Select the font of the numerical value to be displayed. ☞ Page 74 Specifications of displayable characters

Item			Description
5)	[Font Size]		Set the vertical size of the numerical value. The setting range is [8] dots to [540] dots.
6)	[Font Width]		Set the horizontal size of the numerical value. The horizontal size is specified with the magnification relative to [Font Size] (vertical text size). The setting range is [6]% to [1600]%.
7)	[Lock aspect ratio]		The aspect ratio of the numerical value is retained even when the numerical value is resized by manipulation of the handle on the screen editor.
8)	[Alignment]		Set the horizontal position (left-aligned, centered, or right-aligned) of the numerical value. 
9)	[Format]		Select the display type of the device to be monitored. The selectable items vary with the data type of the device. For details, refer to the following. ☞ Page 1331 Selectable range for [Format]
10)	[Rounding]		This item is displayed when [Format] is set to [Real]. If there is a numerical value that have digits to the right of the digit set for [Digits (Fractional)], select the processing method.
11)	[Digits (Integral)]	—	This item is displayed when [Digits (Fractional)] is set to [Fixed]. Set the number of digits of the integer part to be displayed. The setting range depends on the setting of [Format]. • [Signed Decimal] or [Unsigned Decimal]: [1] to [21] • [Hexadecimal]: [1] to [16] • [Octal]: [1] to [6] • [Binary] or [Real]: [1] to [32]
		[Fill with 0]	This item is enabled when [Alignment] is set to right alignment. The numerical value is prefixed with 0 according to the setting value of [Digits (Integral)]. Example) When setting [5] for [Digits (Integral)]  When [Format] is set to [Binary], the GOT displays the numerical value prefixed with 0, regardless of the setting of [Fill with 0].
		[Show "+"]	This item is displayed when [Format] is set to [Signed Decimal] or [Real]. When the numerical value is positive number, [+] is prefixed to the numerical value.
		[Include signs in the integer portion]	This item is displayed when [Format] is set to [Signed Decimal] or [Real], and [Digits (Fractional)] is set to [Fixed]. A sign is displayed as one of the digits of the integer part.
12)	[Display Digits]	—	This item is displayed when [Format] is set to [Real], and [Digits (Fractional)] is set to [Device]. Set the total number of digits of the integer part and fractional part to be displayed. The setting range is [1] to [32].
		[Fill with 0]	This item is enabled when [Alignment] is set to right alignment. The numerical value is prefixed with 0 according to the setting value of [Display Digits]. Example) When setting [Display Digits] to [5] 
		[Show "+"]	This item is displayed when [Format] is set to [Signed Decimal] or [Real]. When the numerical value is positive number, [+] is prefixed to the numerical value.
		[Include signs in the display digits]	This item is displayed when [Format] is set to [Real], and [Digits (Fractional)] is set to [Device]. A sign is displayed as one of the digits to be displayed.

Item			Description
13)	[Digits (Fractional)]	—	This item is displayed when [Format] is set to [Real]. Select a method to specify the number of decimal places, and specify the number of decimal places to be displayed. The following shows selectable items. • [Fixed] Enter the number of decimal places. The setting range is [0] to [30]. • [Device] Set a device to specify the number of decimal places. The number of decimal places changes based on the device value. The data type of the device is unsigned 16-bit binary. Set the device value as follows. X > Y + 1 X: Value set for [Display Digits] Y: Device value to specify the number of decimal places If the device value is outside the valid range, 0 is assumed.
		[Adjust Decimal Point Range]	This item is displayed when [Format] is set to [Real, and [Data Type] is set to [Real(32bit)] or [Real(64bit)]. (When a value other than binary floating values is held in the monitor target device) the integer device value is displayed as a value with the decimal point. Example) Number of the digits to the right of the decimal point: 2 Controller device value: 20  The value is displayed as 0.20 on the GOT. Example) Number of the digits to the right of the decimal point: 3 Controller device value: 20  The value is displayed as 0.020 on the GOT. Automatic adjustment is performed for the following devices. • Monitored device • [$V] and [Other Device] used in the conditional expression for display attributes in the [Style] tab • [$V] and [Other Device] used in the conditional expression for the input range in the [Input Case] tab • [$$], [$W], and [Other Device] used for data operation in the [Operation/Script] tab
			When the data type is 64-bit and either of the following conditions is satisfied, 14 digits in the fractional portion are significant after automatic adjustment. • Data operation is set. • Object internal variables are used. ☞ Page 1050 Operating expression In the conditional expression for display attributes or input range, 14 digits in the fractional portion are significant, and operation is performed with the value before automatic adjustment.
14)	[Display Range]		Displays the maximum/minimum value which can be displayed on the screen.
15)	[Display the numerical value to be shown on the screen with asterisk]		This item is displayed when [Font] is set to other than [7-Segment Font]. The numerical value, sign, and decimal point to be displayed on the screen are displayed with asterisks. The character string (except #) set for [Format String] is not displayed in asterisk. When saved as an operation log, the original values are saved, not asterisks.
16)	[Format String]		This item is displayed when [Font] is set to other than [7-Segment Font]. Characters (such as alphanumeric characters, kanji, or symbols) are displayed in the numerical display object. Enter #s to the positions where the digits of a numerical value are to be displayed. The #s entered in setting this item are replaced with the digits of the device value. Each # is replaced with the digit of the value in the same position counted from the right. If the number of the digits of the device value is larger than that of #s, the digits overflowing from the left are not displayed. The digits of a real number to the right of the decimal point are processed according to the setting for [Rounding]. The sign included in the device value is also processed in the same way that processes the numerical value. For display examples, refer to the following. ☞ Page 1331 Display examples when a format string is set When a character is entered in the field for [Format String], the following setting changes occur. • The settings of [Digits (Integral)] and [Display Digits] become invalid. • The setting of [Alignment] becomes invalid and is changed to right alignment.
17)	[Preview]	—	Displays the preview of the screen.
		[Preview Value]	Set the numerical value to be displayed in the preview.

Item		Description
18)	[Name]	Set the object name. The name is displayed in places such as the data browser and property sheet. The setting can also be changed in other tabs. Up to 100 characters can be set.

Selectable range for [Format]

○: Supported, —:Not supported

[Data Type]	[Format]					
	[Signed Decimal]	[Unsigned Decimal]	[Hexadecimal]	[Octal]	[Binary]	[Real]
[Signed BIN8]	○	○	○	○	○	○
[Unsigned BIN8]	○	○	○	○	○	○
[Signed BIN16]	○	○	○	○	○	○
[Unsigned BIN16]	○	○	○	○	○	○
[Signed BIN32]	○	○	○	—	○	○
[Unsigned BIN32]	○	○	○	—	○	○
[Signed BIN64]	○	○	○	—	—	○
[Unsigned BIN64]	○	○	○	—	—	○
[BCD16]	○	○	○	○	○	○
[BCD32]	○	○	○	—	○	○
[BCD64]	○	○	○	—	—	○
[Real(32bit)]	○	○	○	—	○	○
[Real(64bit)]	○	○	○	—	—	○

Display examples when a format string is set

Ex.

When the setting for [Format] is not [Real]

Format string	Digits in the fractional portion	Device value	Display
##m##cm	—	1234	12m34cm
		123	1m23cm
		12345	23m45cm
		-123	-1m23cm

Ex.

When setting [Real] for [Format] and [Round off] for [Rounding]

Format string	Digits in the fractional portion	Device value	Display	Description
##m##cm	0	12.345	m12cm	Since [Digits (Fractional)] is 0, only the integer part is displayed.
	2		12m35cm	Since [Digits (Fractional)] is 2, the digits from the integer part to the second decimal place are displayed. The device value is rounded off to the third decimal place.
####cm	2	12.344	1234cm	Since [Digits (Fractional)] is 2, the device value is rounded off to the third decimal place.
		12.345	1235cm	
##.##cm	2	12.344	12.34cm	
		12.345	12.35cm	

29.6.2 [Style] tab

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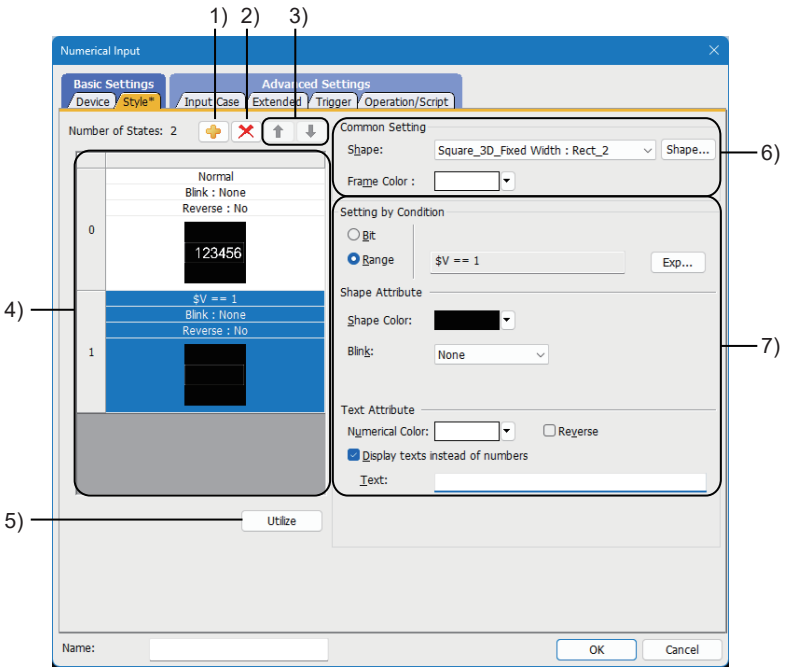
For mobile screens, some setting items are not available.

☞ Page 2742 Usable functions

For the conditions, refer to the following.

☞ Page 1038 Control with conditions



Item			Description
1)	Add button		Adds a new condition.
2)	Delete button		Deletes the selected condition.
3)	Up button Down button		Changes the priority order of the conditions in the preview list.
4)	Preview list		Displays the status set for each condition.
5)	[Utilize] button		Utilizes the selected condition to create a new condition.
6)	[Common Setting]	—	This setting is applied regardless of the satisfied condition.
		[Shape]	Select the shape to be set for the object from the list or with the [Shape] button. ☞ Page 1044 Object shape When the text to be displayed overlaps the shape frame area, the text cannot be displayed normally. Configure the settings so that the text and the shape frame area do not overlap. View in GT Designer3 → View on the GOT 123456 → 2345 Frame shape area Characters which overlap with the frame shape area are not displayed.
		[Frame Color]	Select a frame color for the shape. ☞ Page 988 Color settings

Item				Description
7)	[Setting by Condition]	—		Set the condition to be satisfied for the conditions selected in the preview list. When setting the word device value as the condition, click the [Exp] button to display the [Edit Range] dialog, and then set the conditional expression. For details on the conditions, refer to the following. ☞ Page 1038 Control with conditions The following setting items can be changed for each condition.
		[Shape Attribute]	[Shape Color]	Select the shape color. ☞ Page 988 Color settings
			[Blink]	Select the blinking speed of the numerical value and shape. The blink of the text display is paused when the input cursor is displayed.
			[Blink Scope]	Select the area to be blinked.
		[Text Attribute]	[Numerical Color]	Set the color of the numerical value. ☞ Page 988 Color settings
			[Reverse]	Inverts the color of the numerical value.
			[Display texts instead of numbers]	Set the character string to be displayed instead of numerics. Up to 40 characters can be set. If you input 40 two-byte characters, the text may be truncated.

29.6.3 [Input case] tab

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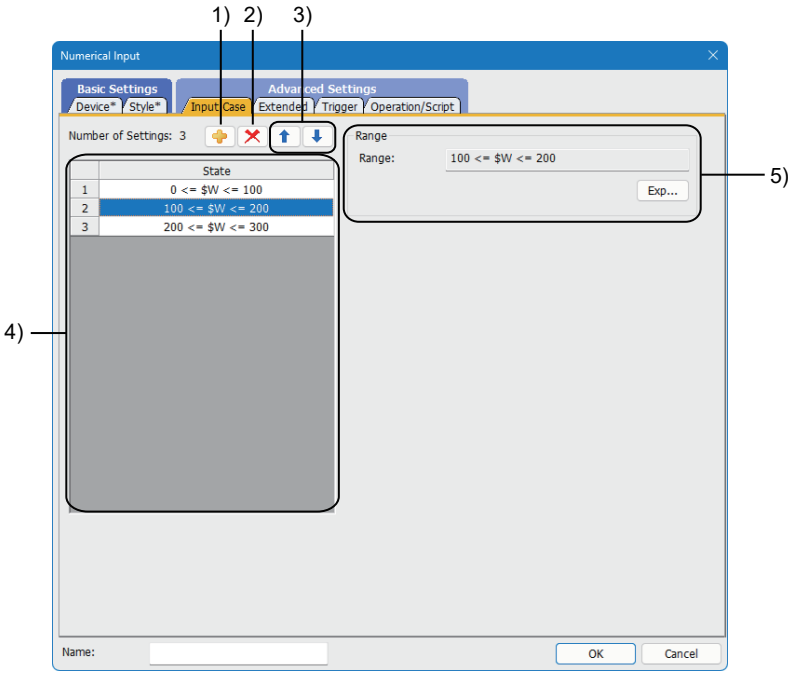

Item		Description
1)	Add button	Adds a new condition.
2)	Delete button	Deletes the selected condition.
3)	Up button Down button	Changes the priority order of the conditions in the preview list.
4)	Setting list	Displays the input ranges that are set.
5)	[Range]	Set the condition to specify the input range. Click the [Range] button, and set the conditional expression in the [Edit Range] dialog. The settings configured in this item are enabled only when input is performed using the numerical input object. If the input is performed by other methods, the settings of [Range] are disabled.

29.6.4 [Extended] tab

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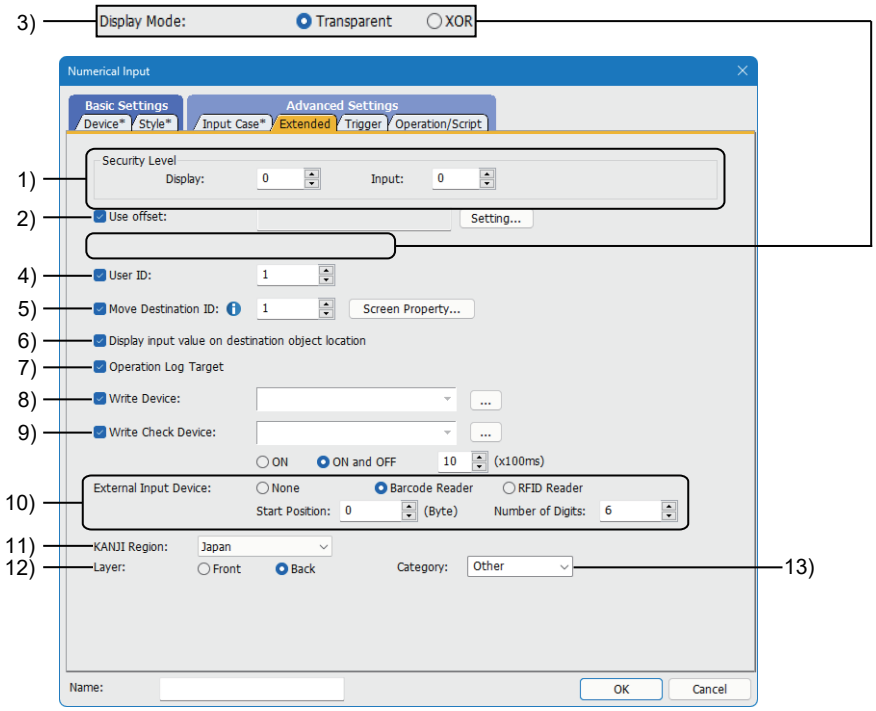
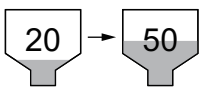
For mobile screens, some setting items are not available.

☞ Page 2742 Usable functions



Item		Description
1)	[Security Level]	Set the security level. The setting range is [0] to [15]. If you do not use the security function of the GOT, select [0]. For [Input], set the same or a greater value than the value set for [Display]. ☞ Page 3038 Restricting display and operation on the GOT (Screen security)
2)	[Use offset]	Configure the settings to monitor the statuses of multiple devices by switching between them with a single device. After selecting this item, set the offset device. ☞ Page 963 Offset
3)	[Display Mode]	Display mode when the numerical input object is superimposed on a level object. This setting is not displayed when [Enable the antialiasing] is selected in the [Type Setting] dialog ([Basic Setting]). The operation when [Transparent] is selected is applied. ☞ Page 519 [Type Setting] dialog
		[Transparent]: Displays the numerical value on the level object.
		[XOR]: The numerical value in a numerical display object is integrated into the XOR synthesis with a level color, to be able to be distinguished from the level object. 
4)	[User ID]	Set the number to identify the object. The setting range is [1] to [65535]. For the applications of the user ID, refer to the following. ☞ Page 1308 Specifying the destination to which the cursor moves after the confirmation of a numerical value entry

Item			Description	
5)	[Move Destination ID]		Set the user ID of a numerical input to which the cursor moves upon inputting a value. To move the cursor by specifying a user ID, a cursor movement setting must also be configured. Configure one of the following settings to enable the cursor movement per project or per screen.	
			To enable cursor movement in the entire project, set as follows in the [Environmental Setting] window ([Advanced Setting] tab of ([Key Window]). ☞ Page 572 [Advanced Setting] tab • Select [Control the cursor] for [Defined key action]. • Select [In order of user ID] or [Subsequently valid user ID] for [Cursor Move Destination].	
			To enable cursor movement only on the screen where the numerical input object is placed, click the [Screen Property] button to display the properties of the screen where the numerical input object is placed. ☞ Page 313 Base screen properties ☞ Page 323 Window screen properties Set as follows in the [Key Window Advanced Setting] tab. • Select [[Prioritize screen setting over project setting]. • Select [Control the cursor] for [Defined key action]. • Select [In order of user ID] or [Subsequently valid user ID] for [Cursor Move Destination].	
6)	[Display input value on destination object location]		Reflects the numerical values entered in the key window to the object on the screen immediately. To perform a write to a device, touch the enter key.	
			In the following cases, the setting of [Format String] is not reflected to the display on the object while a value is being entered. Consequently, the value is displayed on the object in the set digits (the number of the pound signs [#]). (The decimal point is not counted as one digit.) • [Format] is set to [Binary] in the [Device] tab, and GS450.b6 is off. • [Format] is set to [Octal] in the [Device] tab, and GS450.b7 is off. • [Format] is set to [Real] in the [Device] tab. To display the value on the object according to the setting of [Format String], confirm the entry.	
7)	[Operation Log Target]		Select this item to record the operation log of the set object. ☞ Page 1909 Configuring the settings for collecting the GOT operation history ([Operation Log])	
8)	[Write Device]		Set the device to store the input value before data operation, in addition to the monitor device to store the value after data operation. The input values before and after data operation can be managed separately.	
9)	[Write Check Device]		Set the bit device and operation to notify the completion of a numerical input. Prevent input while the write completion device is on, for example, by setting the off state of the write completion device as the trigger condition for the object. If input is continuously performed before the write completion device turns off, the write completion device does not turn off at normal timing. The following shows selectable items for the operation.	
			[ON]	Turns on a set bit device upon completion of a numerical input.
			[ON and OFF]	Turns on a set bit device upon completion of a numerical input, and then turns off the bit device after a specified time period. The setting range of the time from turning on to turning off the bit device is [5] x 100 ms to [30] x 100 ms.
				[Write Complete Device] can be set for numerical input and the text input objects. If [Write Check Device] is set to [ON and OFF] for multiple numerical input or text input objects, do not turn on 21 or more write completion devices simultaneously. Otherwise the write completion devices that turn on 21st and later do not turn off automatically.
				Even when screen switching (including switching to utilities) occurs while a write completion device is on, the write completion device does not turn off. The device remains on until a set time elapses.
10)	[External Input Device]	—	Set whether to enter the numerical values read with a barcode reader or RFID reader. ☞ Page 2564 Using a barcode reader with the GOT (barcode function) ☞ Page 2588 Using an RFID with the GOT (RFID function) When selecting [Barcode Reader] or [RFID Reader], set [Start Position] and [Number of Digits].	
		[Start Position]	Specify the input start byte of the data read with a barcode reader or RFID reader. • [Barcode Reader]: [0]th byte to [3997]th byte • [RFID Reader]: [0]th byte to [19997]th byte	
		[Number of Digits]	Set the number of digits of input data read with a barcode reader or RFID reader. The same or smaller number of digits as that set for [Digits (Integral)] in the [Device] tab can be set.	
11)	[KANJI Region]		Select the KANJI region of the displayed text. ☞ Page 76 KANJI region This item is displayed when [Format String] is set in the [Device] tab or when [Display texts instead of numbers] is set in the [Style] tab.	
12)	[Layer]		Select the layer to place the object. ☞ Page 65 Layer	

Item		Description
13)	[Category]	Select the category to assign the object. ☞ Page 1092 Efficient Drawing with Templates

29.6.5 [Trigger] tab

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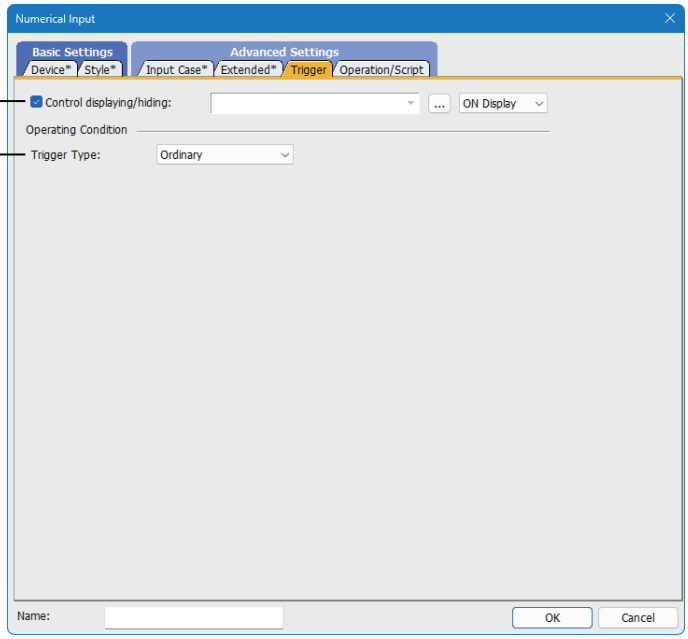

Item		Description
1)	[Control displaying/hiding]	Enables the setting to display the object only when requirements are met. Set the following as requirements. • Bit device for control • When to display: When the bit device for control is on or off
2)	[Trigger Type]	Select the condition of displaying the object. For details on the trigger types, refer to the following. ☞ Page 976 Trigger types settable for the object operating condition

PART 7

29.6.6 [Operation/Script] tab

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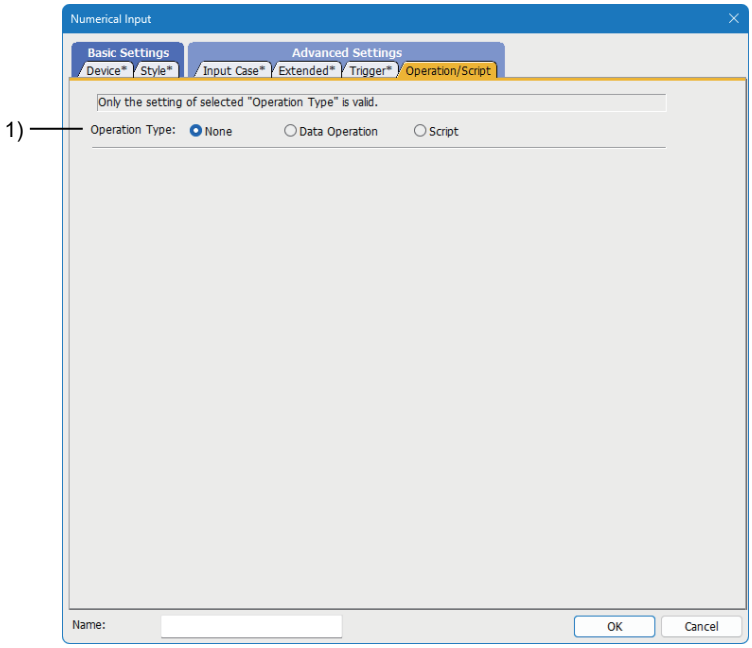
For mobile screens, some setting items are not available.

☞ Page 2742 Usable functions

Set an expression for monitoring using the data operation function or the script function.



Item			Description
1)	[Operation Type]	[None]	The data operation function and the script function are not used.
		[Data Operation]	Set the expression used for the data operation function. ☞ Page 1339 [Data Operation]
		[Script]	Set the expressions for the script function. ☞ Page 1340 [Script]

[Data Operation]

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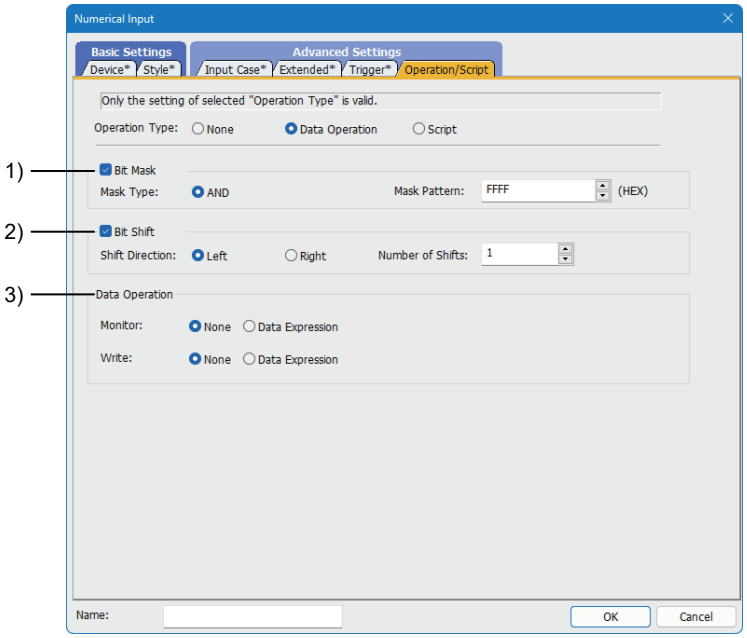
For details on the data operation settings, refer to the following.

☞ Page 1049 Data operation



Item			Description
1)	[Bit Mask]	—	Set the operation of mask processing.
		[Mask Type]	Select the type of mask processing. • [AND]: Logical AND
		[Mask Pattern]	Set a pattern value to mask in hexadecimal. The setting range depends on the setting of [Data Type] in the [Device] tab.
2)	[Bit Shift]	—	Set the operation of shift processing.
		[Shift Direction]	Select a shifting direction.
		[Number of Shifts]	Set the number of bits to be shifted. The setting range depends on the setting of [Data Type] in the [Device] tab.
3)	[Data Operation]	—	Set the format of the expression.
		[Monitor]	Select the expression used when devices are monitored. • [None] Does not perform the data operation by using the expression. • [Data Expression] Performs the data operation by using the expression. Click the [Exp] button to set an expression in the [Edit Data Expression] dialog. ☞ Page 1054 [Edit Data Expression] dialog
		[Write]	Select the expression used when values are written to devices. • [None] Does not perform the data operation by using the expression. • [Data Expression] Performs the data operation by using the expression. Click the [Exp] button to set an expression in the [Edit Data Expression] dialog. ☞ Page 1054 [Edit Data Expression] dialog

[Script]

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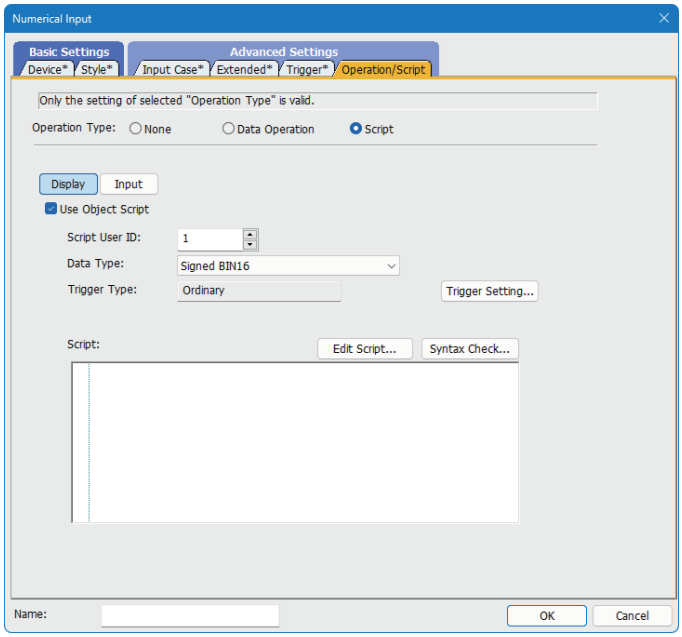
For a single numerical input object, both display object scripts and input object scripts can be set.

For details on the script settings, refer to the following.

☞ Page 2447 Object script



■Relationship between the object settings and object properties

Object settings can be read (referenced) or written (changed) using object properties.

The following shows the correspondence between readable/writable object properties and the setting items in the object setting dialog.

○: Available

×: Not available

—: No applicable setting item

Setting dialog		Object property			
Tab name	**Setting item**	**Property name**	**Read**	**Write**	**Timing for reflecting the setting change*1**
—	—	active	○	○	Upon the setting change
		x	○	○	When the screen is updated
		y	○	○	When the screen is updated
		width	○	×	×
		height	○	×	×
		text_width	○	○	When the object is updated
		text_height	○	○	When the object is updated
[Device]	[Alignment]	arrange	○	○	When the object is updated
	[Digits (Fractional)]	decimal_point	○*2	○*2	Upon the setting change
[Style]	[Frame Color]	frame_color	○	×	×
	[Shape Color]	plate_color	○	○	When the object is updated
	[Reverse]	highlight	○	○	When the object is updated
	[Blink] [Blink Scope]	blink	○	○	When the object is updated
	[Numerical Color]	text_color	○	○	When the object is updated
[Extended]	[Security Level] ([Display])	security	○	○	When the screen is updated
	[Security Level] ([Input])	input_security	○	○	Upon the setting change
	[Display Mode]	draw_mode	○	○	When the object is updated

*1 For information on how long it takes for object property settings to be reflected on the screen, refer to the following page.
☞ Page 2456 Timing at which the setting change of an object property is reflected

*2 Not available when [Device] is selected for [Digits (Fractional)].

29.7 Relevant settings

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For the numerical display and numerical input objects, there are relevant settings other than the specific settings.
The following shows the functions that are available by configuring the relevant settings.
☞ Page 1342 GOT environmental settings (key window), screen property
☞ Page 1343 GOT environmental settings (System information)
☞ Page 1344 GOT internal devices

29.7.1 GOT environmental settings (key window), screen property

Set the following functions for each project (GOT environmental settings) or for each screen (screen property).
☞ Page 558 Setting key windows of the GOT ([Key Window])

• Settings for each project (GOT environmental settings)

Select [Common] → [GOT Environmental Setting] → [Key Window] from the menu to display the [Environmental Setting] window.

• Settings for each screen (screen property)

Select the screen editor on which the key window is to be set, and select [Screen] → [Screen Property] from the menu to display the screen properties.

Function	Setting item
Checking the input range while entering a numerical value	This item is enabled only when an input range is set. Display the [Display Detail Setting] dialog with the [Setting] button in the [Advanced Setting] tab or [Key Window Advanced Setting] tab to set this function with the following item. • [Check the input range while entering numerical values] ☞ Page 1334 [Input case] tab
Displaying the allowable input range as a message when entering a numerical value outside the input range	Display the [Display Detail Setting] dialog with the [Setting] button in the [Advanced Setting] tab or [Key Window Advanced Setting] tab to set this function with the following item. • [Display the valid input range when an invalid value is input in Numerical Input]
Displaying the cursor when the operating condition is satisfied	Set this function in the following item in the [SP Function] tab or [Key Window Advanced Setting] tab. • [Cursor]
Deleting the key window and cursor when the operating condition is not satisfied	Set this function in the following item in the [SP Function] tab or [Key Window Advanced Setting] tab. • [Clear the key window and the cursor] of [When operating conditions are not satisfied]
Setting whether to move the display of the key window or not by screen	Set this function in the following item in the [SP Function] tab or [Key Window Advanced Setting] tab. • [Key Window Position Correction]
Selecting when displaying the value being entered in the key window	Set this function with the following item the [Basic Setting] tab or [Key Window Basic Setting] tab. • [Display value during input]
Selecting when displaying the input range of data in the key window	Set this function with the following item the [Basic Setting] tab or [Key Window Basic Setting] tab. • [Display input function range]
Setting whether to display or hide the cursor when hiding the cursor and pressing the enter key or an arrow key	Display the [Display Detail Setting] dialog with the [Setting] button in the [Advanced Setting] tab or [Key Window Advanced Setting] tab to set this function with the following item. • [Display the cursor with a touch on the Enter/arrow key when the cursor is hidden]
When entering a value or text with a numerical input or text input object, displaying a dialog prompting you to confirm the entry when the enter key is touched	Display the [Display Detail Setting] dialog with the [Setting] button in the [Advanced Setting] tab or [Key Window Advanced Setting] tab to set this function with the following item. • [Display the input confirmation dialog when setting the function of Numerical/Text Input]

Function	Setting item
Displaying the key window when the operating condition is satisfied	Set this function in the following item in the [SP Function] tab or [Key Window Advanced Setting] tab. • [Key Window]
Displaying the key window when the screen is switched	Set this function in the following item in the [SP Function] tab or [Key Window Advanced Setting] tab. • [Display the key window]
Displaying the cursor when the screen is switched	Set this function in the following item in the [SP Function] tab or [Key Window Advanced Setting] tab. • [Display the cursor]
Selecting the method of displaying the cursor when entering a value using a numerical input or text input object	Display the [Display Detail Setting] dialog with the [Setting] button in the [Advanced Setting] tab or [Key Window Advanced Setting] tab to set this function with the following item. • [Cursor Type]
Displaying the key window at a touch input or deleting the key window by pressing the enter key	Set this function in the following item in the [SP Function] tab or [Key Window Advanced Setting] tab. • [Key Window] • [Defined key action]
When multiple numerical or text input objects exist, setting the order of input After an input is confirmed, moving the cursor to the next destination automatically	Set this function in the following item in the [SP Function] tab or [Key Window Advanced Setting] tab. • [Defined key action] • [Reference for determining cursor destination]
Setting the window screen to be used as a key window for numerical inputs (decimal or hexadecimal) and text inputs	Set this function with the following item the [Basic Setting] tab or [Key Window Basic Setting] tab. • [Key Window]

29.7.2 GOT environmental settings (System information)

Select [Common] → [GOT Environmental Setting] → [System Information] from the menu to display the [Environmental Setting] window.

☞ Page 576 Setting a device which controls the GOT operations or notifies the GOT status ([System Information])

Function	Setting item
When deleting the cursor, clearing the cursor information, such as the cursor display object ID and cursor display user ID	[Clear the cursor information when deleting the cursor]
Notifying the value (32 bits) before a change with the numerical input function	[Previous Numeric Value Input(32bit)]
Notifying the value (32 bits) confirmed with the numerical input function	[Current Numeric Value Input(32bit)]
Notifying the confirmation of an entry from a numerical input object (System signal 2-1.b4)	[System Signal 2-1]
Notifying the user ID of the numerical input to which an entry is confirmed	[Numeric Value Input Number]
Notifying the object ID of the object previously displayed under the cursor	[Previous Cursor Display Object ID]
Notifying the user ID No. of the object for which the cursor was displayed previously	[Previous Cursor Display User ID]
Notifying the key codes set to the input keys when there is an input using a text input, touch switch, or other objects	[Key Code Input]
Notifying that the key window is being displayed (System signal 2-1.b11)	[System Signal 2-1]
Turning off the Key Input signal (System signal 1-1.b3)	[System Signal 1-1]
Turning off the Numeric Value Input signal (System signal 1-1.b4)	[System Signal 1-1]
Notifying the object ID of the object currently displayed under the cursor	[Current Cursor Display Object ID]
Notifying the user ID No. of the object for which the cursor is currently being displayed.	[Current Cursor Display User ID]
Notifying the cursor is being displayed in a numerical value or text input (System signal 2-2.b11)	[System Signal 2-2]
Disabling all the key inputs (System signal 1-1.b9)	[System Signal 1-1]
Notifying a key input (System signal 2-1.b3)	[System Signal 2-1]
Notifying a value out of the input range is stored (System signal 2-1.b14)	[System Signal 2-1]

29.7.3 GOT internal devices

☞ Page 3581 GOT special register (GS)

Function	Setting item
Notifying that the object is ready for receiving an direct input with a barcode reader or RFID reader	GS243.b15
When entering a value or text with a numerical input or text input object, displaying a dialog prompting you to confirm the entry when the enter key is touched	GS450.b0
Checking the input range while entering a numerical value	GS450.b1
Storing 0 in the current cursor position device and other related devices of the system information when the cursor is hidden	GS450.b3
Displaying the binary key window when the display format of the numerical input is binary	GS450.b6
Displaying the octal key window when the display format of the numerical input is octal	GS450.b7
Notifying the upper-left coordinates of a numerical input object on which the cursor is displayed	GS694 GS695

30 Placing a text display or text input object

☞ Page 1346 Overview of the text display and text input objects
☞ Page 1348 How to use the text display and text input objects
☞ Page 1352 Specifications of the text display and text input objects
☞ Page 1356 Configuring the settings for a text display or text input object
☞ Page 1357 [Text Display] dialog
☞ Page 1362 [Text Input] dialog
☞ Page 1370 Relevant settings

30.1 Overview of the text display and text input objects

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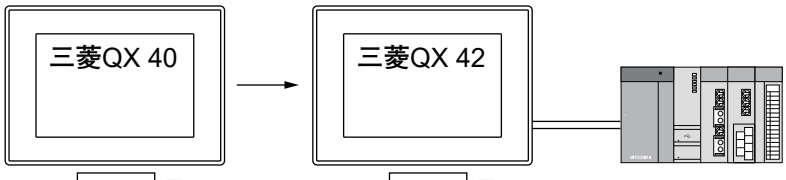
30.1.1 Text display

With this function, the data stored in a word device is handled as text data and displayed as text.



D10	4F8Eh	(三)
D11	4895h	(菱)
D12	5851h	(XQ)
D13	3420h	(4 ␣)
D14	0030h	(0)

D10	4F8Eh	(三)
D11	4895h	(菱)
D12	5851h	(XQ)
D13	3420h	(4 ␣)
D14	0032h	(2)

30.1.2 Text input

With this function, text is written to a word device.

Two methods are available for text input.

☞ Page 1346 Entering characters with keys for entries

☞ Page 1347 Entering the characters read with a barcode reader or RFID reader

Entering characters with keys for entries

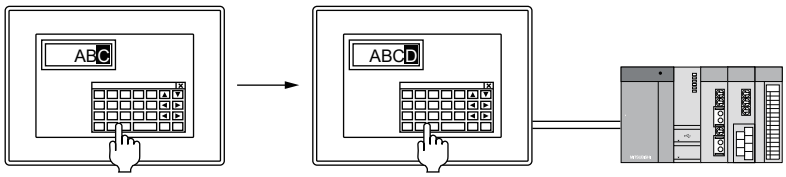
Characters can be entered with a key window or key code switches.

■Entering from a key window

Touch the text input object placed on the base screen to display the key window, and enter characters.

For the key window, refer to the following.

☞ Page 558 Setting key windows of the GOT ([Key Window])



Entering characters

Enter the input characters using the character code with the input key (key code: 000Dh).

D10	0000h	
D11	0000h	

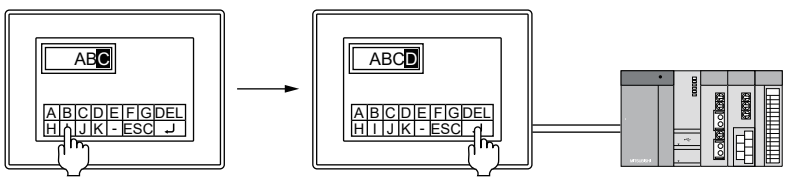
D10	4241h	(BA)
D11	4443h	(DC)

■Using key code switches placed on the screen

Characters can be entered with the key code switches placed on the base screen without displaying a key window.

For key code switches, refer to the following.

☞ Page 1251 [Key Code Switch] dialog



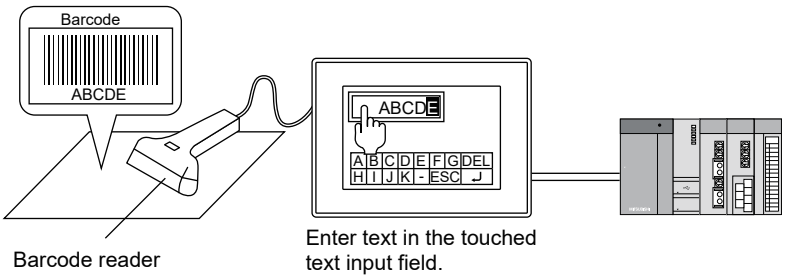
Entering the characters read with a barcode reader or RFID reader

Characters can be entered with a barcode reader or RFID reader.

When entering data with a barcode reader or RFID reader, set the barcode function or RFID function.

☞ Page 2564 Using a barcode reader with the GOT (barcode function)

☞ Page 2588 Using an RFID with the GOT (RFID function)



Precautions

Item	Description
Reading data with a barcode reader or RFID reader during entry on the key window	Depending on the operation, the read data may or may not be input. • While displaying dialog windows The data read with a barcode reader or RFID reader cannot be entered. • While not displaying dialog windows The text being entered on the key window is discarded, and the data read with a barcode reader or RFID reader is entered.
Performing key touch operations while the data read with a barcode reader or RFID reader is being entered	While the data read with a barcode reader or RFID reader is being entered, key touch operations are invalid and the data read with a barcode reader or RFID reader is entered.
Insufficient data for the specified start position	When the data read with a barcode reader or RFID reader is less than the setting of [Start Position], the data is not entered.

30.2 How to use the text display and text input objects

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☞ Page 1348 Specifying the destination to which the cursor moves after the confirmation of a text entry
☞ Page 1351 Operation examples of text display and text input objects

For the basic usage of the text display and text input objects, refer to the following.

☞ Page 1346 Overview of the text display and text input objects

For information on how to place a text display or text input object, refer to the following.

☞ Page 1356 Configuring the settings for a text display or text input object

30.2.1 Specifying the destination to which the cursor moves after the confirmation of a text entry

When [User ID] is set, the destination to which the cursor moves after the confirmation of a text entry can be specified.
[User ID] can be set only when the text input object is used.

☞ Page 1365 [Extended] tab

About [User ID]

The user ID is a number to identify the object.
When [User ID] is set, the following setting and operations are enabled.

☞ Page 1348 Setting the display position of the cursor when the screen is switched or the enter key is pressed
☞ Page 1349 Moving the cursor in ascending or descending order of user ID number
☞ Page 1349 Specifying objects that were used with operation logs

■Setting the display position of the cursor when the screen is switched or the enter key is pressed

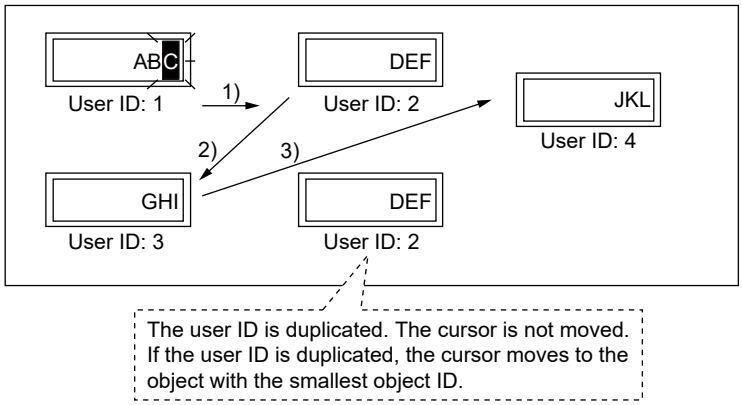
In the [Environmental Setting] window ([Key Window]) or the screen property, the display position of the cursor when the screen is switched or the enter key is pressed can be set.
For details, refer to the following.

☞ Page 558 Setting key windows of the GOT ([Key Window])
☞ Page 313 Changing screen property

■Moving the cursor in ascending or descending order of user ID number

When the following key code switches are used, the cursor can be moved in ascending or descending order of user ID number.

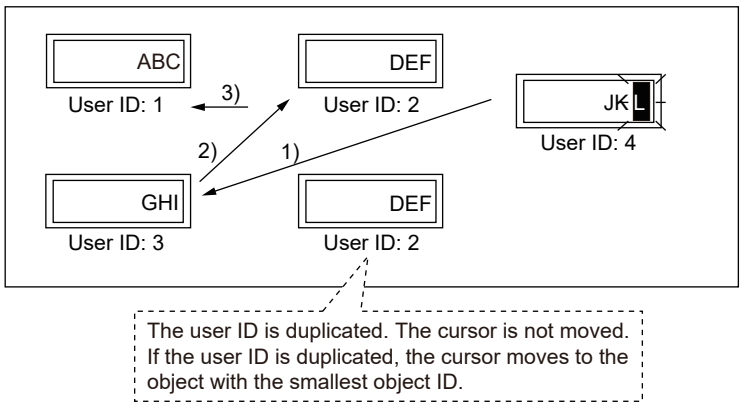
- User ID ascending order movement of cursor (key code: 0092h)



The cursor is moved in order of 1) → 2) → 3).

After 3), the cursor does not move because the destination user ID number does not exist.

- User ID descending order movement of cursor (key code: 0093h)



The cursor is moved in order of 1) → 2) → 3).

After 3), the cursor does not move because the destination user ID number does not exist.

■Specifying objects that were used with operation logs

When input is performed with an object, the user ID is also recorded in the operation log.

Setting a user ID to the object enables you to identify the manipulated object.

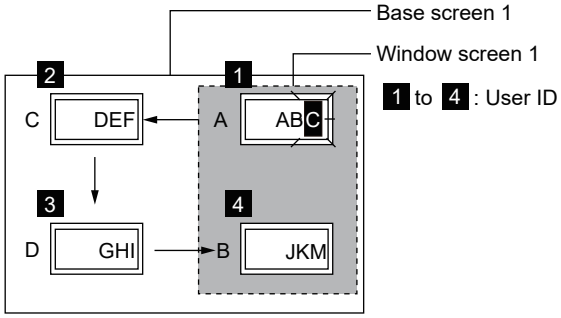
☞ Page 1909 Configuring the settings for collecting the GOT operation history ([Operation Log])

User ID setting

When controlling the cursor using user ID numbers, assign different user ID numbers to each object.
Also, when using overlay screens or superimpose windows, set screens in a way that different user ID numbers are assigned to each object.
When the same user ID number is assigned to different objects, the cursor operation may not perform normally.

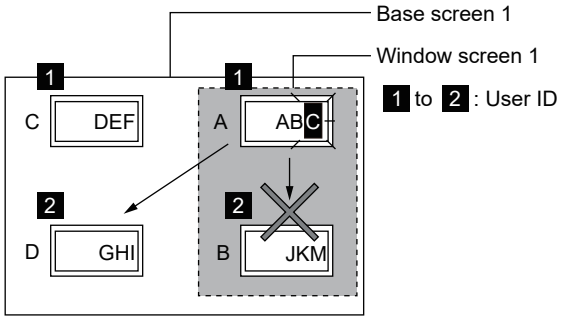
■When assigning different user ID numbers to each object

Even if a set overlay screen object or superimpose window is used, the cursor operation using user ID numbers is performed normally.



■When assigning the same user ID number

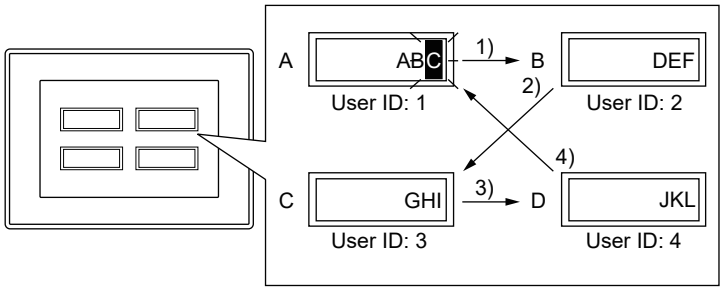
If objects having the same user ID exist on the screen (including set overlay screen objects and superimpose windows), the cursor operation using user ID numbers may not perform normally.



Relation between user ID and destination ID

Move the cursor to the object that has the same user ID number as the move destination ID number of the active object.
☞ Page 1365 [Extended] tab

Ex.
Moving the cursor using the destination ID number



Text input	User ID	Destination ID
A	1	2
B	2	3
C	3	4
D	4	1

30.2.2 Operation examples of text display and text input objects

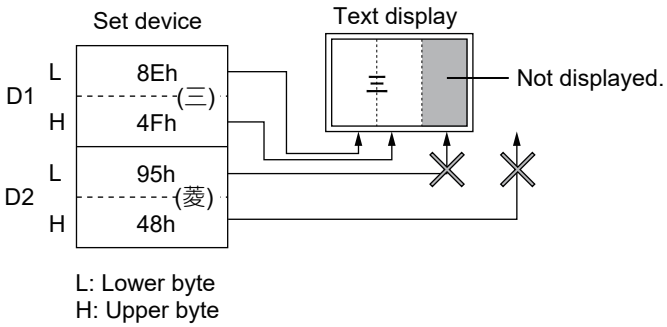
The following shows the examples of display and input operations when the character code is Shift JIS.

Ex.

When a text string is displayed in order of lower bytes to upper bytes in a text display

Setting device: D1

Number of displayed digits: 3

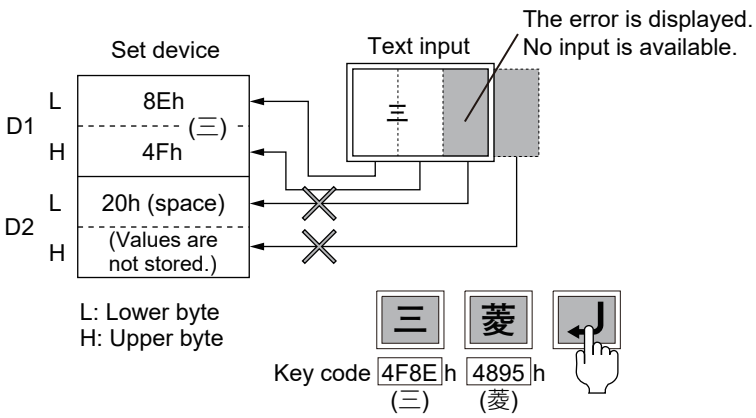


Ex.

When a text string is written in order of lower byte to upper byte using a text input object

Setting device: D1

Number of displayed digits: 3



30.3 Specifications of the text display and text input objects

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☞ Page 1352 Maximum number of objects that can be placed on one screen
☞ Page 1352 Supported character code
☞ Page 1353 Number of monitored devices and displayed digits
☞ Page 1354 Order of displaying and storing character strings

30.3.1 Maximum number of objects that can be placed on one screen

A total of 1024 text displays, text inputs, and other objects can be placed on one base screen, while 512 can be placed on one window screen.

30.3.2 Supported character code

For the character codes supported by the GOT, refer to the following.
☞ Page 80 Character codes supported by the GOT

Precautions

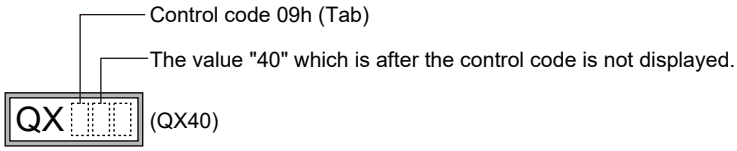
■When the character code is ASCII

If the following ASCII code is included in the target data of the text display object, the text that is after the ASCII code is not displayed.

- 0000h to 001Fh
- 0080h
- 00F0h to 00FFh

Ex.

When control code 09h (Tab) is included



D10	5851h	"X""Q"
D11	3409h	"4""09h (Tab)"
D12	0030h	"0"

■Character code setting when using a string-type label or tag

If you set a label or tag for the device of an object, set the character code according to the type of the label or tag.

- Global label: ASCII code, Unicode, or Shift JIS code
- OMRON NJ/NX tag: Unicode
- AB native tag: ASCII code
- OPC UA tag: Unicode

■Display variation due to font availability

Depending on the character code used and installed fonts, some one-byte and two-byte characters may not be displayed properly.

This can cause a difference between the actual display and the number of displayed digits, preventing the cursor from moving correctly on the object.

- When the character code is ASCII: If no fonts that support European languages are installed, some characters are displayed as two-byte characters.
- When the character code is GB: If any fonts that support European languages are installed, some characters are displayed as one-byte characters.

30.3.3 Number of monitored devices and displayed digits

The number of monitored devices differs depending on the device data type, character code, and the number of displayed digits.

Device data type	Character code	Number of devices to be monitored
16-bit	ASCII Shift JIS GB KS Big5	One word device is used for every two displayed digits. If the number of displayed digits is odd, it is treated as the displayed digits + 1.*1*2 Example) Number of displayed digits: 3, start device: D1000 Two word devices (D1000 and D1001) starting from D1000 are used.
	Unicode	One word device is used for each displayed digit. Example) Number of displayed digits: 3, start device: D1000 Three word devices (D1000, D1001, and D1002) starting from D1000 are used.
8-bit	ASCII Shift JIS GB KS Big5	Eight bit devices are used for each displayed digit. Example) Number of displayed digits: 3, start device: GB1000 Twenty-four consecutive devices (GB1000 to GB1023) starting from GB1000 are used.
	Unicode	Sixteen bit devices are used for each displayed digit. Example) Number of displayed digits: 3, start device: GB1000 Forty-eight consecutive devices (GB1000 to GB1047) starting from GB1000 are used.

*1 For a text display object, the lower or upper bytes of the last device are not monitored.
The position to be ignored depends on the display order of the string data.
High to low: Lower bytes of the last device
Low to high: Upper bytes of the last device

*2 For text input objects, NULL is written to the last monitored device.
The position of insertion depends on the storage order of the string data.
High to low: Lower bytes of the last device
Low to high: Upper bytes of the last device

30.3.4 Order of displaying and storing character strings

You can specify the order of displaying the character strings stored in devices and the order of storing character strings in devices.

The following shows the specifications of each character code.

☞ Page 1354 ASCII, Shift JIS, GB, KS, Big5

☞ Page 1355 Unicode

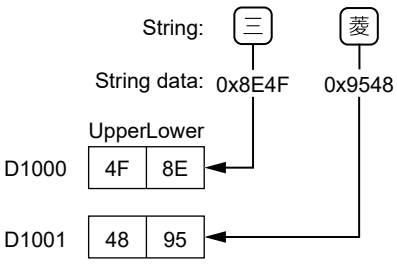
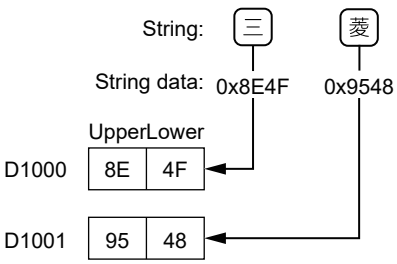
ASCII, Shift JIS, GB, KS, Big5

Specifications differ depending on the data type.

Data type	Specifications
When the data type is 16-bit	Low to high or high to low can be specified. b8 to b15 of a word device are handled as the upper bytes, and b0 to b7 as the lower bytes.
When the data type is 8-bit	Only low to high can be specified. When the start device is GB1000, GB1008 to GB1015 are handled as the upper bytes, and GB1000 to GB1007 are handled as the lower bytes.

Ex.

Storing 16 bit string data in D1000 to D1001

Display order and storage order	Behavior
Low to high	Example) Character code: Shift JIS  Upper: b8 to b15, lower: b0 to b7
High to low	Example) Character code: Shift JIS  Upper: b8 to b15, lower: b0 to b7

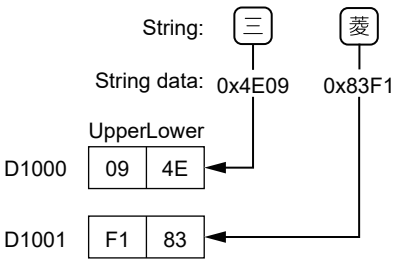
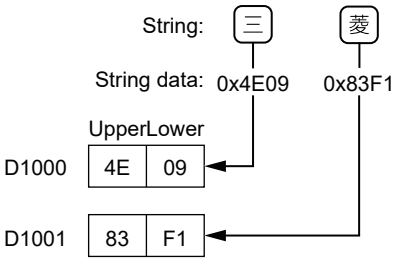
Unicode

Specifications differ depending on the data type.

Data type	Specifications
When the data type is 16-bit	Low to high or high to low can be specified. b8 to b15 of a word device are handled as the upper bytes, and b0 to b7 as the lower bytes.
When the data type is 8-bit	Low to high or high to low can be specified. When the start device is GB1000, GB1032 to GB1063 are handled as the upper bytes, and GB1000 to GB1031 are handled as the lower bytes.

Ex.

Storing 16 bit string data in D1000 to D1001

Display order and storage order	Specifications
Low to high	 Upper: b8 to b15, lower: b0 to b7
High to low	 Upper: b8 to b15, lower: b0 to b7

PART 7

30.4 Configuring the settings for a text display or text input object

Use the following procedure to place a text display or text input object, and configure the operation settings.

Configuring the settings for a text display object

Operating procedure

1. Select [Object] → [Text Display/Input] → [Text Display] from the menu.
2. Click the position to place a text display object.

☞ Page 1001 Placing figures and objects

3. Double-click the object to display the setting dialog.
4. Configure the operation settings in each tab of the [Text Display] dialog.

☞ Page 1357 [Text Display] dialog

For the operations common to all objects or editing operations except operation settings, refer to the following.

☞ Page 988 Color settings

Configuring the settings for a text input object

Operating procedure

1. Select [Object] → [Text Display/Input] → [Text Input] from the menu.
2. Click the position to place a text input object.

☞ Page 1001 Placing figures and objects

3. Double-click the object to display the setting dialog.
4. Configure the operation settings in each tab of the [Text Input] dialog.

☞ Page 1362 [Text Input] dialog

For the operations common to all objects or editing operations except operation settings, refer to the following.

☞ Page 988 Color settings

30.5 [Text Display] dialog

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☞ Page 1357 [Device/Style] tab
☞ Page 1359 [Extended] tab
☞ Page 1360 [Trigger] tab
☞ Page 1361 [Script] tab

30.5.1 [Device/Style] tab

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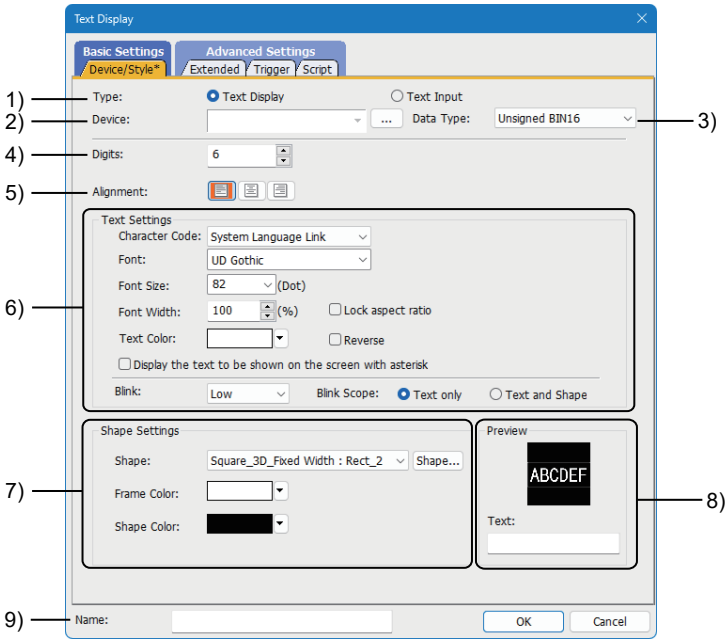
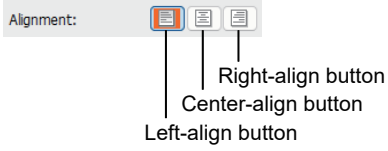
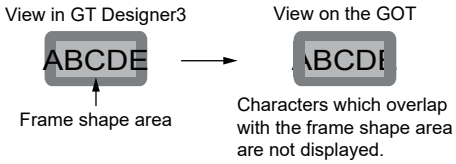
For mobile screens, some setting items are not available.

☞ Page 2742 Usable functions



Item		Description
1)	[Type]	Select the function to be used.
2)	[Device]	Set the start device of the devices to be monitored. ☞ Page 834 How to set devices, labels, and tags The number of monitored devices depends on the setting. For details, refer to the following. ☞ Page 1353 Number of monitored devices and displayed digits
3)	[Data Type]	Select the data type of the device.
4)	[Digits]	Set the number of digits of the text to be displayed. The setting range is [1] to [100]. A one-byte character is counted as one digit, and a two-byte character is counted as two digits.
5)	[Alignment]	Set the horizontal position (left-aligned, centered, or right-aligned) of the text. 

Item			Description
6)	[Text Settings]	[Character Code]	Select the character code of the text to be displayed. When [System Language Link] is selected, the following character codes are used according to the system language of the GOT. • When the system language is English: ASCII • When the system language is not English: Shift JIS
		[Font]	Select a font for the text to be displayed.
		[Font Size]	Set the size of the text to be displayed. The setting range is [8] dots to [540] dots.
		[Font Width]	Set a horizontal text size. The horizontal size is specified with the magnification relative to [Font Size] (vertical text size). The setting range is [6]% to [1600]%.
		[Lock aspect ratio]	The aspect ratio of the text is retained when you resize the text by manipulating a handle on the screen editor.
		[Text Color]	Set the text color. ☞ Page 988 Color settings
		[Reverse]	Inverts the text.
		[Display the text to be shown on the screen with asterisk]	Represents the text to be displayed on the screen with asterisks. When this item is selected, GS450.b4 becomes invalid.
		[Blink]	Select the blinking speed of the text and shape. The blink is paused when the input cursor is displayed.
		[Blink Scope]	Select the area to be blinked.
7)	[Shape Settings]	[Shape]	Select the shape to be set for the object from the list or with the [Shape] button. ☞ Page 1044 Object shape When the text to be displayed overlaps the shape frame area, the text cannot be displayed normally. Configure the settings so that the text and the shape frame area do not overlap. 
		[Frame Color]	Select a frame color for the shape. ☞ Page 988 Color settings
		[Shape Color]	Select the color of the shape. ☞ Page 988 Color settings
8)	[Preview]	[Text]	Displays the preview of the screen. Set the text to be displayed in the preview.
9)	[Name]		Set the object name. The name is displayed in places such as the data browser and property sheet. The setting can also be changed in other tabs. Up to 100 characters can be set.

30.5.2 [Extended] tab

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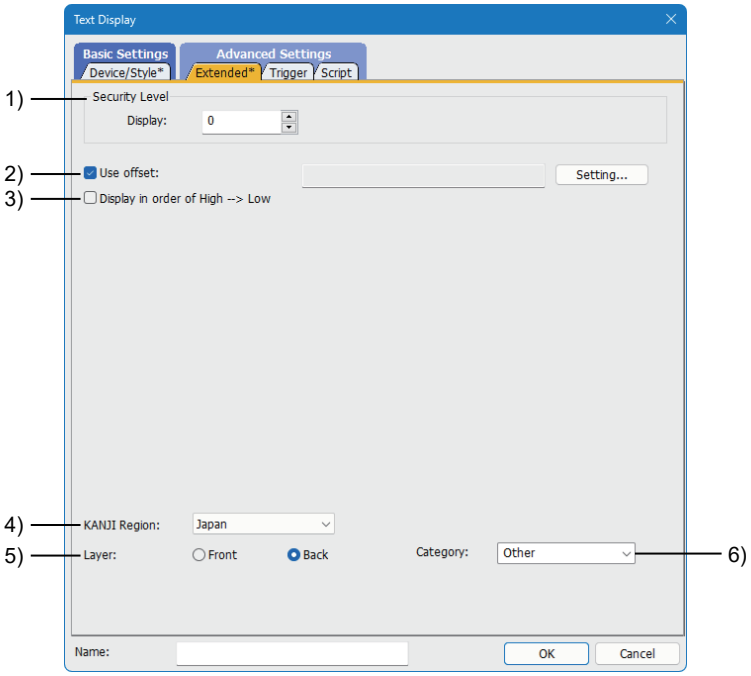
For mobile screens, some setting items are not available.

☞ Page 2742 Usable functions



Item		Description
1)	[Security Level]	Set a security level when using the security function. The setting range is [0] to [15]. Set [0] when the security function is not used. ☞ Page 3038 Restricting display and operation on the GOT (Screen security)
2)	[Use offset]	Select this item to monitor multiple devices by switching them. Set the offset device with the [Setting] button. ☞ Page 963 Offset
3)	[Display in order of High -> Low]	Select this item to display string data stored in devices in order of lower byte to upper byte. For details, refer to the following. ☞ Page 1354 Order of displaying and storing character strings
4)	[KANJI Region]	When selecting [Unicode] for [Character Code], select the KANJI region of the displayed text. ☞ Page 76 KANJI region This item is enabled when either of the following fonts is selected for [Font] in the [Device/Style] tab. • [UD Gothic] • [UD Mincho]
5)	[Layer]	Select the layer to place the object. ☞ Page 65 Layer
6)	[Category]	Select the category to assign the object. ☞ Page 1092 Efficient Drawing with Templates

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30.5.3 [Trigger] tab

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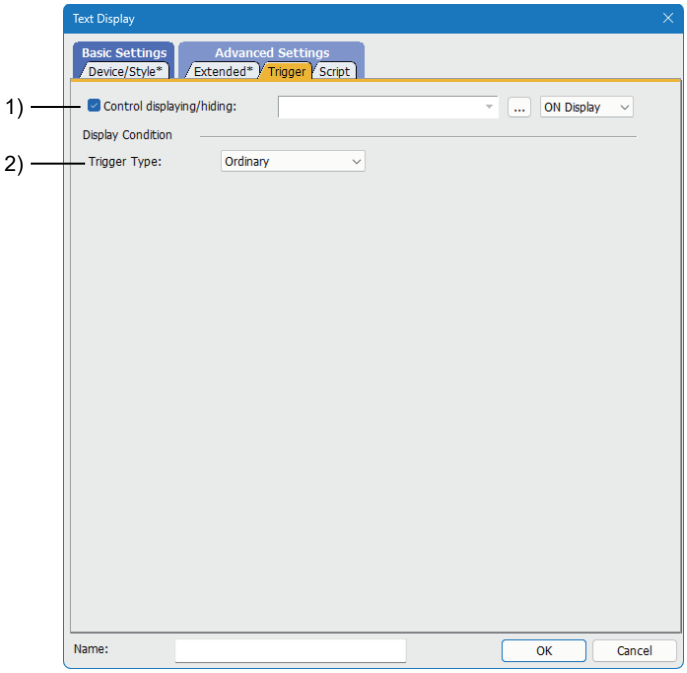

Item		Description
1)	[Control displaying/hiding]	Enables the setting to display the object only when requirements are met. Set the following as requirements. • Bit device for control • When to display: When the bit device for control is on or off
2)	[Trigger Type]	Select a trigger condition to display the object. For details on the trigger types, refer to the following. ☞ Page 969 Trigger types settable for the object display condition

30.5.4 [Script] tab

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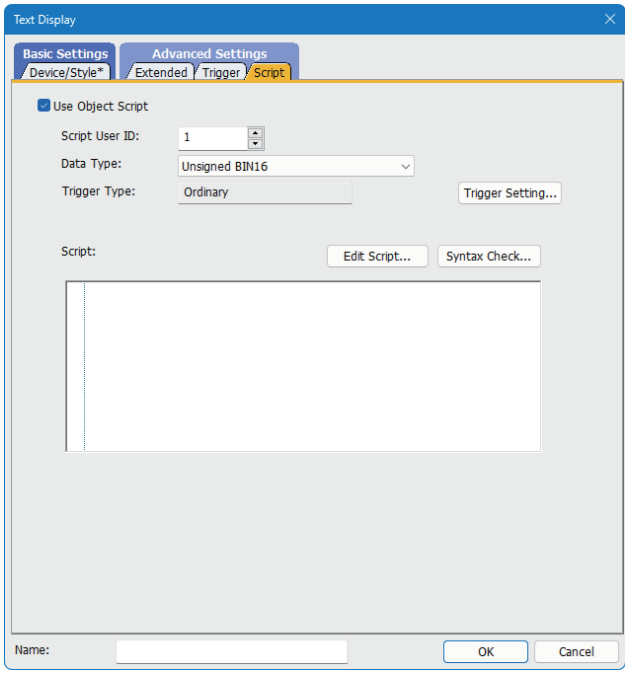
For details on the script settings, refer to the following.

☞ Page 2447 Object script



Relationship between the object settings and object properties

Object settings can be read (referenced) or written (changed) using object properties.

The following shows the correspondence between readable/writable object properties and the setting items in the object setting dialog.

○: Available

×: Not available

—: No applicable setting item

Setting dialog		Object property			
Tab name	**Setting item**	**Property name**	**Read**	**Write**	**Timing for reflecting the setting change*1**
—	—	active	○	○	Upon the setting change
		x	○	○	When the screen is updated
		y	○	○	When the screen is updated
		width	○	×	×
		height	○	×	×
		text_width	○	○	When the object is updated
		text_height	○	○	When the object is updated
[Device/Style]	[Alignment]	arrange	○	○	When the object is updated
	[Text Color]	text_color	○	○	When the object is updated
	[Reverse]	highlight	○	○	When the object is updated
	[Blink] [Blink Scope]	blink	○	○	When the object is updated
	[Frame Color]	frame_color	○	×	×
	[Shape Color]	plate_color	○	○	When the object is updated
[Extended]	[Security Level]	security	○	○	When the screen is updated

*1 For information on how long it takes for object property settings to be reflected on the screen, refer to the following page.

☞ Page 2456 Timing at which the setting change of an object property is reflected

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30.6 [Text Input] dialog

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☞ Page 1362 [Device/Style] tab
☞ Page 1365 [Extended] tab
☞ Page 1367 [Trigger] tab
☞ Page 1368 [Script] tab

30.6.1 [Device/Style] tab

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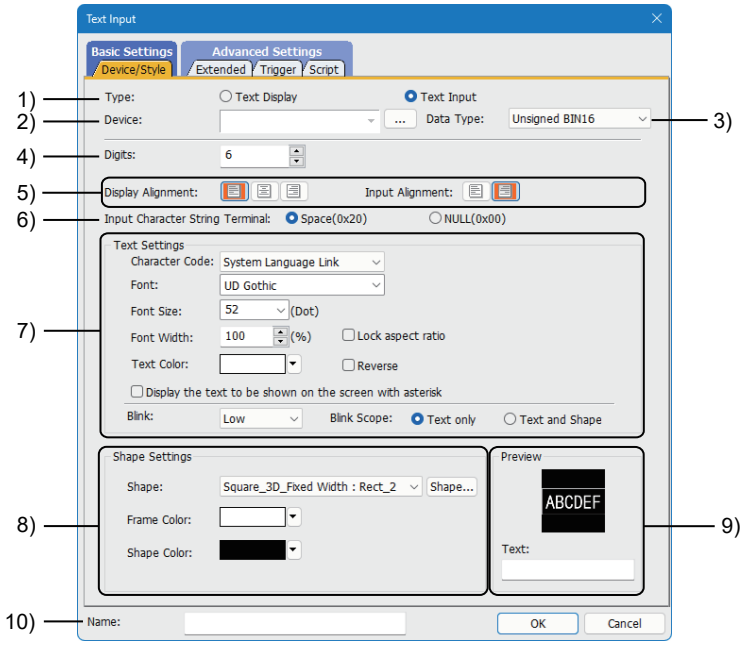
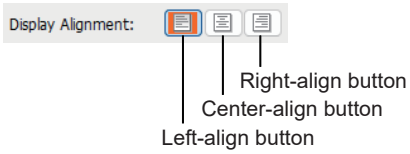
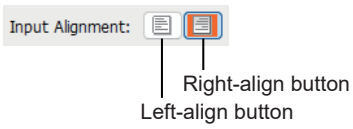
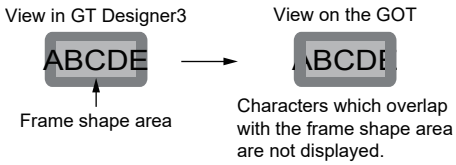
For mobile screens, some setting items are not available.

☞ Page 2742 Usable functions



Item		Description
1)	[Type]	Select the function to be used.
2)	[Device]	Set the start device of the devices to be monitored. ☞ Page 834 How to set devices, labels, and tags The number of monitored devices depends on the setting. For details, refer to the following. ☞ Page 1353 Number of monitored devices and displayed digits
3)	[Data Type]	Select the data type of the device.
4)	[Digits]	Set the number of digits of the text to be displayed. The setting range is [1] to [100]. A one-byte character is counted as one digit, and a two-byte character is counted as two digits.

<table>
<tr><th colspan="3">Item</th><th>Description</th></tr>
<tr><td>5)</td><td>Alignment</td><td>[Display Alignment]</td><td>Set the horizontal position (left-aligned, centered, or right-aligned) of the text to be displayed.
 
</td></tr>
<tr><td></td><td></td><td>[Input Alignment]</td><td>Set the horizontal position (left-aligned, centered, or right-aligned) of the text to be input.
 
</td></tr>
<tr><td>6)</td><td colspan="2">[Input Character String Terminal]</td><td>If the number of input characters is less than the number of characters specified for [Digits] in the [Device/Style] tab, you can select the control code to be inserted to the lacked part.
The following shows selectable items.
• [Space(0x20)]
Insert the space (0x20) to reserve it as a space.
Reentering text deletes the inserted space, and confirming the entry inserts a space.
This item can be selected only when the left alignment is selected for [Display Alignment].
Example) When the entered text has three digits with [7] set in [Digits]
<table><tr><td>Text</td><td>A</td><td>B</td><td>C</td><td>(SP)</td><td>(SP)</td><td>(SP)</td><td>(SP)</td></tr><tr><td>Character code</td><td>(0x41)</td><td>(0x42)</td><td>(0x43)</td><td>(0x20)</td><td>(0x20)</td><td>(0x20)</td><td>(0x20)</td></tr></table>• [NULL(0x00)]
Inserts NULL(0x00) as the first character of the lacked part.
The characters before NULL are enabled, and the characters after NULL are ignored because they are indefinite.
The controller is enabled to detect the text end.
Example) When the entered text has three digits with [7] set in [Digits]
<table><tr><td>Text</td><td>A</td><td>B</td><td>C</td><td>(NULL)</td><td>-</td><td>-</td><td>-</td></tr><tr><td>Character code</td><td>(0x41)</td><td>(0x42)</td><td>(0x43)</td><td>(0x00)</td><td>-</td><td>-</td><td>-</td></tr></table>For GT37 and GT SoftGOT3000, even if [Space(0x20)] is selected, NULL (0x00) is inserted.
☞ Page 1353 Placing a text display or text input object</td></tr>
<tr><td>7)</td><td>[Text Settings]</td><td>[Character Code]</td><td>Select the character code of the text to be displayed.
When [System Language Link] is selected, the following character codes are used according to the system language of the GOT.
• When the system language is English: ASCII
• When the system language is not English: Shift JIS</td></tr>
<tr><td></td><td></td><td>[Font]</td><td>Select a font for the text to be displayed.</td></tr>
<tr><td></td><td></td><td>[Font Size]</td><td>Set the size of the text to be displayed.
The setting range is [8] dots to [540] dots.</td></tr>
<tr><td></td><td></td><td>[Font Width]</td><td>Set a horizontal text size.
The horizontal size is specified with the magnification relative to [Font Size] (vertical text size).
The setting range is [6]% to [1600]%.</td></tr>
<tr><td></td><td></td><td>[Lock aspect ratio]</td><td>The aspect ratio of the text is retained when you resize the text by manipulating a handle on the screen editor.</td></tr>
<tr><td></td><td></td><td>[Text Color]</td><td>Set the text color.
☞ Page 988 Color settings</td></tr>
<tr><td></td><td></td><td>[Reverse]</td><td>Inverts the text.</td></tr>
<tr><td></td><td></td><td>[Display the text to be shown on the screen with asterisk]</td><td>This item is not displayed when [Kana-Kanji/Pinyin Conversion] is selected on the [Extended] tab.
Represents the text and control characters (other than NULL) to be displayed on the screen with asterisks.
Since spaces (0x20) are also displayed with asterisks, if [Space(0x20)] is selected for [Input Character String Terminal], the number of asterisks may be greater than the number of characters.
When saved as an operation log, the original text string is saved, not asterisks.
When this item is selected, GS450.b4 becomes invalid.</td></tr>
<tr><td></td><td></td><td>[Blink]</td><td>Select the blinking speed of the text and shape.
The blink is paused when the input cursor is displayed.</td></tr>
<tr><td></td><td></td><td>[Blink Scope]</td><td>Select the area to be blinked.</td></tr>
</table>

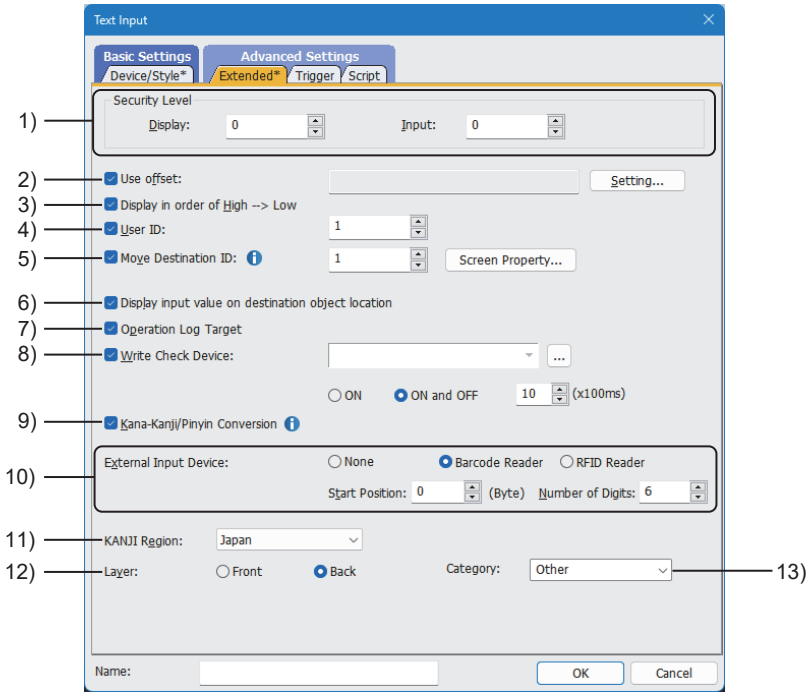
Item			Description
8)	[Shape]	[Shape]	Select the shape to be set for the object from the list or with the [Shape] button. ☞ Page 1044 Object shape When the text to be displayed overlaps the shape frame area, the text cannot be displayed normally. Configure the settings so that the text and the shape frame area do not overlap. 
		[Frame Color]	Select a frame color for the shape. ☞ Page 988 Color settings
		[Shape Color]	Select the color of the shape. ☞ Page 988 Color settings
9)	[Preview]	[Text]	Displays the preview of the screen. Set the text to be displayed in the preview.
10)	[Name]		Set the object name. The name is displayed in places such as the data browser and property sheet. The setting can also be changed in other tabs. Up to 100 characters can be set.

30.6.2 [Extended] tab

GT37 SoftGOT3000

For mobile screens, some setting items are not available.

☞ Page 2742 Usable functions



Item		Description
1)	[Security Level]	Set a security level when using the security function. The setting range is [0] to [15]. Set [0] when the security function is not used. For [Input], set the same or a greater value than the value set for [Display]. ☞ Page 3038 Restricting display and operation on the GOT (Screen security)
2)	[Use offset]	Select this item to monitor multiple devices by switching them. Set the offset device with the [Setting] button. ☞ Page 963 Offset
3)	[Display in order of High -> Low]	Select this item to display string data stored in devices in order of lower byte to upper byte. For details, refer to the following. ☞ Page 1354 Order of displaying and storing character strings
4)	[User ID]	Set the number to identify the object. The setting range is [1] to [65535]. For the applications of the user ID, refer to the following. ☞ Page 1348 Specifying the destination to which the cursor moves after the confirmation of a text entry
5)	[Move Destination ID]	Set the user ID of a text input object to which the cursor moves upon text input. To move the cursor by specifying a user ID, a cursor movement setting must also be configured. Configure one of the following settings to enable the cursor movement per project or per screen.
		To enable cursor movement in the entire project, set as follows in the [Environmental Setting] window ([Advanced Setting] tab of ([Key Window]). ☞ Page 572 [Advanced Setting] tab • Select [Control the cursor] for [Defined key action]. • Select [In order of user ID] or [Subsequently valid user ID] for [Cursor Move Destination].
		To enable cursor movement only on the screen where the text input object is placed, click the [Screen Property] button to display the properties of the screen where the text input object is placed. ☞ Page 313 Base screen properties ☞ Page 323 Window screen properties Set as follows in the [Key Window Advanced Setting] tab. • Select [[Prioritize screen setting over project setting]. • Select [Control the cursor] for [Defined key action]. • Select [In order of user ID] or [Subsequently valid user ID] for [Cursor Move Destination].

Item			Description	
6)	[Display input value on destination object location]		Reflects the text entered in the key window to the object on the screen immediately. To perform a write to a device, touch the enter key.	
7)	[Operation Log Target]		Select this item to record the operation log of the set object. ☞ Page 1909 Configuring the settings for collecting the GOT operation history ([Operation Log])	
8)	[Write Check Device]		Set the bit device and operation to notify the completion of a text input. Prevent input while the write completion device is on, for example, by setting the off state of the write completion device as the trigger condition for the object. If input is continuously performed before the write completion device turns off, the write completion device does not turn off at normal timing. The following shows selectable items for the operation.	
			[ON]	Turns on a set bit device upon completion of a text input.
			[ON and OFF]	Turns on a set bit device upon completion of a text input, and then turns off the bit device after a specified time period. The setting range of the time from turning on to turning off the bit device is [5] x 100 ms to [30] x 100 ms.
				[Write Complete Device] can be set for numerical input and the text input objects. If [Write Check Device] is set to [ON and OFF] for multiple numerical input or text input objects, do not turn on 21 or more write completion devices simultaneously. Otherwise the write completion devices that turn on 21st and later do not turn off automatically.
				Even when screen switching (including switching to utilities) occurs while a write completion device is on, the write completion device does not turn off. The device remains on until a set time elapses.
9)	[Kana-Kanji/Pinyin Conversion]		This item is not displayed when [Display the text to be shown on the screen with asterisk] is selected on the [Device/Style] tab. Select this item to enable Kana-Kanji/Pinyin conversion. For details on the Kana-Kanji/Pinyin conversion function, refer to the following. ☞ Page 604 Configuring the settings for converting a text into kanji or Simplified Chinese characters in the GOT ([Kana-Kanji/Pinyin Conversion])	
10)	[External Input Device]	—	Set whether to input the text read with a serial barcode reader or RFID reader. ☞ Page 2564 Using a barcode reader with the GOT (barcode function) ☞ Page 2588 Using an RFID with the GOT (RFID function) When selecting [Barcode Reader] or [RFID Reader], set [Start Position] and [Number of Digits].	
		[Start Position]	Specify the input start byte of the data read with a barcode reader or RFID reader. • [Barcode Reader]: [0]th byte to [3997]th byte • [RFID Reader]: [0]th byte to [19997]th byte	
		[Number of Digits]	Set the number of digits of input data read with a barcode reader or RFID reader. The same or smaller number of digits as that set for [Digits] in the [Device/Style] tab can be set.	
11)	[KANJI Region]		When selecting [Unicode] for [Character Code], select the KANJI region of the displayed text. ☞ Page 76 KANJI region This item is enabled when either of the following fonts is selected for [Font] in the [Device/Style] tab. • [UD Gothic] • [UD Mincho]	
12)	[Layer]		Select the layer to place the object. ☞ Page 65 Layer	
13)	[Category]		Select the category to assign the object. ☞ Page 1092 Efficient Drawing with Templates	

30.6.3 [Trigger] tab

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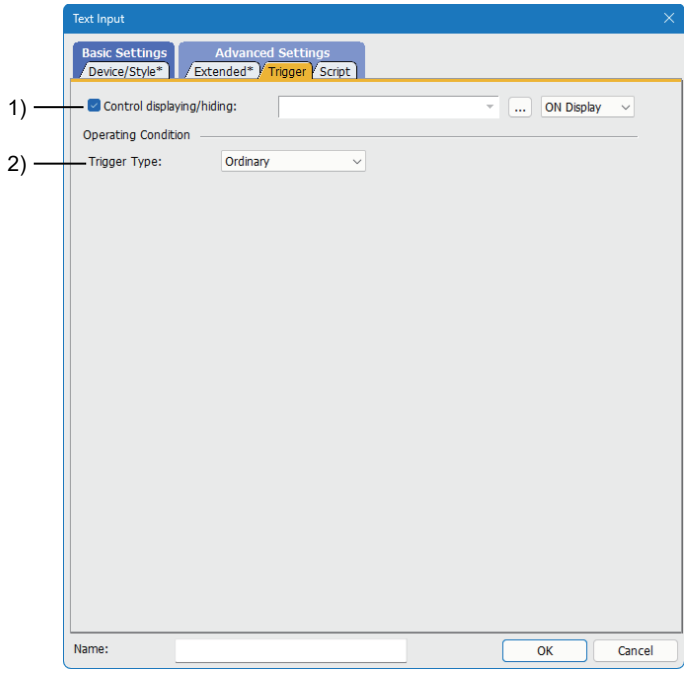


Item		Description
1)	[Control displaying/hiding]	Enables the setting to display the object only when requirements are met. Set the following as requirements. • Bit device for control • When to display: When the bit device for control is on or off
2)	[Trigger Type]	Select the condition of displaying the object. For details on the trigger types, refer to the following. ☞ Page 976 Trigger types settable for the object operating condition

PART 7

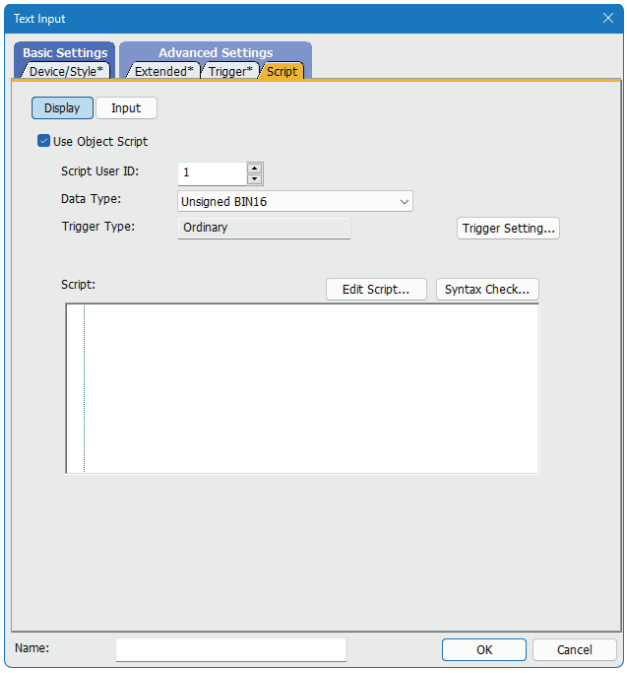
30.6.4 [Script] tab

GT37 SoftGOT3000

For a single text input object, both display object scripts and input object scripts can be set.

For details on the script settings, refer to the following.

☞ Page 2447 Object script



Relationship between the object settings and object properties

Object settings can be read (referenced) or written (changed) using object properties.

The following shows the correspondence between readable/writable object properties and the setting items in the object setting dialog.

○: Available

×: Not available

—: No applicable setting item

Setting dialog		Object property			
Tab name	**Setting item**	**Property name**	**Read**	**Write**	**Timing for reflecting the setting change** *1
—	—	active	○	○	Upon the setting change
		x	○	○	When the screen is updated
		y	○	○	When the screen is updated
		width	○	×	×
		height	○	×	×
		text_width	○	○	When the object is updated
		text_height	○	○	When the object is updated
[Device/Style]	[Alignment]	arrange	○	○	When the object is updated
	[Text Color]	text_color	○	○	When the object is updated
	[Reverse]	highlight	○	○	When the object is updated
	[Blink] [Blink Scope]	blink	○	○	When the object is updated
	[Frame Color]	frame_color	○	×	×
	[Shape Color]	plate_color	○	○	When the object is updated
[Extended]	[Security Level] (display)	security	○	○	When the screen is updated
	[Security Level] (input)	input_security	○	○	Upon the setting change

*1 For information on how long it takes for object property settings to be reflected on the screen, refer to the following page.
☞ Page 2456 Timing at which the setting change of an object property is reflected

30.7 Relevant settings

GT37 SoftGOT3000

For the text display and text input t objects, there are relevant settings other than the specific settings.
The following shows the functions that are available by configuring the relevant settings.
☞ Page 1370 GOT environmental settings (key window), screen property
☞ Page 1372 GOT environmental settings (System information)
☞ Page 1372 GOT internal devices

30.7.1 GOT environmental settings (key window), screen property

Set the following functions for each project (GOT environmental settings) or for each screen (screen property).
☞ Page 558 Setting key windows of the GOT ([Key Window])

• Settings for each project (GOT environmental settings)

Select [Common] → [GOT Environmental Setting] → [Key Window] from the menu to display the [Environmental Setting] window.

• Settings for each screen (screen property)

Select the screen editor on which the key window is to be set, and select [Screen] → [Screen Property] from the menu to display the screen properties.

Function	Setting item
Displaying the key window when the operating condition is satisfied	Set this function in the following item in the [SP Function] tab or [Key Window Advanced Setting] tab. • [Key Window]
Displaying the key window when the screen is switched	Set this function in the following item in the [SP Function] tab or [Key Window Advanced Setting] tab. • [Display the key window]
Displaying the cursor when the screen is switched	Set this function in the following item in the [SP Function] tab or [Key Window Advanced Setting] tab. • [Display the cursor]
Displaying the cursor when the operating condition is satisfied	Set this function in the following item in the [SP Function] tab or [Key Window Advanced Setting] tab. • [Cursor]
Deleting the key window and cursor when the operating condition is not satisfied	Set this function in the following item in the [SP Function] tab or [Key Window Advanced Setting] tab. • [Clear the key window and the cursor] of [When operating conditions are not satisfied]
Selecting the method of displaying the cursor when entering a value using a numerical input or text input object	Display the [Display Detail Setting] dialog with the [Setting] button in the [Advanced Setting] tab or [Key Window Advanced Setting] tab to set this function with the following item. • [Cursor Type]
Displaying the key window at a touch input or deleting the key window by pressing the enter key	Set this function in the following item in the [SP Function] tab or [Key Window Advanced Setting] tab. • [Key Window] • [Defined key action]
When multiple numerical or text input objects exist, setting the order of input After an input is confirmed, moving the cursor to the next destination automatically	Set this function in the following item in the [SP Function] tab or [Key Window Advanced Setting] tab. • [Defined key action] • [Reference for determining cursor destination]
Setting the window screen to be used as a key window for numerical inputs (decimal or hexadecimal) and text inputs	Set this function with the following item the [Basic Setting] tab or [Key Window Basic Setting] tab. • [Key Window]
Setting whether to move the display of the key window or not by screen	Set this function in the following item in the [SP Function] tab or [Key Window Advanced Setting] tab. • [Key Window Position Correction]

Function	Setting item
Setting whether to display or hide the cursor when hiding the cursor and pressing the enter key or an arrow key	Display the [Display Detail Setting] dialog with the [Setting] button in the [Advanced Setting] tab or [Key Window Advanced Setting] tab to set this function with the following item. • [Display the cursor with a touch on the Enter/arrow key when the cursor is hidden]
When entering a value or text with a numerical input or text input object, displaying a dialog prompting you to confirm the entry when the enter key is touched	Display the [Display Detail Setting] dialog with the [Setting] button in the [Advanced Setting] tab or [Key Window Advanced Setting] tab to set this function with the following item. • [Display the input confirmation dialog when setting the function of Numerical/Text Input]

30.7.2 GOT environmental settings (System information)

Select [Common] → [GOT Environmental Setting] → [System Information] from the menu to display the [Environmental Setting] window.

☞ Page 576 Setting a device which controls the GOT operations or notifies the GOT status ([System Information])

Function	Setting item
Outputting the input signal, input number, or others to the system information when the text input is executed	[Output object ID of Text Input to the system information device]
When deleting the cursor, clearing the cursor information, such as the cursor display object ID and cursor display user ID	[Clear the cursor information when deleting the cursor]
Turning off the Key Input signal (System signal 1-1.b3)	[System Signal 1-1]
Turning off the signal (System information 2-1.b4) that turns on when an input using a text input object is confirmed (System signal 1-1.b4)*1	[System Signal 1-1]
Disabling all the key inputs (System signal 1-1.b9)	[System Signal 1-1]
Notifying a key input (System signal 2-1.b3)	[System Signal 2-1]
Notifying the confirmation of an entry from a text input object (System signal 2-1.b4)*1	[System Signal 2-1]
Notifying that the key window is being displayed (System signal 2-1.b11)	[System Signal 2-1]
Notifying that the cursor is being displayed in a text input object (System signal 2-2.b11)	[System Signal 2-2]
Notifying the user ID of the text input object on which the input is confirmed*1	[Numeric Value Input Number]
Notifying the object ID of the object currently displayed under the cursor	[Current Cursor Display Object ID]
Notifying the object ID of the object previously displayed under the cursor	[Previous Cursor Display Object ID]
Notifying the user ID of the object currently displayed under the cursor*1	[Current Cursor Display User ID]
Notifying the user ID of the object previously displayed under the cursor*1	[Previous Cursor Display User ID]
Notifying the key codes set to the input keys when there is an input using a text input, touch switch, or other objects	[Key Code Input]

*1 To set the text input as the operation target of each signal, select [Output object ID of Text Input to the system information device] in the [Environmental Setting] window ([System Information]) or turn on GS450.b2.

☞ Page 576 Setting a device which controls the GOT operations or notifies the GOT status ([System Information])
☞ Page 3640 Monitor Common Control (GS450)

30.7.3 GOT internal devices

☞ Page 3581 GOT special register (GS)

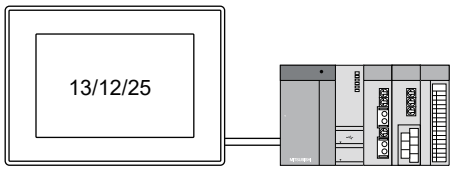
Function	Setting item
Notifying that the object is ready for receiving an direct input with a barcode reader or RFID reader	GS243.b15
When entering a value or text with a numerical input or text input object, displaying a dialog prompting you to confirm the entry when the enter key is touched	GS450.b0
Storing 0 in the current cursor position device and other related devices of the system information when the cursor is hidden	GS450.b3
Switching the conversion method at text entry between Kana-Kanji conversion and Pinyin conversion	GS450.b4
Changing the character code to be used for the text display and text input	GS456
Changing the KANJI region to be used for text display and text input where [Character Code] is set to [Unicode]	GS468
Notifying the upper-left coordinates of a text input object on which the cursor is displayed	GS694 GS695

31 Placing a date display or time display

GT37 SoftGOT3000

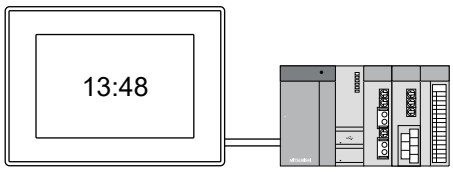
• Date display

This function displays the date on the GOT.



• Time display

This function displays the time on the GOT.



☞ Page 1374 Specifications of the date display and time display
☞ Page 1375 How to use the date display and time display
☞ Page 1376 [Date Display] dialog
☞ Page 1381 [Time Display] dialog

31.1 Specifications of the date display and time display

GT37 SoftGOT3000

31.1.1 Maximum number of objects that can be placed on one screen

The maximum number of objects on one screen depends on the screen type.

• Base screen

Up to 1024 date displays and time displays can be placed on one screen.

• Window screen

Up to 512 date displays and time displays can be placed on one screen.

31.1.2 Date data and time data to be displayed

The date display and the time display use the GOT clock data.

For information on the clock of the GOT, refer to the following.

☞ Page 635 Setting the GOT time setting method ([Time Setting])

31.2 How to use the date display and time display

GT37 SoftGOT3000

31.2.1 Placing a date display or time display

Place a date display or time display on a screen editor.

☞ Page 1001 Placing figures and objects

31.2.2 Editing a date display or time display

Edit a date display or time display on the screen editor.

☞ Page 1003 Selecting figures and objects on the screen editor

☞ Page 1007 Resizing

31.2.3 Configuring the settings for a date display or time display

Configure the settings of a date display or time display on the screen editor.

- Common settings for objects

☞ Page 1032 Settings common to figures and objects

- Date display settings

☞ Page 1376 [Date Display] dialog

- Time display settings

☞ Page 1381 [Time Display] dialog

31.3 [Date Display] dialog

GT37 SoftGOT3000

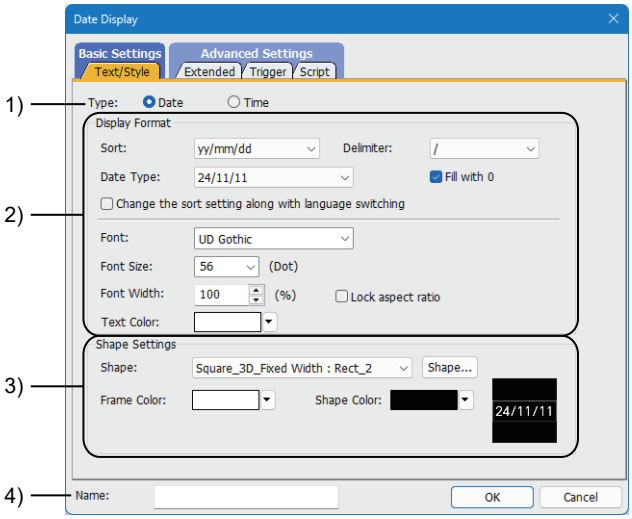
Operating procedure

1. Select [Object] → [Date/Time Display] → [Date Display] from the menu.
2. Click the position to place a date display.
3. Double-click the date display to display the setting dialog.

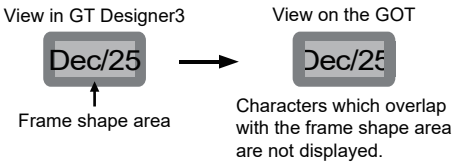
☞ Page 1376 [Text/Style] tab
☞ Page 1378 [Extended] tab
☞ Page 1379 [Trigger] tab
☞ Page 1380 [Script] tab

31.3.1 [Text/Style] tab

GT37 SoftGOT3000

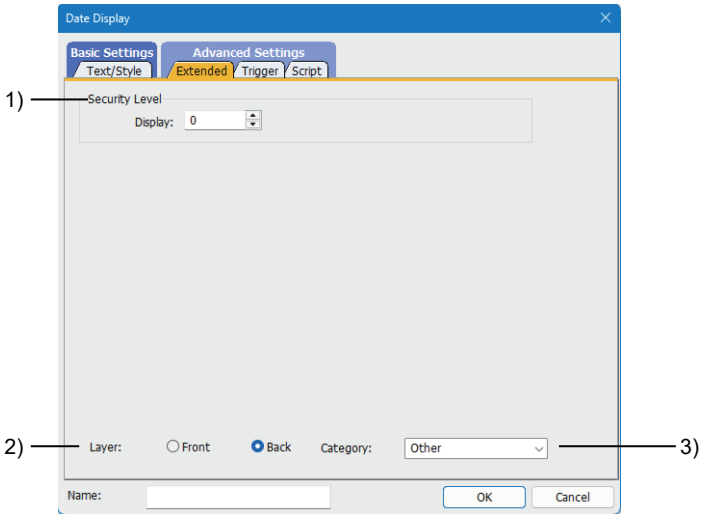


Item			Description
1)	[Type]		Changing the selection toggles between the object types.
2)	[Display Format]	[Sort]	Select a sorting order by year, month, and day. When [Change the sort setting along with language switching] is selected, a sorting order cannot be selected.
		[Delimiter]	Select a delimiter used for separating the year, month, and day.
		[Date Type]	Select the display format of the date. The items to be displayed differ depending on the selected item for [Delimiter] and whether [Fill with 0] is selected.
		[Fill with 0]	When the month or day is a single digit, zero is displayed before the single-digit number.
		[Change the sort setting along with language switching]	Changes the sorting order of the date along with language switching. This function may not be settable depending on the item selected for [Date Type]. To use this function, set [Region Setting] for [Language Switching] of [Environmental Setting] window. ☞ Page 546 Setting for switching the language displayed on the GOT ([Language Switching])

Item			Description
2)	[Display Format]	[Font]	Select the font of the displayed text.
		[Font Size]	Set a vertical text size. The setting range is [8] dots to [540] dots.
		[Font Width]	Set a horizontal text size. The horizontal size is specified with the magnification relative to [Font Size] (vertical text size). The setting range is [6]% to [1600]%.
		[Lock aspect ratio]	Select this item to fix the aspect ratio of the font. When this item is selected, the setting of [Font Width] is disabled.
		[Text Color]	Set the text color. ☞ Page 988 Color settings
3)	[Shape Settings]	[Shape]	Select the shape to be set for the object from the list or with the [Shape] button. ☞ Page 1045 How to set the object shape When the text to be displayed overlaps the shape frame area, the text cannot be displayed normally. Configure the settings so that the text and the shape frame area do not overlap. 
		[Frame Color]	Select the frame color of the shape. ☞ Page 988 Color settings
		[Shape Color]	Select the color of the shape. ☞ Page 988 Color settings
		Preview	Displays the preview of the screen.
4)	[Name]		Set the object name. The name is displayed in places such as the data browser and property sheet. The setting can also be changed in other tabs. Up to 100 characters can be set.

31.3.2 [Extended] tab

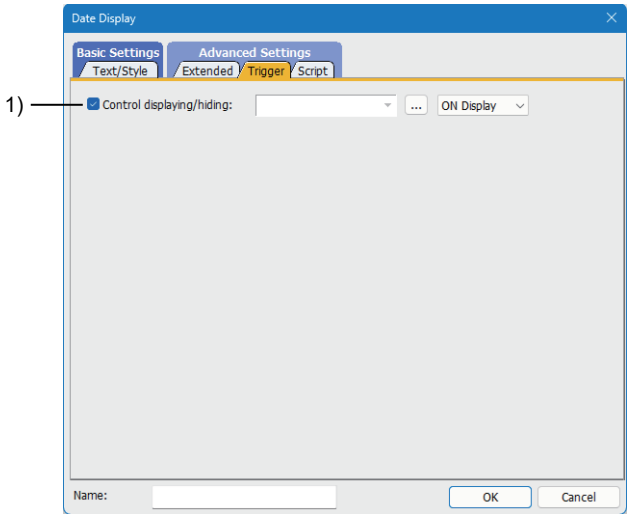
GT37 SoftGOT3000



Item		Description
1)	[Security Level]	Set a security level when using the security. The setting range is [0] to [15]. If you do not use the security, select [0]. ☞ Page 3038 Restricting display and operation on the GOT (Screen security)
2)	[Layer]	Switches layers to be placed.
3)	[Category]	Select the category to assign the object. ☞ Page 1121 Managing figures and objects by category

31.3.3 [Trigger] tab

GT37 SoftGOT3000



Item		Description
1)	[Control displaying/hiding]	Set the control device to display or hide all the objects including the shape frame. When the set device is in either the ON or OFF status, select whether or not to display the object. ☞ Page 1121 Managing figures and objects by category

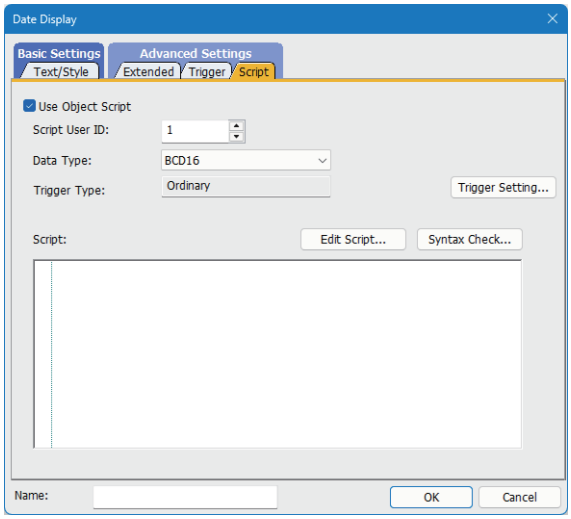
PART 7

31.3.4 [Script] tab

GT37 SoftGOT3000

For the script settings, refer to the following.

☞ Page 2447 Object script



Relationship between the object settings and object properties

Object settings can be read (referenced) or written (changed) using object properties.

The following shows the correspondence between readable/writable object properties and the setting items in the object setting dialog.

○: Available

×: Not available

—: No applicable setting item

Setting dialog		Object property			
Tab name	**Setting item**	**Property name**	**Read**	**Write**	**Timing for reflecting the setting change*1**
—	—	active	○	○	Upon the setting change
		x	○	○	When the screen is updated
		y	○	○	When the screen is updated
		width	○	×	×
		height	○	×	×
		text_width	○	○	When the object is updated
		text_height	○	○	When the object is updated
[Text/Style]	[Text Color]	text_color	○	○	When the object is updated
	[Frame Color]	frame_color	○	×	×
	[Shape Color]	plate_color	○	○	When the object is updated
[Extended]	[Security Level]	security	○	○	When the screen is updated

*1 For information on how long it takes for object property settings to be reflected on the screen, refer to the following page.

☞ Page 2456 Timing at which the setting change of an object property is reflected

31.4 [Time Display] dialog

GT37 SoftGOT3000

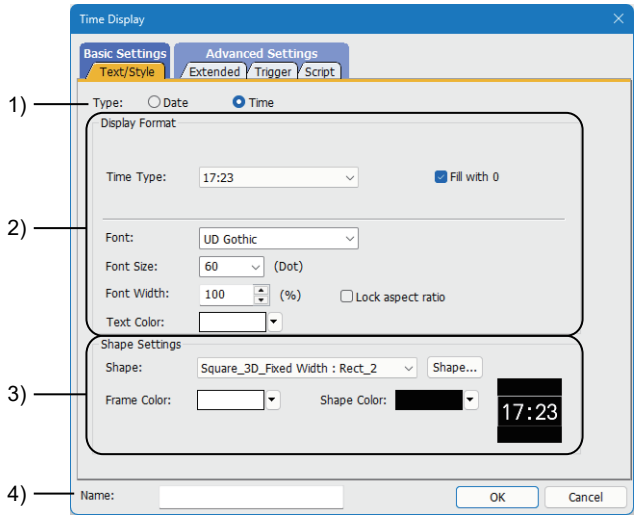
Operating procedure

1. Select [Object] → [Date/Time Display] → [Time Display] from the menu.
2. Click the position to place a time display.
3. Double-click the time display to display the setting dialog.

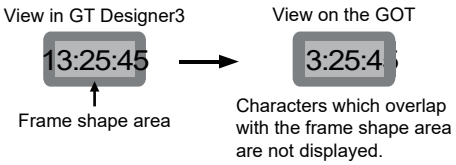
☞ Page 1381 [Text/Style] tab
☞ Page 1383 [Extended] tab
☞ Page 1384 [Trigger] tab
☞ Page 1385 [Script] tab

31.4.1 [Text/Style] tab

GT37 SoftGOT3000

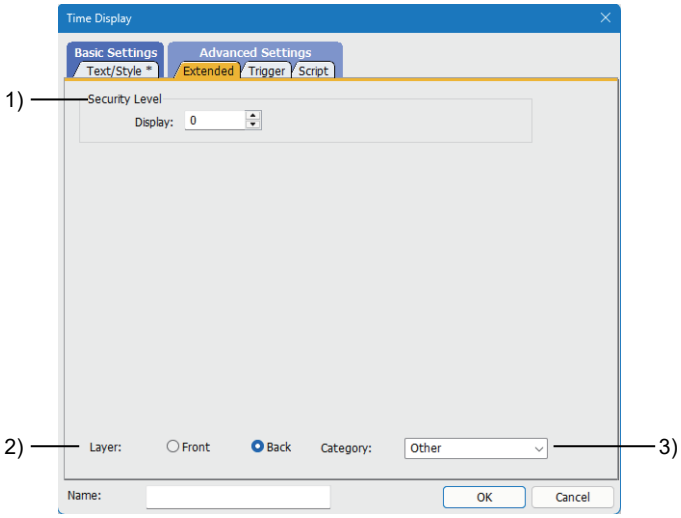


Item			Description
1)	[Type]		Select the function to be used.
2)	[Display Format]	[Time Type]	Select the display format of the time. The items to be displayed differ depending on whether [Fill with 0] is selected.
		[Fill with 0]	When the time, minute, or second is a single digit, zero is displayed before the single-digit number.
2)	[Display Format]	[Font]	Select the font of the displayed text.
		[Font Size]	Set a vertical text size. The setting range is [8] dots to [540] dots.
		[Font Width]	Set a horizontal text size. The horizontal size is specified with the magnification relative to [Font Size] (vertical text size). The setting range is [6]% to [1600]%.
		[Lock aspect ratio]	Select this item to fix the aspect ratio of the font. When this item is selected, the setting of [Font Width] is disabled.
		[Text Color]	Set the text color. ☞ Page 988 Color settings

Item			Description
3)	[Shape Settings]	[Shape]	Select the shape to be set for the object from the list or with the [Shape] button. ☞ Page 1045 How to set the object shape When the text to be displayed overlaps the shape frame area, the text cannot be displayed normally. Configure the settings so that the text and the shape frame area do not overlap. 
		[Frame Color]	Select the frame color of the shape. ☞ Page 988 Color settings
		[Shape Color]	Select the color of the shape. ☞ Page 988 Color settings
		Preview	Displays the preview of the screen.
4)	[Name]		Set the object name. The name is displayed in places such as the data browser and property sheet. The setting can also be changed in other tabs. Up to 100 characters can be set.

31.4.2 [Extended] tab

GT37 SoftGOT3000



Item		Description
1)	[Security Level]	Set a security level when using the security. The setting range is [0] to [15]. If you do not use the security, select [0]. ☞ Page 3038 Restricting display and operation on the GOT (Screen security)
2)	[Layer]	Switches layers to be placed.
3)	[Category]	Select the category to assign the object. ☞ Page 1121 Managing figures and objects by category

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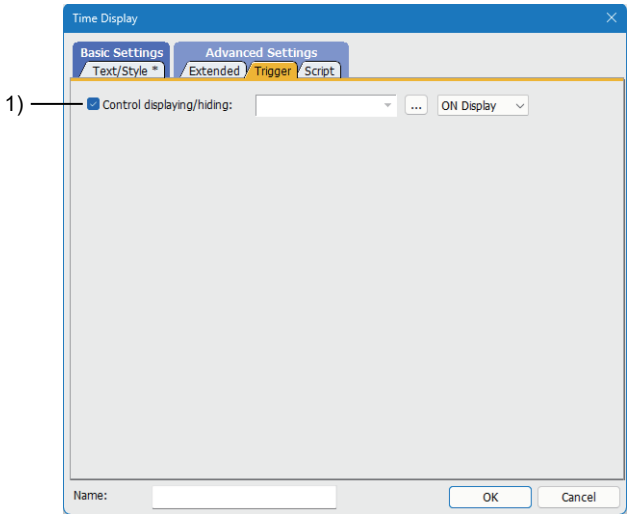
31.4.3 [Trigger] tab

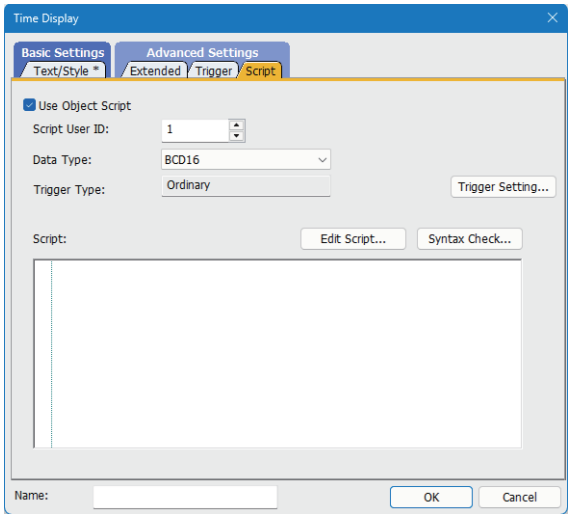
GT37 SoftGOT3000



Item		Description
1)	[Control displaying/hiding]	Set the control device to display or hide all the objects including the shape frame. When the set device is in either the ON or OFF status, select whether or not to display the object. ☞ Page 1121 Managing figures and objects by category

31.4.4 [Script] tab

GT37 SoftGOT3000



Relationship between the object settings and object properties

Object settings can be read (referenced) or written (changed) using object properties.

The following shows the correspondence between readable/writable object properties and the setting items in the object setting dialog.

○: Available

×: Not available

—: No applicable setting item

Setting dialog		Object property			
Tab name	Setting item	Property name	Read	Write	Timing for reflecting the setting change*1
—	—	active	○	○	Upon the setting change
		x	○	○	When the screen is updated
		y	○	○	When the screen is updated
		width	○	×	×
		height	○	×	×
		text_width	○	○	When the object is updated
		text_height	○	○	When the object is updated
[Text/Style]	[Text Color]	text_color	○	○	When the object is updated
	[Frame Color]	frame_color	○	×	×
	[Shape Color]	plate_color	○	○	When the object is updated
[Extended]	[Security Level]	security	○	○	When the screen is updated

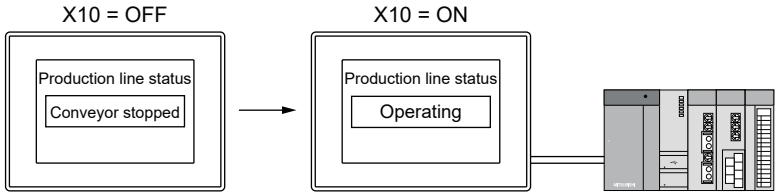
*1 For information on how long it takes for object property settings to be reflected on the screen, refer to the following page.
☞ Page 2456 Timing at which the setting change of an object property is reflected

32 Placing a comment display

GT37 SoftGOT3000

• Comment display (bit)

This function displays the comment corresponding to the on/off status of a bit device.

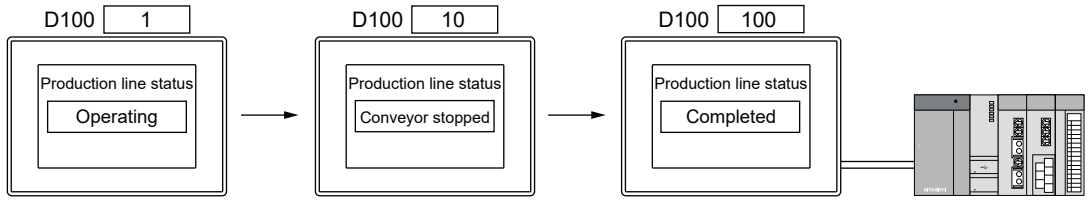


Comment of when the bit device is off

Comment of when the bit device is off

• Comment display (word)

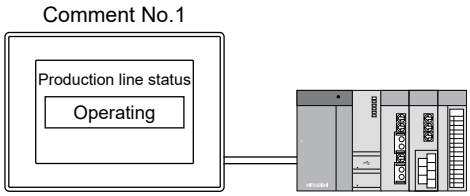
This function displays the comment corresponding to the value of a word device.



Comment No.1 is displayed. Comment No.10 is displayed. Comment No.100 is displayed.

• Comment display (simple)

This function displays comments without setting a device.



Comment No.1 is always displayed.

☞ Page 1387 Specifications of the comment display
☞ Page 1388 How to use the comment display
☞ Page 1390 [Bit Comment Display] dialog
☞ Page 1400 [Word Comment Display] dialog
☞ Page 1413 [Simple Comment Display] dialog

32.1 Specifications of the comment display

GT37 SoftGOT3000

32.1.1 Maximum number of objects that can be placed on one screen

Up to 1024 comment display and other objects can be placed on one base screen, while up to 512 can be placed on one window screen.

32.1.2 Comment to be used

The comment display uses the comment that is created in the comment group.

☞ Page 776 Comment setting ([Comment])

Precautions

If the nonexistent value (column No.) is stored in the language switching device, the comment is not displayed.

32.1.3 Superimposing a comment display on a level object

A comment display can be superimposed on a level object.

For restrictions on superimposing a comment display on a level object, refer to the following.

☞ Page 1761 Placing a level object

PART 7

32.2 How to use the comment display

GT37 SoftGOT3000

32.2.1 Placing a comment display

Place comment displays on the screen editor.

☞ Page 1001 Placing figures and objects

32.2.2 Editing comment displays

Edit comment displays that have been placed on the screen editor.

☞ Page 1003 Selecting figures and objects on the screen editor

☞ Page 1007 Resizing

32.2.3 Setting comment displays

Set comment displays that have been placed on the screen editor.

Common settings for objects

☞ Page 1032 Settings common to figures and objects

Comment display (bit) settings

☞ Page 1390 [Bit Comment Display] dialog

Comment display (word) settings

☞ Page 1400 [Word Comment Display] dialog

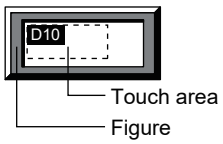
Comment display (simple) settings

☞ Page 1413 [Simple Comment Display] dialog

32.2.4 How to adjust the display position of shapes set for objects

Select [Edit] → [Edit Touch Area] → [Manual Edit] from the menu to adjust the display positions of the touch area and the shape.

☞ Page 1030 Adjusting the touch area of an object (size, position)



32.2.5 Displaying the comment that exceeds the display range

The display method for the comment that exceeds the display range can be set.

Select the comment display on the screen editor to display the numbers of digits and rows that are available for the object size in the status bar.

Precautions

Some comment cannot be displayed within the display range by language switching.

Set the display range of the object after considering the number of characters in the registered comment.

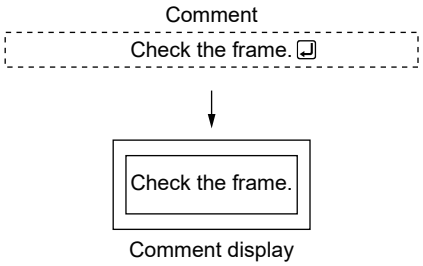
The display range of the comment can be checked on the screen of GT Designer3 by changing the preview column No.

☞ Page 546 Setting for switching the language displayed on the GOT ([Language Switching])

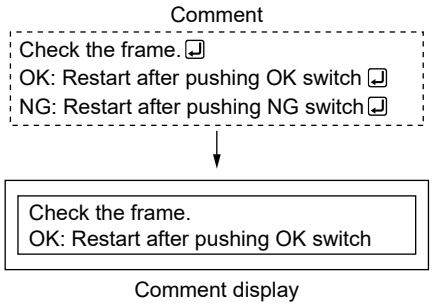
Displaying the comment with the word wrap

If a comment exceeds the display range horizontally, the comment is wrapped to the next line.

However, the word wrap is not applicable to the comment displayed in a Windows font.



If a comment exceeds the display range vertically, only the part of the comment within the range is displayed.



Displaying the comment without the word wrap

When [Adjust Font Size] is selected, [Font Size] is adjusted automatically so that the entire comment fits on the display range.

☞ Page 1392 [Comment] tab

☞ Page 1403 [Comment] tab

☞ Page 1413 [Simple Comment Display] dialog

32.3 [Bit Comment Display] dialog

GT37 SoftGOT3000

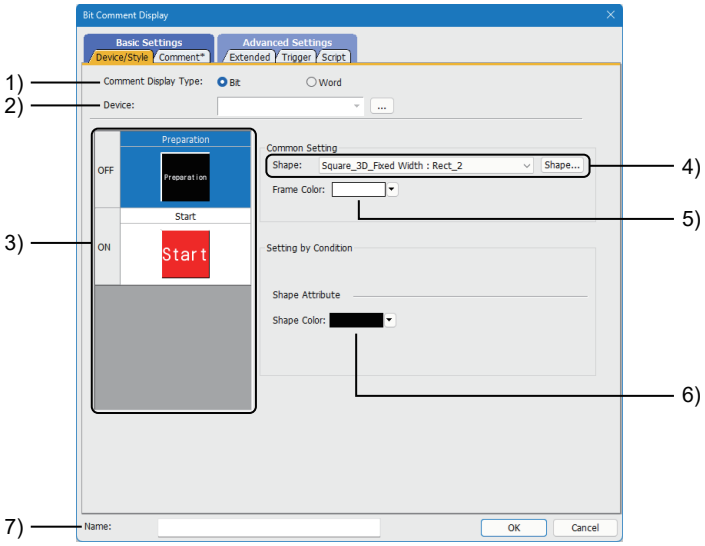
Operating procedure

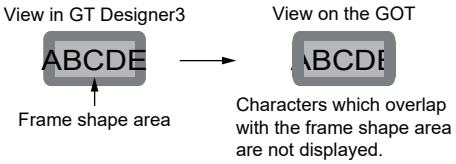
1. Select [Object] → [Comment Display] → [Bit Comment] from the menu.
2. Click the position to place a bit comment display.
3. Double-click the bit comment display to display the setting dialog.

☞ Page 1391 [Device/Style] tab
☞ Page 1392 [Comment] tab
☞ Page 1395 [Extended] tab
☞ Page 1397 [Trigger] tab
☞ Page 1398 [Script] tab

32.3.1 [Device/Style] tab

GT37 SoftGOT3000



Item		Description
1)	[Comment Display Type]	Select the comment display type. The following shows selectable items. • [Bit] • [Word]
2)	[Device]	Set the device to be monitored. ☞ Page 834 How to set devices, labels, and tags
3)	Preview list	Displays the shapes for the on and off status.
4)	[Shape]	Select the shape to be set for the object from the list or with the [Shape] button. ☞ Page 1045 How to set the object shape When the text to be displayed overlaps the shape frame area, the text cannot be displayed normally. Configure the settings so that the text and the shape frame area do not overlap. 
5)	[Frame Color]	Select the frame color of the shape. ☞ Page 988 Color settings
6)	[Shape Color]	Select the color of the shape.
7)	[Name]	Set the object name. The name is displayed in places such as the data browser and property sheet. The setting can also be changed in other tabs. Up to 100 characters can be set.

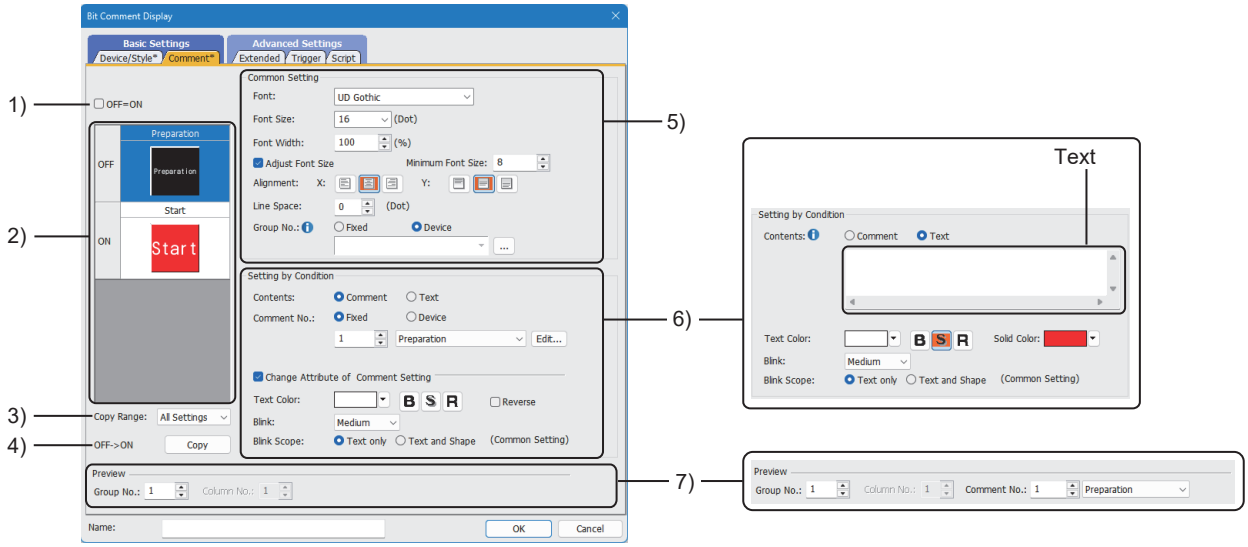
PART 7

32.3.2 [Comment] tab

GT37 SoftGOT3000

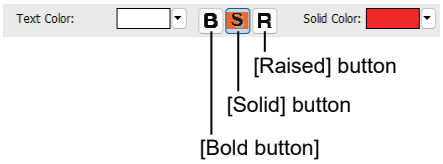
For mobile screens, some setting items are not available.

☞ Page 2742 Usable functions



Item		Description
1)	[OFF=ON]	Selecting this item applies the same setting to both when the switch is on and off.
2)	Preview list	Displays the shapes for the on and off status.
3)	[Copy Range]	Set the copy range. The following shows selectable items. • [All settings]: Copies all the text settings. • [Text only]: Copies the text only.
4)	[OFF→ON], [ON→OFF]	Copies the text setting. Depending on the selection in the preview list, the copy source and copy destination are different. • [OFF→ON]: Copies the setting for when the switch is off to the setting for when the switch is on by clicking the [Copy] button. • [ON→OFF]: Copies the setting for when the switch is on to the setting for when the switch is off by clicking the [Copy] button.

Item			Description
5)	[Common Setting]	[Font]	Select the font of the displayed text. • [UD Gothic] • [UD Mincho] • [UDP Gothic] • [UDP Mincho] • [Windows Font]: This item is selectable when [Group No.] is set to [Fixed]. Displays text in the font specified with [Windows Font] in the [Comment Group Property] dialog.
		[Windows Font Setting] button	This item appears when [Windows Font] is selected for [Font]. The [Comment Group Property] dialog for the group number specified by [Group No.] is displayed. Set [Windows Font] and [Character Set] for the target column of the comment group. ☞ Page 797 [Comment Group Property] dialog
		[Font Size]	Set a vertical text size. The setting range is [8] dots to [540] dots.
		[Font Width]	Set a horizontal text size. The horizontal size is specified with the magnification relative to [Font Size] (vertical text size). The setting range is [6]% to [1600]%.
		[Adjust Font Size]	The font size is automatically adjusted according to the object size. When this item is deselected, a line feed is automatically inserted.
		[Minimum Font Size]	This item can be set only when [Adjust Font Size] is set. Set the minimum font size applied when the font size is automatically adjusted. The setting range is [8] dots to [540] dots.
		[Alignment]	Set the vertical and horizontal positions of the text.
		[Line Space]	Set the space between lines in units of dots. The setting range is [0] dots to [128] dots.
		[Group No.]	Set the group number of the comment group to be used. • [Fixed] Select this item to use the specified comment group. After selecting this item, directly enter the comment group No. to be used. • [Device] Select this item to use the comment group number corresponding to the value of the device to be set. Select this item and set the device. ☞ Page 834 How to set devices, labels, and tags

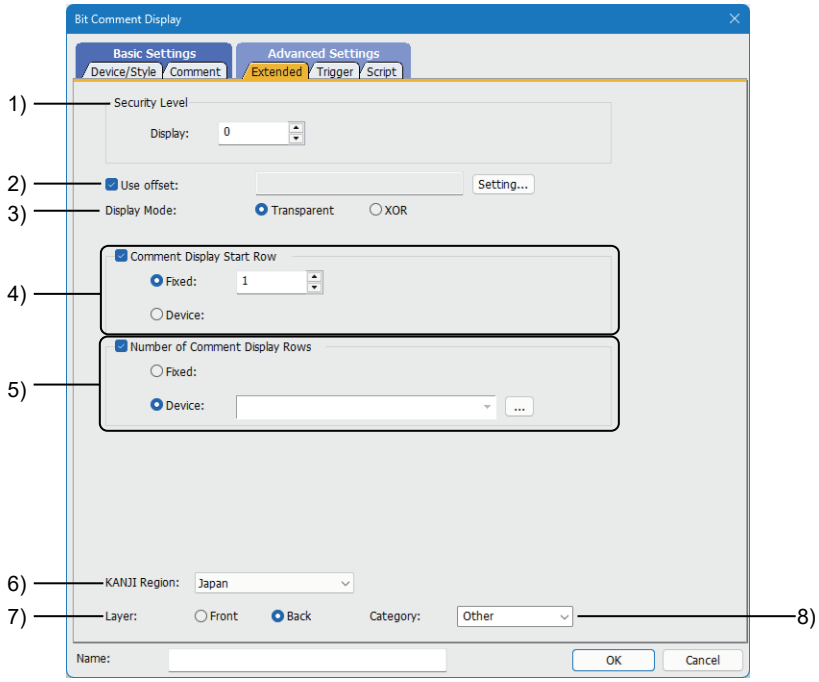
Item			Description
6)	[Setting by Condition]	—	The setting items differ depending on the selection for [Contents].
		[Contents]	Select the item to be displayed as a comment. The following shows selectable items. • [Comment]: Set [Comment No.]. • [Text]: Enter text directly.
		[Comment No.]	Select the target item in the preview list, then set the comment number of the comment to be used. • [Fixed] Select this item to use the specified comment. After selecting this item, directly enter the comment No. to be used. If [0] is specified, no comment is displayed. To edit the comment to be displayed, click the [Edit] button to display the [Edit Comment] dialog. If you specify an unregistered comment group number or comment number, a comment is newly created. ☞ Page 3685 [Edit Comment] dialog • [Device] Select this item to use the comment number corresponding to the value of the device to be set. Select this item and set the device. ☞ Page 834 How to set devices, labels, and tags
		[Change Attribute of Comment Setting]	Set the comment attribute such as [Text Color] and [Blink].
		[Text Color]	Set the color and style of the text to be displayed on the object. One style ([Bold], [Solid], or [Raised]) is settable only.  • [Text Color] Set the text color. ☞ Page 988 Color settings • [Bold] button Displays the text in bold. • [Solid] button Displays the text with a shadow. • [Raised] button Displays the text embossed. • [Solid Color] When [Solid] or [Raised] is selected as the text style, set the color of the shadow.
		[Blink]	Select the blinking speed of the text and shape. The following shows selectable items. • [None] • [Low] • [Medium] • [High]
		[Reverse]	Inverts the text.
		[Blink Scope]	Select the area to be blinked. The following shows selectable items. • [Text only] • [Text and Shape] These settings are applied to all the conditions to be set.
7)	[Preview]	—	Set the comment to be previewed in the preview list.
		[Group No.]	Set the comment group No. to be previewed. This item can be set only when [Device] is set in [Group No.]. The setting range is [1] to [500].
		[Column No.]	Set the column No. to be previewed. The setting range is [1] to [30].
		[Comment No.]	This item appears when [Device] is selected for [Comment No.] under [Setting by Condition]. Set the comment No. to be displayed. The setting range is [0] to [32767].

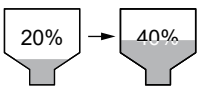
32.3.3 [Extended] tab

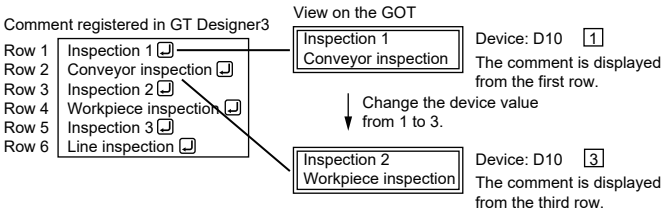
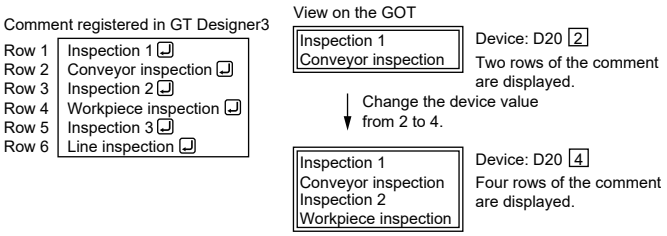
GT37 SoftGOT3000

For mobile screens, some setting items are not available.

☞ Page 2742 Usable functions

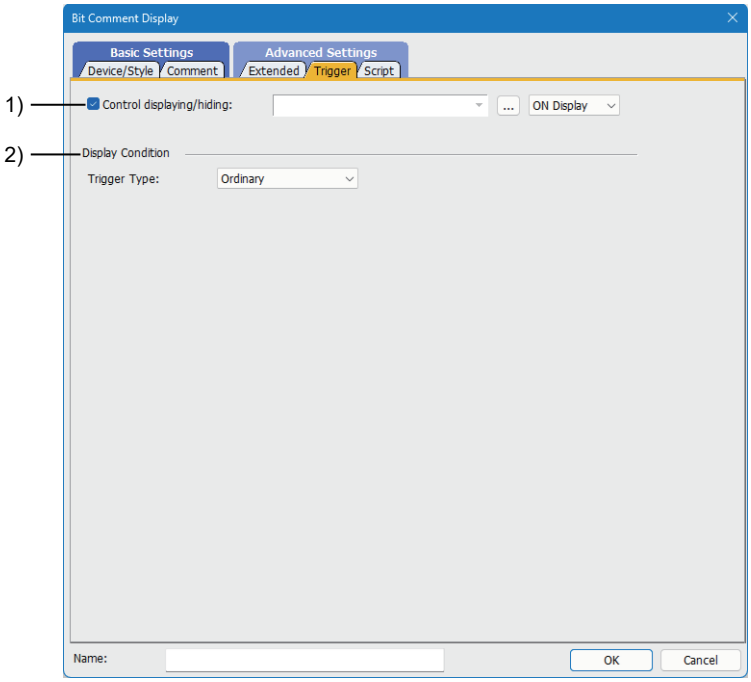


Item		Description
1)	[Security Level]	Set a security level when using the security. The setting range is [0] to [15]. If you do not use the security, select [0].
2)	[Use offset]	Select this item to monitor multiple devices by switching them. Sets the offset device with the [Setting] button. ☞ Page 963 Offset
3)	[Display Mode]	Display mode when the comment display is superimposed on a level object. This setting is not displayed when [Enable the antialiasing] is selected in the [Type Setting] dialog ([Basic Setting]). The operation when [Transparent] is selected is applied. ☞ Page 519 [Type Setting] dialog • [Transparent]: Displays the comment on the level object. • [XOR]: XOR synthesizes the comment using the level color so that the comment is distinguished from the level object. 

Item			Description
4)	[Comment Display Start Row]	—	When setting a comment having multiple rows, set the first row to be displayed. If a nonexistent line number is specified, no comment is displayed. If the comment is displayed as blank, check the number of rows of the specified comments.
		[Fixed]	Enter the start row directly. The setting range is [1] to [32767].
		[Device]	Set the device value as the start row to be displayed. ☞ Page 834 How to set devices, labels, and tags Example) When [Device] is selected and [D10] is specified 
5)	[Number of Comment Display Rows]	—	When setting a comment having multiple rows, set the number of rows to be displayed.
		[Fixed]	Enter the number of rows to be displayed directly . The setting range is [1] to [32767].
		[Device]	Set the device value as the number of rows to be displayed. ☞ Page 834 How to set devices, labels, and tags If the device stores 0, no comment is displayed. Example) When [Device] is selected and [D20] is set 
6)	[KANJI Region]		Select the KANJI region of the text to be displayed. ☞ Page 74 Specifications of displayable characters The following shows selectable items. • [Japan] • [China(GB)-Mincho] • [China(Big5)-Gothic]
7)	[Layer]		Switches layers to be placed. The following shows selectable items. • [Front] • [Back]
8)	[Category]		Select the category to assign the object. ☞ Page 1121 Managing figures and objects by category

32.3.4 [Trigger] tab

GT37 SoftGOT3000



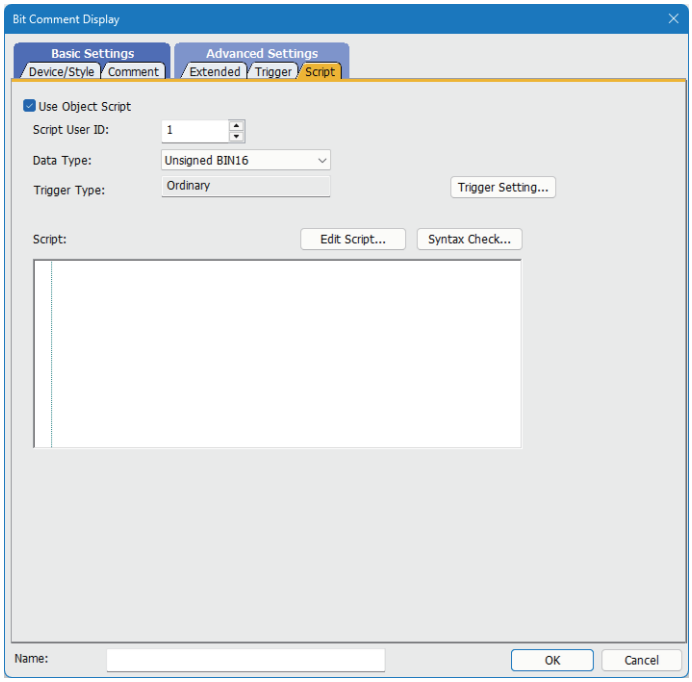
Item		Description
1)	[Control displaying/hiding]	Set the control device to display or hide all the objects including the shape frame. When the set device is in either the ON or OFF status, select whether or not to display the object. The following shows selectable items. • [ON Display] • [OFF Display] ☞ Page 834 How to set devices, labels, and tags
2)	[Trigger Type]	Select a trigger condition to display the object. The following shows selectable items. • [Ordinary] • [ON] • [OFF] • [Rise] • [Fall] • [Rise/Fall] • [Sampling] • [Range] • [Bit Trigger] • [ON Sampling] • [OFF Sampling] The selectable items vary depending on the GOT model. For details, refer to the following. ☞ Page 970 Specifications of the trigger types For the settings of each item, refer to the following. ☞ Page 968 Trigger type settings

32.3.5 [Script] tab

GT37 SoftGOT3000

For the script settings, refer to the following.

☞ Page 2447 Object script



Relationship between the object settings and object properties

Object settings can be read (referenced) or written (changed) using object properties.

The following shows the correspondence between readable/writable object properties and the setting items in the object setting dialog.

○: Available

×: Not available

—: No applicable setting item

Setting dialog		Object property			
Tab name	**Setting item**	**Property name**	**Read**	**Write**	**Timing for reflecting the setting change*1**
—	—	active	○	○	Upon the setting change
		x	○	○	When the screen is updated
		y	○	○	When the screen is updated
		width	○	×	×
		height	○	×	×
		text_width	○	○	When the object is updated
		text_height	○	○	When the object is updated
[Device/Style]	[Frame Color]	frame_color	○	×	×
	[Shape Color]	plate_color	○	○	When the object is updated
[Extended]	[Text Color]	text_color	○	○	When the object is updated
	[Blink]	blink	○	○	When the object is updated
	[Blink Scope]	blink	○	○	When the object is updated
	[Reverse]	highlight	○	○	When the object is updated
	[Alignment]	arrange	○	○	When the object is updated
	[Security Level]	security	○	○	When the screen is updated
	[Display Mode]	draw_mode	○	○	When the object is updated

*1 For information on how long it takes for object property settings to be reflected on the screen, refer to the following page.
☞ Page 2456 Timing at which the setting change of an object property is reflected

32.4 [Word Comment Display] dialog

GT37 SoftGOT3000

Operating procedure

1. Select [Object] → [Comment Display] → [Word Comment] from the menu.
2. Click the position to place a word comment display.
3. Double-click the word comment display to display the setting dialog.

☞ Page 1401 [Device/Style] tab
☞ Page 1403 [Comment] tab
☞ Page 1407 [Extended] tab
☞ Page 1409 [Trigger] tab
☞ Page 1410 [Operation/Script] tab

32.4.1 [Device/Style] tab

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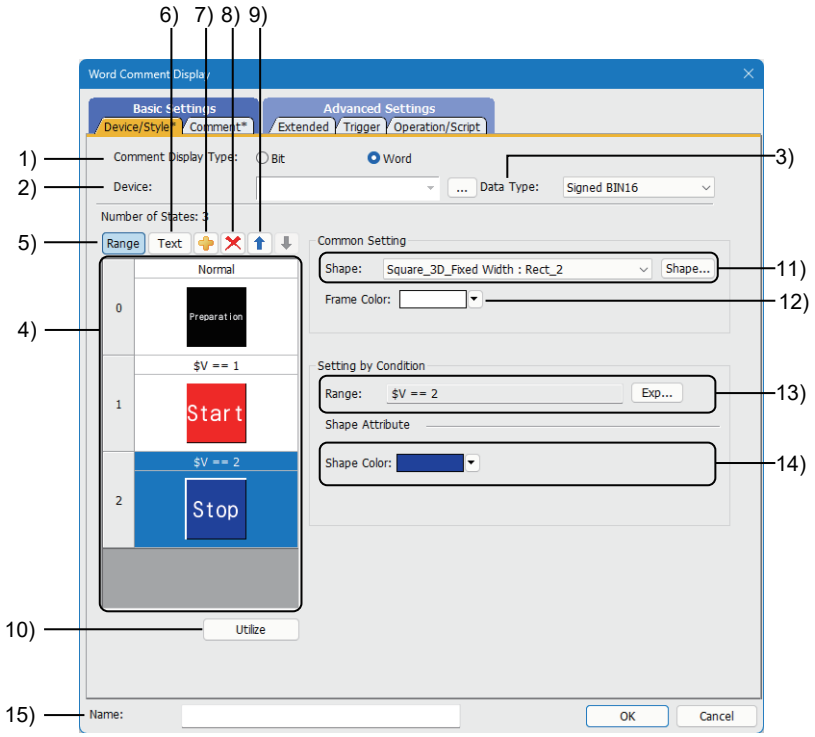
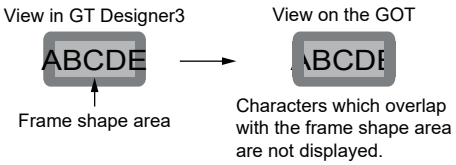
For the conditions, refer to the following.

☞ Page 1038 Control with conditions



Item		Description
1)	[Comment Display Type]	Select the comment display type. The following shows selectable items. • [Bit] • [Word]
2)	[Device]	Set the device to be monitored. ☞ Page 834 How to set devices, labels, and tags
3)	[Data Type]	Select the data type of the device. The following shows selectable items. • [Signed BIN16] • [Unsigned BIN16] • [Signed BIN8] • [Unsigned BIN8] • [BCD16]
4)	Preview list	Displays set conditions.
5)	[Range] button	Displays the preview list in range.
6)	[Text] button	Displays the preview list in text.
7)	Add button	Adds a new condition.
8)	Delete button	Deletes the selected condition.
9)	Up button Down button	Changes the priority order of the conditions in the preview list.
10)	[Utilize] button	Creates a new condition utilizing the selected condition.

PART 7

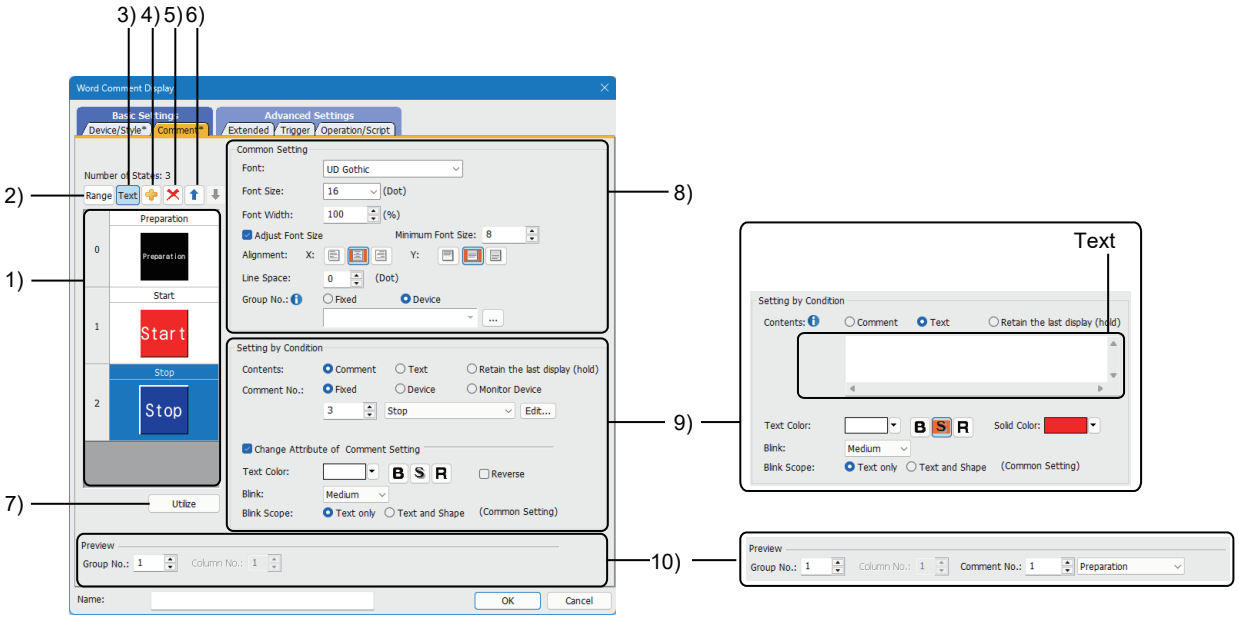
Item		Description
11)	[Shape]	Select the shape to be set for the object from the list or with the [Shape] button. ☞ Page 1045 How to set the object shape When the text to be displayed overlaps the shape frame area, the text cannot be displayed normally. Configure the settings so that the text and the shape frame area do not overlap. 
12)	[Frame Color]	Select the frame color of the shape. ☞ Page 988 Color settings
13)	[Range]	Set a condition which changes the display property of the lamp. Click the [Exp] button, and set the conditional expression in the [Edit Range] dialog. For details on the [Edit Range] dialog, refer to the following. ☞ Page 1043 [Edit Range] dialog
14)	[Shape Color]	Select the color of the shape. ☞ Page 988 Color settings
15)	[Name]	Set the object name. The name is displayed in places such as the data browser and property sheet. The setting can also be changed in other tabs. Up to 100 characters can be set.

32.4.2 [Comment] tab

GT37 SoftGOT3000

For mobile screens, some setting items are not available.

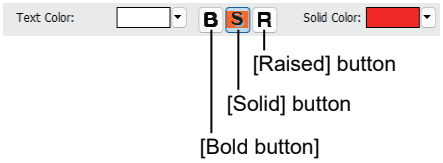
☞ Page 2742 Usable functions



Item		Description
1)	Preview list	Displays set conditions.
2)	[Range] button	Displays the preview list in range.
3)	[Text] button	Displays the preview list in text.
4)	Add button	Adds a new condition.
5)	Delete button	Deletes the selected condition.
6)	Up button Down button	Changes the priority order of the conditions in the preview list.
7)	[Utilize] button	Creates a new condition utilizing the selected condition.

PART 7

Item			Description
8)	[Common Setting]	[Font]	Select the font of the displayed text. • [UD Gothic] • [UD Mincho] • [UDP Gothic] • [UDP Mincho] • [Windows Font]: This item is selectable when [Group No.] is set to [Fixed]. Displays text in the font specified with [Windows Font] in the [Comment Group Property] dialog.
		[Windows Font Setting] button	This item appears when [Windows Font] is selected for [Font]. The [Comment Group Property] dialog for the group number specified by [Group No.] is displayed. Set [Windows Font] and [Character Set] for the target column of the comment group. ☞ Page 797 [Comment Group Property] dialog
		[Font Size]	Set a vertical text size. The setting range is [8] dots to [540] dots.
		[Font Width]	Set a horizontal text size. The horizontal size is specified with the magnification relative to [Font Size] (vertical text size). The setting range is [6]% to [1600]%.
		[Adjust Font Size]	The font size is automatically adjusted according to the object size. When this item is deselected, a line feed is automatically inserted.
		[Minimum Font Size]	This item can be set only when [Adjust Font Size] is set. Set the minimum font size applied when the font size is automatically adjusted. The setting range is [8] dots to [540] dots.
		[Alignment]	Set the vertical and horizontal positions of the text.
		[Line Space]	Set the space between lines in units of dots. The setting range is [0] dots to [128] dots.
		[Group No.]	Set the group number of the comment group to be used. • [Fixed] Select this item to use the specified comment group. After selecting this item, directly enter the comment group No. to be used. • [Device] Select this item to use the comment group number corresponding to the value of the device to be set. Select this item and set the device. ☞ Page 834 How to set devices, labels, and tags

Item			Description
9)	[Setting by Condition]	—	The setting items differ depending on the selection for [Contents].
		[Contents]	Select the item to be displayed as a comment. The following shows selectable items. • [Comment]: Set [Comment No.]. • [Text]: Enter text directly. • [Retain the last display (hold)]: Holds the comment being displayed.
		[Comment No.]	Select the target item in the preview list, then set the comment number of the comment to be used. • [Fixed] Select this item to use the specified comment. After selecting this item, directly enter the comment No. to be used. If [0] is specified, no comment is displayed. To edit the comment to be displayed, click the [Edit] button to display the [Edit Comment] dialog. If you specify an unregistered comment group number or comment number, a comment is newly created. ☞ Page 3685 [Edit Comment] dialog • [Device] Select this item to use the comment number corresponding to the value of the device to be set. Select this item and set the device. ☞ Page 834 How to set devices, labels, and tags • [Monitor Device] Select this item to use the comment number corresponding to the value of the monitor device set for [Device] in the [Device/Style] tab.
		[Change Attribute of Comment Setting]	Set the comment attribute such as [Text Color] and [Blink].
		[Text Color]	Set the color and style of the text to be displayed on the object. One style ([Bold], [Solid], or [Raised]) is settable only.  • [Text Color] Set the text color. ☞ Page 988 Color settings • [Bold] button Displays the text in bold. • [Solid] button Displays the text with a shadow. • [Raised] button Displays the text embossed. • [Solid Color] When [Solid] or [Raised] is selected as the text style, set the color of the shadow.
		[Blink]	Select the blinking speed of the text and shape. The following shows selectable items. • [None] • [Low] • [Medium] • [High]
		[Reverse]	Inverts the text.
		[Blink Scope]	Select the area to be blinked. The following shows selectable items. • [Text only] • [Text and Shape] These settings are applied to all the conditions to be set.

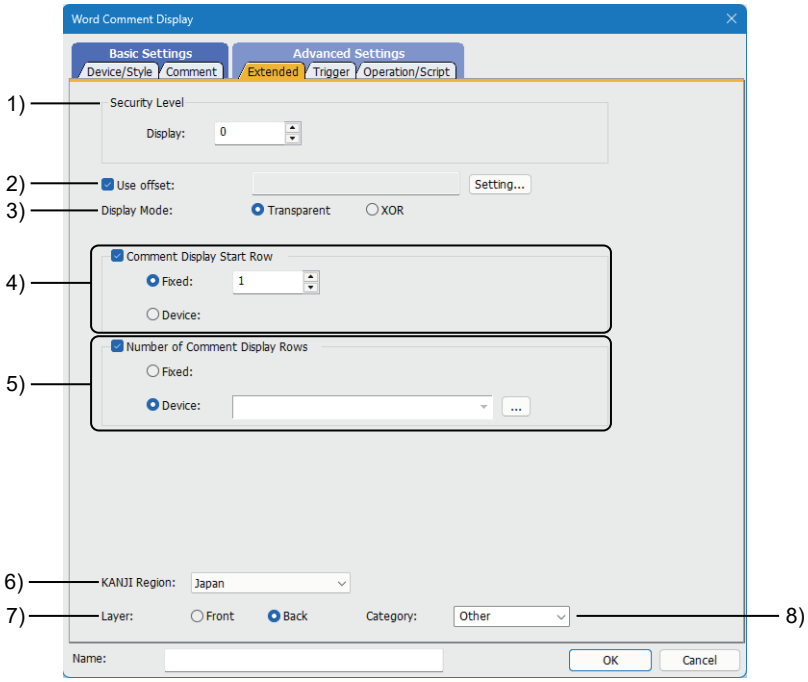
Item			Description
10)	[Preview]	—	Set the comment to be previewed in the preview list.
		[Group No.]	Set the comment group No. to be previewed. This item can be set only when [Device] is set in [Group No.]. The setting range is [1] to [500].
		[Column No.]	Set the column No. to be previewed. The setting range is [1] to [30].
		[Comment No.]	This item appears when [Device] or [Monitor Device] is selected for [Comment No.] under [Setting by Condition]. Set the comment No. to be previewed. The setting range is [0] to [32767].

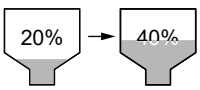
32.4.3 [Extended] tab

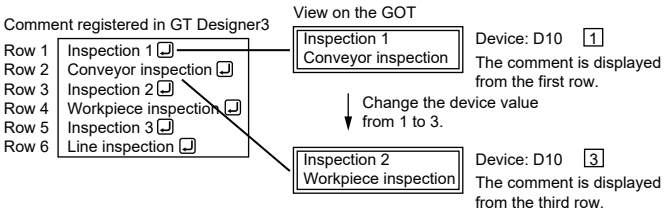
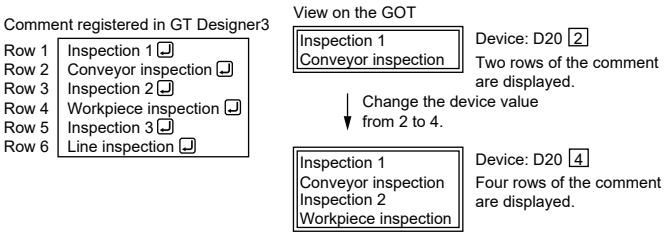
GT37 SoftGOT3000

For mobile screens, some setting items are not available.

☞ Page 2742 Usable functions

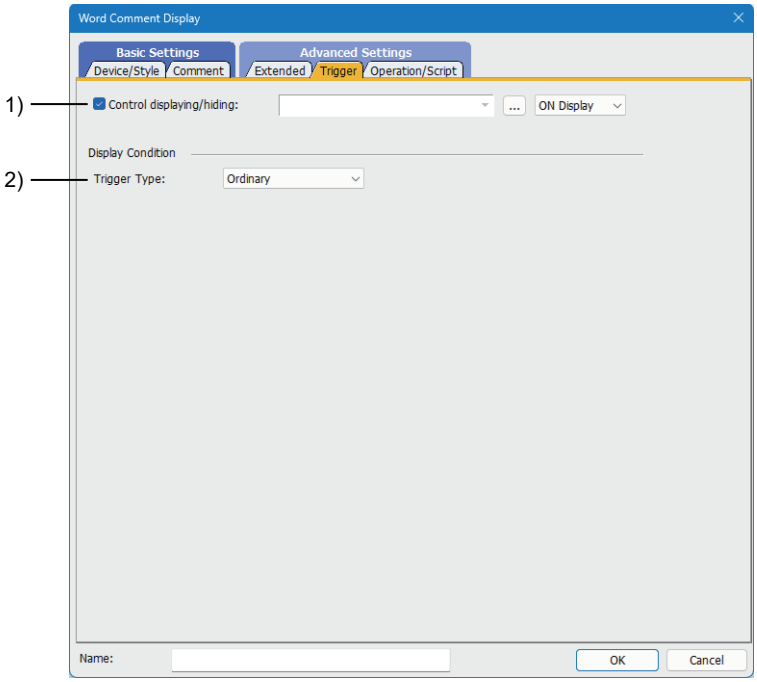


Item		Description
1)	[Security Level]	Set a security level when using the security. The setting range is [0] to [15]. If you do not use the security, select [0].
2)	[Use offset]	Select this item to monitor multiple devices by switching them. Sets the offset device with the [Setting] button. ☞ Page 963 Offset
3)	[Display Mode]	Display mode when the comment display is superimposed on a level object. This setting is not displayed when [Enable the antialiasing] is selected in the [Type Setting] dialog ([Basic Setting]). The operation when [Transparent] is selected is applied. ☞ Page 519 [Type Setting] dialog • [Transparent]: Displays the comment on the level object. • [XOR]: XOR synthesizes the comment using the level color so that the comment is distinguished from the level object. 

Item			Description
4)	[Comment Display Start Row]	—	When setting a comment having multiple rows, set the first row to be displayed. If a nonexistent line number is specified, no comment is displayed. If the comment is displayed as blank, check the number of rows of the specified comments.
		[Fixed]	Enter the start row directly. The setting range is [1] to [32767].
		[Device]	Set the device value as the start row to be displayed. ☞ Page 834 How to set devices, labels, and tags Example) When [Device] is selected and [D10] is specified 
5)	[Number of Comment Display Rows]	—	When setting a comment having multiple rows, set the number of rows to be displayed.
		[Fixed]	Enter the number of rows to be displayed directly . The setting range is [1] to [32767].
		[Device]	Set the device value as the number of rows to be displayed. ☞ Page 834 How to set devices, labels, and tags If the device stores 0, no comment is displayed. Example) When [Device] is selected and [D20] is set 
6)	[KANJI Region]		Select the KANJI region of the text to be displayed. ☞ Page 74 Specifications of displayable characters The following shows selectable items. • [Japan] • [China(GB)-Mincho] • [China(Big5)-Gothic]
7)	[Layer]		Switches layers to be placed. The following shows selectable items. • [Front] • [Back]
8)	[Category]		Select the category to assign the object. ☞ Page 1121 Managing figures and objects by category

32.4.4 [Trigger] tab

GT37 SoftGOT3000



Item		Description
1)	[Control displaying/hiding]	Set the control device to display or hide all the objects including the shape frame. When the set device is in either the ON or OFF status, select whether or not to display the object. The following shows selectable items. • [ON Display] • [OFF Display] ☞ Page 834 How to set devices, labels, and tags
2)	[Trigger Type]	Select a trigger condition to display the object. The following shows selectable items. • [Ordinary] • [ON] • [OFF] • [Rise] • [Fall] • [Rise/Fall] • [Sampling] • [Range] • [Bit Trigger] • [ON Sampling] • [OFF Sampling] The selectable items vary depending on the GOT model. For details, refer to the following. ☞ Page 970 Specifications of the trigger types For the settings of each item, refer to the following. ☞ Page 968 Trigger type settings

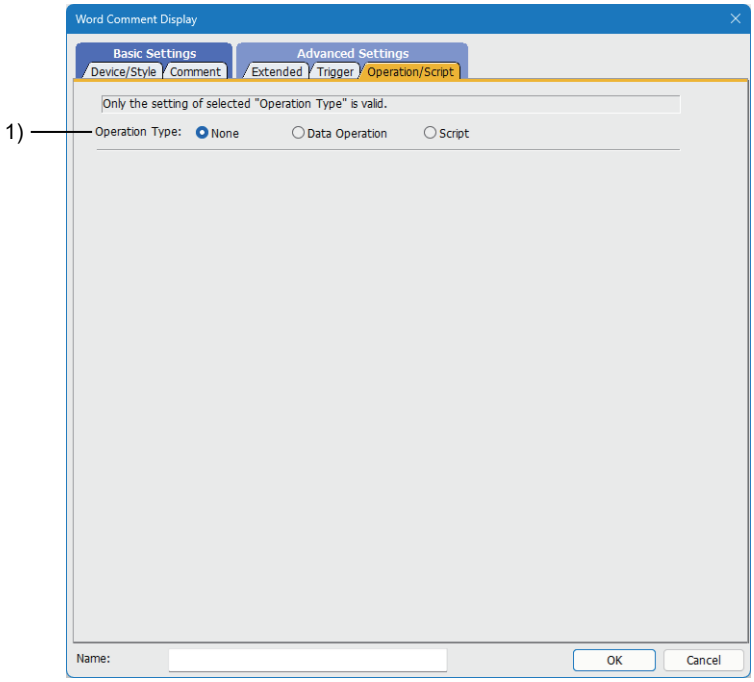
32.4.5 [Operation/Script] tab

GT37 SoftGOT3000

For mobile screens, some setting items are not available.

☞ Page 2742 Usable functions

The setting items differ depending on the selection for [Operation Type].



Item			Description
1)	[Operation Type]	[None]	The data operation function and the script function are not used.
		[Data Operation]	Set the expression used for the data operation function.
		[Script]	Set the expressions for the script function.

The setting items vary depending on the selected function.

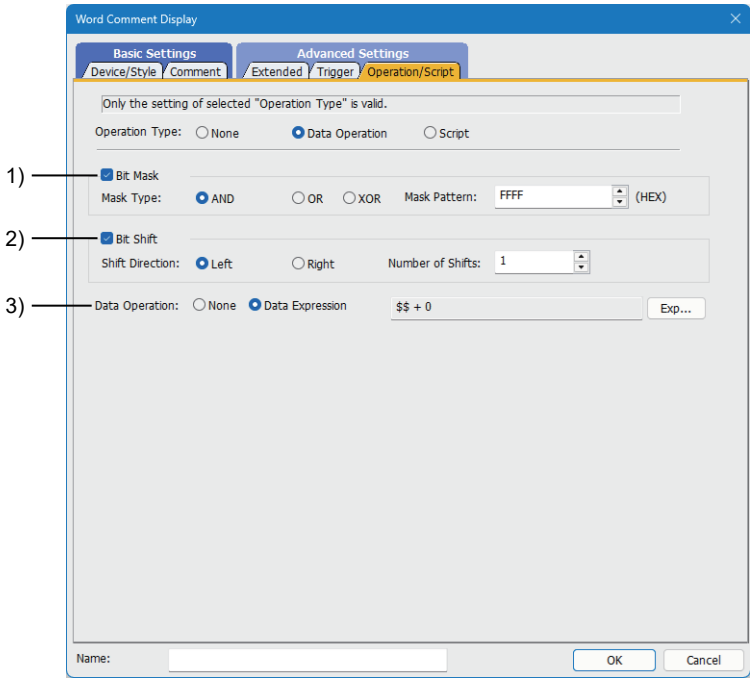
The following shows the settings for each function.

[Data Operation]

This item can be set only when [Operation Type] is [Data Operation].

For details on the data operation settings, refer to the following.

☞ Page 1053 How to set the data operation



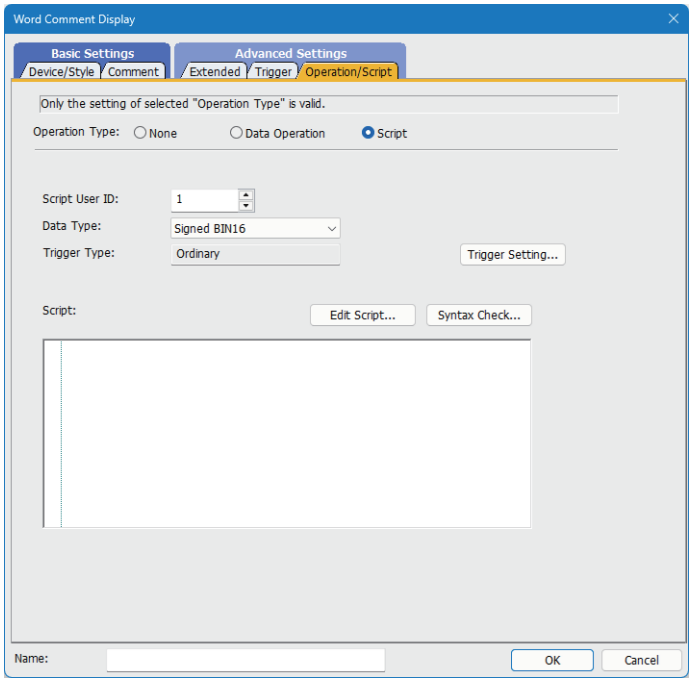
Item			Description
1)	[Bit Mask]	—	Set the operation of mask processing.
		[Mask Type]	Select the type of mask processing. The following shows selectable items. • [AND]: Logical AND • [OR]: Logical OR • [XOR]: Exclusive OR
		[Mask Pattern]	Set a pattern value to mask in hexadecimal. The setting range differs depending on the setting of [Data Type] in the [Device/Style] tab.
2)	[Bit Shift]	—	Set the operation of shift processing.
		[Shift Direction]	Select a shifting direction. The following shows selectable items. • [Left] • [Right]
		[Number of Shifts]	Set the number of bits to be shifted. The setting range differs depending on the setting of [Data Type] in the [Device/Style] tab.
3)	[Data Operation]		Select the format of the expression operating with the data operation. The following shows selectable items. • [None] • [Data Expression]

[Script]

This item can be set only when [Operation Type] is [Script].

For the script settings, refer to the following.

☞ Page 2447 Object script



■Relationship between the object settings and object properties

Object settings can be read (referenced) or written (changed) using object properties.

The following shows the correspondence between readable/writable object properties and the setting items in the object setting dialog.

○: Available

×: Not available

—: No applicable setting item

Setting dialog		Object property			
Tab name	**Setting item**	**Property name**	**Read**	**Write**	**Timing for reflecting the setting change*1**
—	—	active	○	○	Upon the setting change
		x	○	○	When the screen is updated
		y	○	○	When the screen is updated
		width	○	×	×
		height	○	×	×
		text_width	○	○	When the object is updated
		text_height	○	○	When the object is updated
[Device/Style]	[Frame Color]	frame_color	○	×	×
	[Shape Color]	plate_color	○	○	When the object is updated
[Extended]	[Text Color]	text_color	○	○	When the object is updated
	[Blink]	blink	○	○	When the object is updated
	[Blink Scope]	blink	○	○	When the object is updated
	[Reverse]	highlight	○	○	When the object is updated
	[Alignment]	arrange	○	○	When the object is updated
[Extended]	[Security Level]	security	○	○	When the screen is updated
	[Display Mode]	draw_mode	○	○	When the object is updated

*1 For information on how long it takes for object property settings to be reflected on the screen, refer to the following page.

☞ Page 2456 Timing at which the setting change of an object property is reflected

32.5 [Simple Comment Display] dialog

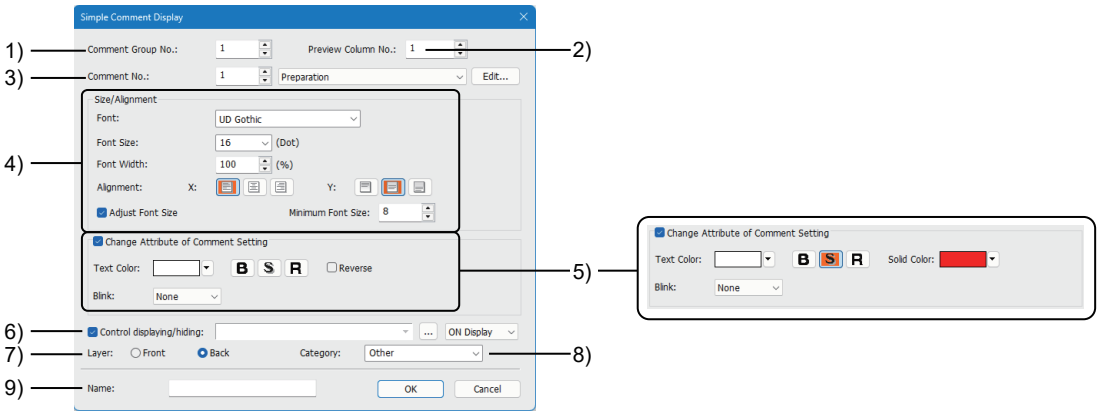
GT37 SoftGOT3000

For mobile screens, some setting items are not available.

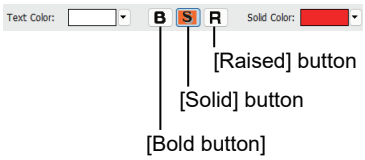
☞ Page 2742 Usable functions

Operating procedure

1. Select [Object] → [Comment Display] → [Simple Comment] from the menu.
2. Click the position to place a simple comment display.
3. Double-click the simple comment display to display the setting dialog.



Item		Description
1)	[Comment Group No.]	Set the comment group number to be used. The setting range is [1] to [500]. When the nonexistent comment group No. is set, the comment is not displayed.
2)	[Preview Column No.]	Set the column No. to be displayed. The setting range is [1] to [30].
3)	[Comment No.]	Set the comment No. to be displayed. The setting range is [0] to [32767]. If [0] is set, no comment is not displayed.

Item			Description
4)	[Size/Alignment]	[Font]	Select the font of the displayed text. • [UD Gothic] • [UD Mincho] • [UDP Gothic] • [UDP Mincho] • [Windows Font] This item is selectable when [Group No.] is set to [Fixed]. Displays text in the font specified with [Windows Font] in the [Comment Group Property] dialog. The following shows selectable items.
		[Windows Font Setting] button	This item appears when [Windows Font] is selected for [Font]. The [Comment Group Property] dialog for the group number specified by [Group No.] is displayed. Set [Windows Font] and [Character Set] for the target column of the comment group. ☞ Page 797 [Comment Group Property] dialog
		[Font Size]	Set a vertical text size. The setting range is [8] dots to [540] dots.
		[Font Width]	Set a horizontal text size. The horizontal size is specified with the magnification relative to [Font Size] (vertical text size). The setting range is [6]% to [1600]%.
		[Alignment]	Set the vertical and horizontal positions of the text.
		[Adjust Font Size]	The font size is automatically adjusted according to the object size. When this item is deselected, a line feed is automatically inserted.
		[Minimum Font Size]	This item can be set only when [Adjust Font Size] is set. Set the minimum font size applied when the font size is automatically adjusted. The setting range is [8] dots to [540] dots.
5)	[Change Attribute of Comment Setting]	—	Set the comment attribute such as [Text Color] and [Blink].
		[Text Color]	Set the color and style of the text to be displayed on the object. One style ([Bold], [Solid], or [Raised]) is settable only.  • [Text Color] Set the text color. ☞ Page 988 Color settings • [Bold] button Displays the text in bold. • [Solid] button Displays the text with a shadow. • [Raised] button Displays the text embossed. • [Solid Color] When [Solid] or [Raised] is selected as the text style, set the color of the shadow.
		[Blink]	Select the blinking speed of the text and shape. The following shows selectable items. • [None] • [Low] • [Medium] • [High]
		[Reverse]	Inverts the text.
6)	[Control displaying/hiding]		Set the device that controls display/hide of all objects. When the set device is in either the ON or OFF status, select whether or not to display the object. The following shows selectable items. • [ON Display] • [OFF Display] ☞ Page 834 How to set devices, labels, and tags
7)	[Layer]		Switches layers to be placed. The following shows selectable items. • [Front] • [Back]

Item		Description
8)	[Category]	Select the category to assign the object. ☞ Page 1121 Managing figures and objects by category
9)	[Name]	Set the object name. The name is displayed in places such as the data browser and property sheet. Up to 100 characters can be set.

33 Placing a parts display

GT37 SoftGOT3000

This function displays a registered part, base screen, or window screen according to the device status.

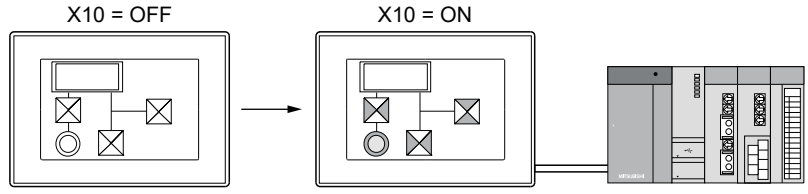
☞ Page 1416 How to switch parts
☞ Page 1417 Specifications of the parts display
☞ Page 1420 How to use the parts display
☞ Page 1436 [Bit Parts Display] dialog
☞ Page 1449 [Word Parts Display] dialog
☞ Page 1464 [Fixed Parts Display] dialog
☞ Page 1476 Relevant settings

33.1 How to switch parts

• Parts display (bit)

☞ Page 1436 [Bit Parts Display] dialog

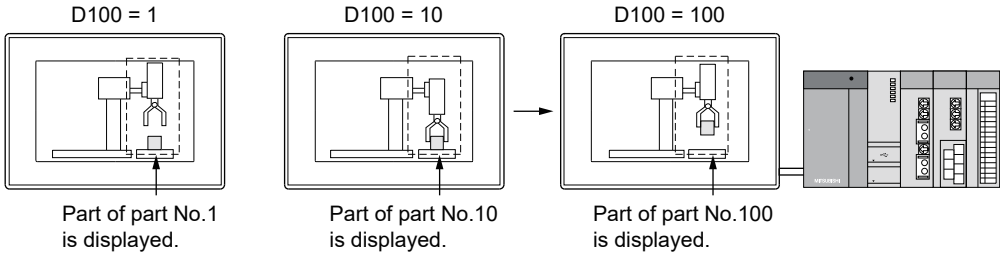
This object displays a part, base screen, or window screen corresponding to the ON or OFF status of a bit device.



• Parts display (word)

☞ Page 1449 [Word Parts Display] dialog

This object displays a part, base screen, or window screen corresponding to the value of a word device.

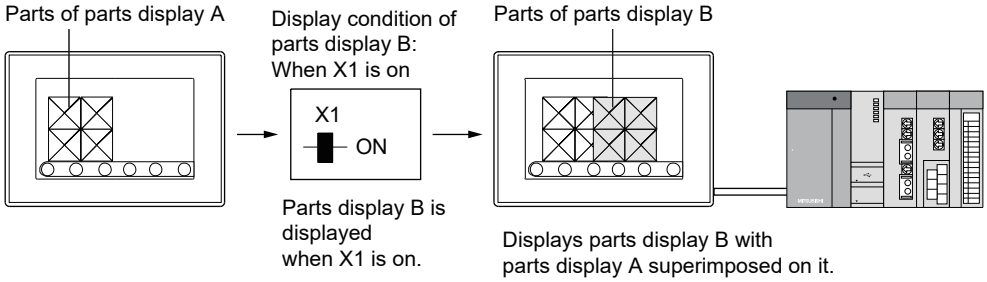


• Parts display (fixed)

☞ Page 1464 [Fixed Parts Display] dialog

This function displays the parts, base screen, and window screen corresponding to the rising edge or falling edge of a bit device.

The object can display only one type of part, but it can be superimposed on a different parts display object.



33.2 Specifications of the parts display

GT37 SoftGOT3000

☞ Page 1417 Maximum number of objects that can be placed on one screen
☞ Page 1417 Parts displayed by parts displays
☞ Page 1417 Types of displayable parts

33.2.1 Maximum number of objects that can be placed on one screen

Up to 1024 part display and other objects can be placed on one base screen, while up to 512 can be placed on one window screen.

33.2.2 Parts displayed by parts displays

The following two types of parts can be displayed by the parts display, and the parts need to be registered in advance.

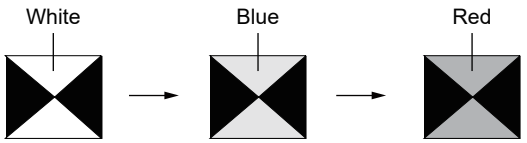
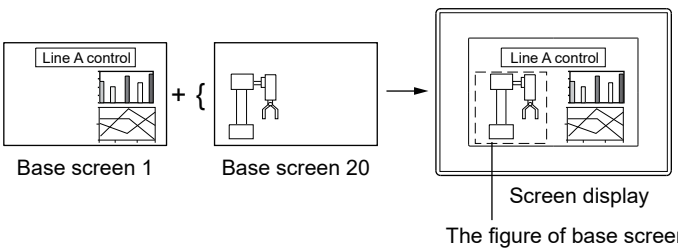
- The parts data registered as the parts in GT Designer3 (registered parts)

☞ Page 812 Registering parts ([Parts])

- BMP, JPEG, and PNG files (BMP, JPEG, and PNG file parts) stored in the data storage

☞ Page 827 Using the image file stored in the data storage as a part

33.2.3 Types of displayable parts

Type	Description	Remarks
Parts	Displays the figure registered as a part. Example) Registrable figures as parts Figure Text BMP file, JPEG file, PNG file	• The parts need to be registered in advance. ☞ Page 812 Registering parts ([Parts]) ☞ Page 827 Using the image file stored in the data storage as a part • The user cannot register vector format shapes. ☞ Page 1062 Library data types
Mark	Switches the figure colors which are registered as the parts corresponding to the change of device status. Because one part can display different images, the registration of multiple parts is not necessary and the capacity of the GOT memory can be saved.  D100 = 0 D100 = 50 D100 = 100 The display color of the white space can be changed.	• The parts in BMP, JPEG, or PNG format cannot be used. • Draw the part whose color is to be switched in white. • While fixed parts are being displayed, switching to multiple colors cannot be executed. The display is only in a single color.
Base screen Window screen	Displays the figure on a base screen and window screen.  Base screen 1 Base screen 20 Screen display The figure of base screen 20 is displayed on base screen 1.	• The object set on a base screen or window screen is not displayed.

Precautions

■Display when a part extends off the screen

If a part is placed so that it extends off the screen, the display on the GOT differs depending on the components of the part and [Graphics Setting].

Part components	Part display
Image data + figures	The part within the screen is displayed. However, if a part extends above or to the left of the screen, the display differs depending on the GOT model used, as described below. • Other than GT SoftGOT3000 The figures within the screen are displayed, whereas image data even within the screen is not. • GT SoftGOT3000 or GT Simulator3 If the image file format is BMP or JPEG, image data within the screen is also displayed.
Image data only	The part within the screen is displayed. When an image file in the data storage is used as a part and the part extends above or to the left of the screen, system alarm 537 is output in the following cases. The data will not be displayed. • Other than GT SoftGOT3000: A BMP, JPEG, or PNG file part is to be displayed. • GT SoftGOT3000 or GT Simulator3: A PNG file part is to be displayed.

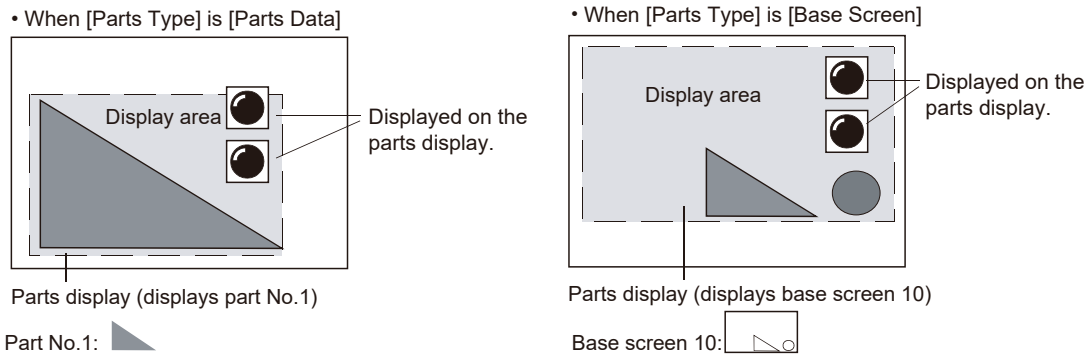
■When a part overlaps another object

Set the parts display in a way that does not make the part overlap with another object.

Otherwise, the overlapped object may not be displayed normally.

In such a case, set the parts display and the object in different layers.

This also applies to cases where an object overlaps with the display area as shown below.



33.2.4 Setting the parts displays to be integrated into XOR synthesis

BMP, JPEG, PNG file parts, or vector image parts registered in GT Designer3

PNG file parts and vector image parts cannot be integrated into XOR synthesis.
To execute XOR synthesis for BMP or JPEG file parts, set the parts to the back layer.

Point

BMP format images (with a specified transparent color) are not XOR synthesized on the screen editor of GT Designer3, but they are XOR synthesized on the GOT.
To check the XOR-synthesized images, use the GOT or GT Simulator3.

XOR synthesis of multiple superimposed parts

- Only fixed parts displays can be superimposed.
- Place all the parts displays intended for XOR synthesis on the same layer.
- If they are set on the front layer, the part on which no parts are superimposed is integrated into an XOR synthesis with [Front Layer Transparent Color] of the screen.

XOR synthesis of parts that include characters

In cases where the parts to be displayed includes an object whose character effect is set to [Bold], [Solid], or [Raised], the characters may be chipped or the character color may not be displayed normally when the parts are displayed.

XOR synthesis of parts with registered logo texts

To combine a user-registered logo text part with other parts or objects by XOR synthesis, select [Background Color] in the [Logo Text] dialog.
If [Background Color] is deselected, the logo text part cannot be combined with other parts or objects by XOR synthesis.

Precautions

■When specifying a screen for the parts type and XOR for the display type

- When the base screen or window screen is specified as the parts type of a parts display (bit part/word part) and XOR is specified as the display type, the parts that have been displayed are deleted and then a new screen is displayed.
- The area to be deleted is the same as that of the base/window screen around the drawing point of the parts display (screen (center, top left)).
- When an object is included in the base/window screen area to be deleted, the object is also deleted.

To prevent the object from being deleted, change the parts type from the screen to the parts and adjust the position in a way that does not make the parts overlap with an object or change the display type to overwrite when leaving the screen being specified as the parts type.
Because the parts that were displayed previously are left when an overwrite operation is performed, the same size of parts is required.

- In cases where the parts, base screen, and window screen to be displayed include an object whose character effect is set to [Bold], [Solid], or [Raised], the characters may be chipped or the character color may not be displayed normally when the parts are displayed.

33.3 How to use the parts display

GT37 SoftGOT3000

☞ Page 1420 Placing a parts display
☞ Page 1420 Editing parts displays
☞ Page 1420 Setting parts displays
☞ Page 1421 How to move the parts (control with the position device)
☞ Page 1427 Parts movement animation example
☞ Page 1427 Procedure for setting an movement animation
☞ Page 1428 Display methods for BMP, JPEG, and PNG file parts in the data storage
☞ Page 1433 Switching the image on a parts display object automatically
☞ Page 1435 Part No.
☞ Page 1435 Setting the image data of parts to a transparent color

33.3.1 Placing a parts display

Place parts displays on the screen editor.

☞ Page 1001 Placing figures and objects

33.3.2 Editing parts displays

Edit parts displays that have been placed on the screen editor.

☞ Page 1003 Selecting figures and objects on the screen editor
☞ Page 1007 Resizing

33.3.3 Setting parts displays

Set parts displays that have been placed on the screen editor.

- Common settings for objects

☞ Page 1032 Settings common to figures and objects

- Parts display (bit) settings

☞ Page 1436 [Bit Parts Display] dialog

- Parts display (word) settings

☞ Page 1449 [Word Parts Display] dialog

- Parts display (fixed) settings

☞ Page 1464 [Fixed Parts Display] dialog

33.3.4 How to move the parts (control with the position device)

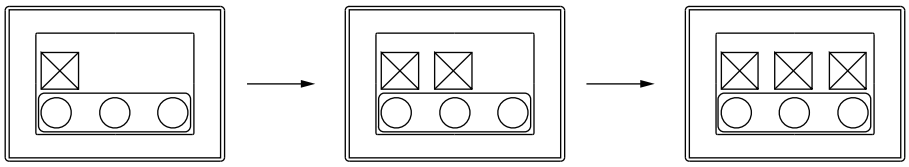
Display the parts movement as follows using the position device and parts switching device.

To display the movement of parts, select [Specify the moving animation] in the [Animation] tab, then set the movement method.

The following movement methods are available.

☞ Page 1421 Line
☞ Page 1422 Circle
☞ Page 1425 Route specification
☞ Page 1426 Coordinates specification

The locus display that leaves the locus can be used by setting [Display Mode] in the [Device/Style] or [Style] tab.



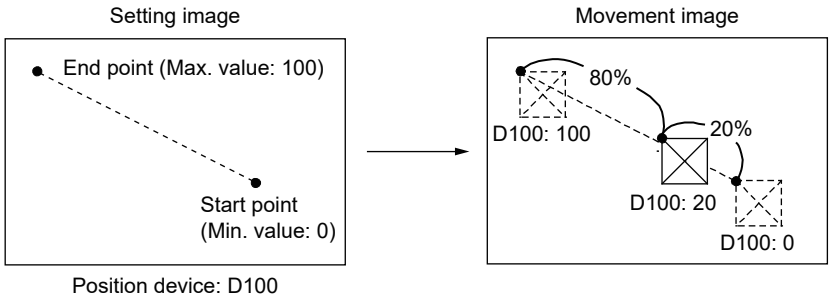
Select [Locus] for [Display Mode] to use the locus display.

☞ Page 1436 [Device/Style] tab
☞ Page 1449 [Device/Style] tab
☞ Page 1465 [Style] tab

Line

The part is moved across the set start point and end point.

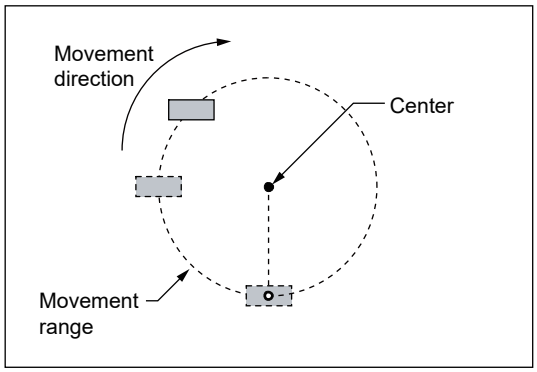
Set the minimum value to the start point and the maximum value to the end point. The part display position changes according to the position device value and is relative to the start and end points on the line across the two points.



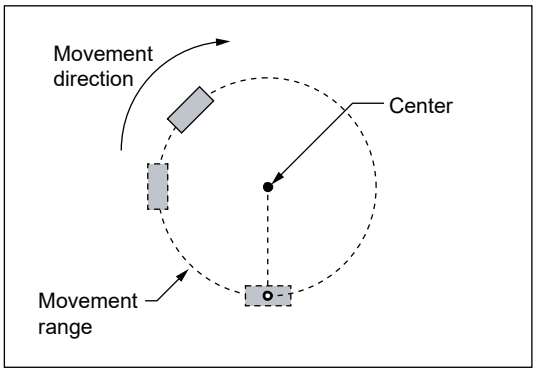
Circle

The circular parts movement is displayed around the set coordinates.

When [Enable the antialiasing] is deselected in the [Type Setting] dialog ([Basic Setting]), the object itself does not rotate.



Displayed object moved in a circular direction
+
Rotation of the object disabled

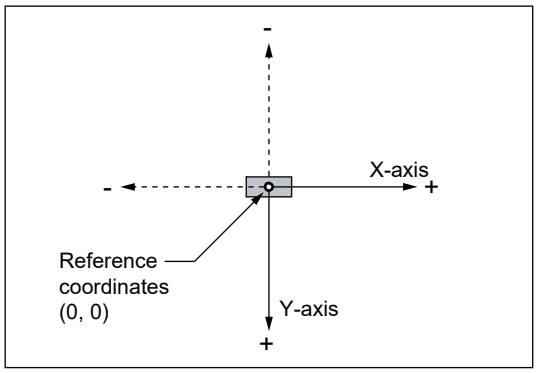


Displayed object moved in a circular direction
+
Rotation of the object enabled

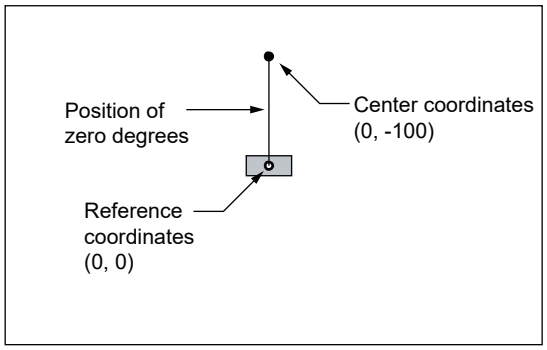
■Center coordinates

Set the coordinates relative to the position of the parts display as the reference coordinates (0, 0), regardless of the coordinates on the screen editor.

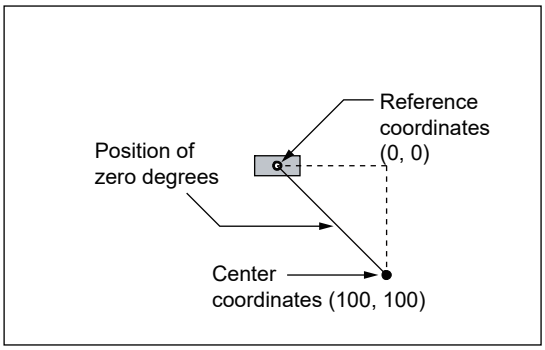
The X and Y axes of the center coordinates increase to the right and downward from the reference coordinates.



The angle between the reference coordinates and the center coordinates is regarded as 0 degrees.



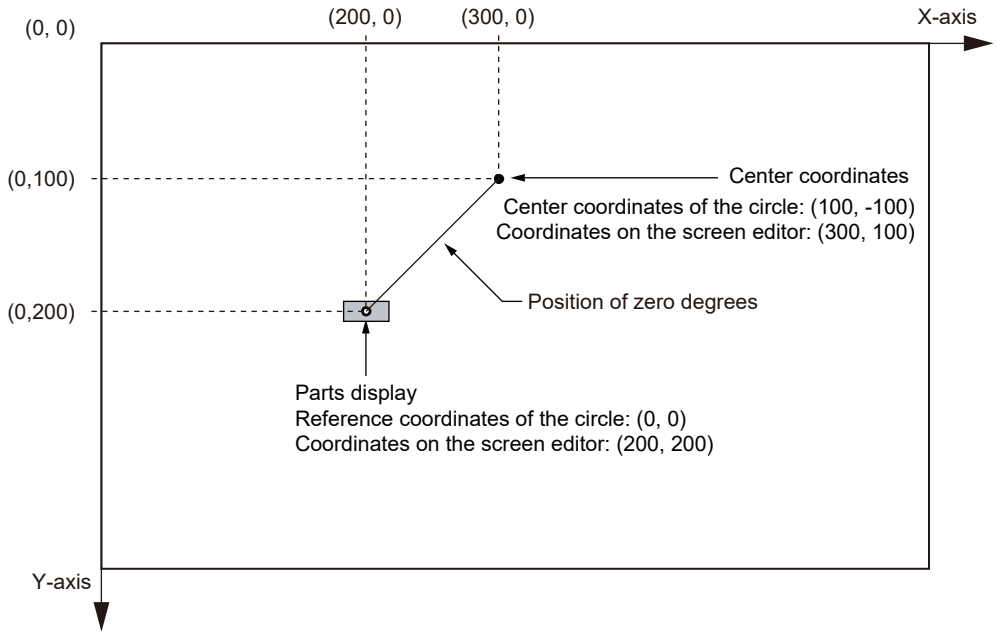
When the center coordinates are (0, -100)



When the center coordinates are (100, 100)

Ex.

Place the part display at coordinates (200, 200) on the screen editor and set the center coordinates to (100, -100).



■Movement range and direction

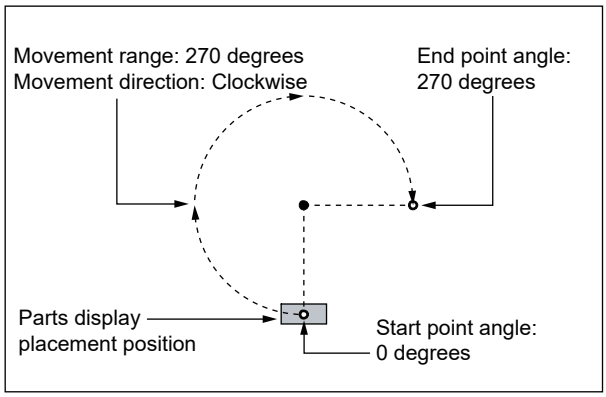
Set the start and end point angles to set the movement range and direction.

The movement range is determined by subtracting the start point angle from the end point angle.

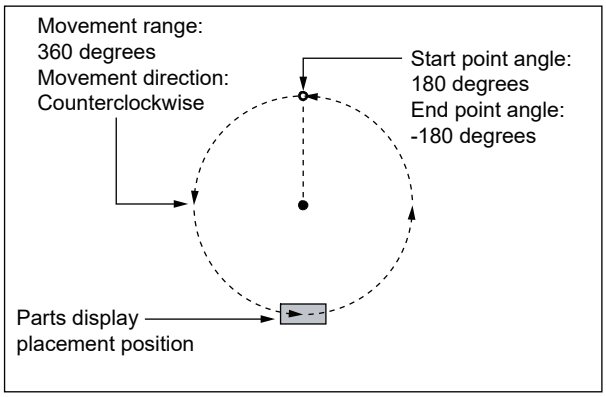
When the movement range is 0 or more, the part moves clockwise.

When the movement range is less than 0, the part moves counterclockwise.

Add the value of the position device to change the position of the part in the moving direction.



Start point angle: 0 degrees, end point angle: 270 degrees



Start point angle: 180 degrees, end point angle: -180 degrees

■Changing the display position

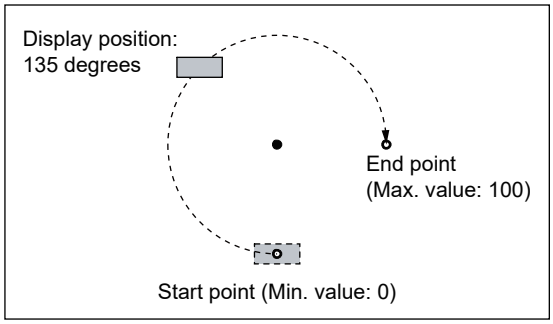
Change the display position using the value of the position device.

The minimum value set for the position device corresponds to the start point and the maximum value corresponds to the end point.

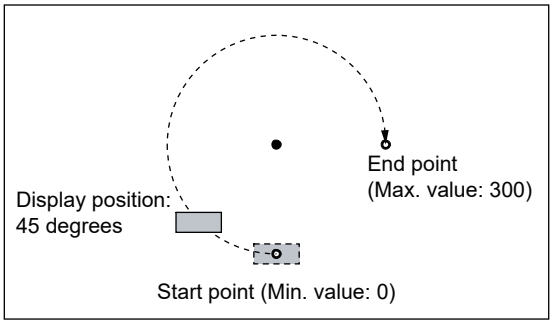
When the minimum and maximum values are changed, the display position differs even if the value of the position device is the same.

Set the value of the position device according to the minimum and maximum values.

Position device: D100
D100 = 50



Min. value: 0, max. value: 100



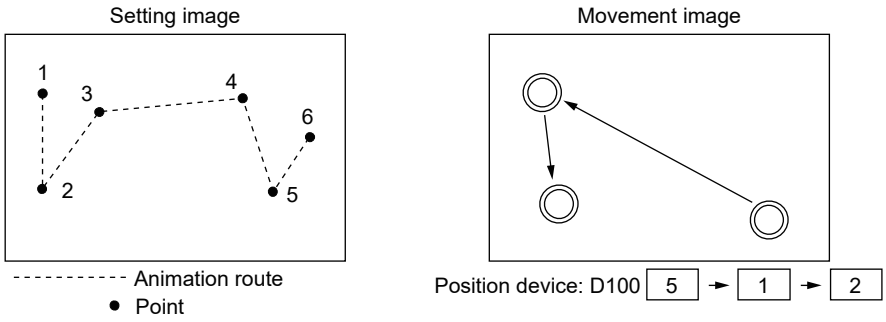
Min. value: 0, max. value: 300

Route specification

Parts are displayed at the specified display position (route).

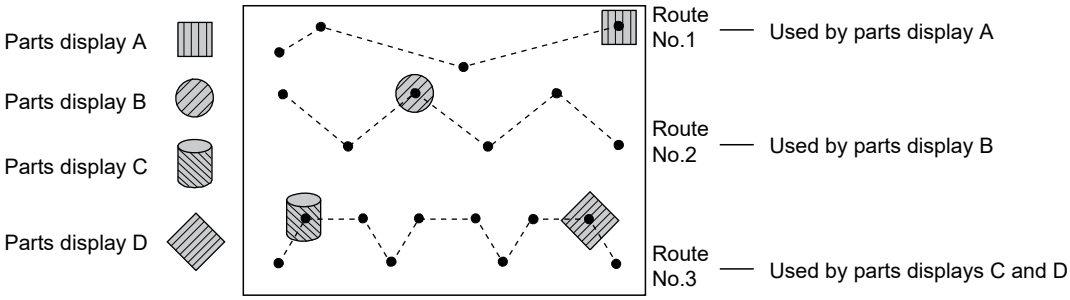
To set a route, register animation routes consisting of multiple connected points.

The part is displayed at the position with the same point No. as the position device value.



Set animation routes on screen basis. Up to 30 routes can be set for one screen.

The animation routes can be shared by multiple parts displays.



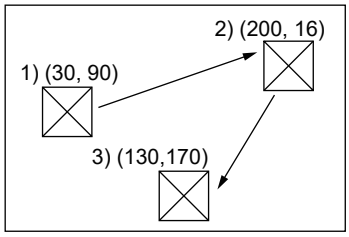
PART 7

Coordinates specification

Parts are displayed with the coordinates on one-dot basis.

For the coordinates, the values of two word devices are specified as X and Y.

By changing the value of the position device, the display position can be changed on one-dot basis.



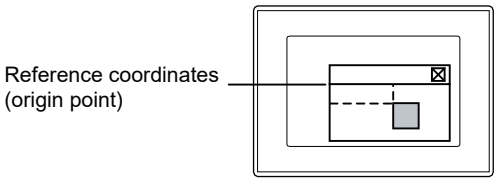
	1)	2)	3)
Position device (X-axis coordinate): D100	30	200	130
Position device (Y-axis coordinate): D101	90	16	170

■Reference coordinate

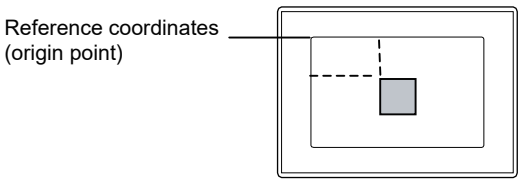
For the parts which are displayed in an overlap window, the top left of the overlap window is the reference coordinate.

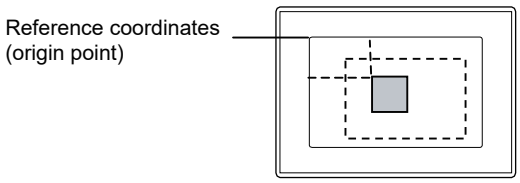
Ex.

For the overlap window



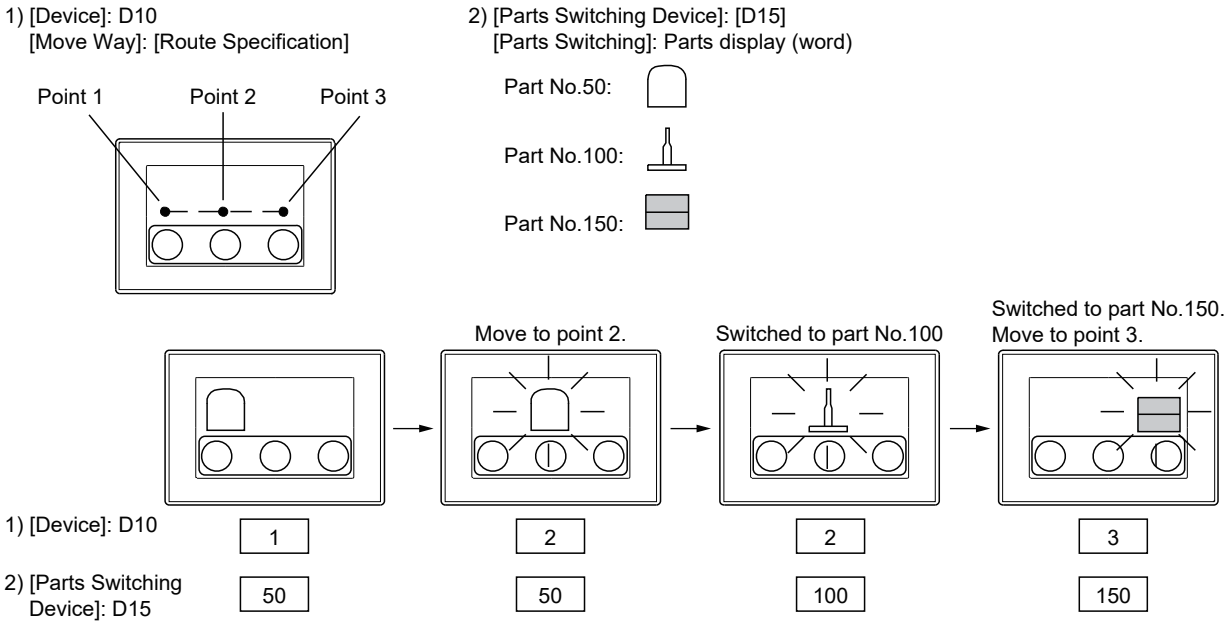
For other than the above (such as base screens and superimpose windows), the top left of the displayed base screen is the reference coordinate.





33.3.5 Parts movement animation example

Move and switch parts as follows using the position device and parts switching device.



33.3.6 Procedure for setting an movement animation

To set an movement animation, select [Parts Switching] and then [Move Way].

Operating procedure

1. Select the switching method of parts in the [Device/Style] tab (for the fixed parts, select it in the [Style] tab).

The method cannot be changed after a parts display object is set.

2. Select the movement method of parts in the [Animation] tab.

The method can be changed after a parts display object is set.

To move parts with route specification, configure the settings for [Animation Route] before configuring the settings for the parts display object.

☞ Page 1881 Configuring an animation route

PART 7

33.3.7 Display methods for BMP, JPEG, and PNG file parts in the data storage

BMP, JPEG, and PNG file parts can be displayed by object or project.

Display method by object (using image files)

Specify a BMP file, JPEG file, or PNG file stored in the data storage at each object setting of the parts display to display as parts.

Operating procedure

1. Save the BMP, JPEG, or PNG file to be displayed as parts in the data storage.

For the storing method, refer to the following.

☞ Page 827 Using the image file stored in the data storage as a part

2. When the display condition set for a parts display object is satisfied, the specified BMP, JPEG, or PNG file part in the data storage is displayed.

Set the following items in the [Device/Style] tab of the parts display and use the parts display.

- Setting image files
- Setting image file numbers

■Display example

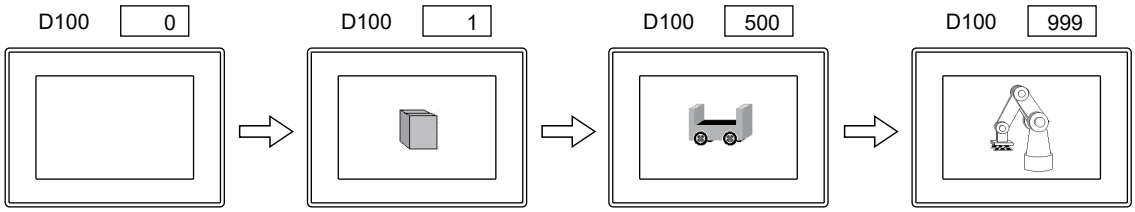
The following shows a display example of when a BMP file part is stored in the data storage.

Ex.

Displaying BMP images in the parts display (word)

Set image files and write part numbers between 1 and 65536 in a word device to display the BMP images.

- Word device used to display the parts: D100



Display method by project

To display BMP, JPEG, or PNG file parts in the data storage, specify a part number from 9001 to 9999.
To display BMP, JPEG, or PNG file parts in the data storage when a part number 9001 to 9999 is specified, follow the steps below.

■When using BMP, JPEG, or PNG file parts in the data storage

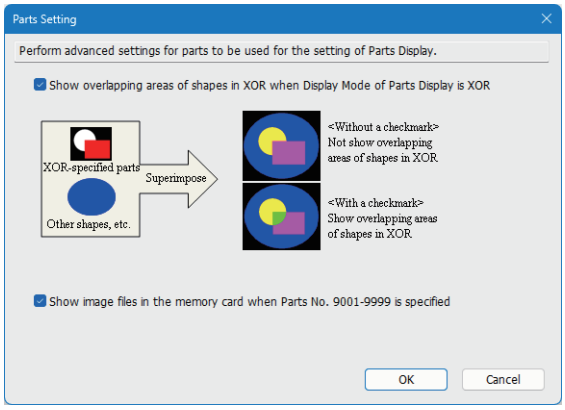
This method is applied to display BMP, JPEG, or PNG files in the data storage when the part number 9001 to 9999 is specified.

Operating procedure

1. Save the BMP, JPEG, or PNG file to be displayed as parts in the data storage.

☞ Page 827 Using the image file stored in the data storage as a part

2. Select [Show image files in the memory card when Parts No. 9001-9999 is specified] in the [Parts Setting] dialog and write the setting to the GOT.



3. When the display condition of a part (part number: 9001 to 9999) set for a parts display is satisfied, the BMP, JPEG, or PNG file part in the data storage is displayed.

Setting [Image File Setting] and [Image File No.] are unnecessary.

■When displaying BMP, JPEG, or PNG file parts in the data storage using GS450.b8

This method is applied to switch between the parts registered in GT Designer3 and the BMP, JPEG, or PNG file parts in the data storage when a part number 9001 to 9999 is specified.
To use GS450.b8, deselect [Show image files in the memory card when Parts No. 9001-9999 is specified] in the [Parts Setting] dialog.
If the above setting is valid, BMP, JPEG, or PNG files in the data storage can be used as parts regardless of the status of GS450.b8.

Part No.	GS450.b8: ON	GS450.b8: OFF
9001 to 9999	Displays the BMP, JPEG, and PNG file parts in the data storage.	Displays the parts registered in GT Designer3

Operating procedure

1. Save the BMP, JPEG, or PNG file to be displayed as parts in the data storage.

☞ Page 827 Using the image file stored in the data storage as a part

2. Turn on GS450.b8.
3. When the display condition of a part (part number: 9001 to 9999) set for a parts display is satisfied, the BMP, JPEG, or PNG file part in the data storage is displayed.

■Display example

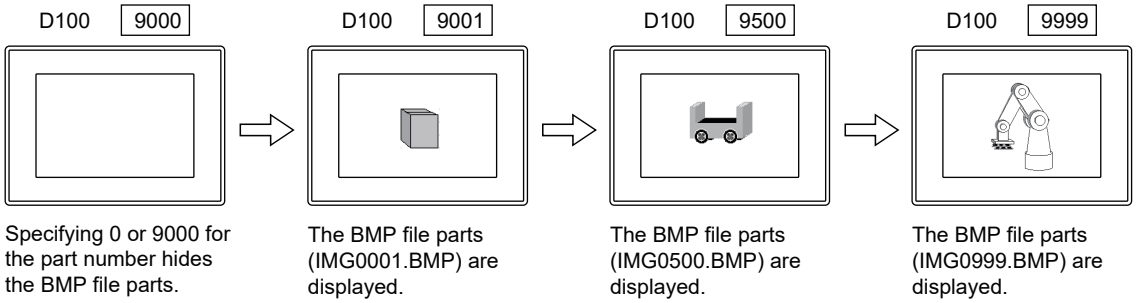
The following shows a display example of when a BMP file part is stored in the data storage.

Ex.

Displaying BMP file parts in a parts display (word part)

Writing a part number from 9001 to 9999 to a word device displays the BMP file part.

- Word device used to display the parts: D100



■When specifying a part number other than 9001 to 9999

Even if BMP, JPEG, or PNG file parts in the data storage are set to be displayed, parts registered in GT Designer3 are displayed when a part number outside the range of 9001 to 9999 is specified.

■When switching to BMP, JPEG, or PNG file parts in the data storage with the same part numbers (only when using GS450.b8)

To switch the displayed part (part number: 9001 to 9999) registered in GT Designer3 to a BMP, JPEG, or PNG file part with the same number in the data storage, follow the steps below.

Operating procedure

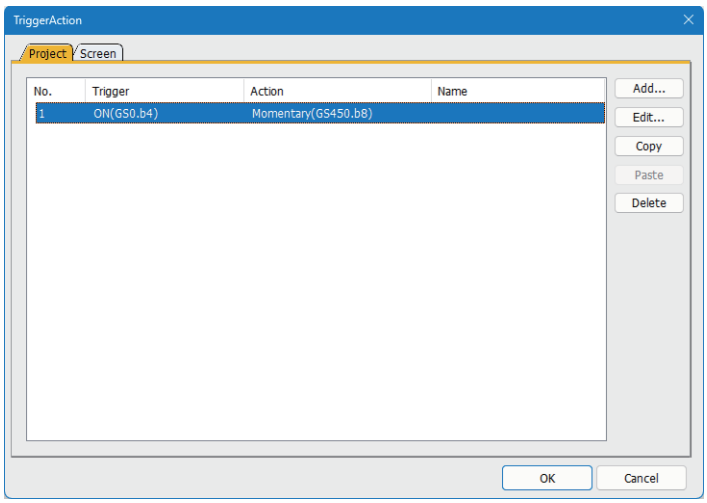
1. Turn on GS450.b8.
2. Specify part No. 0 or 9000 to hide the displayed part.
3. Specify the part number of the BMP, JPEG, or PNG file parts in the data storage to be displayed.

■Example of cases where GS450.b8 is automatically turned on after the GOT is powered on

The following shows an example of cases where GS450.b8 is automatically turned on after the GOT is powered on.
This method is useful when using GS450.b8 to display BMP, JPEG, and PNG file parts in the data storage from the beginning of operation.

Operating procedure

1. As a trigger action, make the GOT internal device (device always on: GS0.b4) as a trigger condition and make settings that store 1 to GS450.b8 while the trigger is on.
2. Store 1 in GS450.b8 with the trigger action after the GOT is powered on.



- Set in the [Project] tab of [Trigger Action].
- Set this trigger action in the first row of the list.

This stores 1 in GS450.b8 immediately after the GOT is powered on.
Parts displayed in parts displays at GOT startup may not be switched to BMP, JPEG, or PNG file parts.
(When the screen is switched, the parts are switched.)
Design screens under consideration for the above description.

- Select [Ordinary] for [Trigger Type].

Precautions

■Deleting parts

Use [Mark Data] and [Parts Data] of [Parts Type] to delete parts.

When [Base Screen] or [Window Screen] of [Parts Type] is used, parts are not deleted even if the parts are specified to 0. (When the screen is redisplayed after being switched to another, the parts are deleted.)

■While reading BMP, JPEG, or PNG files

While files are read, the monitor screen stops.

■When BMP, JPEG, or PNG file parts are incompletely displayed

When an error occurs while files are being on display step by step, the images may be displayed halfway.

In this case, display the parts again or check the BMP, JPEG, or PNG file.

■Displaying BMP, JPEG, or PNG file parts in the data storage

Do not disconnect the data storage from the GOT while displaying BMP, JPEG, or PNG file parts in the data storage.

■When stopping using BMP, JPEG, and PNG file parts in the data storage

Carry out either of the following operations.

- Change [Parts Setting] of GT Designer3 and write the project.
- Turn off the GOT internal device (GS450.b8).

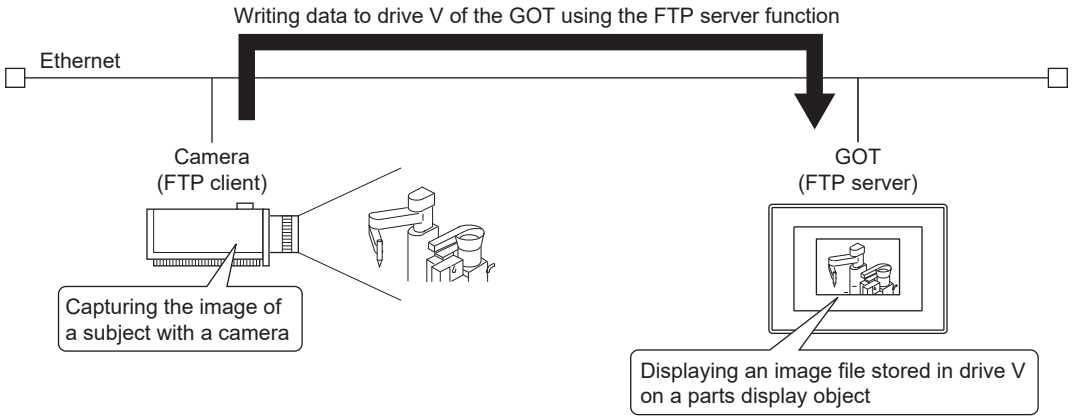
Even if disconnecting the data storage without the above operations, the BMP, JPEG, or PNG file parts may be displayed due to the following reasons.

BMP, JPEG, and PNG file parts displayed on the GOT are stored in the built-in memory of the GOT. (Only one BMP, JPEG, or PNG file part is retained.)

If a BMP, JPEG, or PNG file part with the same part number is played successively, the part stored in the built-in memory of the GOT, not the part registered in GT Designer3, is displayed.

33.3.8 Switching the image on a parts display object automatically

When an image file stored in drive V is updated, the image on the parts display object is automatically switched.
The image file can be displayed like a video playback when the file is frequently updated.
Write the image files in drive V using the FTP server function.



Displayable image files

The image files that satisfy all the following conditions can be displayed as parts.

- Storage designation: Drive V
- File name: IMG1, IMG2, IMG3, or IMG4
- File format: JPEG
- Resolution: QVGA, VGA, SVGA, XGA, WXGA, or full-HD

Specifications of drive V

Up to four files can be stored.
Up to 8 MB of data can be stored regardless of the storable number of files.
The status of drive V is not notified and the files stored in drive V are not manipulated.
The image files stored in drive V are deleted at the following timings.

- GT37

When the GOT is restarted
Note that the image files are retained if the package data is updated at the restart.

- GT SoftGOT3000

The files are deleted when monitoring starts with GT SoftGOT3000 or when GT SoftGOT3000 exits.

Settings of a parts display object

The following shows the settings required for a parts display and operating procedure.

Operating procedure

1. Select [Common] → [Parts] → [Parts Setting] from the menu to display the [Parts Setting] dialog.
2. Select [Enable the automatic update of image files].

☞ Page 831 [Parts Setting] dialog

3. Place a parts display object.
4. In the [Device/Style] or [Style] tab, configure the following settings.

- Select [Image File (automatic update)] for [Parts Type].
- Set the image file number to be used in [Detail Settings of Parts].

☞ Page 1436 [Bit Parts Display] dialog
☞ Page 1449 [Word Parts Display] dialog
☞ Page 1464 [Fixed Parts Display] dialog

Precautions

If you set a display condition in the [Trigger] tab, the image files may be updated even if the display condition is not established.

Configuring the FTP server and FTP client settings

The FTP server function to be used depends on the GOT model.

- GT37

Use the FTP server function of the GOT for settings.

☞ Page 2904 Transferring files between the GOT and peripheral devices (FTP server function)

- GT SoftGOT3000

Use the FTP server function of Windows for settings.

For the image files stored in drive V, configure the settings on the FTP client to be used.

33.3.9 Part No.

Depending on the part number, displayable parts and operations are different.

The following shows the relationship between part numbers and displayable parts.

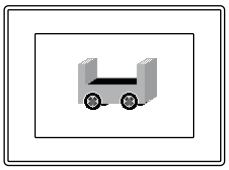
○: Can be displayed —: Cannot be displayed △: Display is deleted

Part No.	When BMP, JPEG, and PNG file parts in the data storage are set to be displayed		When BMP, JPEG, and PNG file parts in the data storage are not set to be displayed	
	Parts registered in GT Designer3	BMP, JPEG, and PNG file parts in the data storage	Parts registered in GT Designer3	BMP, JPEG, and PNG file parts in the data storage
0	△*1	△*1	△*1	—
1 to 8999	○	—	○	—
9000	—	△*1	○	—
9001 to 9999	—*2	○	○	—
10000 to 32767	○	—	○	—

*1 When [Indirect Device] is set for [Detail Settings of Parts] in the [Word Parts Display] dialog, the parts are not hidden. (The current display is held.)
For the method of hiding parts in the [Word Parts Display] dialog, refer to [Detail Settings of Parts] in the [Word Parts Display] dialog.
☞ Page 1436 [Device/Style] tab

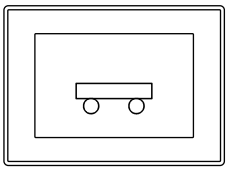
*2 Even if the parts registered in GT Designer3 are registered, they cannot be displayed.
Example) When a part registered in GT Designer3 is registered with the part No. 9123

BMP, JPEG, and PNG file parts are displayed.



When BMP, JPEG, and PNG file parts in the data storage are set to be displayed.

The parts registered in GT Designer3 (parts No.9123) are displayed.



When BMP, JPEG, and PNG file parts in the data storage are not set to be displayed.

33.3.10 Setting the image data of parts to a transparent color

When a transparent color is set for the image data of set parts, the setting of the transparent color is enabled.

(Transparent colors can be set only for the image data of BMP files.)

The following shows the method of enabling a transparent color setting for parts.

Operating procedure

1. Set a transparent color for the image data.
2. Register the image data for which the transparent color has been set as parts or into the library.
3. Set the registered parts or library as the parts.

☞ Page 1183 [Transparent Setting] dialog

33.4 [Bit Parts Display] dialog

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Operating procedure

1. Select [Object] → [Parts Display] → [Bit Parts] from the menu.
2. Click the position to place a bit parts display.
3. Double-click the bit parts display to display the setting dialog.

☞ Page 1436 [Device/Style] tab
☞ Page 1441 [Extended] tab
☞ Page 1442 [Animation] tab
☞ Page 1447 [Trigger] tab
☞ Page 1448 [Script] tab

33.4.1 [Device/Style] tab

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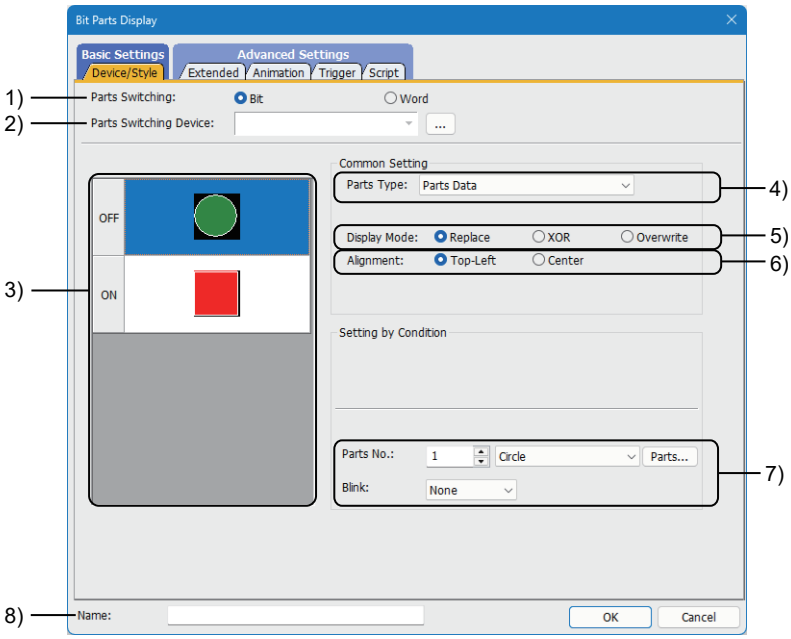
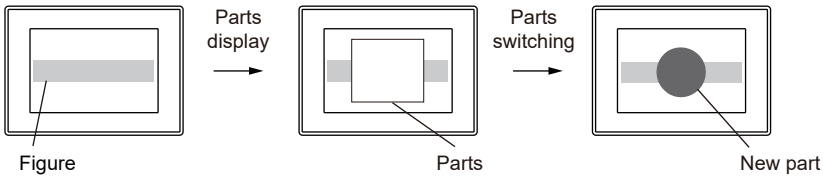
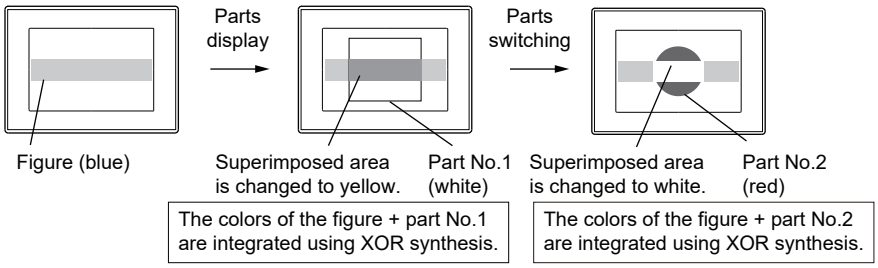
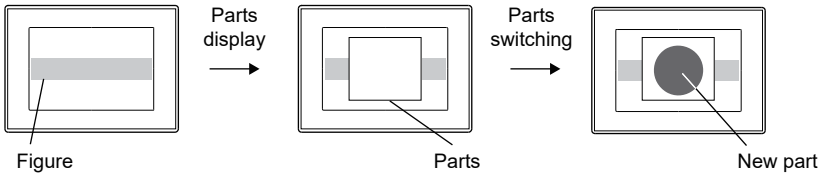
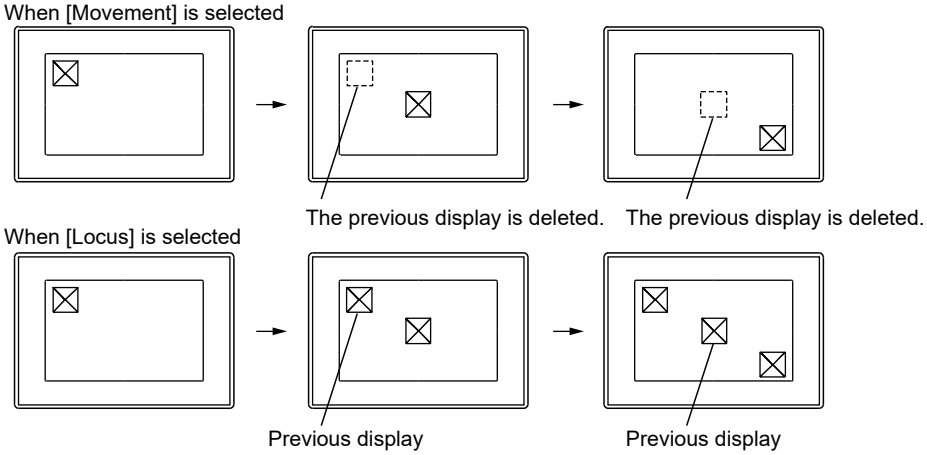
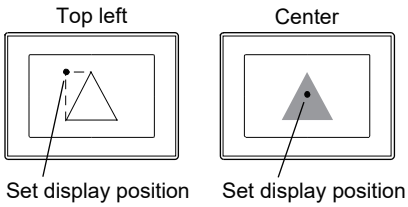


Item		Description
1)	[Parts Switching]	Select a parts display type. The following shows selectable items. • [Bit] • [Word]
2)	[Parts Switching Device]	Set the device to be monitored. ☞ Page 834 How to set devices, labels, and tags
3)	Preview list	Displays the shapes for the on and off status.

Item			Description
4)	[Parts Type]	—	Select the type of the parts for the parts display.
		[Parts]	Displays registered parts. When a transparent color is set for the image data of set parts, the setting of the transparent color is enabled. For the method of enabling the transparent color setting of parts, refer to the following. ☞ Page 1435 Setting the image data of parts to a transparent color
		[Mark Data]	Switches the white area of the registered part to another display color according to the change of the device status. After selecting, set [Parts No.] to be displayed. The setting range is [0] to [32767]. Click the [Parts] button to check the type of the registered parts. For the parts that can be displayed by mark, refer to the following. ☞ Page 812 Registering parts ([Parts]) When a transparent color is set for the image data of set parts, the setting of the transparent color is enabled. For the method of enabling the transparent color setting of parts, refer to the following. ☞ Page 1435 Setting the image data of parts to a transparent color
		[Base Screen]	Displays the registered base screens as parts.
		[Window Screen]	Displays the registered window screens as parts.
		[Image File]	Select an image file registered in the data storage to display the file as a part. Click the [Setting] button and select an image file in the [Image File Setting] dialog. ☞ Page 1440 [Image File Setting] dialog
		[Image File (automatic update)]	Select an image file on drive V to display it as a part. When the file on drive V is updated, the image on the parts display object is automatically switched. For details, refer to the following. ☞ Page 1433 Switching the image on a parts display object automatically Set the image file number to be used in [Setting by Condition]. When [XOR] is selected for [Display Mode], even though an image file on drive V is updated, the image on the parts display object is not automatically switched.

Item		Description
5)	[Display Mode] (When not specifying a movement animation)	Select a display method for the switched parts when [Specify the moving animation] is deselected in the [Animation] tab. ☞ Page 1442 [Animation] tab This setting is not displayed when [Enable the antialiasing] is selected in the [Type Setting] dialog ([Basic Setting]). The operation when [Replace] is selected is applied. ☞ Page 519 [Type Setting] dialog • [Replace] Deletes the parts displayed previously and displays the new parts. When [Parts Type] is [Base Screen] or [Window Screen], this item cannot be set.  • [XOR] After deleting the parts displayed previously, the areas which overlap with the new part are displayed with an XOR synthesis. For information on combining overlapped colors using XOR synthesis, refer to the following.  • [Overwrite] Displays a new part, base screen, or window screen on the part that has been displayed. 
	[Display Mode] (When specifying a movement animation)	Select a display method for the moved parts when [Specify the moving animation] is deselected in the [Animation] tab. ☞ Page 1442 [Animation] tab This setting is not displayed when [Enable the antialiasing] is selected in the [Type Setting] dialog ([Basic Setting]). The operation when [Move] is selected is applied. ☞ Page 519 [Type Setting] dialog • [Move] Displays the parts movement by deleting the previously displayed part. • [Locus] Displays the parts movement without deleting the parts that have been displayed. 

Item			Description
6)	[Alignment]		Select the default display position of parts, base screens, and window screens. • [Top-Left] Sets the top left of parts, base screens, and window screens as the default display position. • [Center] Sets the center of parts, base screens, and window screens as the default display position. 
7)	[Setting by Condition]	[Parts No.]	Set the number that has been assigned to the part, base screen, or window screen to be displayed. Click the [Parts Data] button to check the registered parts, base screen, and window screen. The setting range is [0] to [32767]. When 0 is set for [Parts No.], the part is deleted.
		[Mark Color]	When selecting [Mark Data] for [Parts Type], select the color of the area of the part to be switched from white.
		[Screen No.]	When selecting [Base Screen] or [Window Screen] for [Parts Type], specify the screen No. Click the [Screen] button to check the registered parts, base screen, and window screen.
		[Image File No.]	Set the image file number when you select [Image File] or [Image File (automatic update)] for [Parts Type]. The setting range varies depending on the setting of [Digits] in the [Image File Setting] dialog. Select [Image File] for [Parts Type]. • [Digits] is [5]: [0] to [65535] • [Digits] is [4]: [0] to [9999] • [Digits] is [3]: [0] to [999] • [Digits] is [2]: [0] to [99] • [Digits] is [1]: [0] to [9] Select [Image File (automatic update)] for [Parts Type]. • [0] to [4] When 0 is set for [Screen File No.], images are deleted. When displaying only images for the on status, set 0 for [Image File No.] for the off status.
		[Blink]	Select the blinking speed of the parts. The following shows selectable items. • [None] • [Low] • [Medium] • [High]
8)	[Name]		Set the object name. The name is displayed in places such as the data browser and property sheet. The setting can also be changed in other tabs. Up to 100 characters can be set.

[Image File Setting] dialog

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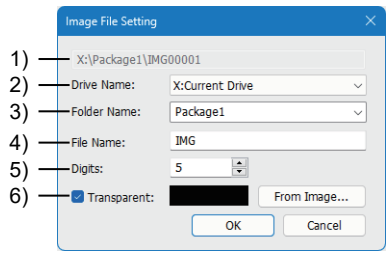
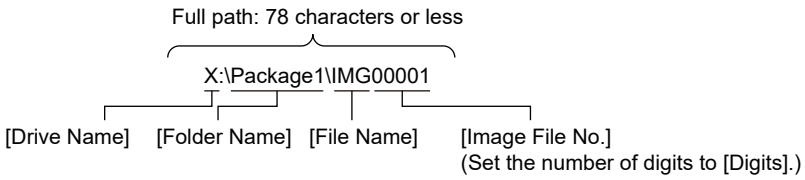
Select an image file to be displayed as a part.



Item		Description
1)	Image file path	Displays the full path of the specified image file. Set the path with 78 characters or less. Example) Using IMG00001.bmp stored in Package1 folder in drive X as a part  When [Image File No.] is set to [0], the path is not displayed.
2)	[Drive Name]	Select the drive to store the image file. The following shows selectable items. • [A:Standard SD Card] • [B:USB Drive] • [E:USB Drive] • [F:USB Drive] • [G:USB Drive] • [X:Current Drive] For the available drives by GOT model, refer to the following. ☞ Page 81 Drive configuration and capacity of the GOT
3)	[Folder Name]	Specify the folder in which image files are stored.
4)	[File Name]	Specify the first character of the image file name.
5)	[Digits]	Specify the number of digits of [Image File No.]. The setting range is [1] to [5].
6)	[Transparent]	Set a transparent color for the image file selected in this dialog. This setting is only effective for BMP files. Set a transparent color in the [Transparent Setting] dialog. ☞ Page 1183 [Transparent Setting] dialog Click the [From Image] button to display the [Open] dialog. Select an image file to be used in the [Transparent Setting] dialog to display the [Transparent Setting] dialog.

33.4.2 [Extended] tab

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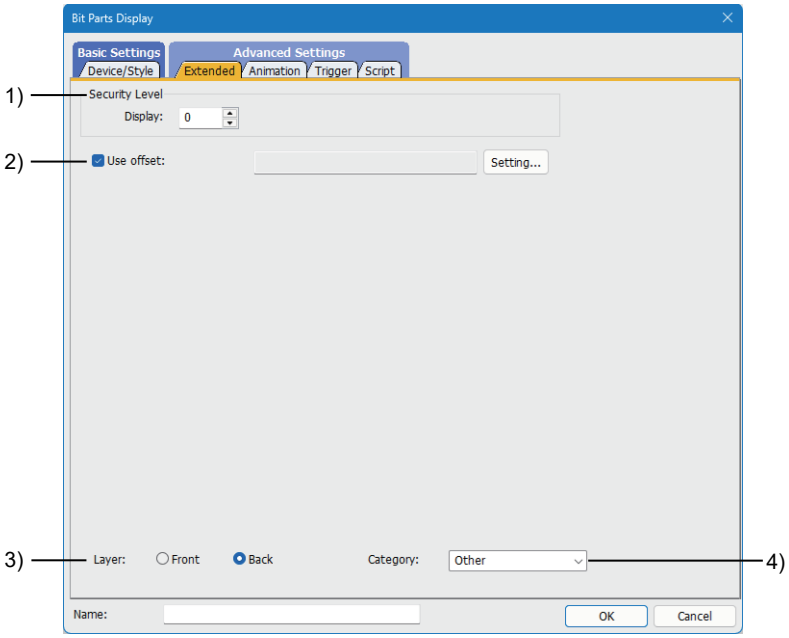

Item		Description
1)	[Security Level]	Set a security level when using the security function. The setting range is [0] to [15]. If you do not use the security, select [0]. ☞ Page 3038 Restricting display and operation on the GOT (Screen security)
2)	[Use offset]	Select this item to monitor multiple devices by switching them. Sets the offset device with the [Setting] button. ☞ Page 963 Offset
3)	[Layer]	Switches layers to be placed. The following shows selectable items. • [Front] • [Back]
4)	[Category]	Select the category to assign the object. ☞ Page 1121 Managing figures and objects by category

PART 7

33.4.3 [Animation] tab

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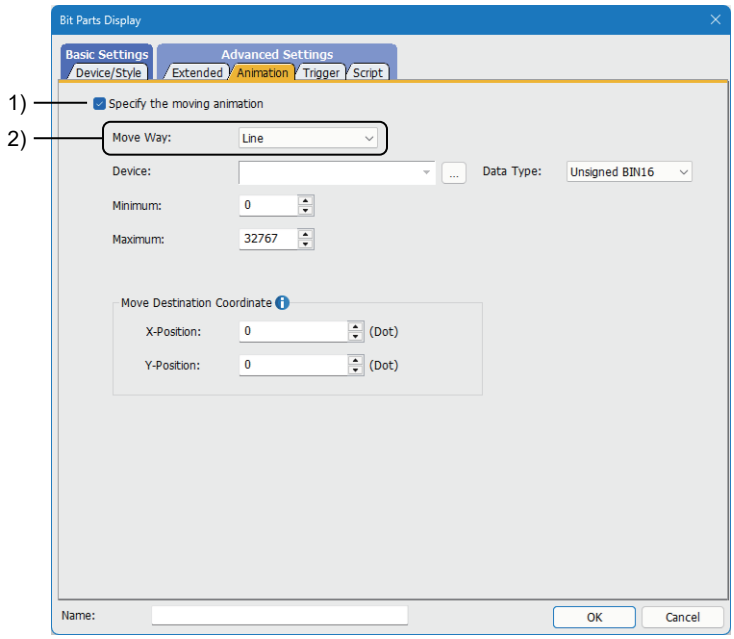
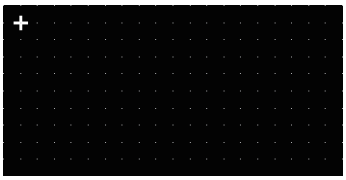
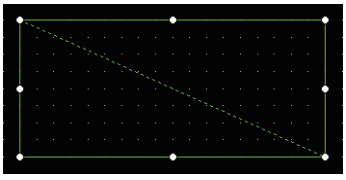
The setting items vary depending on the selected movement method.

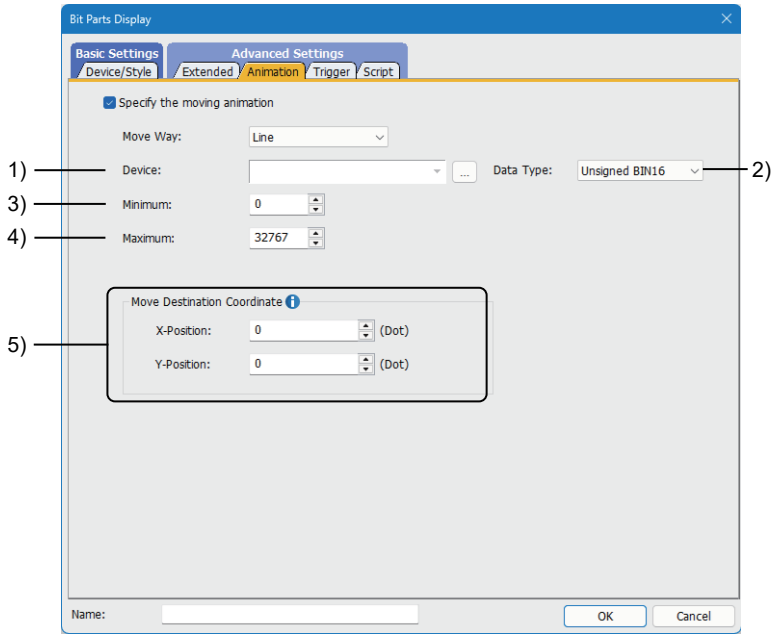


Item			Description
1)	[Specify the moving animation]		Set a movement animation for the parts display.
2)	[Move Way]	[Line]	Select [Line] to display the parts movement on the line across the specified start and end points. After the setting, perform the following operation on the screen editor. Click the start point on the drawing screen.  Move the cursor and click the end point. The line, which is the parts movement range, is set. 
		[Circle]	Select [Circle] to display the parts movement on the circle around the specified center coordinates. For information on the circular movement display, refer to the following. ☞ Page 1422 Circle After the setting, place a parts display on the screen editor.
		[Route Specification]	Select this item to display the part at the specified display position (route). After selecting this item, set [Route No.] of the route on which to display the parts movement in the [Animation Route] dialog. The setting range is [0] to [29]. Set the animation route on the screen in advance.
		[Specified coordinates]	Select [Specified coordinates] to display the parts movement using the values of two word devices as the X and Y coordinates. After selecting this item, set the device that stores the coordinate position. ☞ Page 834 How to set devices, labels, and tags

For the settings of each movement method, refer to the following.

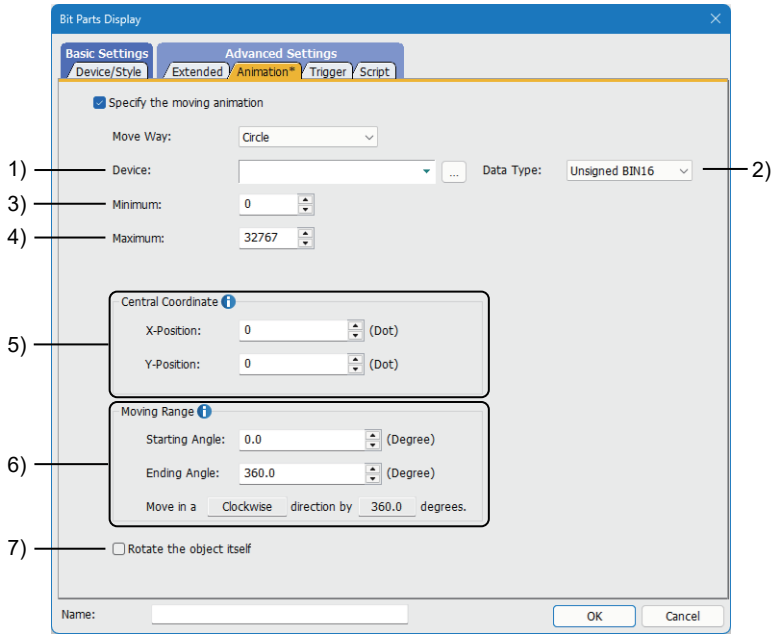
☞ Page 1443 [Line]
☞ Page 1444 [Circle]
☞ Page 1445 [Route Specification]
☞ Page 1445 [Specified coordinates]

[Line]



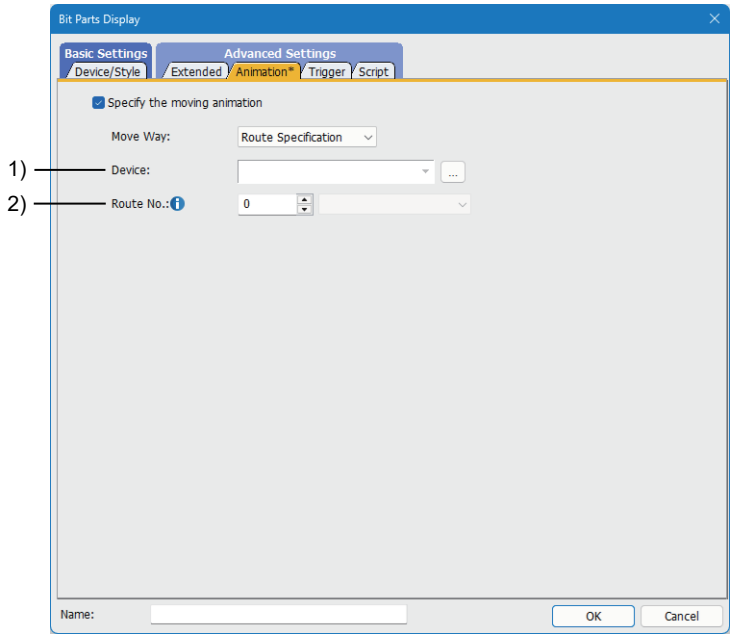
Item			Description
1)	[Device]		Set a device that stores the values relative to the start and end points.
2)	[Data Type]		Select the data type of the word device. The following shows selectable items. • [Unsigned BIN16] • [Signed BIN16]
3)	[Minimum]		Set the minimum value for the start point. The setting range is [0] to [65535].
4)	[Maximum]		Set the maximum value for the end point. The setting range is [0] to [65535].
5)	[Move Destination Coordinate]	[X-Position]	Set the X coordinate of the end point of the object's trajectory. The setting range is [-5000] to [5000].
		[Y-Position]	Set the Y coordinate of the end point of the object's trajectory. The setting range is [-5000] to [5000].

[Circle]



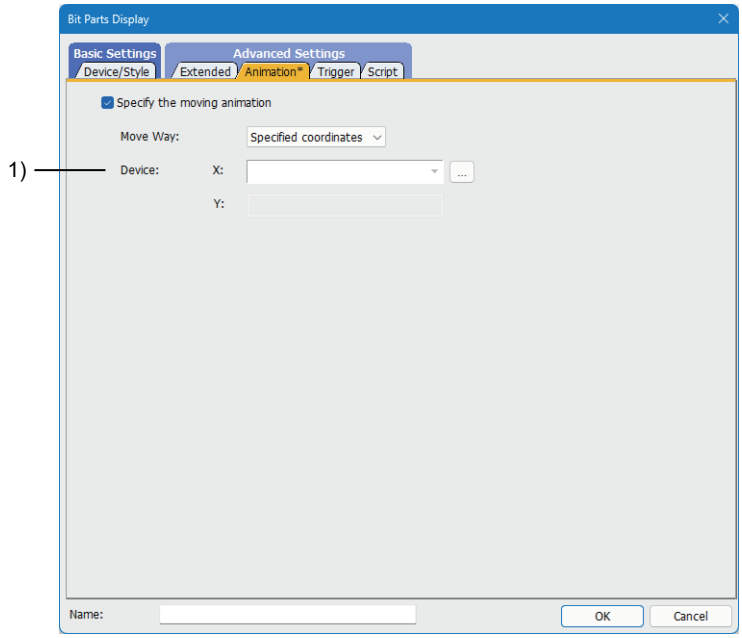
Item		Description
1)	[Device]	Set a device that stores the values relative to the start and end point angles.
2)	[Data Type]	Select the data type of the word device. The following shows selectable items. • [Unsigned BIN16] • [Signed BIN16]
3)	[Minimum]	Set the minimum value for the start point angle. The setting range is [0] to [65535].
4)	[Maximum]	Set the maximum value for the end point angle. The setting range is [0] to [65535].
5)	[Central Coordinate]	Set the center coordinates of a circle. The following shows the setting ranges. • [X-Position]: [-5000] to [5000] • [Y-Position]: [-5000] to [5000] Set the center coordinates relative to the coordinates of the parts display object. The angle between the coordinates of the parts display object and the center coordinates is regarded as 0 degrees.
6)	[Moving Range]	Set the start and end point angles to determine the movement range and direction for the part. The following shows the setting ranges. • [Starting Angle]: [-360.0] to [360.0] • [Ending Angle]: [-360.0] to [360.0] The angle is settable in units of 0.1 degree. The angle increases clockwise from 0 degrees.
7)	[Rotate the object itself]	This item appears when [Enable the antialiasing] is selected in the [Type Setting] dialog ([Basic Setting]). Rotates the part at the same angle in the same direction as the parts movement display settings based on the position selected for [Alignment] in the [Device/Style] or [Style] tab. The minimum rotation angle of the part is 1 degree.

[Route Specification]



Item		Description
1)	[Device]	Set a device that stores the display position (route).
2)	[Route No.]	Set [Route No.] in the [Animation Route] dialog to display the parts movement. The setting range is [0] to [29].

[Specified coordinates]



Item		Description
1)	[Device]	Set the device that stores the values of X-axis and Y-axis. The set device and the following device are set to store the coordinates of X-axis and Y-axis. (The set device is for storing the coordinate of X-axis)

Precautions

■Values to be stored in the position devices

The behavior when the value stored in the position device is outside the range differs depending on the setting of [Move Way] in the [Animation] tab.

• [Line], [Route Specification], or [Specified coordinates] is selected for [Move Way].

The part is not moved and the previous display is held.

• [Circle] is selected for [Move Way]

If the value is smaller than the minimum value, the display position changes according to the value set as the minimum value.

If the value is larger than the maximum value, the display position changes according to the value set as the maximum value.

■Precautions when [Circle] is selected for [Move Way]

• Displaying an image file in the data storage as a part

The image file is displayed but cannot be moved in a circular direction.

• Displaying a part containing a character

If a character set in the [Text] dialog is contained, the character is not displayed.

• Displaying a part containing a BMP file for which a transparent color is set

The outline color of the BMP file may be changed due to antialiasing.

The color changed from the transparent color will not be transparent.

• Display position of parts

Depending on the start or end point angle or the value of the position device, the part display position may deviate.

33.4.4 [Trigger] tab

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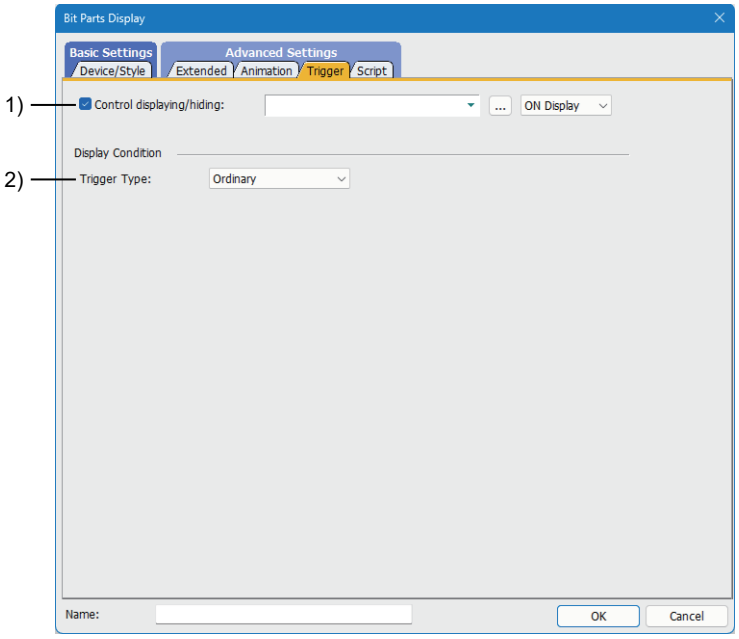

Item		Description
1)	[Control displaying/hiding]	Set the control device to display or hide all the objects including the shape frame. When the set device is in either the ON or OFF status, select whether or not to display the object. The following shows selectable items. • [ON Display] • [OFF Display] ☞ Page 834 How to set devices, labels, and tags
2)	[Trigger Type]	Select a trigger condition to display the object. The following shows selectable items. • [Ordinary] • [ON] • [OFF] • [Rise] • [Fall] • [Rise/Fall] • [Sampling] • [Range] • [Bit Trigger] • [ON Sampling] • [OFF Sampling] The selectable items vary depending on the GOT model. For details, refer to the following. ☞ Page 970 Specifications of the trigger types For the settings of each item, refer to the following. ☞ Page 968 Trigger type settings

33.4.5 [Script] tab

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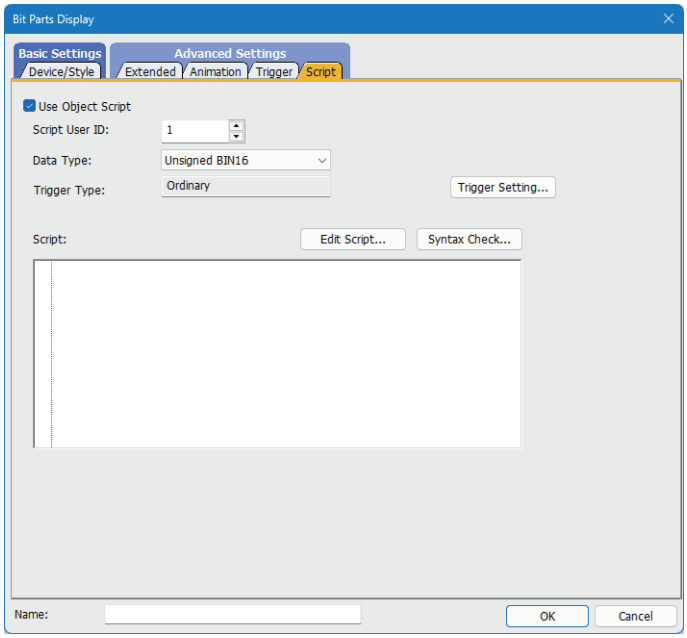
For details on the script settings, refer to the following.

☞ Page 2447 Object script



Relationship between the object settings and object properties

Object settings can be read (referenced) or written (changed) using object properties.

The following shows the correspondence between readable/writable object properties and the setting items in the object setting dialog.

○: Available

×: Not available

—: No applicable setting item

Setting dialog		Object property				
Tab name	Setting item	Property name	Read	Write	Timing for reflecting the setting change*1	
					When not specifying a movement animation	When specifying a movement animation
—	—	active	○	○	Upon the setting change	Upon the setting change
		x	○	○	When the screen is updated	Upon the setting change
		y	○	○	When the screen is updated	Upon the setting change
[Device/Style]	[Display Mode]	draw_mode	○	○	When the object is updated	—
	[Parts No.]	part_no	○	○	Upon the setting change	Upon the setting change
	[Mark Color]	mark_color	○	○	Upon the setting change	Upon the setting change
	[Blink]	blink	○	○	Upon the setting change	Upon the setting change
[Extended]	[Security Level]	security	○	○	When the screen is updated	When the screen is updated

*1 For information on how long it takes for object property settings to be reflected on the screen, refer to the following page.

☞ Page 2456 Timing at which the setting change of an object property is reflected

33.5 [Word Parts Display] dialog

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Operating procedure

1. Select [Object] → [Parts Display] → [Word Parts] from the menu.
2. Click the position to place a word parts display.
3. Double-click the word parts display to display the setting dialog.

☞ Page 1449 [Device/Style] tab
☞ Page 1454 [Extended] tab
☞ Page 1455 [Animation] tab
☞ Page 1460 [Trigger] tab
☞ Page 1461 [Operation/Script] tab

33.5.1 [Device/Style] tab

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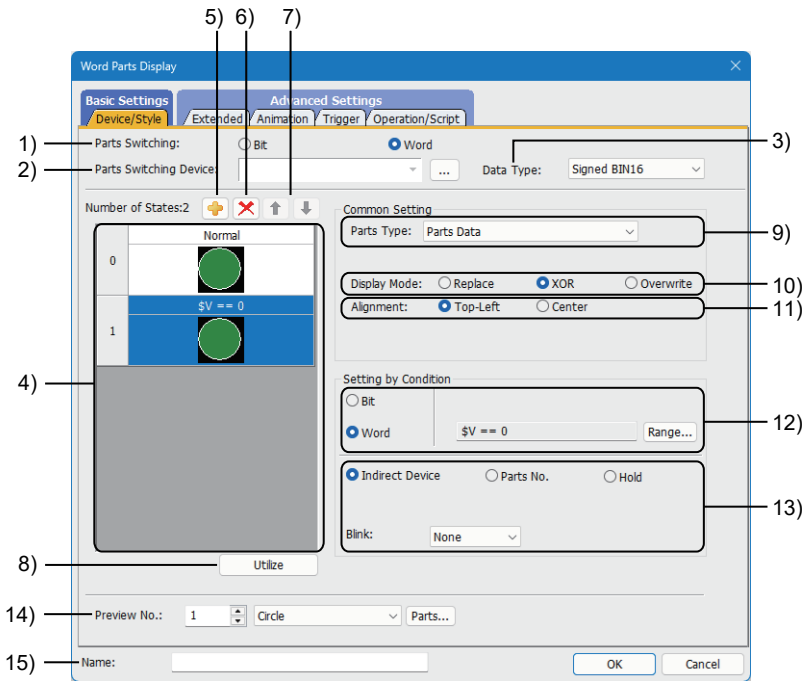
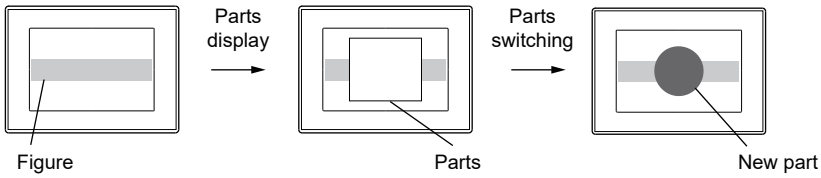
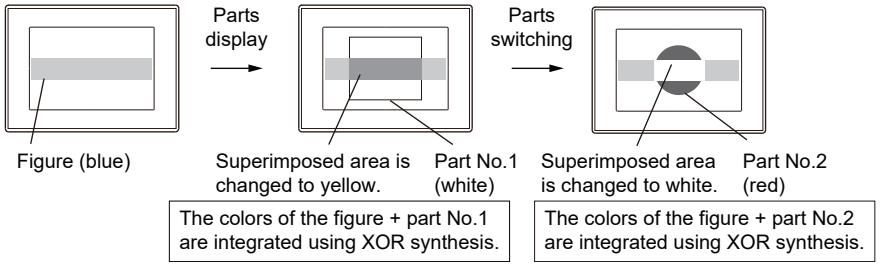
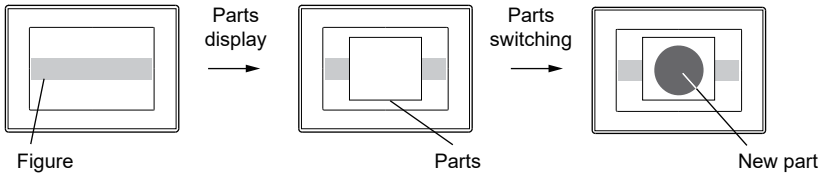
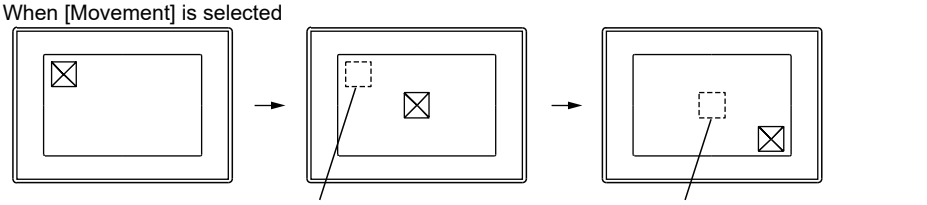
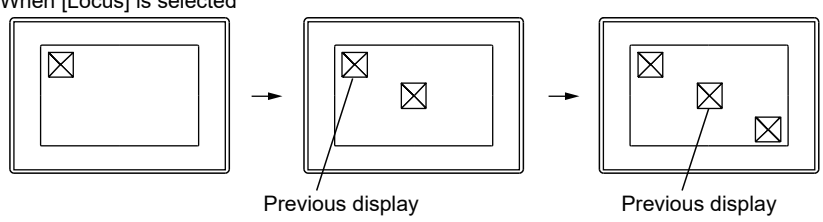
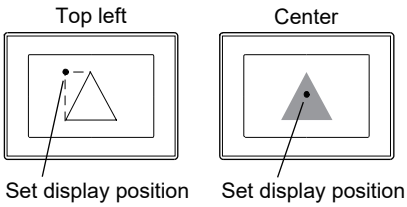
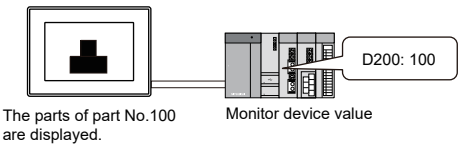


Item		Description
1)	[Parts Switching]	Select a parts display type. The following shows selectable items. • [Bit] • [Word]
2)	[Parts Switching Device]	Set the device to be monitored. ☞ Page 834 How to set devices, labels, and tags
3)	[Data Type]	Select the data type of the device. The following shows selectable items. • [Signed BIN16] • [Unsigned BIN16] • [Signed BIN8] • [Unsigned BIN8] • [BCD16]
4)	Preview list	Displays the set conditions.
5)	Add button	Adds a new condition.

Item			Description
6)	Delete button		Deletes the selected condition.
7)	Up button, down button		Changes the priority order of the conditions in the preview list.
8)	[Utilize] button		Creates a new condition utilizing the selected condition.
9)	[Parts Type]	—	Select the type of the parts for the parts display.
		[Parts]	Displays registered parts. When a transparent color is set for the image data of set parts, the setting of the transparent color is enabled. For the method of enabling the transparent color setting of parts, refer to the following. ☞ Page 1435 Setting the image data of parts to a transparent color
		[Mark Data]	Switches the white area of the registered part to another display color according to the change of the device status. After selecting, set [Parts No.] to be displayed. The setting range is [0] to [32767]. Click the [Parts] button to check the type of the registered parts. For the parts that can be displayed by mark, refer to the following. ☞ Page 812 Registering parts ([Parts]) When a transparent color is set for the image data of set parts, the setting of the transparent color is enabled. For the method of enabling the transparent color setting of parts, refer to the following. ☞ Page 1435 Setting the image data of parts to a transparent color
		[Base Screen]	Displays the registered base screens as parts.
		[Window Screen]	Displays the registered window screens as parts.
		[Image File]	Select an image file registered in the data storage to display the file as a part. Click the [Setting] button and select an image file in the [Image File Setting] dialog. ☞ Page 1440 [Image File Setting] dialog
		[Image File (automatic update)]	Select an image file on drive V to display it as a part. When the file on drive V is updated, the image on the parts display object is automatically switched. For details, refer to the following. ☞ Page 1433 Switching the image on a parts display object automatically Set the image file number to be used in [Setting by Condition]. When [XOR] is selected for [Display Mode], even though an image file on drive V is updated, the image on the parts display object is not automatically switched.

Item		Description
10)	[Display Mode] (When not specifying a movement animation)	Select a display method for the switched parts when [Specify the moving animation] is deselected in the [Animation] tab. ☞ Page 1455 [Animation] tab This setting is not displayed when [Enable the antialiasing] is selected in the [Type Setting] dialog ([Basic Setting]). The operation when [Replace] is selected is applied. ☞ Page 519 [Type Setting] dialog • [Replace] Deletes the parts displayed previously and displays the new parts. When [Parts Type] is [Base Screen] or [Window Screen], this item cannot be set.  • [XOR] After deleting the parts displayed previously, the areas which overlap with the new part are displayed with an XOR synthesis. For information on combining overlapped colors using XOR synthesis, refer to the following.  • [Overwrite] Displays a new part, base screen, or window screen on the part that has been displayed. 
	[Display Mode] (When specifying a movement animation)	Select a display method for the moved parts when [Specify the moving animation] is deselected in the [Animation] tab. ☞ Page 1455 [Animation] tab This setting is not displayed when [Enable the antialiasing] is selected in the [Type Setting] dialog ([Basic Setting]). The operation when [Move] is selected is applied. ☞ Page 519 [Type Setting] dialog • [Move] Displays the parts movement by deleting the previously displayed part. • [Locus] Displays the parts movement without deleting the parts that have been displayed. When [Movement] is selected  When [Locus] is selected 

Item			Description
11)	[Alignment]		Select the default display position of parts, base screens, and window screens. • [Top-Left] Sets the top left of parts, base screens, and window screens as the default display position. • [Center] Sets the center of parts, base screens, and window screens as the default display position. 
12)	[Range]		• [Bit] Select this item when changing the display according to the on and off status of the bit device. After selecting, set the bit device and device status (ON, OFF). • [Word] Select this item when changing the display according to the value of a word device. After selecting, set the conditional expression for the value of the word device with [Range] button.
13)	[Setting by Condition]*1	[Indirect Device]	Display the [Parts No.] corresponding to the value of the parts switching device. When deleting the parts, set $V==0 for [Range]. When the value of the parts switching device is 0, deleted the part. 
		[Parts No.]	Set the number that has been assigned to the part, base screen, or window screen to be displayed. Click the [Parts Data] button to check the registered parts, base screen, and window screen. The setting range is [0] to [32767]. When 0 is set for [Parts No.], the part is deleted.
		[Mark Color]	When selecting [Mark Data] for [Parts Type], select the color of the area of the part to be switched from white.
		[Screen No.]	When selecting [Base Screen] or [Window Screen] for [Parts Type], specify the screen No. Click the [Screen] button to check the registered parts, base screen, and window screen.
		[Image File No.]	Set the image file number when you select [Image File] or [Image File (automatic update)] for [Parts Type]. The setting range varies depending on the setting of [Digits] in the [Image File Setting] dialog. Select [Image File] for [Parts Type]. • [Digits] is [5]: [0] to [65535] • [Digits] is [4]: [0] to [9999] • [Digits] is [3]: [0] to [999] • [Digits] is [2]: [0] to [99] • [Digits] is [1]: [0] to [9] Select [Image File (automatic update)] for [Parts Type]. • [0] to [4] When 0 is set for [Screen File No.], images are deleted. When displaying only images for the on status, set 0 for [Image File No.] for the off status.
		[Hold]	Select this item to hold the current display of the parts.
		[Blink]	Select the blinking speed of the parts. The following shows selectable items. • [None] • [Low] • [Medium] • [High]
14)	[Preview No.]		Displays the part of the specified part number on the screen of GT Designer3. The setting range is [0] to [32767].
15)	[Name]		Set the object name. The name is displayed in places such as the data browser and property sheet. The setting can also be changed in other tabs. Up to 100 characters can be set.

*1 When an option other than [Indirect Device] is selected, conditions are required to be set.
The following shows how the parts are switched according to the setting of [Setting by Condition] and set conditions.

Type of [Setting by Condition]	Condition setting	
	Enabled	**None**
[Indirect Device]	Depending on a set condition, parts are displayed as follows. • When a condition is satisfied Displays the parts set for the condition. • When a condition is not satisfied Depending on the value of the parts switching device, parts are switched and displayed.	Set a condition as required. Depending on the monitor device value, parts are switched and displayed. Set a condition when switching parts according to the other conditions.
[Parts No.] [Mark Color]	Depending on a set condition, parts are displayed as follows. • When a condition is satisfied Displays the parts set for the condition. • When a condition is not satisfied Displays the parts set for [Detail Settings of Parts].	Make sure to set a condition. Otherwise, only one type of parts is displayed continuously. Switching to another part cannot be performed.
[Hold]	Depending on a set condition, parts are displayed as follows. • When a condition is satisfied Displays the parts set for the condition. • When a condition is not satisfied Holds the display of the parts set for the condition.	Make sure to set a condition. Without a condition, nothing is displayed.

For details on the conditions, refer to the following.

☞ Page 1038 Control with conditions

33.5.2 [Extended] tab

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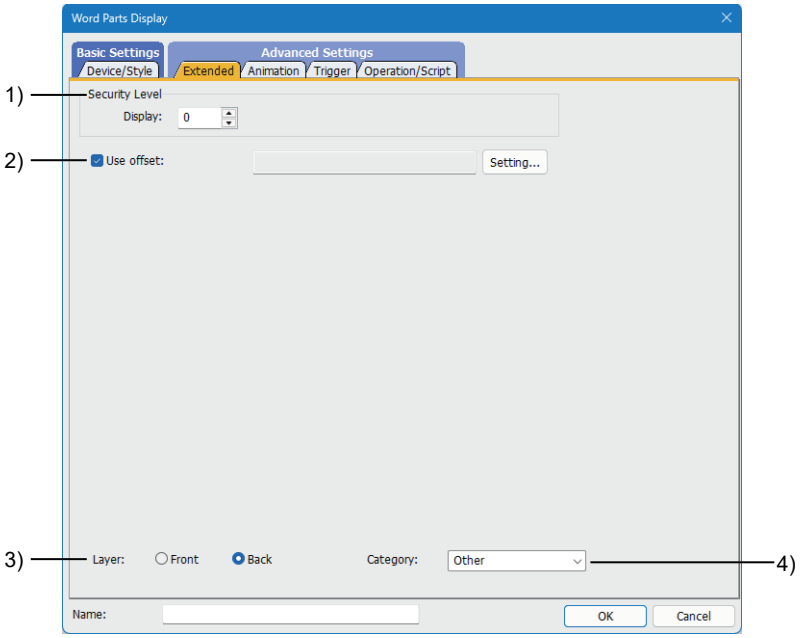

Item		Description
1)	[Security Level]	Set the security level when using the security function. The setting range is [1] to [15]. If you do not use the security function, select [0].
2)	[Use offset]	Select this item to monitor multiple devices by switching them. Sets the offset device with the [Setting] button.
3)	[Layer]	Switches layers to be placed. The following shows selectable items. • [Front] • [Back]
4)	[Category]	Select the category to assign the object. ☞ Page 1121 Managing figures and objects by category

33.5.3 [Animation] tab

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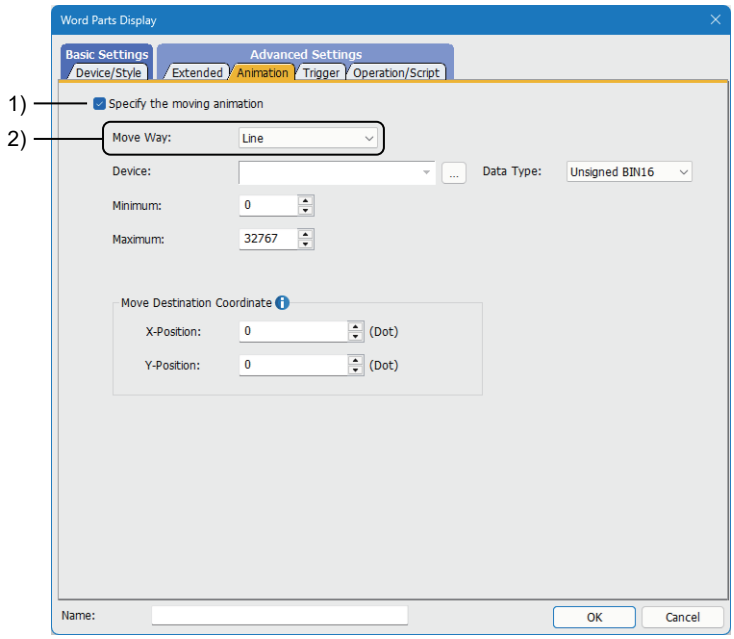
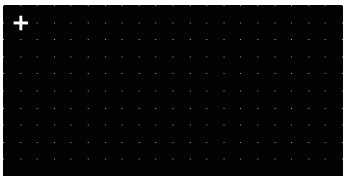
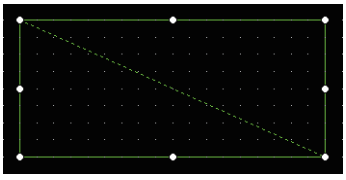
The setting items vary depending on the selected movement method.



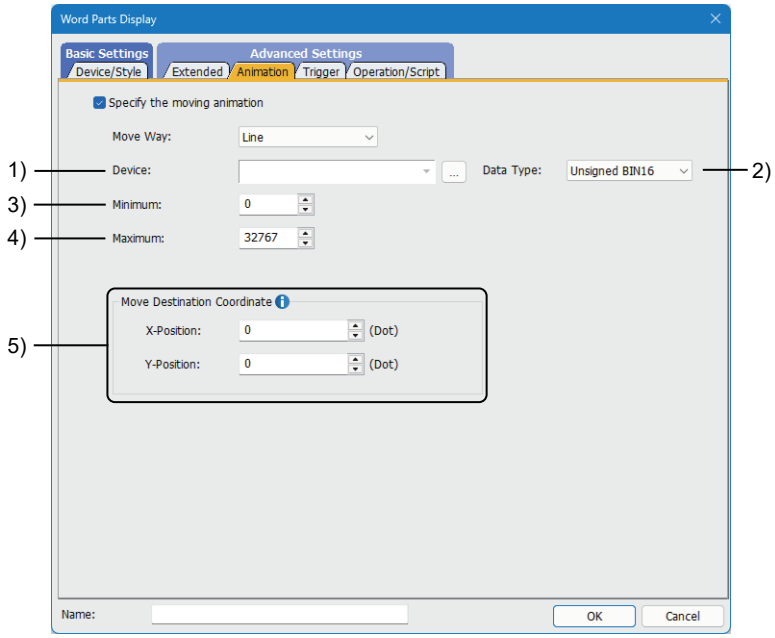
Item			Description
1)	[Specify the moving animation]		Set a movement animation for the parts display.
2)	[Move Way]	[Line]	Select [Line] to display the parts movement on the line across the specified start and end points. After the setting, perform the following operation on the screen editor. Click the start point on the drawing screen.  Move the cursor and click the end point. The line, which is the parts movement range, is set. 
		[Circle]	Select [Circle] to display the parts movement on the circle around the specified center coordinates. For information on the circular movement display, refer to the following. ☞ Page 1422 Circle After the setting, place a parts display on the screen editor.
		[Route Specification]	Select this item to display the part at the specified display position (route). After selecting this item, set [Route No.] of the route on which to display the parts movement in the [Animation Route] dialog. The setting range is [0] to [29]. Set the animation route on the screen in advance.
		[Specified coordinates]	Select [Specified coordinates] to display the parts movement using the values of two word devices as the X and Y coordinates. After selecting this item, set the device that stores the coordinate position. ☞ Page 834 How to set devices, labels, and tags

PART 7

For the settings of each movement method, refer to the following.

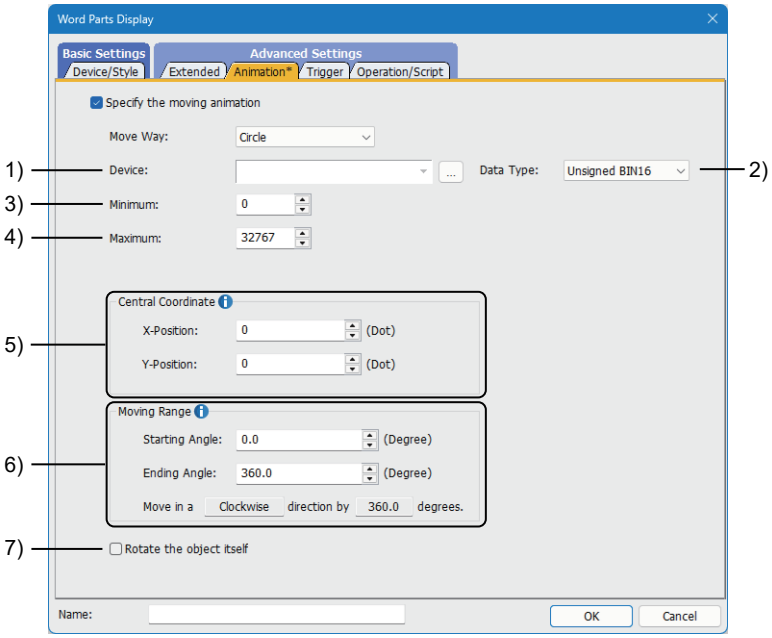
☞ Page 1456 [Line]
☞ Page 1457 [Circle]
☞ Page 1458 [Route Specification]
☞ Page 1458 [Specified coordinates]

[Line]



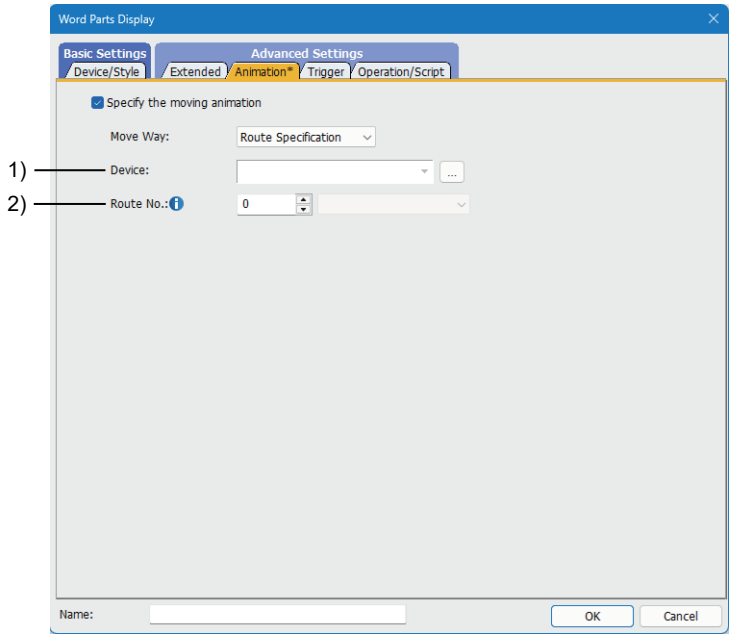
Item			Description
1)	[Device]		Set a device that stores the values relative to the start and end points.
2)	[Data Type]		Select the data type of the word device. The following shows selectable items. • [Unsigned BIN16] • [Signed BIN16]
3)	[Minimum]		Set the minimum value for the start point. The setting range is [0] to [65535].
4)	[Maximum]		Set the maximum value for the end point. The setting range is [0] to [65535].
5)	[Move Destination Coordinate]	[X-Position]	Set the X coordinate of the end point of the object's trajectory. The setting range is [-5000] to [5000].
		[Y-Position]	Set the Y coordinate of the end point of the object's trajectory. The setting range is [-5000] to [5000].

[Circle]



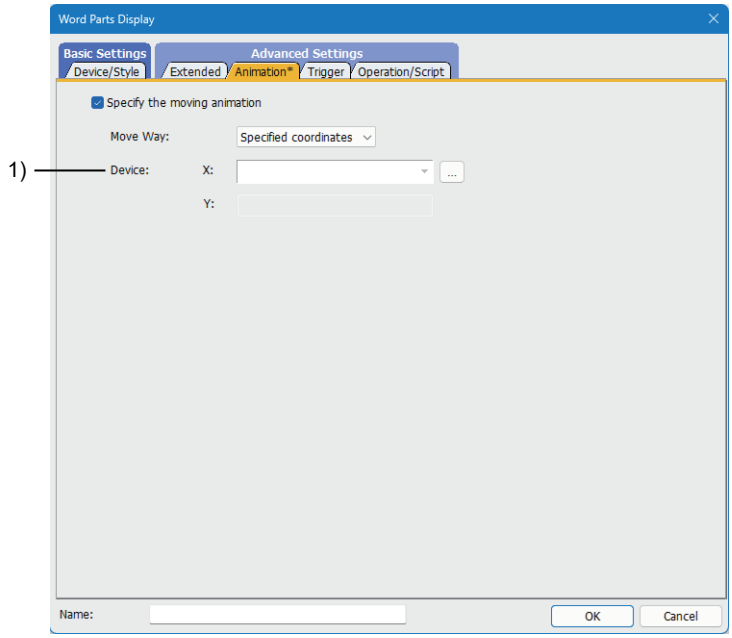
Item		Description
1)	[Device]	Set a device that stores the values relative to the start and end point angles.
2)	[Data Type]	Select the data type of the word device. The following shows selectable items. • [Unsigned BIN16] • [Signed BIN16]
3)	[Minimum]	Set the minimum value for the start point angle. The setting range is [0] to [65535].
4)	[Maximum]	Set the maximum value for the end point angle. The setting range is [0] to [65535].
5)	[Central Coordinate]	Set the center coordinates of a circle. The following shows the setting ranges. • [X-Position]: [-5000] to [5000] • [Y-Position]: [-5000] to [5000] Set the center coordinates relative to the coordinates of the parts display object. The angle between the coordinates of the parts display object and the center coordinates is regarded as 0 degrees.
6)	[Moving Range]	Set the start and end point angles to determine the movement range and direction for the part. The following shows the setting ranges. • [Starting Angle]: [-360.0] to [360.0] • [Ending Angle]: [-360.0] to [360.0] The angle is settable in units of 0.1 degree. The angle increases clockwise from 0 degrees.
7)	[Rotate the object itself]	This item appears when [Enable the antialiasing] is selected in the [Type Setting] dialog ([Basic Setting]). Rotates the part at the same angle in the same direction as the parts movement display settings based on the position selected for [Alignment] in the [Device/Style] or [Style] tab. The minimum rotation angle of the part is 1 degree.

[Route Specification]



Item		Description
1)	[Device]	Set a device that stores the display position (route).
2)	[Route No.]	Set [Route No.] in the [Animation Route] dialog to display the parts movement. The setting range is [0] to [29].

[Specified coordinates]



Item		Description
1)	[Device]	Set the device that stores the values of X-axis and Y-axis. The set device and the following device are set to store the coordinates of X-axis and Y-axis. (The set device is for storing the coordinate of X-axis)

Precautions

■Values to be stored in the position devices

The behavior when the value stored in the position device is outside the range differs depending on the setting of [Move Way] in the [Animation] tab.

• [Line], [Route Specification], or [Specified coordinates] is selected for [Move Way].

The part is not moved and the previous display is held.

• [Circle] is selected for [Move Way]

If the value is smaller than the minimum value, the display position changes according to the value set as the minimum value.

If the value is larger than the maximum value, the display position changes according to the value set as the maximum value.

■Precautions when [Circle] is selected for [Move Way]

• Displaying an image file in the data storage as a part

The image file is displayed but cannot be moved in a circular direction.

• Displaying a part containing a character

If a character set in the [Text] dialog is contained, the character is not displayed.

• Displaying a part containing a BMP file for which a transparent color is set

The outline color of the BMP file may be changed due to antialiasing.

The color changed from the transparent color will not be transparent.

• Display position of parts

Depending on the start or end point angle or the value of the position device, the part display position may deviate.

33.5.4 [Trigger] tab

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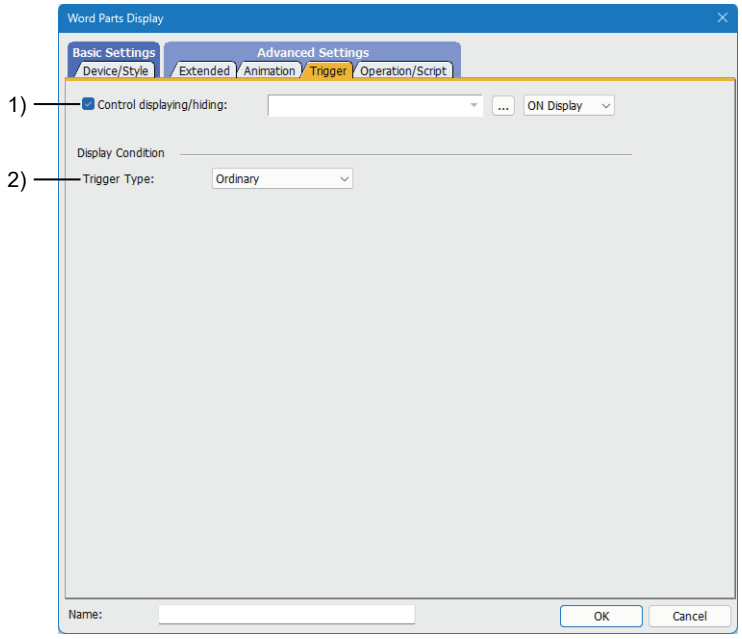

Item		Description
1)	[Control displaying/hiding]	Set the control device to display or hide all the objects including the shape frame. When the set device is in either the ON or OFF status, select whether or not to display the object. The following shows selectable items. • [ON Display] • [OFF Display] ☞ Page 834 How to set devices, labels, and tags
2)	[Trigger Type]	Select a trigger condition to display the object. The following shows selectable items. • [Ordinary] • [ON] • [OFF] • [Rise] • [Fall] • [Rise/Fall] • [Sampling] • [Range] • [Bit Trigger] • [ON Sampling] • [OFF Sampling] The selectable items vary depending on the GOT model. For details, refer to the following. ☞ Page 970 Specifications of the trigger types For the settings of each item, refer to the following. ☞ Page 968 Trigger type settings

33.5.5 [Operation/Script] tab

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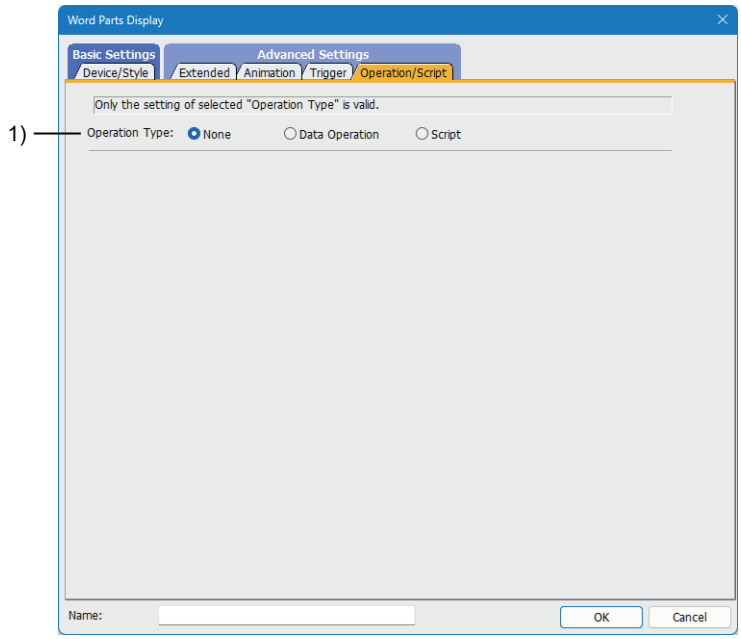
Set an expression for monitoring using the data operation function or the script function.



Item			Description
1)	[Operation Type]	[None]	The data operation function and the script function are not used.
		[Data Operation]	Set the expression used for the data operation function.
		[Script]	Set the expressions for the script function.

The setting items differ depending on the selection for [Operation Type].

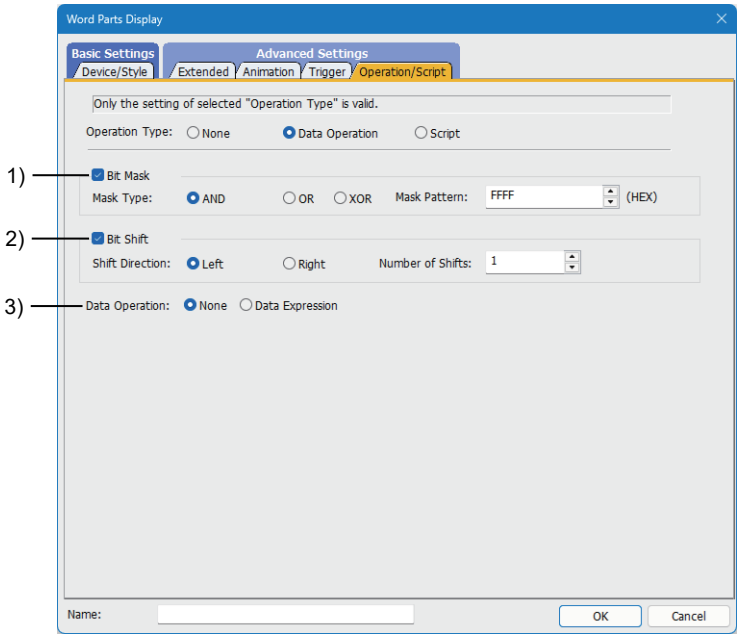
The following shows the settings for each function.

[Data Operation]

This item can be set only when [Operation Type] is [Data Operation].

For details on the data operation settings, refer to the following.

☞ Page 1053 How to set the data operation



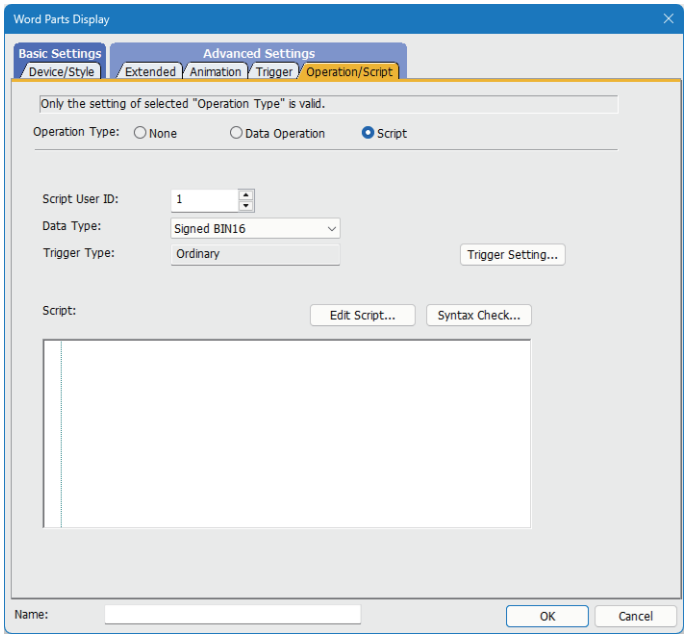
Item			Description
1)	[Bit Mask]	—	Set the operation of mask processing.
		[Mask Type]	Select the type of mask processing. The following shows selectable items. • [AND]: Logical AND • [OR]: Logical OR • [XOR]: Exclusive OR
		[Mask Pattern]	Set a pattern value to mask in hexadecimal. The setting range differs depending on the setting of [Data Type] in the [Device/Style] tab.
2)	[Bit Shift]	—	Set the operation of shift processing.
		[Shift Direction]	Select a shifting direction. The following shows selectable items. • [Left] • [Right]
		[Number of Shifts]	Set the number of bits to be shifted. The setting range differs depending on the setting of [Data Type] in the [Device/Style] tab.
3)	[Data Operation]		Select the format of the expression operating with the data operation. The following shows selectable items. • [None] • [Data Expression]

[Script]

This item can be set only when [Operation Type] is [Script].

For details on the script settings, refer to the following.

☞ Page 2447 Object script



■Relationship between the object settings and object properties

Object settings can be read (referenced) or written (changed) using object properties.

The following shows the correspondence between readable/writable object properties and the setting items in the object setting dialog.

○: Available

×: Not available

—: No applicable setting item

Setting dialog		Object property				
Tab name	Setting item	Property name	Read	Write	Timing for reflecting the setting change*1	
					When not specifying a movement animation	When specifying a movement animation
—	—	active	○	○	Upon the setting change	Upon the setting change
		x	○	○	When the screen is updated	Upon the setting change
		y	○	○	When the screen is updated	Upon the setting change
[Device/Style]	[Display Mode]	draw_mode	○	○	When the object is updated	—
	[Parts No.]	part_no	○	○	Upon the setting change	Upon the setting change
	[Mark Color]	mark_color	○	○	Upon the setting change	Upon the setting change
	[Blink]	blink	○	○	Upon the setting change	Upon the setting change
[Extended]	[Security Level]	security	○	○	When the screen is updated	When the screen is updated

*1 For information on how long it takes for object property settings to be reflected on the screen, refer to the following page.

☞ Page 2456 Timing at which the setting change of an object property is reflected

33.6 [Fixed Parts Display] dialog

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Operating procedure

1. Select [Object] → [Parts Display] → [Fixed Parts] from the menu.
2. Click the position to place a fixed parts display.
3. Double-click the fixed parts display to display the setting dialog.

☞ Page 1465 [Style] tab
☞ Page 1468 [Extended] tab
☞ Page 1469 [Animation] tab
☞ Page 1474 [Trigger] tab
☞ Page 1475 [Script] tab

33.6.1 [Style] tab

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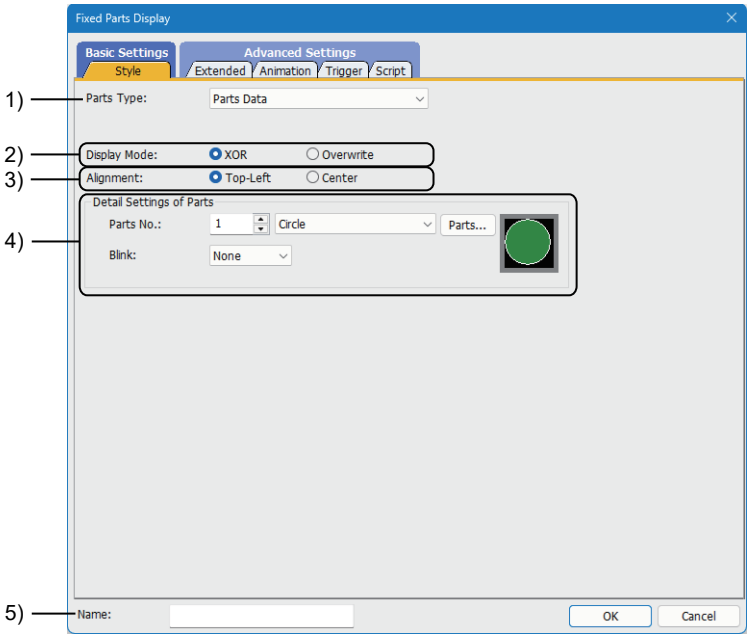
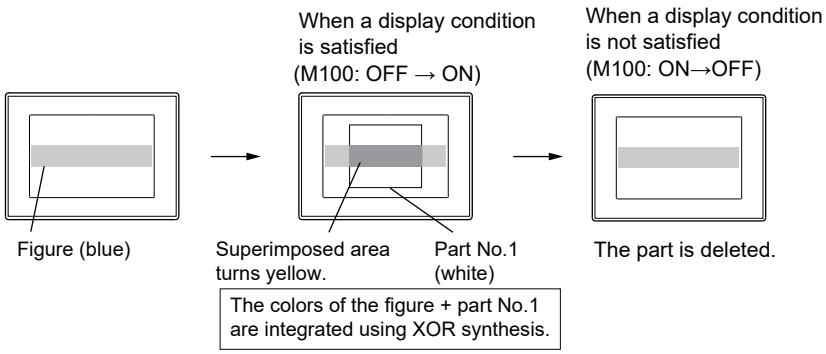
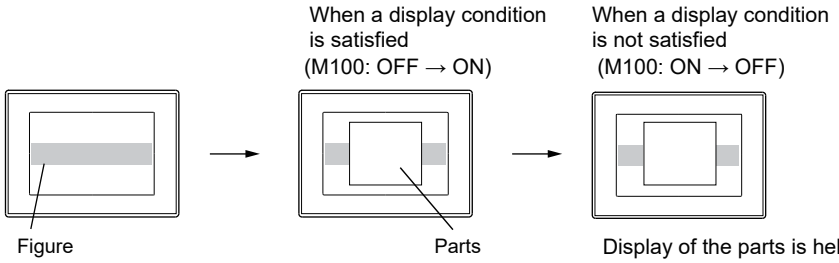
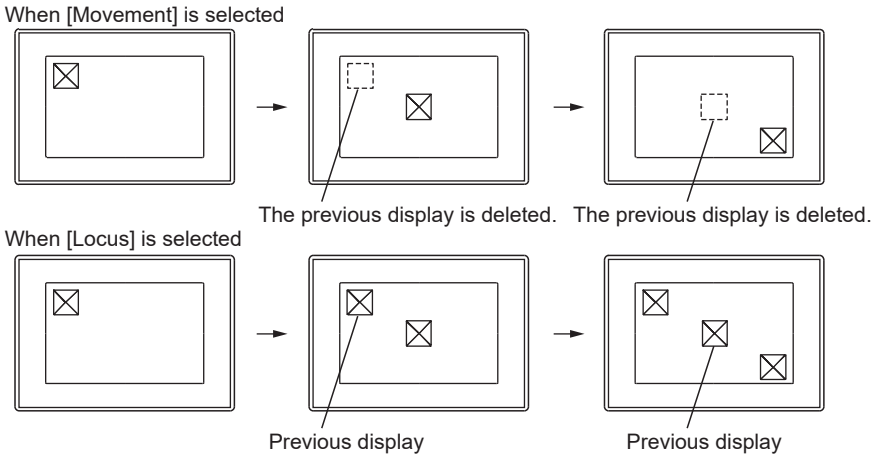
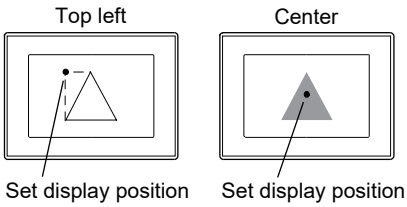


Item			Description
1)	[Parts Type]	[Parts Data]	Select the type of the parts for the parts display. Displays registered parts. When a transparent color is set for the image data of set parts, the setting of the transparent color is enabled. For the method of enabling the transparent color setting of parts, refer to the following. ☞ Page 1435 Setting the image data of parts to a transparent color
		[Mark Data]	Switches the white area of the registered part to the color set for [Mark Color]. After selecting, set [Parts No.] to be displayed. The setting range is [0] to [32767]. Click the [Parts] button to check the type of the registered parts. For the parts that can be displayed by mark, refer to the following. ☞ Page 812 Registering parts ([Parts]) When a transparent color is set for the image data of set parts, the setting of the transparent color is enabled. For the method of enabling the transparent color setting of parts, refer to the following. ☞ Page 1435 Setting the image data of parts to a transparent color
		[Base Screen]	Displays the registered base screens as parts.
		[Window Screen]	Displays the registered window screens as parts.
		[Image File]	Select an image file registered in the data storage to display the file as a part. Click the [Setting] button and select an image file in the [Image File Setting] dialog. ☞ Page 1440 [Image File Setting] dialog
		[Image File (automatic update)]	Select an image file on drive V to display it as a part. When the file on drive V is updated, the image on the parts display object is automatically switched. For details, refer to the following. ☞ Page 1433 Switching the image on a parts display object automatically Set the image file number to be used in [Setting by Condition]. When [XOR] is selected for [Display Mode], even though an image file on drive V is updated, the image on the parts display object is not automatically switched.

Item		Description
2)	[Display Mode] (When not specifying a movement animation)	Select a display method for the switched parts when [Specify the moving animation] is deselected in the [Animation] tab. ☞ Page 1469 [Animation] tab This setting is not displayed when [Enable the antialiasing] is selected in the [Type Setting] dialog ([Basic Setting]). The operation when [Overwrite] is selected is applied. ☞ Page 519 [Type Setting] dialog • [XOR] Displays parts, base screens, and window screens with an XOR synthesis on figures or other parts displays. When the display condition is not satisfied, the parts, base screens, and window screens are deleted. Example) Display condition: While M100 is on  • [Overwrite] Displays parts, base screens, and window screens on figures or other parts displays. Even if the display condition is not satisfied, the display of the parts, base screens, and window screens are held. Example) Display condition: While M100 is on 
	[Display Mode] (When specifying a movement animation)	Select a display method for the moved parts when [Specify the moving animation] is deselected in the [Animation] tab. ☞ Page 1469 [Animation] tab This setting is not displayed when [Enable the antialiasing] is selected in the [Type Setting] dialog ([Basic Setting]). The operation when [Move] is selected is applied. ☞ Page 519 [Type Setting] dialog • [Move] Displays the parts movement by deleting the previously displayed part. • [Locus] Displays the parts movement without deleting the parts that have been displayed. 

Item			Description
3)	[Alignment]		Select the default display position of parts, base screens, and window screens. • [Top-Left] Sets the top left of parts, base screens, and window screens as the default display position. • [Center] Sets the center of parts, base screens, and window screens as the default display position. 
4)	[Detail Settings of Parts]	[Parts No.]	Set the number that has been assigned to the part, base screen, or window screen to be displayed. Click the [Parts Data] button to check the registered parts, base screen, and window screen. The setting range is [0] to [32767]. When 0 is set for [Parts No.], the part is deleted.
		[Mark Color]	When selecting [Mark Data] for [Parts Type], select the color of the area of the part to be switched from white.
		[Screen No.]	When selecting [Base Screen] or [Window Screen] for [Parts Type], specify the screen No. Click the [Screen] button to check the registered parts, base screen, and window screen.
		[Image File No.]	Set the image file number when you select [Image File] or [Image File (automatic update)] for [Parts Type]. The setting range varies depending on the setting of [Digits] in the [Image File Setting] dialog. Select [Image File] for [Parts Type]. • [Digits] is [5]: [0] to [65535] • [Digits] is [4]: [0] to [9999] • [Digits] is [3]: [0] to [999] • [Digits] is [2]: [0] to [99] • [Digits] is [1]: [0] to [9] Select [Image File (automatic update)] for [Parts Type]. • [0] to [4] When 0 is set for [Screen File No.], images are deleted.
		[Blink]	Select the blinking speed of the parts. The following shows selectable items. • [None] • [Low] • [Medium] • [High]
5)	[Name]		Set the object name. The name is displayed in places such as the data browser and property sheet. The setting can also be changed in other tabs. Up to 100 characters can be set.

33.6.2 [Extended] tab

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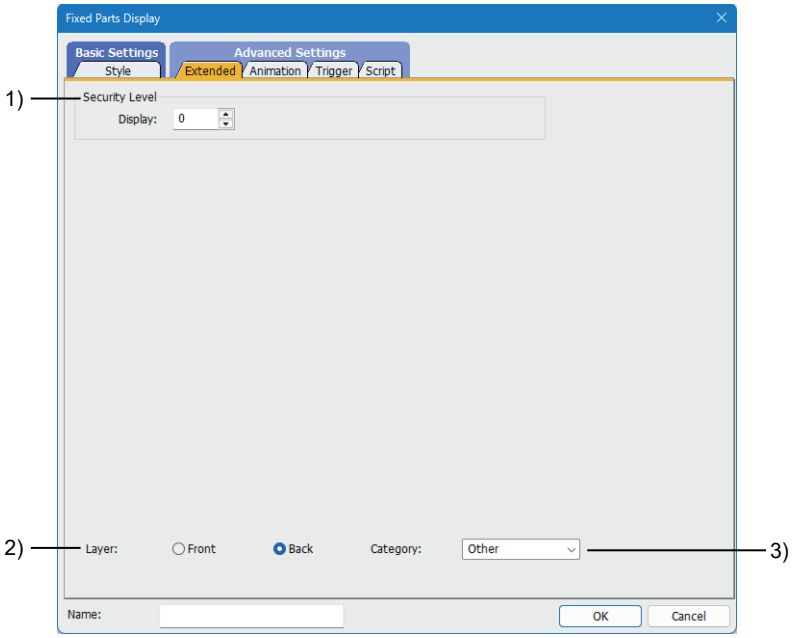

Item		Description
1)	[Security Level]	Set the security level when using the security function. The setting range is [1] to [15]. If you do not use the security function, select [0].
2)	[Layer]	Switches layers to be placed. The following shows selectable items. • [Front] • [Back]
3)	[Category]	Select the category to assign the object. ☞ Page 1121 Managing figures and objects by category

33.6.3 [Animation] tab

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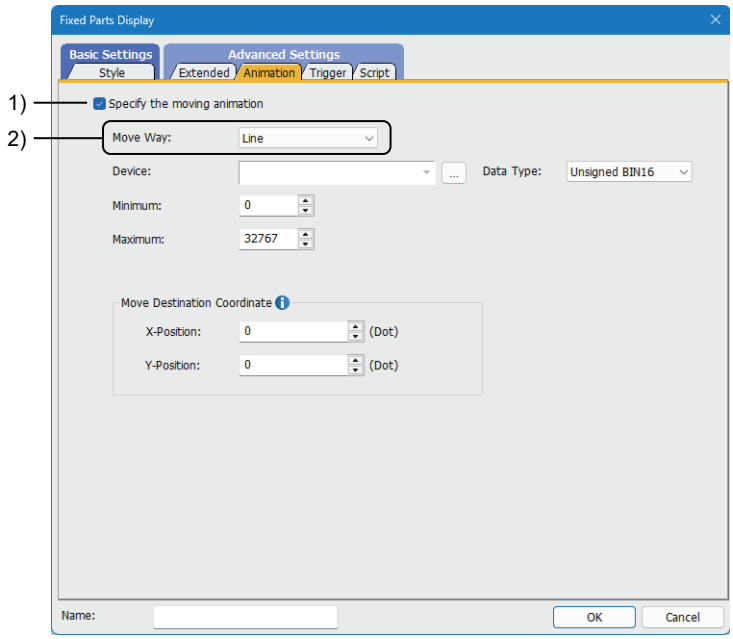
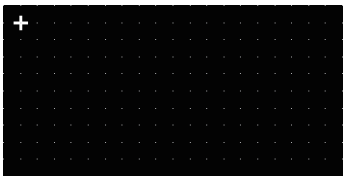
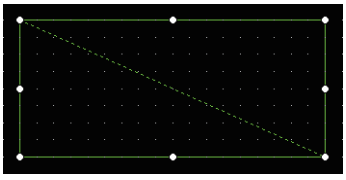
The setting items vary depending on the selected movement method.



Item			Description
1)	[Specify the moving animation]		Set a movement animation for the parts display.
2)	[Move Way]	[Line]	Select [Line] to display the parts movement on the line across the specified start and end points. After the setting, perform the following operation on the screen editor. Click the start point on the drawing screen.  Move the cursor and click the end point. The line, which is the parts movement range, is set. 
		[Circle]	Select [Circle] to display the parts movement on the circle around the specified center coordinates. For information on the circular movement display, refer to the following. ☞ Page 1422 Circle After the setting, place a parts display on the screen editor.
		[Route Specification]	Select this item to display the part at the specified display position (route). After selecting this item, set [Route No.] of the route on which to display the parts movement in the [Animation Route] dialog. The setting range is [0] to [29]. Set the animation route on the screen in advance.
		[Specified coordinates]	Select [Specified coordinates] to display the parts movement using the values of two word devices as the X and Y coordinates. After selecting this item, set the device that stores the coordinate position. ☞ Page 834 How to set devices, labels, and tags

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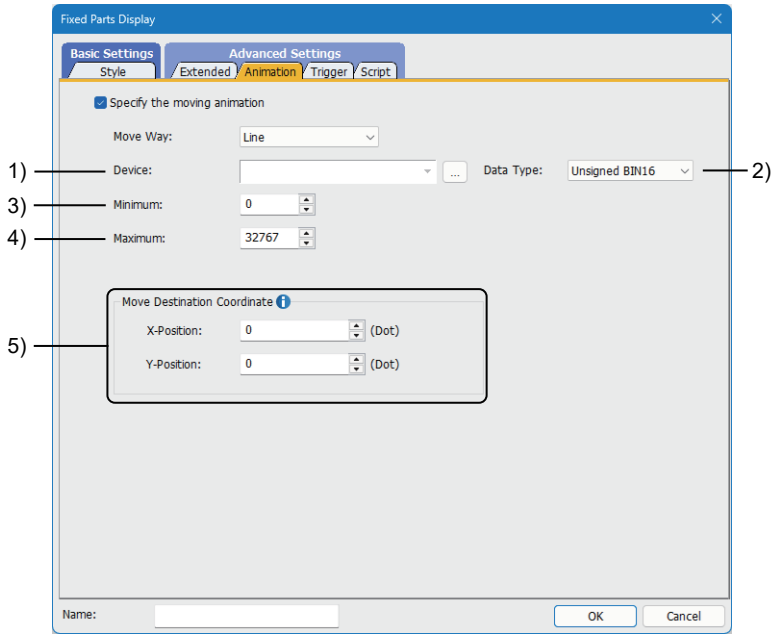
For the settings of each movement method, refer to the following.

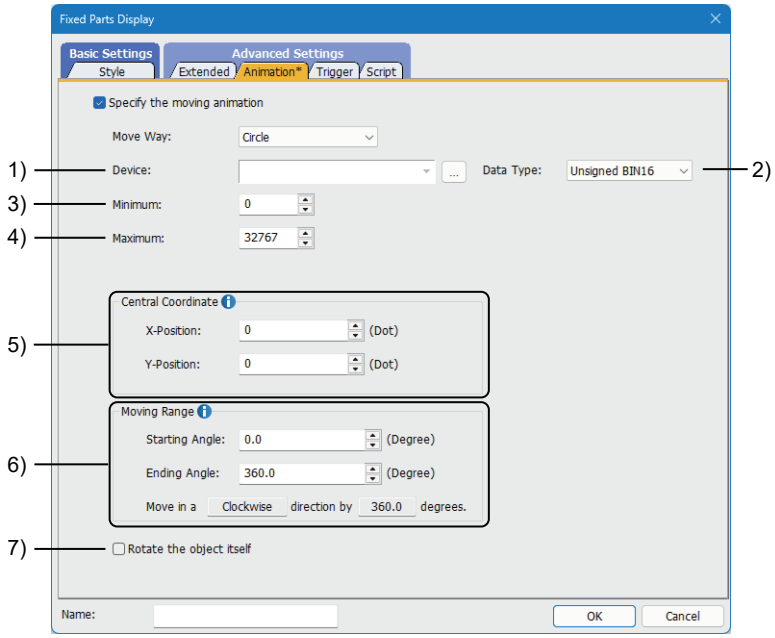
☞ Page 1470 [Line]
☞ Page 1471 [Circle]
☞ Page 1472 [Route Specification]
☞ Page 1472 [Specified coordinates]

[Line]



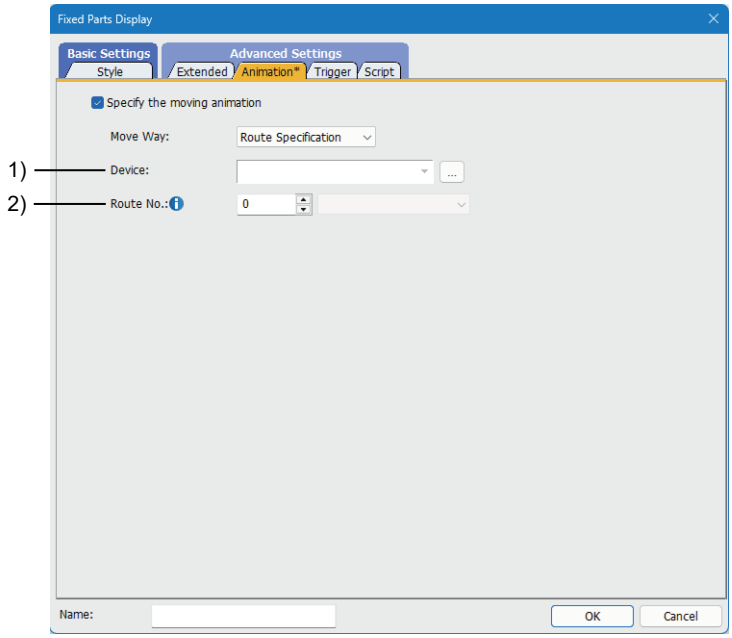
Item			Description
1)	[Device]		Set a device that stores the values relative to the start and end points.
2)	[Data Type]		Select the data type of the word device. The following shows selectable items. • [Unsigned BIN16] • [Signed BIN16]
3)	[Minimum]		Set the minimum value for the start point. The setting range is [0] to [65535].
4)	[Maximum]		Set the maximum value for the end point. The setting range is [0] to [65535].
5)	[Move Destination Coordinate]	[X-Position]	Set the X coordinate of the end point of the object's trajectory. The setting range is [-5000] to [5000].
		[Y-Position]	Set the Y coordinate of the end point of the object's trajectory. The setting range is [-5000] to [5000].

[Circle]



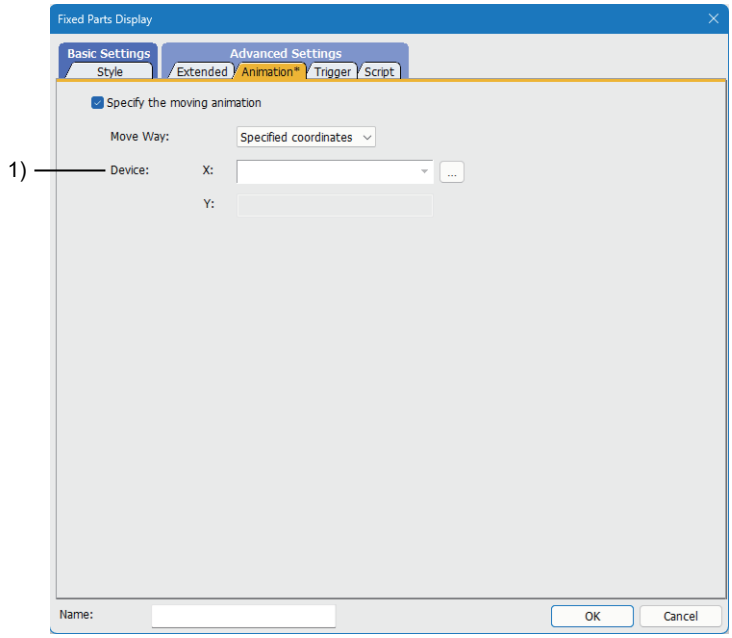
Item		Description
1)	[Device]	Set a device that stores the values relative to the start and end point angles.
2)	[Data Type]	Select the data type of the word device. The following shows selectable items. • [Unsigned BIN16] • [Signed BIN16]
3)	[Minimum]	Set the minimum value for the start point angle. The setting range is [0] to [65535].
4)	[Maximum]	Set the maximum value for the end point angle. The setting range is [0] to [65535].
5)	[Central Coordinate]	Set the center coordinates of a circle. The following shows the setting ranges. • [X-Position]: [-5000] to [5000] • [Y-Position]: [-5000] to [5000] Set the center coordinates relative to the coordinates of the parts display object. The angle between the coordinates of the parts display object and the center coordinates is regarded as 0 degrees.
6)	[Moving Range]	Set the start and end point angles to determine the movement range and direction for the part. The following shows the setting ranges. • [Starting Angle]: [-360.0] to [360.0] • [Ending Angle]: [-360.0] to [360.0] The angle is settable in units of 0.1 degree. The angle increases clockwise from 0 degrees.
7)	[Rotate the object itself]	This item appears when [Enable the antialiasing] is selected in the [Type Setting] dialog ([Basic Setting]). Rotates the part at the same angle in the same direction as the parts movement display settings based on the position selected for [Alignment] in the [Device/Style] or [Style] tab. The minimum rotation angle of the part is 1 degree.

[Route Specification]



Item		Description
1)	[Device]	Set a device that stores the display position (route).
2)	[Route No.]	Set [Route No.] in the [Animation Route] dialog to display the parts movement. The setting range is [0] to [29].

[Specified coordinates]



Item		Description
1)	[Device]	Set the device that stores the values of X-axis and Y-axis. The set device and the following device are set to store the coordinates of X-axis and Y-axis. (The set device is for storing the coordinate of X-axis)

Precautions

■Values to be stored in the position devices

The behavior when the value stored in the position device is outside the range differs depending on the setting of [Move Way] in the [Animation] tab.

• [Line], [Route Specification], or [Specified coordinates] is selected for [Move Way].

The part is not moved and the previous display is held.

• [Circle] is selected for [Move Way]

If the value is smaller than the minimum value, the display position changes according to the value set as the minimum value.

If the value is larger than the maximum value, the display position changes according to the value set as the maximum value.

■Precautions when [Circle] is selected for [Move Way]

• Displaying an image file in the data storage as a part

The image file is displayed but cannot be moved in a circular direction.

• Displaying a part containing a character

If a character set in the [Text] dialog is contained, the character is not displayed.

• Displaying a part containing a BMP file for which a transparent color is set

The outline color of the BMP file may be changed due to antialiasing.

The color changed from the transparent color will not be transparent.

• Display position of parts

Depending on the start or end point angle or the value of the position device, the part display position may deviate.

33.6.4 [Trigger] tab

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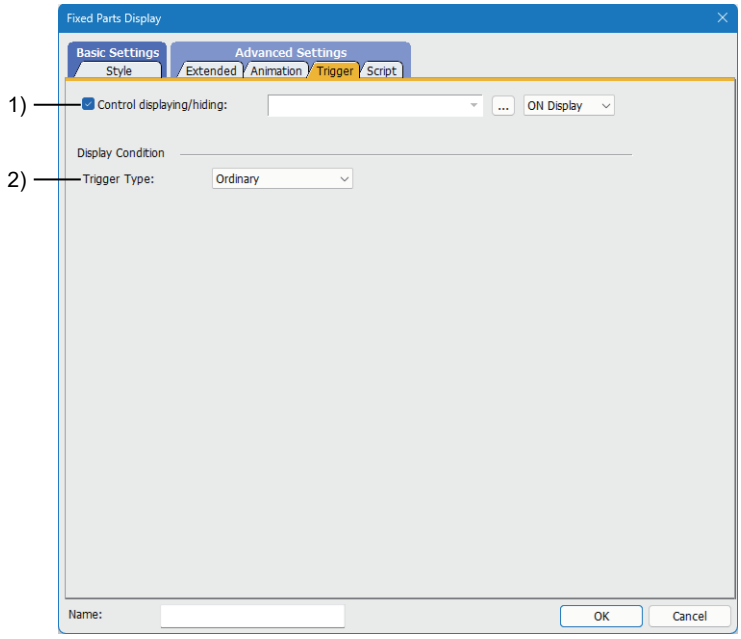

Item		Description
1)	[Control displaying/hiding]	Set the control device to display or hide all the objects including the shape frame. When the set device is in either the ON or OFF status, select whether or not to display the object. The following shows selectable items. • [ON Display] • [OFF Display] ☞ Page 834 How to set devices, labels, and tags
2)	[Trigger Type]	Select a trigger condition to display the object. The selectable items vary depending on whether or not to specify a movement animation. The following shows selectable items. When deselecting [Specify the moving animation] in the [Animation] tab • [Ordinary] • [ON] • [OFF] • [Range] • [Bit Trigger] When selecting [Specify the moving animation] in the [Animation] tab • [Ordinary] • [ON] • [OFF] • [Rise] • [Fall] • [Rise/Fall] • [Sampling] • [Range] • [Bit Trigger] For the settings of each item, refer to the following. ☞ Page 968 Trigger type settings

33.6.5 [Script] tab

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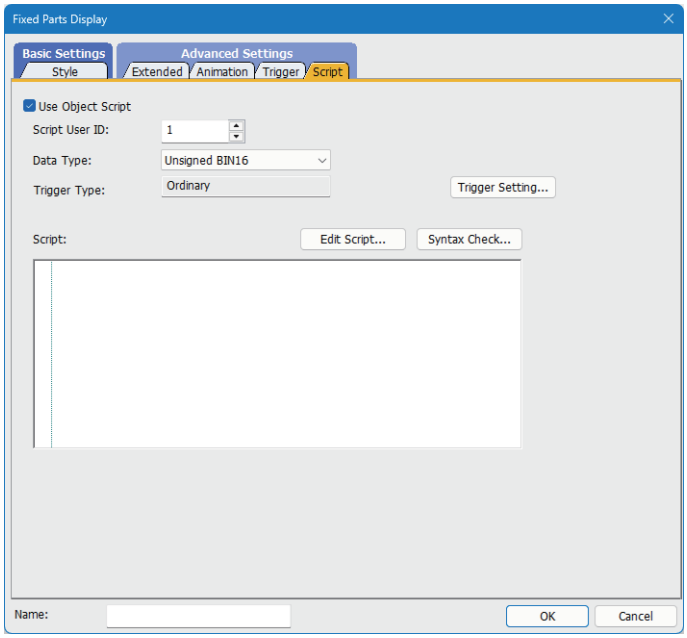
For details on the script settings, refer to the following.

☞ Page 2447 Object script



Relationship between the object settings and object properties

Object settings can be read (referenced) or written (changed) using object properties.

The following shows the correspondence between readable/writable object properties and the setting items in the object setting dialog.

○: Available

×: Not available

—: No applicable setting item

Setting dialog		Object property				
Tab name	Setting item	Property name	Read	Write	Timing for reflecting the setting change*1	
					When not specifying a movement animation	When specifying a movement animation
—	—	active	○	○	Upon the setting change	Upon the setting change
		x	○	○	When the screen is updated	Upon the setting change
		y	○	○	When the screen is updated	Upon the setting change
[Device/Style]	[Display Mode]	draw_mode	○	○	When the object is updated	—
	[Parts No.]	part_no	○	○	Upon the setting change	Upon the setting change
	[Mark Color]	mark_color	○	○	Upon the setting change	Upon the setting change
	[Blink]	blink	○	○	Upon the setting change	Upon the setting change
[Extended]	[Security Level]	security	○	○	When the screen is updated	When the screen is updated

*1 For information on how long it takes for object property settings to be reflected on the screen, refer to the following page.

☞ Page 2456 Timing at which the setting change of an object property is reflected

33.7 Relevant settings

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Configure the relevant settings in addition to the specific settings for the parts display as required.
The following shows the functions that are available by configuring the relevant settings.

33.7.1 Parts setting

Select [Common] → [Parts] → [Parts Setting] from the menu to display the [Parts Setting] dialog.
☞ Page 831 [Parts Setting] dialog

Function	Setting item
When the display mode of the parts display (except fixed parts) is XOR, integrating grouped figures into an XOR synthesis simultaneously	[Show overlapping areas of shapes in XOR when Display Mode of Parts Display is XOR]
Setting whether to use image files in the data storage for parts displays	[Show image files in the memory card when Parts No. 9001-9999 is specified]
When [Image File (automatic update)] is selected for [Parts Type], updating the image on the parts display object automatically when an image file stored in drive V is updated	[Enable the automatic update of image files]

33.7.2 GOT internal device

☞ Page 3581 GOT special register (GS)

Function	Setting item
Using image files in the data storage as parts for parts displays (Read device)	GS450.b8

34 Placing a frame animation

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☞ Page 1478 Overview of the frame animation
☞ Page 1479 How to use the frame animation
☞ Page 1481 Specifications of the frame animation
☞ Page 1484 Configuring the frame animation settings
☞ Page 1486 [Frame Animation] dialog

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34.1 Overview of the frame animation

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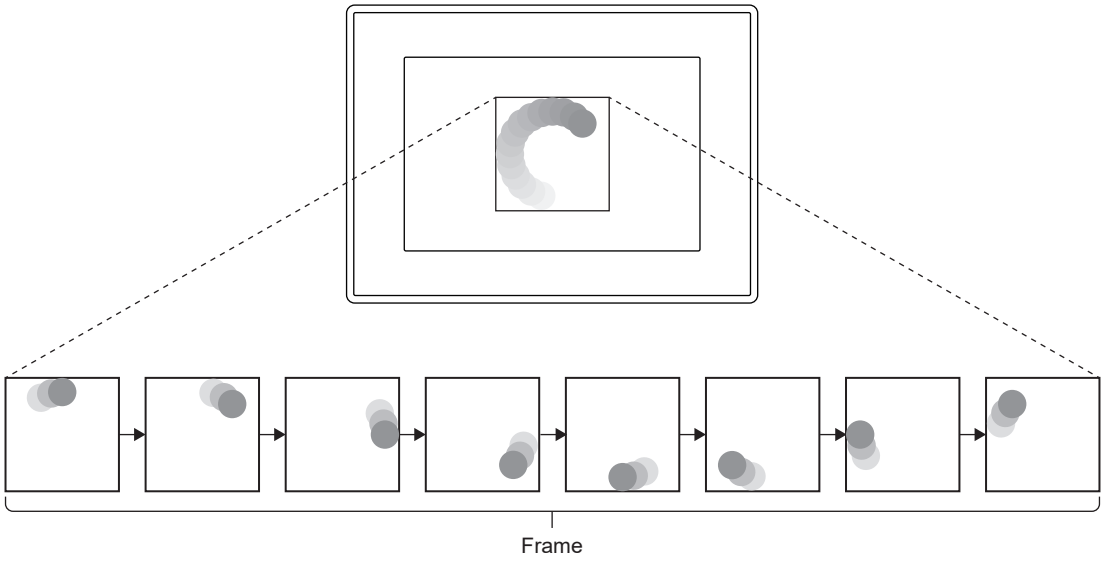
This function displays a frame-by-frame animation.

A frame refers to a frame in a video.

By setting a different graphic for each frame and continuously changing the frame, it appears as though the graphic is moving.



34.2 How to use the frame animation

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The following methods are available for video playback using the frame animation.

☞ Page 1479 Playback in order from the first frame (cycle playback)
☞ Page 1480 Method for specifying a frame with a device (frame number playback)

34.2.1 Playback in order from the first frame (cycle playback)

In this method, a cycle (display time per frame) is specified and the frames are played in order from the first frame.

If the cycle is shortened, the frame rate increases and the animation becomes smoother.

If the cycle is lengthened, the frame rate decreases and the animation becomes rougher.

Ex.

Frame rate when the number of frames is 10

- When the cycle is 0.1 seconds, the frame rate is 10 fps
- When the cycle is 0.5 seconds, the frame rate is 2 fps
- When the cycle is 1 second, the frame rate is 1 fps

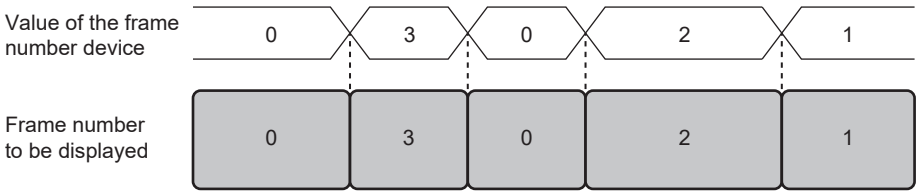
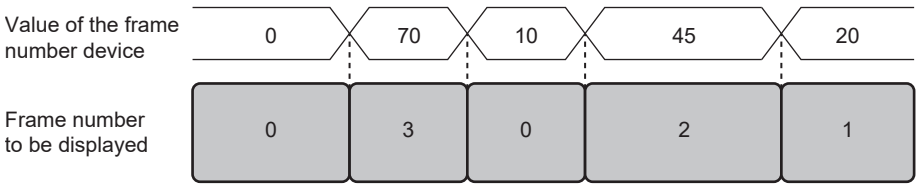
Set the cycle with [Frame Update Cycle] in the [Device/Style] tab.

☞ Page 1487 [Period]

34.2.2 Method for specifying a frame with a device (frame number playback)

With this method, the frame to be switched to is specified with a frame number device.

There are two ways to specify a frame with a frame number device; either directly or with a relative value.

Method	Required actions and settings
Specifying a frame number directly	Deselect [Frame No. Scaling Processing] in the [Frame Animation] dialog ([Device/Style] tab). When a value (frame number) is stored in a frame number device, the corresponding frame is displayed. 
Specifying a frame number with a relative value	Select [Frame No. Scaling Processing] in the [Frame Animation] dialog ([Device/Style] tab). When a range of relative values is set with [Lower Limit] and [Upper Limit], the relationship between the relative values and the frame number is calculated from the range of relative values and the number of frames. The relationship between the relative values and the frame number can be checked in the preview list. ☞ Page 1488 [Frame No.] When a value (relative value) is stored in the frame number device, the corresponding frame is displayed. Example) When the range of relative values is 0 to 99 and the number of frames is 5 Relationship between the relative value and the frame number Relative value / Frame No. 0 to 19 / 0 20 to 39 / 1 40 to 59 / 2 60 to 79 / 3 80 to 99 / 4 

34.3 Specifications of the frame animation

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☞ Page 1481 Maximum number of simultaneously displayed items
☞ Page 1481 Frame animation size
☞ Page 1481 Maximum number of frames
☞ Page 1482 Data that can be set as a graphic in a frame
☞ Page 1482 Displaying a frame in which no graphic is set
☞ Page 1482 Position of the graphic in the frame
☞ Page 1483 Display size of the graphic set in the frame

34.3.1 Maximum number of simultaneously displayed items

Up to 32 frame animations can be displayed simultaneously on the screens being displayed (including the base screen, window screen, set overlay screen, and window screen output for digital image display).

34.3.2 Frame animation size

The following shows the minimum and maximum sizes of the frame animation.

Size	Size (dot)
Minimum	2 × 2
Maximum	1600 × 1600

34.3.3 Maximum number of frames

Up to 64 frames can be created.
A frame number (0 to 63) is automatically assigned to each frame.
The first frame is frame No. 0 and the 64th frame is frame No. 63.

34.3.4 Data that can be set as a graphic in a frame

The table below shows data that can be set as a graphic in a frame.

Type	Description	Remarks
Library data	Images and videos registered in the library. ☞ Page 1061 Using the data registered in the library	—
Image file	The following shows the importable file formats. • BMP format: *.bmp • JPEG format: *.jpg, *.jpeg, *.jpe • PNG format: *.png The maximum size of settable images is 1600 × 1600 pixels.	Image files with different extensions can be mixed for each frame.
		The transparency information of *.png and *.apng files is enabled.
Video file	The following shows the importable file formats. • Animation PNG format: *.png, *.apng • GIF format: *.gif The maximum size of settable videos is 1600 × 1600 pixels.	When a video file is imported, each frame of the video is set as a graphic. If the video file consists of more than 64 frames, the 65th frame onward will be discarded.
		When a video is imported, the graphics in all of the frames are updated. To mix video files and other data (library data or image files), change the graphic in each frame after importing the video file.
		The transparency information of *.png and *.apng files is enabled.

Point

The imported image or video file is set as a graphic in the frame, but it is not registered in the library.
To set the same graphic for another frame animation, register the graphic in the library to eliminate the need to import the file again.
For information on how to register a graphic in the library, refer to the following.
☞ Page 1081 Importing an image file
☞ Page 1083 Importing a video file

34.3.5 Displaying a frame in which no graphic is set

Frames which have no graphic set in them are hidden.
Frames which have no graphic set in them can be played in intervals.

34.3.6 Position of the graphic in the frame

The graphic is displayed in the center of the frame animation placed on the screen.

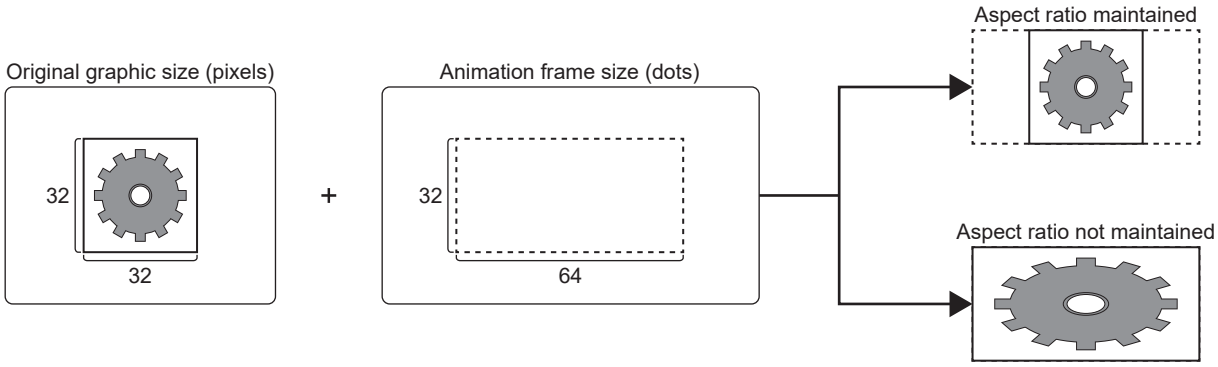
34.3.7 Display size of the graphic set in the frame

The graphic is resized according to the size and shape of the frame animation placed on the screen.

Select [Lock aspect ratio] in the [Device/Style] tab to maintain the original aspect ratio when resizing the object.

☞ Page 1486 [Device/Style] tab

Ex.



PART 7

34.4 Configuring the frame animation settings

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This section explains how to configure the frame animation settings for each playback target.

☞ Page 1484 Playing back video files and videos registered in the library
☞ Page 1485 Setting a graphic in each frame and playing the frames back

Point

Preconfigured frame animations can be used in other screens or projects by registering them in the library.

☞ Page 1068 Registering data in the library

34.4.1 Playing back video files and videos registered in the library

☞ Page 1484 Placing from the menu
☞ Page 1484 Dragging a video file to place it in the screen editor

Placing from the menu

Operating procedure

1. Select [Object] → [Frame Animation] from the menu.
2. Click a position to place the frame animation.

☞ Page 1001 Placing figures and objects

3. Double-click the frame animation to display the [Frame Animation] dialog.
4. In the [Device/ Style] tab, set the type of media to be played back.

☞ Page 1486 [Device/Style] tab

Media	Action	Remarks
Video file	Click the [Browse] button and select a video file to import. The selected video is divided into one graphic per frame.	If the number of video frames exceeds 64, the 65th frame onward will be discarded.
A video registered in the library	Frames are added according to the amount of library data to be played. Click the [Shape] button to display the [Image List] dialog (graphics). ☞ Page 1048 [Library] Select [Collectively set the animation] then select the library data. Once the [OK] button is clicked, the selected library data will be divided into one graphic per frame.	The library data is used only for existing frames. Even if the number of frames is less than the amount of library data, frames are not automatically added.

5. Configure the settings in each tab of the [Frame Animation] dialog.

☞ Page 1486 [Frame Animation] dialog

This concludes the frame animation settings.

For the operations common to all objects or editing operations except operation settings, refer to the following.

☞ Page 988 Color settings

Dragging a video file to place it in the screen editor

Drag a video file (GIF/APNG) to the screen editor to place a frame animation.

Each frame of the dragged video file is set to the graphic in each frame of the placed frame animation.

If the number of video frames exceeds 64, the 65th frame onward will be discarded.

The size of the frame animation is the same as the resolution of the video file.

All other settings (excluding the setting of each frame) are set to default.

34.4.2 Setting a graphic in each frame and playing the frames back

Operating procedure

1. Select [Object] → [Frame Animation] from the menu.
2. Click a position to place the frame animation.

☞ Page 1001 Placing figures and objects

3. Double-click the frame animation to display the [Frame Animation] dialog.
4. Select the frames in the preview list in the [Device/Style] tab and set a graphic in each frame.

☞ Page 1486 [Device/Style] tab

5. Configure the settings in each tab of the [Frame Animation] dialog.

☞ Page 1486 [Frame Animation] dialog

This concludes the frame animation settings.

For the operations common to all objects or editing operations except operation settings, refer to the following.

☞ Page 988 Color settings

34.5 [Frame Animation] dialog

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☞ Page 1486 [Device/Style] tab
☞ Page 1489 [Extended] tab
☞ Page 1490 [Trigger] tab, [Display/Playback Condition] tab
☞ Page 1492 [Script] and [Operation/Script] tabs

34.5.1 [Device/Style] tab

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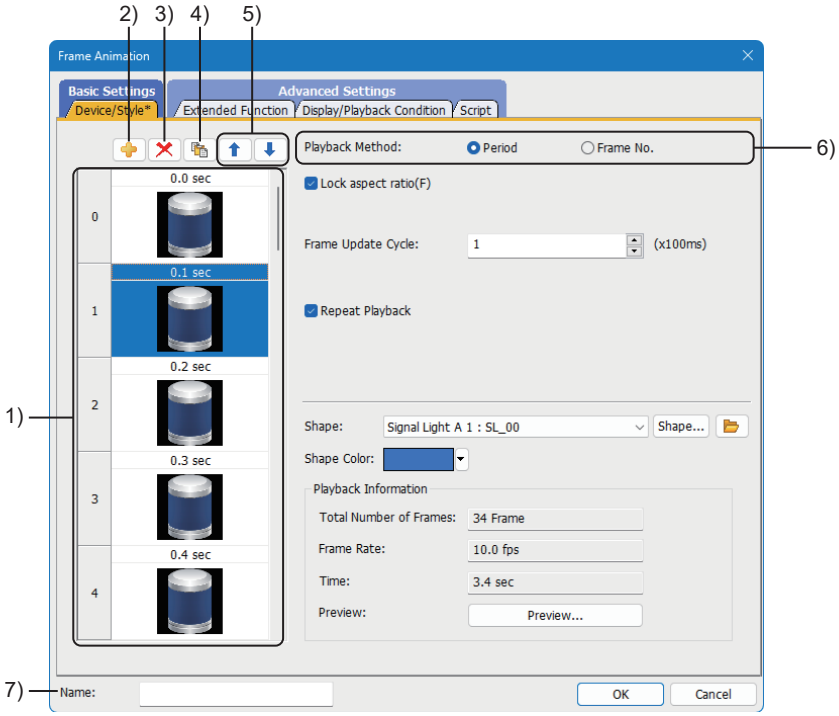
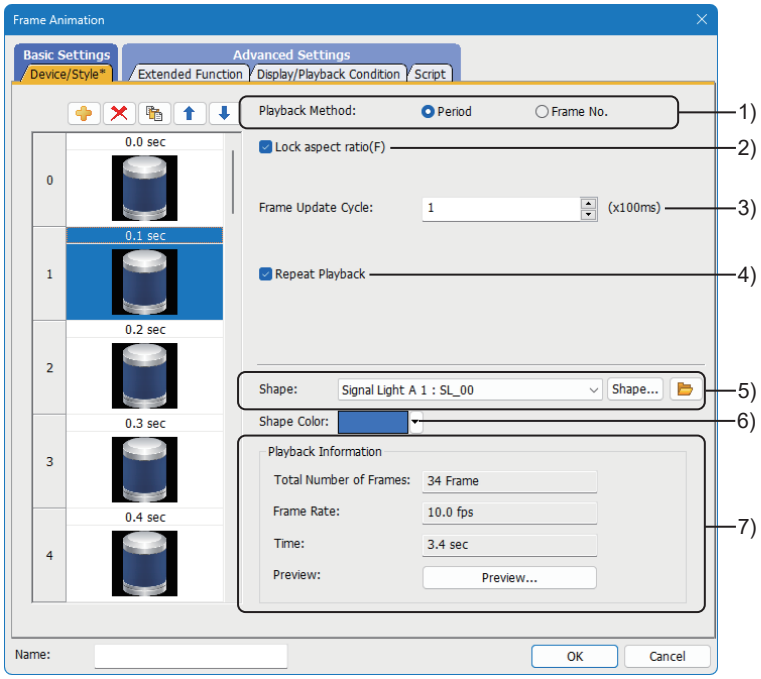
Configure the playback method and frame-related settings.



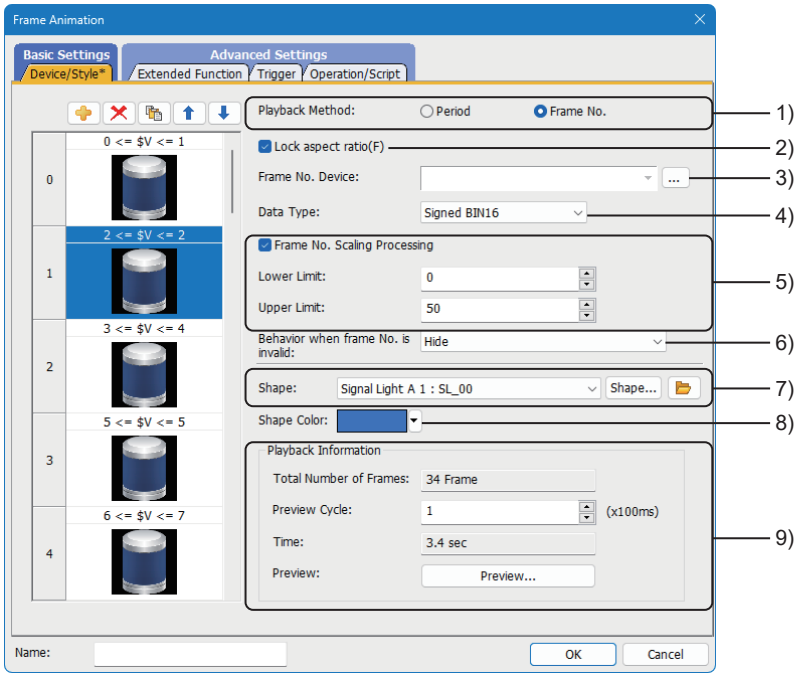
Item		Description
1)	Preview list	A list of frames.
2)	Add button	Adds a frame.
3)	Delete button	Deletes the selected frame from the preview list.
4)	[Duplicate] button	Duplicates the selected frame in the preview list.
5)	Up button Down button	Changes the order of the frame in the preview list.
6)	[Playback Method]	Selects the playback method. The settings in the [Device/Style] tab differ depending on the selected playback method. ☞ Page 1487 [Period] ☞ Page 1488 [Frame No.]
7)	[Name]	Enter a name for the graphic. The name is displayed in the data browser, property sheet, and others. The setting can also be changed in other tabs. Up to 100 characters can be set.

[Period]



Item			Description
1)	[Playback Method]		Select [Period].
2)	[Lock aspect ratio]		Select this item to maintain the aspect ratio of the image. Deselect this item to scale the aspect ratio of the image to the size of the frame animation.
3)	[Frame Update Cycle]		Sets the display time of each frame. The setting range is [1] × 100 ms to [100] × 100 ms. The playback start time (the time each frame is displayed for after playback commences) of each frame in the preview list will be displayed depending on the value set in this field.
4)	[Repeat Playback]		Once the last frame has been played, playback starts again from the first frame. The last frame remains displayed if playback is not repeated. Configure the following settings to repeat playback after an interval. • Duplicate the last frame at the end of the preview list. • Add an empty frame at the end of the preview list.
5)	[Shape]	—	Set a graphic to display using the frame animation. Select a frame from the preview list then select a graphic for that frame.
		[Shape] button	Click this button to display the [Image List] dialog and select a graphic from the library. ☞ Page 1045 [Image List] dialog (shape)
		[Browse] button	Click this button to display the [Browse] dialog and import an image or video file. When an image is imported, it is set as a graphic in the selected frame in the preview list. When a video is imported, the graphics in all of the frames are updated.
6)	[Shape Color]		Change the shape color of the shape in the selected frame of the preview list. This item appears when a shape in the System Library is set.
7)	[Playback Information]	[Total Number of Frames]	The total number of frames created in the preview list.
		[Frame Rate]	[Total Number of Frames] ÷ [Time]
		[Time]	The amount of time it takes to play all the frames set for [Frame Update Cycle].
		[Preview]	Preview the video with the applied settings. Click the [Preview] button to play the video in the [Preview] dialog.

[Frame No.]



Item			Description
1)	[Playback Method]		Select [Frame No.].
2)	[Lock aspect ratio]		Select this item to maintain the aspect ratio of the image. Deselect this item to scale the aspect ratio of the image to the size of the frame animation.
3)	[Frame No. Device]		Set a word device to specify the frame number of the frame to be displayed. ☞ Page 834 How to set devices, labels, and tags
4)	[Data Type]		Select the data type of [Frame No. Device].
5)	[Frame No. Scaling Processing]		Specify a frame number with a relative value, not directly. ☞ Page 1480 Method for specifying a frame with a device (frame number playback) When a range of relative values is set with [Lower Limit] and [Upper Limit], the relationship between the relative values and the frame number is calculated from the range of relative values and the number of frames. The setting range of the [Lower Limit] and [Upper Limit] depends on the [Data Type]. • [Unsigned BIN16]: [0] to [65535] • [Signed BIN16]: [-32768] to [32767] • [BCD16]: [0] to [9999] The relationship between the relative value and the frame number can be checked via the range formula displayed in each frame in the preview list.
6)	[Behavior when frame No. is invalid]		Select the action when a value outside the range is written to the frame number device.
7)	[Shape]	—	Set a graphic to display using the frame animation. Select a frame from the preview list then select a graphic for that frame.
		[Shape] button	Click this button to display the [Image List] dialog and select a graphic from the library. ☞ Page 1045 [Image List] dialog (shape)
		[Browse] button	Click this button to display the [Browse] dialog and import an image or video file. When an image is imported, it is set as a graphic in the selected frame in the preview list. When a video is imported, the graphics in all of the frames are updated.
8)	[Shape Color]		Change the shape color of the shape in the selected frame of the preview list. This item appears when a shape in the System Library is set.
9)	[Playback Information]	[Total Number of Frames]	The total number of frames created in the preview list.
		[Preview Cycle]	Set the playback speed in preview.
		[Time]	The amount of time it takes to play all the frames set for [Preview Cycle].
		[Preview]	Preview the video with the applied settings. Click the [Preview] button to play the video in the [Preview] dialog.

34.5.2 [Extended] tab

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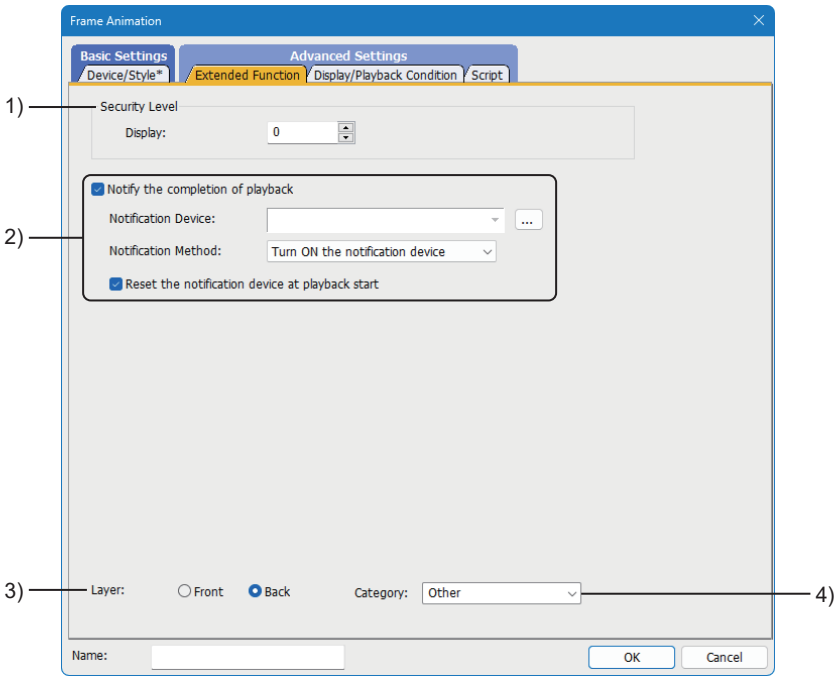
Set the security level and configure the settings that notify playback is complete.



Item			Description
1)	[Security Level]		Set the security level. The setting range is [0] to [15]. If you do not use the security function of the GOT, select [0]. ☞ Page 3038 Restricting display and operation on the GOT (Screen security)
2)	[Notify the completion of playback]	—	Uses a notification device to notify that playback is complete.
		[Notification Device]	Set the bit device to notify that playback is complete. ☞ Page 834 How to set devices, labels, and tags
		[Notification Method]	Select whether to turn the notification device on or off once playback is complete.
		[Reset the notification device at playback start]	Resets the notification device at the beginning of playback. When [Turn ON the notification device] is selected for [Notification Method], the notification device is turned off. When [Turn OFF the notification device] is selected for [Notification Method], the notification device is turned on.
3)	[Layer]		Select the layer to place the object. ☞ Page 65 Layer
4)	[Category]		Select the category to assign the object. ☞ Page 1121 Managing figures and objects by category

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34.5.3 [Trigger] tab, [Display/Playback Condition] tab

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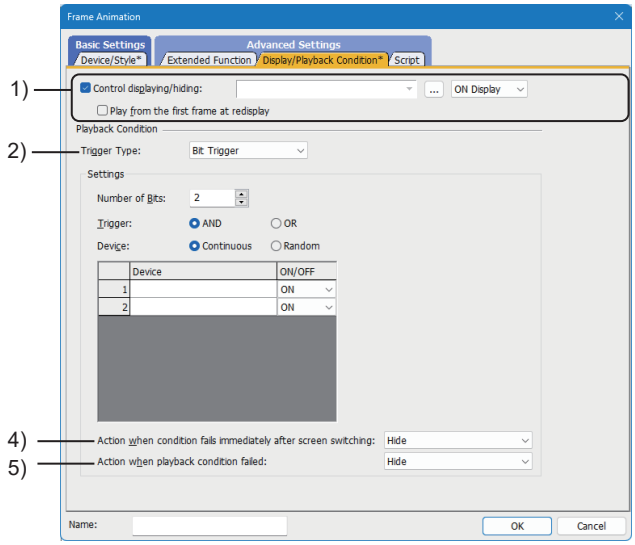
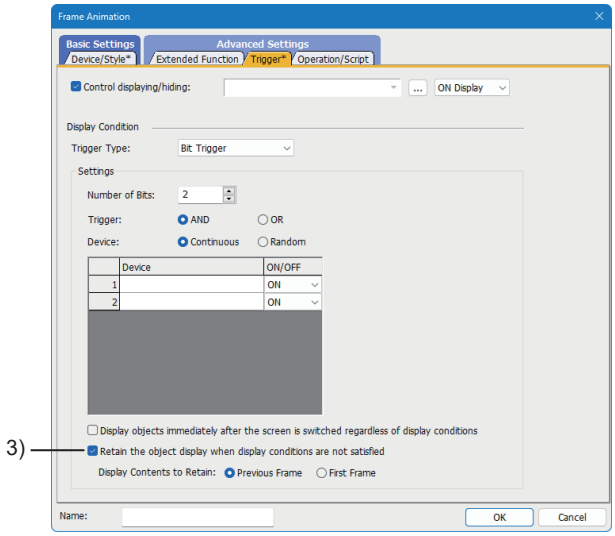
Set the trigger condition to display the object.

Different tabs appear depending on the setting of [Playback Method] in the [Device/Style] tab.





Item			Description
1)	[Control displaying/hiding]	—	Enables the setting to display the object only when requirements are met. Set the following as requirements. • Bit device for control • When to display: When the bit device for control is on or off
		[Play from the first frame at redisplay]	Starts the animation from the first frame when the object status changes from not displayed to displayed.
2)	[Trigger Type]		Select a trigger condition to display the object. For details on the trigger types, refer to the following. ☞ Page 969 Trigger types settable for the object display condition
3)	[Retain the object display when display conditions are not satisfied]		Displays the specified frame when the display conditions are not satisfied. The frame that is displayed when the display conditions are not satisfied is selected in [Display Contents to Retain]. For information on which frame playback will begin from when the display conditions change from not satisfied to satisfied, refer to the following. ☞ Page 1490 Frames that are played when the display conditions change from not satisfied to satisfied
4)	[Action when condition fails immediately after screen switching]		Specify the behavior of the object immediately after the screen transition while the playback condition is not satisfied.
5)	[Action when playback condition failed]		Specify the behavior when the playback condition transitions from the satisfied state to the unsatisfied state.

Frames that are played when the display conditions change from not satisfied to satisfied

Which frame playback will start from when the display conditions change from not satisfied to satisfied differs depending on the settings of the display conditions.

[Playback Method]	Display condition settings		Actions when display conditions change from not satisfied to satisfied
	[Retain the object display when display conditions are not satisfied]	[Display Contents to Retain]	
[Period]	Deselected	—	Playback starts from the current frame just as it is about to be hidden.
	Selected	[Previous Frame]	Playback starts from the paused frame.
		[First Frame]	Playback starts from the first frame.

[Playback Method]	Display condition settings		Actions when display conditions change from not satisfied to satisfied
	[Retain the object display when display conditions are not satisfied]	[Display Contents to Retain]	
[Frame No.]	Deselected	—	Playback starts from the frame specified with the frame number specification device.
	Selected	[Previous Frame]	
		[First Frame]	

34.5.4 [Script] and [Operation/Script] tabs

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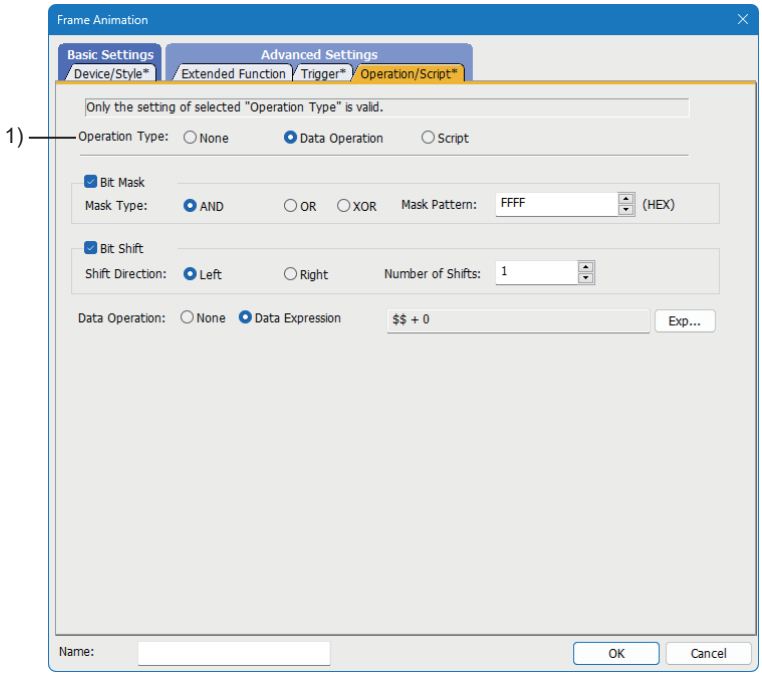
Different tabs appear depending on the setting of [Playback Method] in the [Device/Style] tab.

[Playback Method] settings	Description
[Period]	Displays the [Script] tab. Set the expressions for the script function. ☞ Page 1494 [Script]
[Frame No.]	Displays the [Operation/Script] tab. Set an expression when you perform monitoring with the data operation function or the script function.



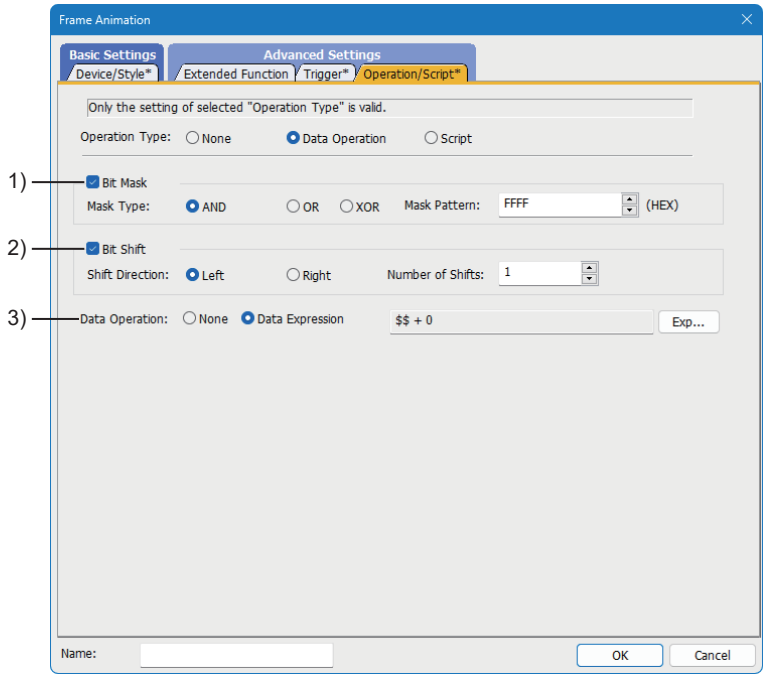
Item			Description
1)	[Operation Type]	[None]	Does not use the data operation function and the script function.
		[Data Operation]	Set the expression used for the data operation function. ☞ Page 1493 [Data Operation]
		[Script]	Set the expressions for the script function. ☞ Page 1494 [Script]

[Data Operation]

Configure the operating process for the frame number device.

For details on the data operation settings, refer to the following.

☞ Page 1049 Data operation

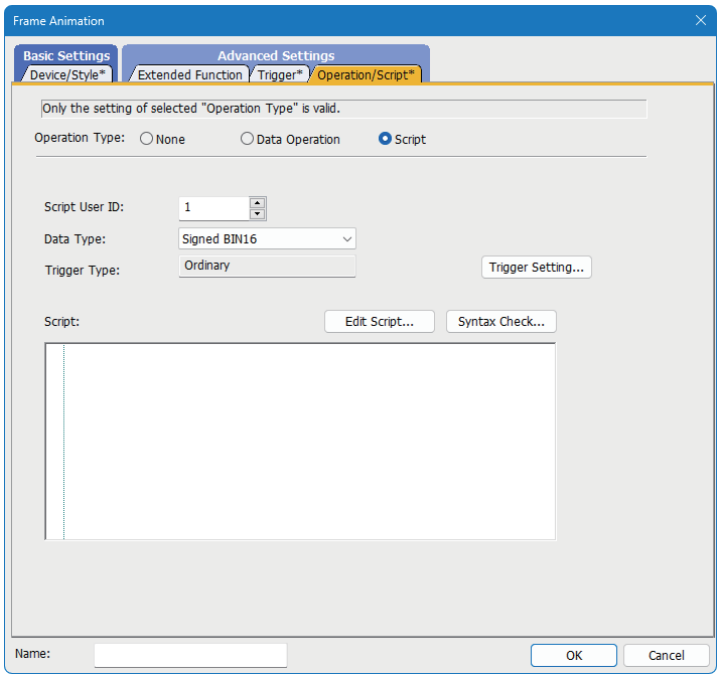


Item			Description
1)	[Bit Mask]	—	Set the operation of mask processing.
		[Mask Type]	Select the type of mask processing. • [AND]: Logical AND • [OR]: Logical OR • [XOR]: Exclusive OR
		[Mask Pattern]	Set a pattern value to mask in hexadecimal. The setting range depends on the setting of [Data Type] in the [Device/Style] tab.
2)	[Bit Shift]	—	Set the operation of shift processing.
		[Shift Direction]	Select a shifting direction.
		[Number of Shifts]	Set the number of bits to be shifted. The setting range depends on the setting of [Data Type] in the [Device/Style] tab.
3)	[Data Operation]	—	Set the format of the expression.
		[None]	Does not perform the data operation by using the expression.
		[Data Expression]	Performs the data operation by using the expression. Click the [Exp] button to set an expression in the [Edit Data Expression] dialog. ☞ Page 1054 [Edit Data Expression] dialog

[Script]

For the script settings, refer to the following.

☞ Page 2447 Object script



■Relationship between the object settings and object properties

Object settings can be read (referenced) or written (changed) using object properties.

The following shows the correspondence between readable/writable object properties and the setting items in the object setting dialog.

○: Available

×: Not available

—: No applicable setting item

Setting dialog		Object property			
Tab name	**Setting**	**Property name**	**Read**	**Write**	**Timing for reflecting the setting change*1**
—	—	active	○	○	Upon the setting change
		x	○	○	When the screen is updated
		y	○	○	When the screen is updated
[Extended]	[Security Level]	security	○	○	When the screen is updated

*1 For information on how long it takes for object property settings to be reflected on the screen, refer to the following page.

☞ Page 2456 Timing at which the setting change of an object property is reflected

35 Placing a historical data list display

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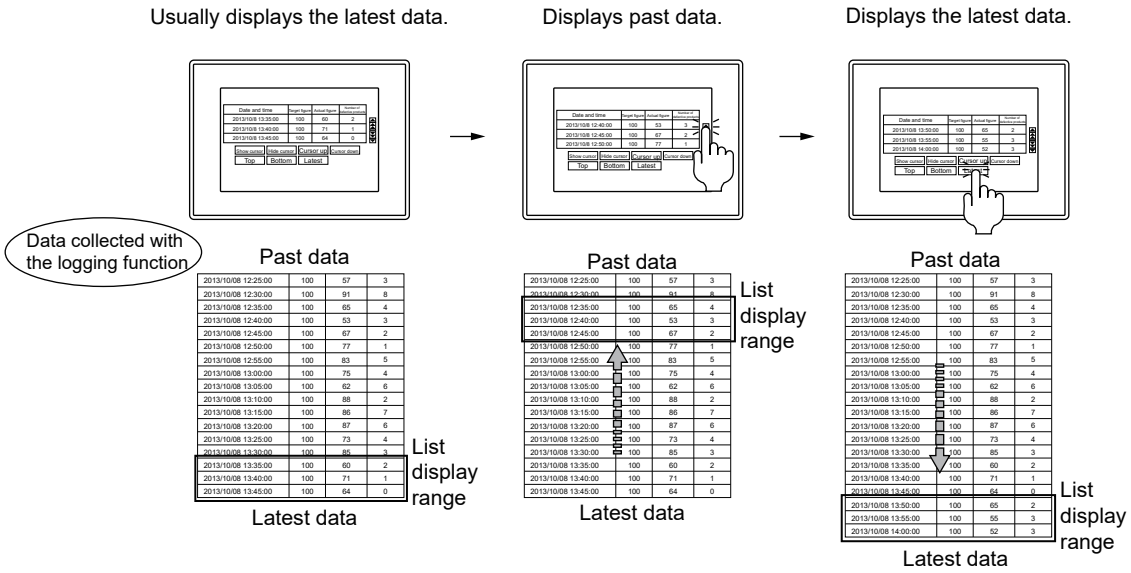
This function chronologically lists the device data collected by logging.

☞ Page 2194 Collecting device data ([Logging])



☞ Page 1495 Specifications of the historical data list display
☞ Page 1498 How to use the historical data list display
☞ Page 1504 [Historical Data List Display] dialog

35.1 Specifications of the historical data list display

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35.1.1 Maximum number of objects that can be placed on one screen

Up to eight objects can be placed on one screen.

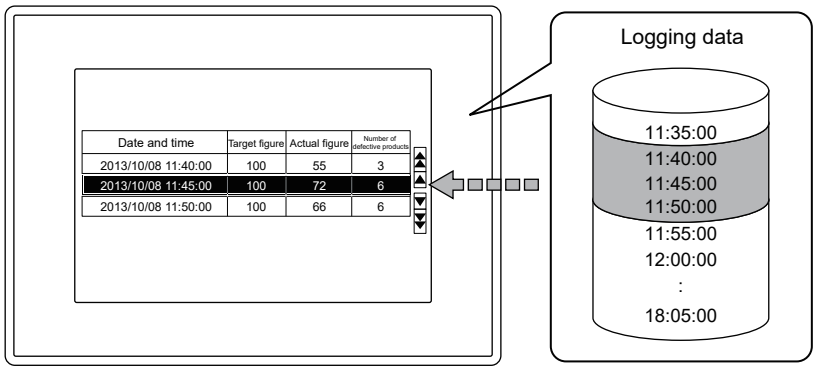
35.1.2 Relationship with the logging function

For information on the logging function, refer to the following.

☞ Page 2194 Collecting device data ([Logging])

Contents displayed by historical data list displays

The data collected or accumulated in buffering areas or data storage by the logging is displayed as a list with this function.
As the accumulated data are available, current and past information can be displayed as a list.



Displays accumulated data in a list.

Logging data which can be displayed with historical data list displays

One historical data list display corresponds to only one logging ID number for the display of data.
To display multiple logging ID numbers, set the same number of historical data list displays.

A logging setting required when historical data list displays are used

Make sure that the set value of [Number of Logs a file] in the relevant logging setting is equal to or larger than the set value of [Display Rows] in the historical data list display setting to secure performance.

☞ Page 1504 [Display] tab

Consistency check

The consistency between the setting of a historical data list display and the corresponding logging setting is checked at the following timing.

- When the setting dialog for a historical data list display is opened
- When devices of a historical data list are enabled and a data check is conducted

Precautions

If the logging devices of the logging settings are changed or the data of another project for logging is utilized after a historical data list display is set, the device of the logging setting may not match the device of the historical data list display.
In this case, set the device of the historical data list display again.
When the device type does not match, the historical data list display is not displayed.

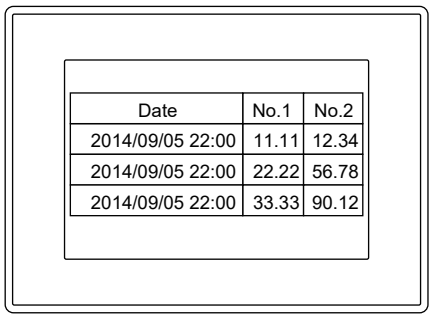
35.1.3 Display when a data operation error occurs

For the data operation, if a BCD-BIN conversion error or a division by zero error occurs, the object displays hyphens corresponding to the number of displayed digits.

Display of a value containing a symbol or decimal point

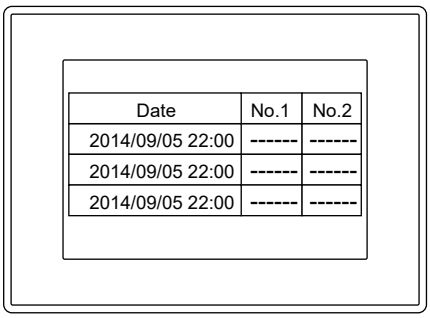
A symbol and a decimal point, which are contained in a value, are also displayed as hyphens.

Example) When the settings are configured as follows: display format: real, number of displayed digits: 5 (fractional portion: 2), and right alignment



Date	No.1	No.2
2014/09/05 22:00	11.11	12.34
2014/09/05 22:00	22.22	56.78
2014/09/05 22:00	33.33	90.12

Normal display



Date	No.1	No.2
2014/09/05 22:00	------	------
2014/09/05 22:00	------	------
2014/09/05 22:00	------	------

Display at an error occurrence

PART 7

35.2 How to use the historical data list display

GT37 SoftGOT3000

35.2.1 Placing a historical data list display

Place historical data list displays on the screen editor.

☞ Page 1001 Placing figures and objects

35.2.2 Editing historical data list displays

Edit historical data list displays that have been placed on the screen editor.

☞ Page 1003 Selecting figures and objects on the screen editor

☞ Page 1007 Resizing

35.2.3 Setting historical data list displays

Set historical data list displays that have been placed on the screen editor.

Common settings for objects

For the common settings for objects, refer to the following.

☞ Page 1032 Settings common to figures and objects

Setting historical data list displays

The following outlines the procedure for setting a historical data list display.

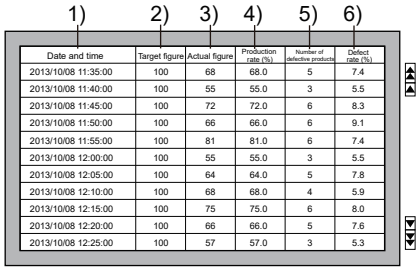
Ex.

A historical data list display that displays target figures and actual figures

D10, D20, and D30 are logged in a trigger sampling cycle of 300000 ms.

☞ Page 1504 [Historical Data List Display] dialog

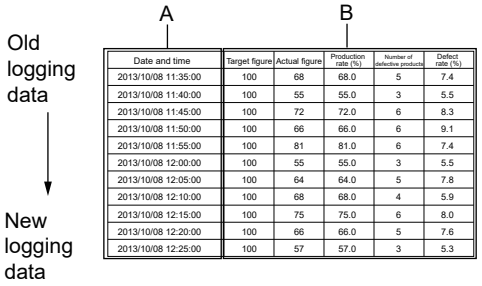
☞ Page 2194 Collecting device data ([Logging])



Date and time	Target figure	Actual figure	Production rate (%)	Number of defective products	Defect rate (%)
2013/10/08 11:35:00	100	68	68.0	5	7.4
2013/10/08 11:40:00	100	55	55.0	3	5.5
2013/10/08 11:45:00	100	72	72.0	6	8.3
2013/10/08 11:50:00	100	66	66.0	6	9.1
2013/10/08 11:55:00	100	81	81.0	6	7.4
2013/10/08 12:00:00	100	55	55.0	3	5.5
2013/10/08 12:05:00	100	64	64.0	5	7.8
2013/10/08 12:10:00	100	68	68.0	4	5.9
2013/10/08 12:15:00	100	75	75.0	6	8.0
2013/10/08 12:20:00	100	66	66.0	5	7.6
2013/10/08 12:25:00	100	57	57.0	3	5.3

Item		Description
1)	Date and time	Displays the date and time when logging data is obtained.
2)	Target figure	Monitors the value of D10.
3)	Actual figure	Monitors the value of D20.
4)	Production rate (%)	Displays the value that derives from "Actual figure ÷ Target figure × 100". (0 to 100.0%)
5)	Number of detective products	Monitors the value of D30.
6)	Defect rate (%)	Displays the value that derives from "Number of defective products ÷ Actual figure × 100". (0 to 100.0%)

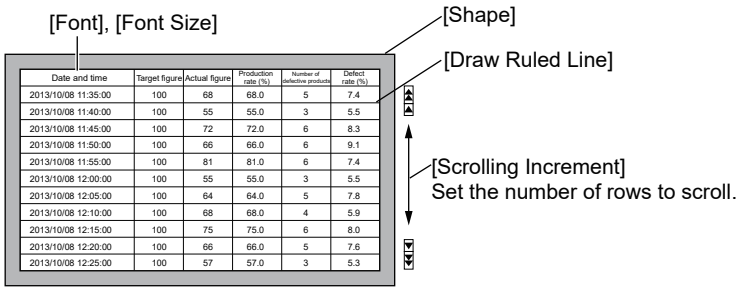
1. Set the number of rows and columns to be displayed, the device to be monitored, and the items to be monitored in the [Display] tab.



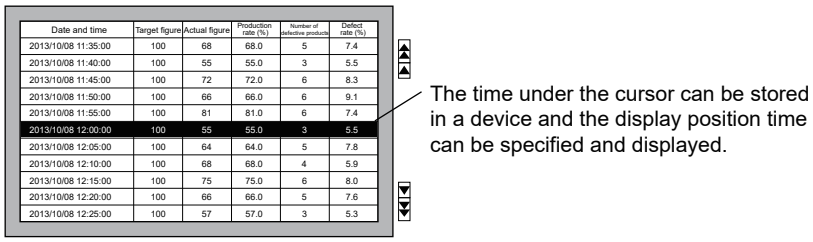
A Date column
Date and time stored in the logging data

B Data column
Device values are displayed according to the device setting.

2. Set the font, font size, ruled line, spacing, and figure in the [Text/Style] tab.



3. Set the security level, time of the cursor position, and time of the display position in the [Extended] tab if necessary.



35.2.4 Displaying and moving the cursor

The cursor can be displayed and moved in the list with a key code switch.

With the setting of [Single Touch Operation], the cursor can be displayed directly on and moved to a touched position.

When [Time Device] in the [Extended] tab of [Historical Data List Display] is set, a selected date and time are stored in a set device.

☞ Page 1512 [Extended] tab

Date and time	Target figure	Actual figure	Production rate (%)	Number of defective products	Defect rate (%)
2013/10/08 11:45:00	100	72	72.0	6	8.3
2013/10/08 11:50:00	100	66	66.0	6	9.1
2013/10/08 11:55:00	100	81	81.0	6	7.4
2013/10/08 12:00:00	100	55	55.0	3	5.5
2013/10/08 12:05:00	100	64	64.0	5	7.8
2013/10/08 12:10:00	100	68	68.0	4	5.9
2013/10/08 12:15:00	100	75	75.0	6	8.0

→

Date and time	Target figure	Actual figure	Production rate (%)	Number of defective products	Defect rate (%)
2013/10/08 11:45:00	100	72	72.0	6	8.3
2013/10/08 11:50:00	100	66	66.0	6	9.1
2013/10/08 11:55:00	100	81	81.0	6	7.4
2013/10/08 12:00:00	100	55	55.0	3	5.5
2013/10/08 12:05:00	100	64	64.0	5	7.8
2013/10/08 12:10:00	100	68	68.0	4	5.9
2013/10/08 12:15:00	100	75	75.0	6	8.0

[Time Device]
Device value: 2013/10/08 12:00:00

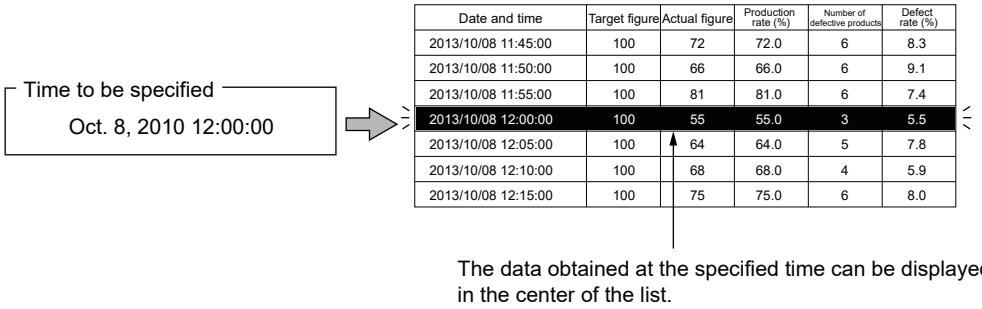
35.2.5 Displaying data obtained at a specified time

The data obtained at a specified time can be displayed with a key code switch.

When [Display Position Time Device] in the [Extended] tab of the [Historical Data List Display] dialog is set, the data of a specified time is displayed in the center of the list of the historical data list display.

☞ Page 1512 [Extended] tab

When the data of a specified time is displayed, the update of the list stops.



Date and time	Target figure	Actual figure	Production rate (%)	Number of defective products	Defect rate (%)
2013/10/08 11:45:00	100	72	72.0	6	8.3
2013/10/08 11:50:00	100	66	66.0	6	9.1
2013/10/08 11:55:00	100	81	81.0	6	7.4
2013/10/08 12:00:00	100	55	55.0	3	5.5
2013/10/08 12:05:00	100	64	64.0	5	7.8
2013/10/08 12:10:00	100	68	68.0	4	5.9
2013/10/08 12:15:00	100	75	75.0	6	8.0

35.2.6 Conjunction with historical trend graphs

By setting the same device to [Time Device] of historical data list displays and [Display Position Time] of historical trend graphs, the data obtained at time specified with a historical data list display can be displayed in a historical trend graph.

☞ Page 1512 [Extended] tab

☞ Page 1594 Placing a trend graph

Ex.

Displaying the data obtained at time specified with a historical data list display in a historical trend graph

Make the following settings.

- Set [D1000] for [Time Device] of the [Historical Data List Display] dialog.
- Set [D1000] for [Display Position Time] of the [Historical Trend Graph].

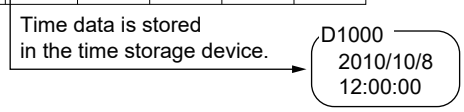
Operating procedure

1. Display the cursor in the historical data list display and move the cursor to the data to be displayed in the historical trend graph.

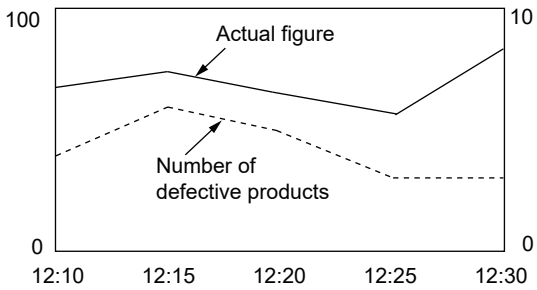
The time is stored in the time device (D1000). (Device value: specified time)

Historical data list display

Date and time	Target figure	Actual figure	Production rate (%)	Number of defective products	Defect rate (%)
2013/10/08 11:35:00	100	68	68.0	5	7.4
2013/10/08 11:40:00	100	55	55.0	3	5.5
2013/10/08 11:45:00	100	72	72.0	6	8.3
2013/10/08 11:50:00	100	66	66.0	6	9.1
2013/10/08 11:55:00	100	81	81.0	6	7.4
2013/10/08 12:00:00	100	55	55.0	3	5.5
2013/10/08 12:05:00	100	64	64.0	5	7.8
2013/10/08 12:10:00	100	68	68.0	4	5.9
2013/10/08 12:15:00	100	75	75.0	6	8.0
2013/10/08 12:20:00	100	66	66.0	5	7.6
2013/10/08 12:25:00	100	57	57.0	3	5.3



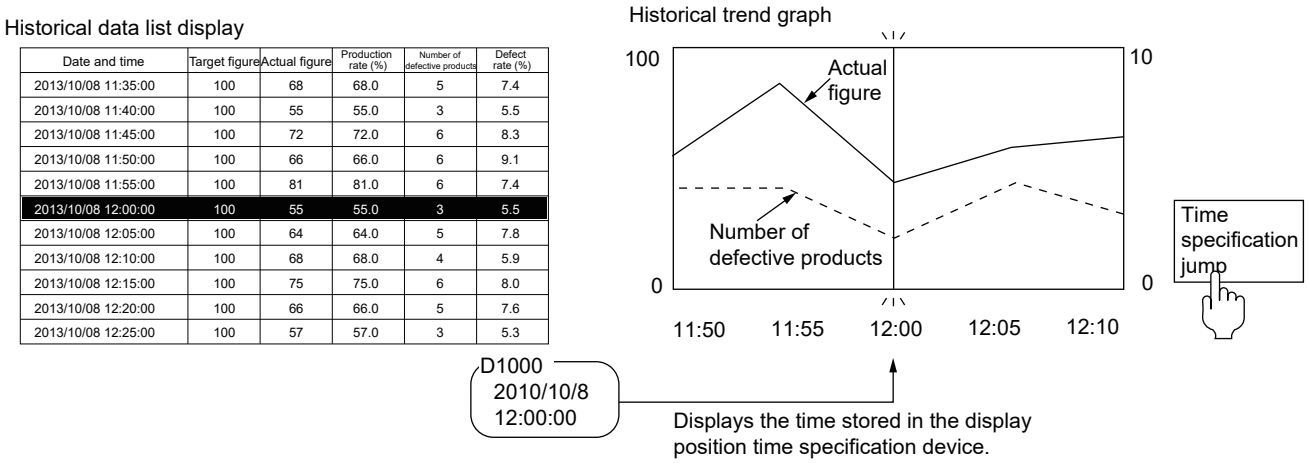
Historical trend graph



2. Enter the key code of the display position time specification jump (FFD4h) with a touch switch. The data obtained at the time stored in [Display Position Time Device] (D1000) is displayed in the historical trend graph.

Historical data list display

Date and time	Target figure	Actual figure	Production rate (%)	Number of defective products	Defect rate (%)
2013/10/08 11:35:00	100	68	68.0	5	7.4
2013/10/08 11:40:00	100	55	55.0	3	5.5
2013/10/08 11:45:00	100	72	72.0	6	8.3
2013/10/08 11:50:00	100	66	66.0	6	9.1
2013/10/08 11:55:00	100	81	81.0	6	7.4
2013/10/08 12:00:00	100	55	55.0	3	5.5
2013/10/08 12:05:00	100	64	64.0	5	7.8
2013/10/08 12:10:00	100	68	68.0	4	5.9
2013/10/08 12:15:00	100	75	75.0	6	8.0
2013/10/08 12:20:00	100	66	66.0	5	7.6
2013/10/08 12:25:00	100	57	57.0	3	5.3



Point

Displaying data of historical trend graphs in historical data list displays

By setting the same device to [Time Device] of historical trend graphs and [Display Position Time Device] of historical data list displays, the data obtained at time specified with a historical trend graph can be displayed in a historical data list display.

☞ Page 1512 [Extended] tab

☞ Page 1594 Placing a trend graph

Precautions

■When using the time specification jump function

If the time specification jump function is used, the update processing of the list stops.

To resume the update processing, touch a touch switch for which the key code (FFEFh) is set.

■When carrying out another operation while a time specification jump is performed

While the data obtained at a specified time is searched with the time specification jump function, the operations with functions other than the historical data list display cannot be performed.

■When multiple values of logging data are obtained around a specified time

If logging data are not obtained at a specified time, the data obtained at the nearest time is searched.

When the multiple values are obtained at the nearest time, the first detected value is displayed.

■When displaying the data obtained at the start of logging and the data obtained around the time when the latest data is obtained

When the logging data obtained at a specified time is the one obtained at the start of the logging or the data obtained around the time when the latest data is obtained, the data to be displayed may not be displayed in the center of the historical data list display.

■When performing a time specification jump without specifying time

When performing a time specification jump without specifying time (all the settings of [Display Position Time Device] are 0), the update processing stops and the latest data is displayed.

To resume the update processing, touch a touch switch for which the key code (FFEFh) is set.

■When there is no logging data that can be displayed in historical data list displays

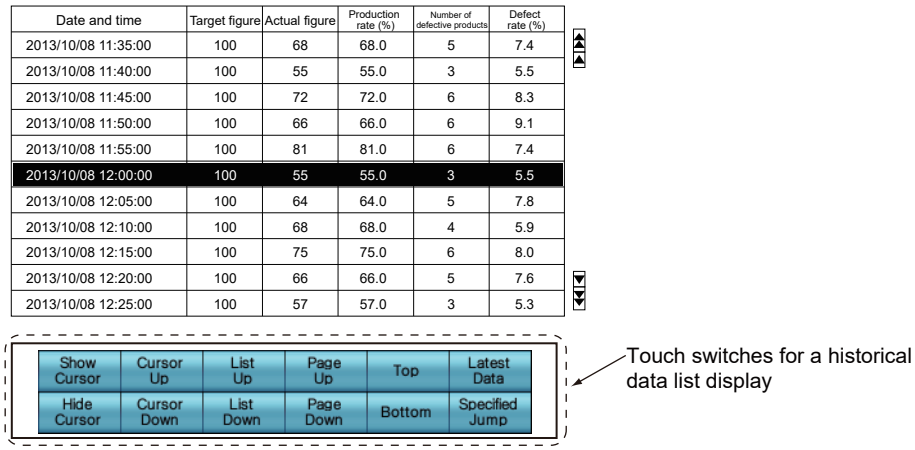
When there is no logging data that can be displayed in a historical data list display, no time specification jump is performed.

■When the logging data to be displayed are not shown in chronological order

When the logging data to be displayed are not shown in chronological order due to a time change of the GOT's clock, the data obtained at the time the nearest to a specified time may not be displayed.

35.2.7 Touch switches for historical data list displays

Touch switches for the historical data list display are available by reading from the library of GT Designer3.
The text and shape of each touch switch are user-changeable.
When key codes are set for touch switches, touch switches for the historical data list display can be created by a user.



Touch switch	Key code	Description
Show cursor	FFF0h	Displays or hides the cursor. Displays the cursor in the center of the list.
Hide cursor	FFF1h	
List Cursor Up	FFF2h	Moves the cursor upward or downward.
List Cursor Down	FFF3h	
List Displacement Scroll Up	FFF4h	Scrolls the cursor to the row a specified number of rows below or above. By setting [Scrolling Increment], the number of the rows between the original position and destination can be changed. ☞ Page 1510 [Text/Style] tab
List Displacement Scroll Down	FFF5h	
List Page Scroll Up	FFF6h	Scrolls the cursor to the row a specified number of rows displayed in the list below or above.
List Page Scroll Down	FFF7h	
Jump to the top of the list	FFD0h	Moves the cursor to the top of the list.

Touch switch	Key code	Description
Jump to the bottom of the list 	FFD1h	Moves the cursor to the bottom of the list.
Latest Data 	FFEFh	Displays the latest data.
Move display position to the specified time 	FFD4h	Displays the time data stored in the Display Position Time Specification device in the center. (Time specification jump function)

35.2.8 Operations performed using the object gesture function

The display of objects can be operated using gestures.

For information on operations using gestures, refer to the following.

☞ Page 507 Operating objects with gestures (object gesture function)

PART 7

35.3 [Historical Data List Display] dialog

GT37 SoftGOT3000

Operating procedure

1. Select [Object] → [Historical Data List Display] from the menu.
2. Click the position to place a historical data list display.
3. Double-click the historical data list display to display the setting dialog.

☞ Page 1504 [Display] tab
☞ Page 1510 [Text/Style] tab
☞ Page 1512 [Extended] tab
☞ Page 1517 [Trigger] tab

35.3.1 [Display] tab

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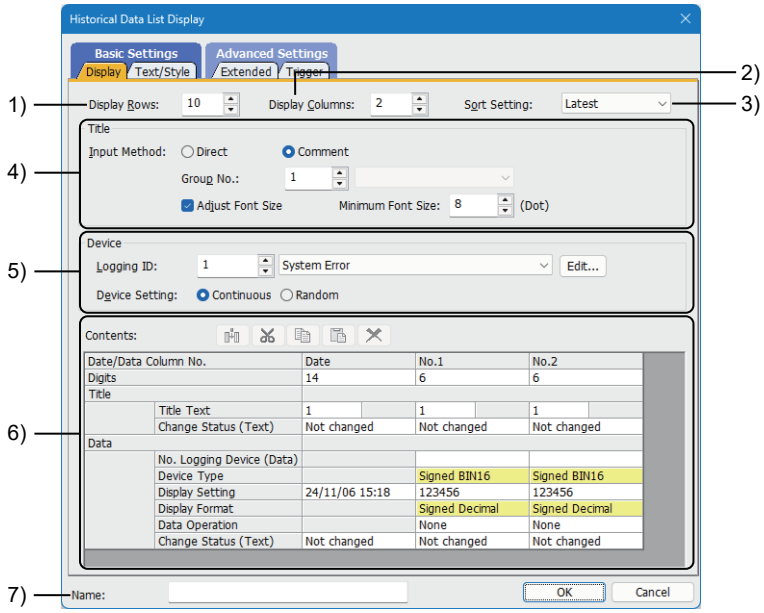
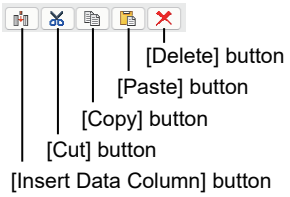
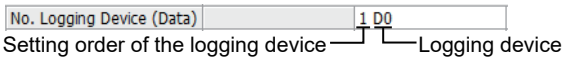


Item		Description
1)	[Display Rows]	Set the number of rows excluding the title row. The setting range is [1] to [47].
2)	[Display Columns]	Set the number of the data columns. The setting range is [1] to [32].
3)	[Sort Setting]	Select the method of sorting out the rows to be displayed. The following shows selectable items. • [Latest] • [Oldest]

Item			Description
4)	[Title]	[Input Method]	Select the method of setting the text to be displayed in the title. The following shows selectable items. • [Direct] • [Comment]
		[Group No.]	This item can be set only when [Comment] is selected for [Input Method]. Set the comment group number to be used. The setting range is [1] to [500].
		[Adjust Font Size]	This item can be set only when [Comment] is selected for [Input Method]. The font size is automatically adjusted according to the object size. When this item is deselected, a line feed is automatically inserted.
		[Minimum Font Size]	This item can be set only when [Adjust Font Size] is set. Set the minimum font size applied when the font size is automatically adjusted. The setting range is [8] dots to [540] dots.
5)	[Device]	[Logging ID]	Set the logging ID number to be displayed. The setting range is [1] to [32767]. When the [Edit] button is clicked, the [Logging] dialog appears and the logging ID number can be edited. ☞ Page 2194 Collecting device data ([Logging])
		[Device Setting]	Select the setting method for [No. Logging Device]. The following shows selectable items. • [Continuous]: Set the number of successive devices counted from a set first device. The number of successive devices is the same as that of logging blocks. • [Random]: Set the number of devices one by one.

Item			Description
6)	[Contents]	Edit button	Edits display columns or others.  • [Insert Data Column] button Inserts a new column on the left of a selected data column. • [Cut] button Cuts a selected data column. • [Copy] button Copies a selected data column or character string. • [Paste] button Pastes a cut or copied data column or character string. • [Delete] button Deletes a selected data column.
		[Date/Data Column No.]	Displays the data column numbers of the number of the columns set for [Date] and [Display Columns].
		[Digits]	Set the number of digits to be displayed in each column. The following shows the setting ranges. • [Date]: [5] to [100] • Data column No.: [1] to [100]
		[Title Text]	Set the title of each column. Depending on the selection in [Input Method], the setting items are different. • If [Direct] is selected for [Input Method]: Enter the title in the text box directly. • If [Comment] is selected for [Input Method]: Set a comment No. or a comment. The setting range is [1] to [32767].
		[Change Status (Text)]	Displays whether the format of the title has been changed or not. • [Changed] • [Not changed] Click the [...] button to display the [Text Format] dialog. The format of the title is user-changeable. ☞ Page 1507 [Text Format] dialog
		[No. Logging Device]	In the [Device List] dialog, select a logging device of a selected logging ID number. When a logging device is selected in the [Device List] dialog, the order of the logging device and the device are displayed. 
		[Device Type]	Displays the device type selected for [No. Logging Device].
		[Display Setting]	Depending on the column to be set, the setting item differs. • If the [Date] column is set: Set the display format of the date and time for [Date/Time Setting]. ☞ Page 3684 [Date/Time Setting] dialog (screen) • If a data column is set: Set the display format of the device and numerical value in the [Display Setting] dialog. ☞ Page 1508 [Display Setting] dialog (historical data list display)
		[Display Format]	Displays the setting of [Display Format] in the [Display Setting] dialog.
		[Data Operation]	Set an expression in the [Edit Data Expression] dialog. Signed BIN16 is used as the data type of the device specified in the expression. ☞ Page 1053 How to set the data operation When no expression is set, [None] is displayed. For a device capable of storing an integer only, refer to the following to display the device value as a real number. ☞ Page 1509 Displaying an integer as a real number
		[Change Status (Text)]	Displays whether the format of the data column has been changed or not. • [Changed] • [Not changed] Click the [...] button to display the [Text Format] dialog. The format of the data column is user-changeable. ☞ Page 1507 [Text Format] dialog

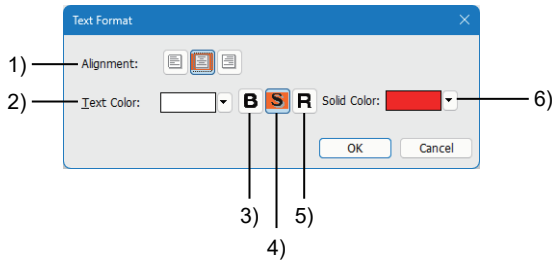
Item		Description
7)	[Name]	Set the object name. The name is displayed in places such as the data browser and property sheet. The setting can also be changed in other tabs. Up to 100 characters can be set.

Precautions

When the bit is selected for the device type, the screen editor always displays the off status even if the display is switched to on.

In the GOT, ON or OFF status of the monitored device is displayed correctly.

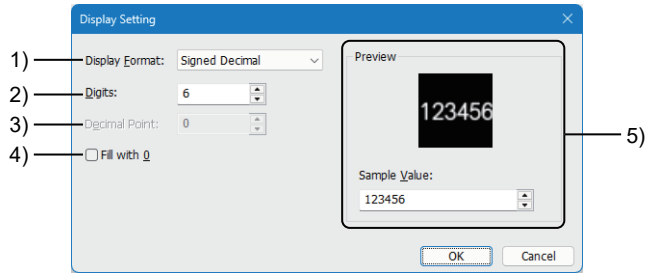
[Text Format] dialog

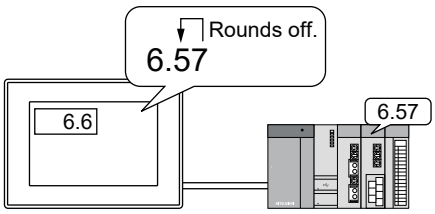
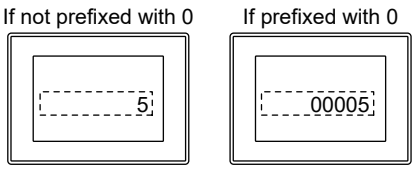


Item		Description
1)	[Alignment]	Set the horizontal and vertical positions of the text.
2)	[Text Color]	Set the text color. ☞ Page 988 Color settings
3)	[Bold] button	Displays the text in bold.
4)	[Solid] button	Displays the text with a shadow.
5)	[Raised] button	Displays the text embossed.
6)	[Solid Color]	When [Solid] or [Raised] is selected as the text style, set the color of the shadow.

PART 7

[Display Setting] dialog (historical data list display)



Item			Description
1)	[Display Format]		Select the display type of the device to be monitored.*1
2)	[Digits]		Set the number of the digits of the numerical values to be displayed. The setting range differs depending on the setting of [Display Type]. • [Signed Decimal] or [Unsigned Decimal]: [1] to [21] • [Hexadecimal]: [1] to [16] • [Octal]: [1] to [6] • [Binary] or [Real]: [1] to [32]
3)	[Decimal Point]		Set the number of digits to the right of the decimal point to be displayed. The setting range is [0] to [30]. This item can be set only when [Format] is [Real]. If there are digits to the right of a set rightmost digit, the value is rounded off and displayed. When 0 is set, the value is rounded off to the first decimal place. Example) When the device value is 6.57, and [Decimal Point] is set to [1] 
4)	[Fill with 0]		Prefixes a numerical value with 0 and displays it. Example) When the device value is 5 and [Digits] is set to [5] 
5)	[Preview]	[Sample Value]	Displays the preview of the screen. Set the numerical value to be displayed in the preview.

*1 The selectable items vary depending on the data type of the device.
○: Supported, —: Not supported

[Data Type]	[Display Format]					
	[Signed Decimal]	[Unsigned Decimal]	[Hexadecimal]	[Octal]	[Binary]	[Real]
[Signed BIN16]	○	○	○	○	○	○
[Unsigned BIN16]	○	○	○	○	○	○
[Signed BIN32]	○	○	○	—	○	○
[Unsigned BIN32]	○	○	○	—	○	○
[Signed BIN64]	○	○	○	—	—	○
[Unsigned BIN64]	○	○	○	—	—	○
[Signed BIN8]	○	○	○	○	○	○
[Unsigned BIN8]	○	○	○	○	○	○
[BCD16]	○	○	○	○	○	○
[BCD32]	○	○	○	—	○	○
[BCD64]	○	○	○	—	—	○
[Real(32bit)]	○	○	○	—	○	○
[Real(64bit)]	○	○	○	—	—	○

Precautions

■Displaying data which cannot be processed as real numbers

When [Real] is set for [Display Format] and the data to be displayed cannot be processed as real numbers, what are displayed depends on the values.

- If all the values are 0: [Inf] is displayed.
- If values are not 0: [NaN] is displayed.

For instruction on setting [Display Format], refer to the following.

☞ Page 1504 [Display] tab

■Displaying an integer as a real number

For a device capable of storing an integer only, configure the following settings to display the device value as a real number.

Item	Settings
[Device Type] in the logging setting	Select one of the following items. • [Signed BIN16] • [Unsigned BIN16] • [Signed BIN32] • [Unsigned BIN32] • [Signed BIN64] • [Unsigned BIN64] • [Signed BIN8] • [Unsigned BIN8]
[Display Format] in the [Display Setting] dialog	Select [Real].
[Data Operation]	Set the operational expression: $$/(10 to the n-th power). The symbol $$ represents a device value, and the letter n represents the number of decimal places.

Ex.

When the number of decimal places is 2

In [Data Operation], set the operational expression: $$/100.

When the target device stores 12345, the displayed value is 123.45.

35.3.2 [Text/Style] tab

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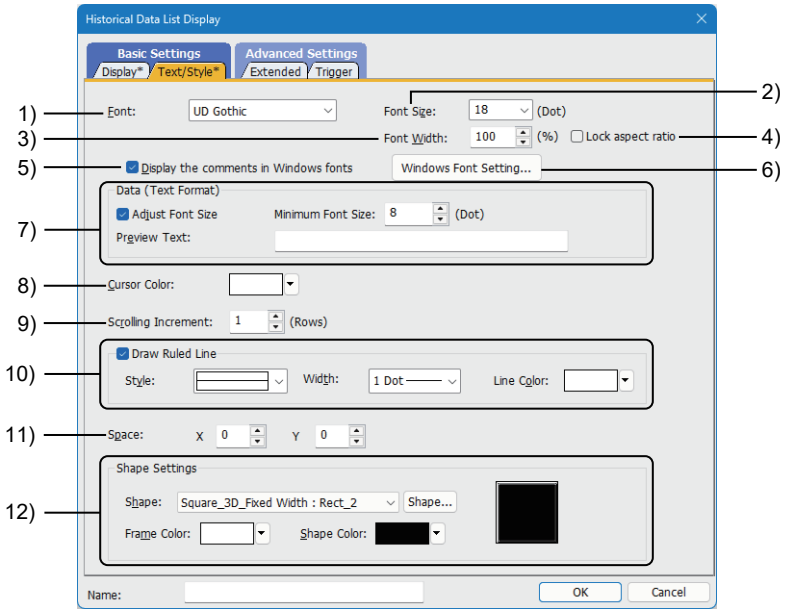
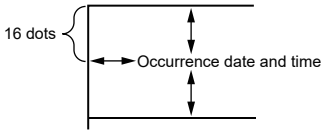
For mobile screens, some setting items are not available.

☞ Page 2742 Usable functions



Item			Description
1)	[Font]		Select the font of the displayed text. The following shows selectable items. • [UD Gothic] • [UD Mincho] • [UDP Gothic] • [UDP Mincho]
2)	[Font Size]		Set the font size of the text to be displayed. ☞ Page 74 Specifications of displayable characters
3)	[Font Width]		Set a horizontal text size. The horizontal size is specified with the magnification relative to [Font Size] (vertical text size). The setting range is [6]% to [1600]%.
4)	[Lock aspect ratio]		Select this item to fix the aspect ratio of the font. When this item is selected, the setting of [Font Width] is disabled.
5)	[Display the comments in Windows fonts]		Displays the following registered comments in Windows fonts. • Comments set for the titles in the [Display] tab (when [Comment] is selected for [Specification])
6)	[Windows Font Setting] button		Displays the [Comment Group Property] dialog to list the properties of the comment group specified with [Group No.] in the [Display] tab. Set [Windows Font] and [Character Set] for the target column of the comment group. ☞ Page 797 [Comment Group Property] dialog
7)	[Data (Text Format)]	—	This item is settable only when [String] is selected for [Device Type] in any column on the [Display] tab.
		[Adjust Font Size]	The font size is automatically adjusted according to the object size. When this item is deselected, a line feed is automatically inserted.
		[Minimum Font Size]	Set the minimum font size applied when the font size is automatically adjusted. The setting range is [8] dots to [540] dots.
		[Preview Text]	Set the text to be previewed on the screen editor.
8)	[Cursor Color]		Select the color of the cursor used for selecting logging data. ☞ Page 988 Color settings
9)	[Scrolling Increment]		Set the number of the rows for scroll operations on the list performed when the key cords for scrolling the list (up/down) (FFF4h, FFF5h) are entered. The setting range is [1] to [27].

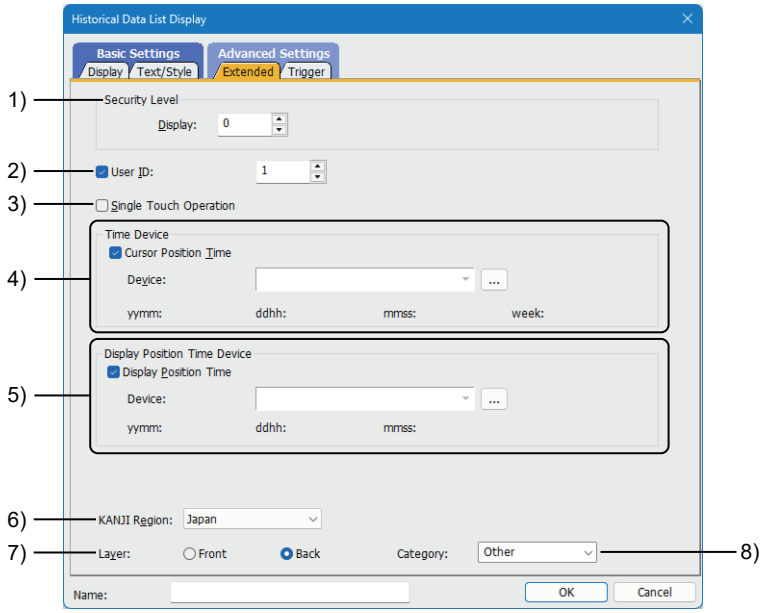
Item			Description
10)	[Draw Ruled Line]	[Style]	Select the style of ruled lines. The following shows selectable items. • Solid line • Dotted line • Broken line • One-dot chain line • Two-dot chain line
		[Width]	Select the width of ruled lines. • [1 Dot] • [2Dot] • [3Dot] • [4Dot] • [5Dot] • [6Dot] • [7Dot]
		[Line Color]	Set the ruled line color. ☞ Page 988 Color settings
11)	[Space]		Set the space between the text or time display to be displayed and the ruled line of the table. The setting range is [0] to [32]. The actually displayed space is defined by the setting of [Font Size] as follows. Setting value of [Font Size] × setting value of [Space] Example) When setting [Font Size] to [2] and [Space] to [8] 
12)	[Shape Settings]	[Shape]	Select the shape to be set for the object from the list or with the [Shape] button. ☞ Page 1045 How to set the object shape
		[Frame Color]	Select the frame color of the shape. ☞ Page 988 Color settings
		[Shape Color]	Select the color of the shape. ☞ Page 988 Color settings

35.3.3 [Extended] tab

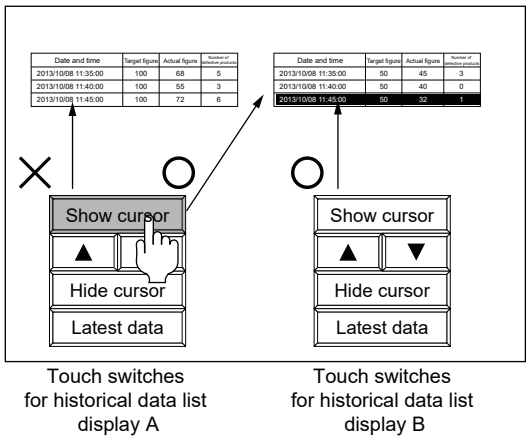
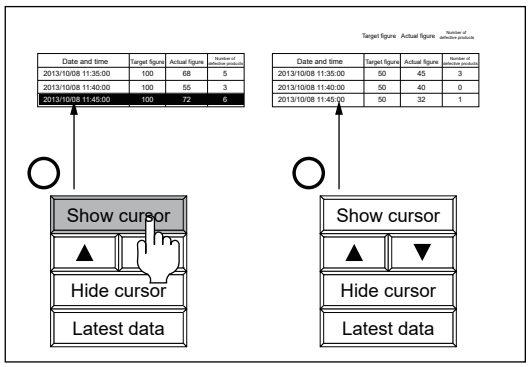
GT37 SoftGOT3000

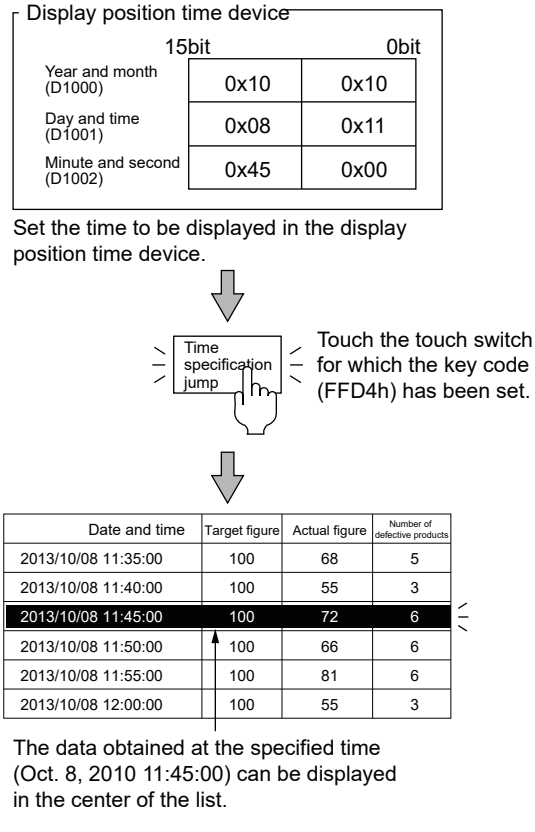
For mobile screens, some setting items are not available.

☞ Page 2742 Usable functions



Item		Description
1)	[Security Level]	Set a security level when using the security. The setting range is [0] to [15]. If you do not use the security, select [0].

Item		Description
2)	[User ID]	Select this item to set the user ID. The setting range is [1] to [65535]. With the setting of user ID, each object can have an ID number (user ID) and the target ID (object) for an operation can be specified with a touch switch. Hence touch switch operations can be performed as required. If user ID is not set Historical data list display A Historical data list display B  Touch switches for historical data list display A Touch switches for historical data list display B The touch switches for historical data list display A work for historical data list display B. If user ID is set Historical data list display A Historical data list display B (User ID: 1) (User ID: 2)  Touch switches for historical data list display A (User ID: 1) Touch switches for historical data list display B (User ID: 2) Although the same key codes are used, the target for an operation can be specified with IDs. Hence operations can be performed as required. To specify the user ID of the object to be operated with a touch switch, set [User ID for a key input] or [Individually set user ID for key input]. For information on touch switches, refer to the following. ☞ Page 1199 [Switch] dialog ☞ Page 1251 [Key Code Switch] dialog
3)	[Single Touch Operation]	Displays the cursor in the touched position directly.

Item			Description
4)	[Time Device]	[Cursor Position Time]	Writes the date and time displayed in the position where the cursor is displayed to a device as BCD data. Set a device for [Device] in which the date and time are stored.
		[Device]	Set the device that stores the date and time.*1*2*3*4 Set a GOT internal device for this item. When a controller device is used, the monitor speeds may become slow. ☞ Page 834 How to set devices, labels, and tags ☞ Page 3577 GOT internal devices
5)	[Display Position Time Device]	[Display Position Time]	Displays the data of a specified date and time. (Time specification jump function) Set a device for [Device] in which a specified date and time are stored.
		[Device]	Set a device in which a specified date and time are stored. ☞ Page 834 How to set devices, labels, and tags The successive devices from a set device are set to store the data of year and month, day and hour, and minute and second. By using [Display Position Time Device] and a touch switch, the logging data obtained at a specified date and time can be displayed in the center of the historical data list display. (The cursor is displayed in the position of the logging data obtained at a specified time.) If logging data are not obtained at a specified date and time, the logging data obtained at the nearest date and time is displayed. • Specifications of the time The following shows the data range. January 1, 2000 to December 31, 2099 • Required settings*5 • Operation example The following shows an example of a time specification jump function operation. Example) When setting D1000 as the display position time specification device and displaying the data of Oct. 8, 2010 11:45:00  For precautions of the time specification jump function, refer to the following. ☞ Page 1500 Conjunction with historical trend graphs
6)	[KANJI Region]		This setting appears when either of the following settings is configured. • [Direct] is selected for [Input Method]. • A device with a string data format is selected for [No. Logging Device (Data)]. Select the KANJI region of the text to be displayed. The following shows selectable items. • [Japan] • [China(GB)-Mincho] • [China(Big5)-Gothic]

Item		Description
7)	[Layer]	Switches layers to be placed. The following shows selectable items. • [Front] • [Back]
8)	[Category]	Select the category to assign the object. ☞ Page 1121 Managing figures and objects by category

*1 How to store the data to the device

Time is stored in the upper eight bits and lower eight bits of a set device.

Example) When setting D100

D100	b15 to b8	b7 to b0
	(Year)	(Month)
D101	b15 to b8	b7 to b0
	(Day)	(Time)
D102	b15 to b8	b7 to b0
	(Minute)	(Second)
D103	b15 to b8	b7 to b0
	Not used	(Day of the week)

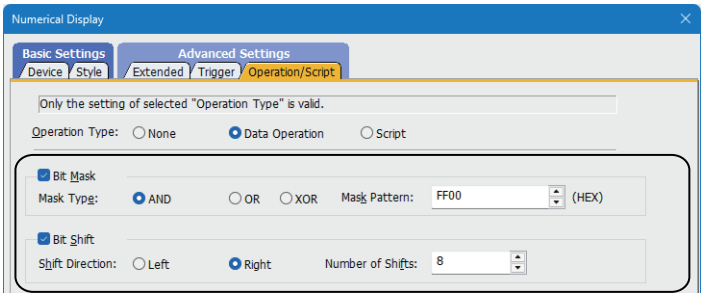
(0: Sunday, 1: Monday, 2: Tuesday, 3: Wednesday, 4: Thursday, 5: Friday, 6: Saturday)

*2 Monitoring set devices

When monitoring a device with a numerical display, select [BCD16], [BCD32], or [BCD64] for [Data Type], and set [Bit Mask] and [Bit Shift] of [Data Operation] as follows.

Example) Numerical display settings

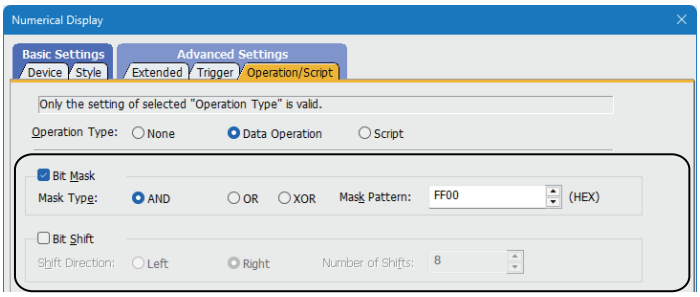
When displaying the year (upper 8 bits)



Lower 8 bits of D100 (b7 to b0): Masked

Upper 8 bits of D100 (b15 to b8): Shifted to the right by 8 bits

When displaying the month (lower 8 bits)



Upper 8 bits of D100 (b15 to b8): Masked

*3 Timing with which data is stored in devices

With the following timings, data is stored.

• When the cursor is displayed in the list

• When the displayed cursor is moved

• When the cursor is displayed and the historical data list display is operated with a touch switch

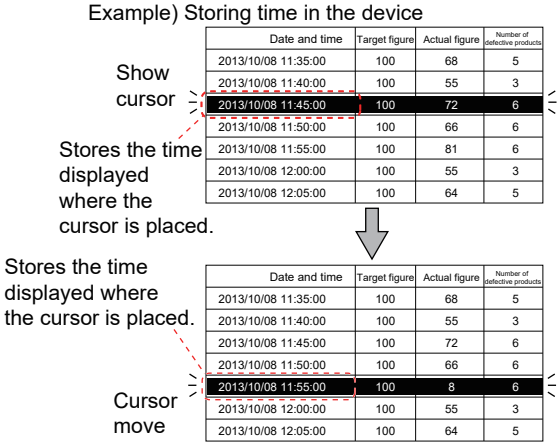
*4 Values to be stored in devices

If the cursor is displayed in the list, the update processing of the list stops.

Into a device, the value of the data and time displayed in the position where the cursor is displayed at the processing stop is stored.

Example) Storing a date and time into a device

Example) Storing time in the device



Date and time	Target figure	Actual figure	Number of defective products
2013/10/08 11:35:00	100	68	5
2013/10/08 11:40:00	100	55	3
2013/10/08 11:45:00	100	72	6
2013/10/08 11:50:00	100	66	6
2013/10/08 11:55:00	100	81	6
2013/10/08 12:00:00	100	55	3
2013/10/08 12:05:00	100	64	5

Date and time	Target figure	Actual figure	Number of defective products
2013/10/08 11:35:00	100	68	5
2013/10/08 11:40:00	100	55	3
2013/10/08 11:45:00	100	72	6
2013/10/08 11:50:00	100	66	6
2013/10/08 11:55:00	100	8	6
2013/10/08 12:00:00	100	55	3
2013/10/08 12:05:00	100	64	5

The data at the time the drawing process stops is stored in the device based on the timing of the cursor display or movement.

*5 Place the following objects on the screen and set them.

Object	Settings
Switch, key code switch	Read an applicable object from the library of GT Designer3 or create one. ☞ Page 1500 Displaying data obtained at a specified time When creating the objects, set [Action] of [Code Setting] to [Display Position Time Device] for each object. ☞ Page 1191 Placing a touch switch
Historical data list display	Select [Display Position Time] in the [Extended] tab and set a device. ☞ Page 1512 [Extended] tab

Precautions

When setting [Single Touch Operation] in the [Extended] tab of the [Historical Data List Display] dialog, set the size of the part displayed in the list to a multiple of 16.

If a set size is not a multiple of 16, or a point not in the succession of a multiple of 16 is pressed, the following irregularities may occur.

- The cursor is displayed in a position away from a touched point.
- Touches do not receive any response.

35.3.4 [Trigger] tab

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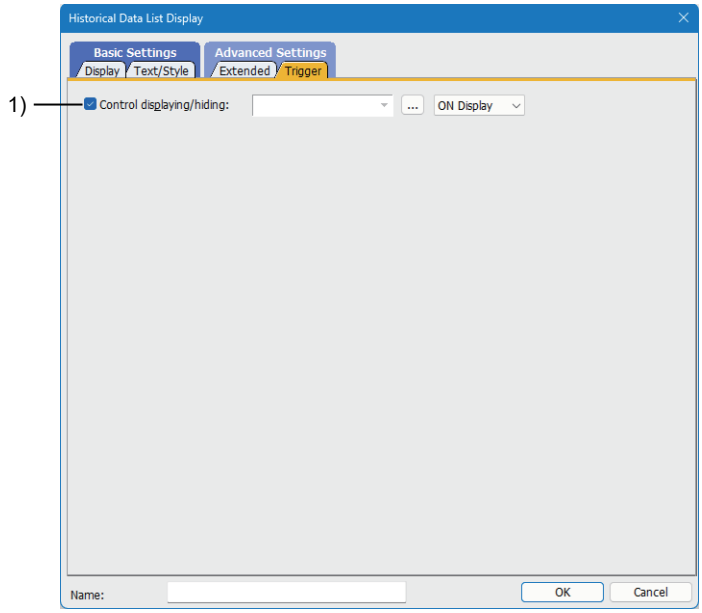

Item		Description
1)	[Control displaying/hiding]	Set the control device to display or hide all the objects including the shape frame. When the set device is in either the ON or OFF status, select whether or not to display the object. The following shows selectable items. • [ON Display] • [OFF Display] ☞ Page 834 How to set devices, labels, and tags

PART 7

36 Placing an alarm display

For information on how to place and set the alarm display, refer to the following.

☞ Page 2132 Viewing alarm events (Alarm display)

37 Placing a simple alarm display

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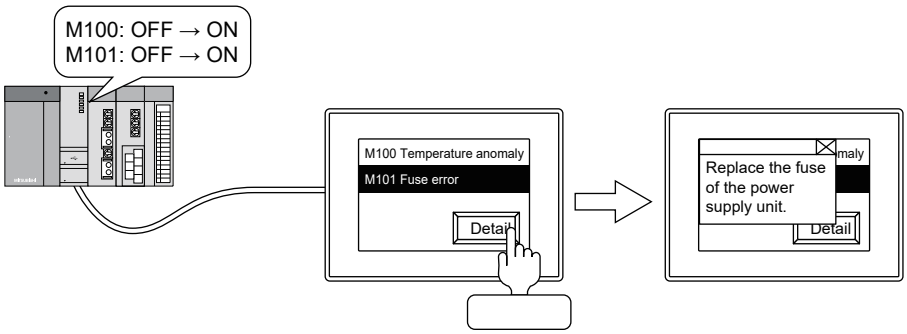
This function displays a user-created comment as an alarm message when an alarm occurs.
When multiple devices turn on, a comment is displayed in the order in which comments are set.



☞ Page 1520 Specifications of the simple alarm display
☞ Page 1521 How to use the simple alarm display
☞ Page 1533 [Simple Alarm Display] dialog
☞ Page 1541 Relevant settings

For details on alarms, refer to the following.

☞ Page 2022 Collecting alarms by monitoring devices
☞ Page 2075 Collecting alarms by monitoring the system

PART 7

37.1 Specifications of the simple alarm display

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37.1.1 Maximum number of objects on one screen

Up to 24 objects can be placed.

37.1.2 Detecting alarm occurrences and resets

Alarm occurrences and resets are detected only while the GOT displays a screen on which a simple alarm display object is placed.

If you switch the screen having no simple alarm display object to another screen having a simple alarm display object, the time of screen switching is displayed as the time of occurrence of an alarm event.

To detect alarm events regardless of the displayed screen, use an alarm display (user) object.

☞ Page 2022 Collecting alarms by monitoring devices

☞ Page 2075 Collecting alarms by monitoring the system

37.1.3 Displaying the time of occurrence

For the time of occurrences, the clock data of the GOT is used.

For the precautions and restrictions of the clock function which manages the GOT clock data, refer to the following.

☞ Page 635 Setting the GOT time setting method ([Time Setting])

37.1.4 Comments displayed in simple alarm displays

For the comments to be displayed, use a comment group.

For details on the comment group, refer to the following.

☞ Page 776 Comment setting ([Comment])

37.2 How to use the simple alarm display

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37.2.1 Placing a simple alarm display

Place simple alarm displays on the screen editor.

☞ Page 1001 Placing figures and objects

37.2.2 Editing simple alarm displays

Edit simple alarm displays that have been placed on the screen editor.

☞ Page 1003 Selecting figures and objects on the screen editor

☞ Page 1007 Resizing

37.2.3 Setting simple alarm displays

Set simple alarm displays that have been placed on the screen editor.

Common settings for objects

☞ Page 1032 Settings common to figures and objects

Simple alarm display settings

☞ Page 1533 [Simple Alarm Display] dialog

37.2.4 Number of alarms to be displayed

Select whether to display just one of alarms that have occurred or display more.

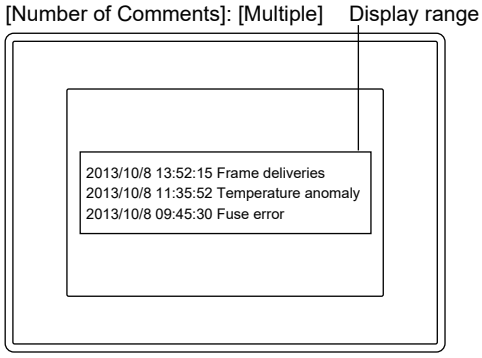
☞ Page 1534 [Device] tab

Displaying multiple alarms

One alarm is displayed in one row.

The part that cannot be displayed within a row is not displayed.

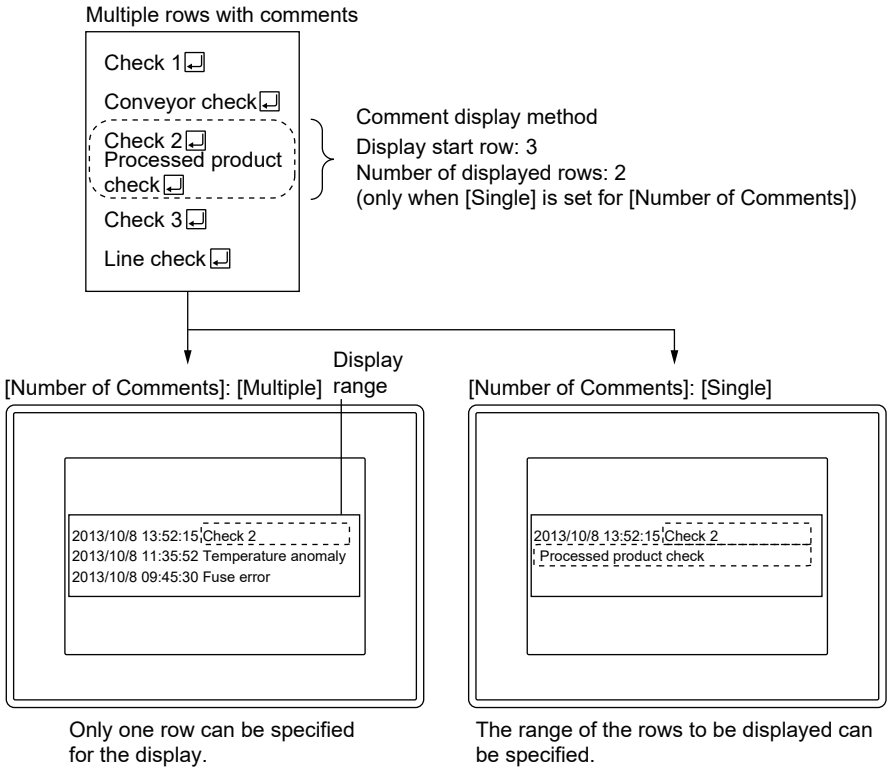
A comment that involves multiple rows cannot be displayed from its second row.



When multiple alarms are displayed, you can specify any line of the multiple-line comment to be displayed.

Ex.

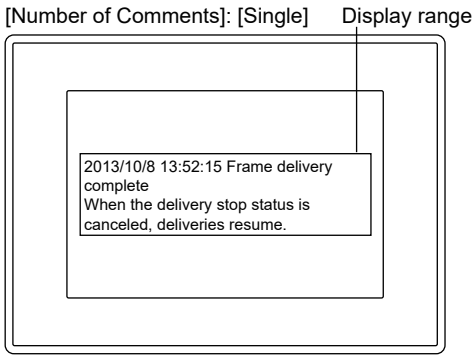
Displaying a line of the registered 6-line comment



Displaying one alarm

The part that overflows from the first row goes down to the next line.

A comment that involves multiple rows is displayed in more than two rows as long as the comment length is within the display range.



PART 7

37.2.5 Display order

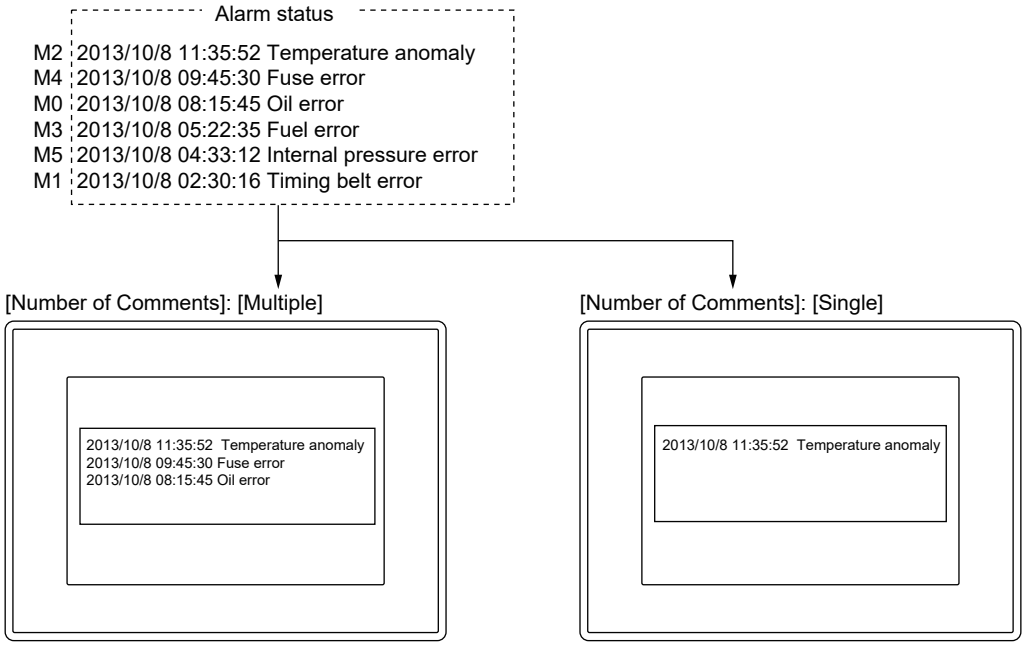
Set the order in which multiple alarms are displayed.

By the setting, alarms can be displayed in order of time of their occurrences or device number.

☞ Page 1537 [Style] tab

Ex.

When displaying alarms in order of time of most recent occurrences

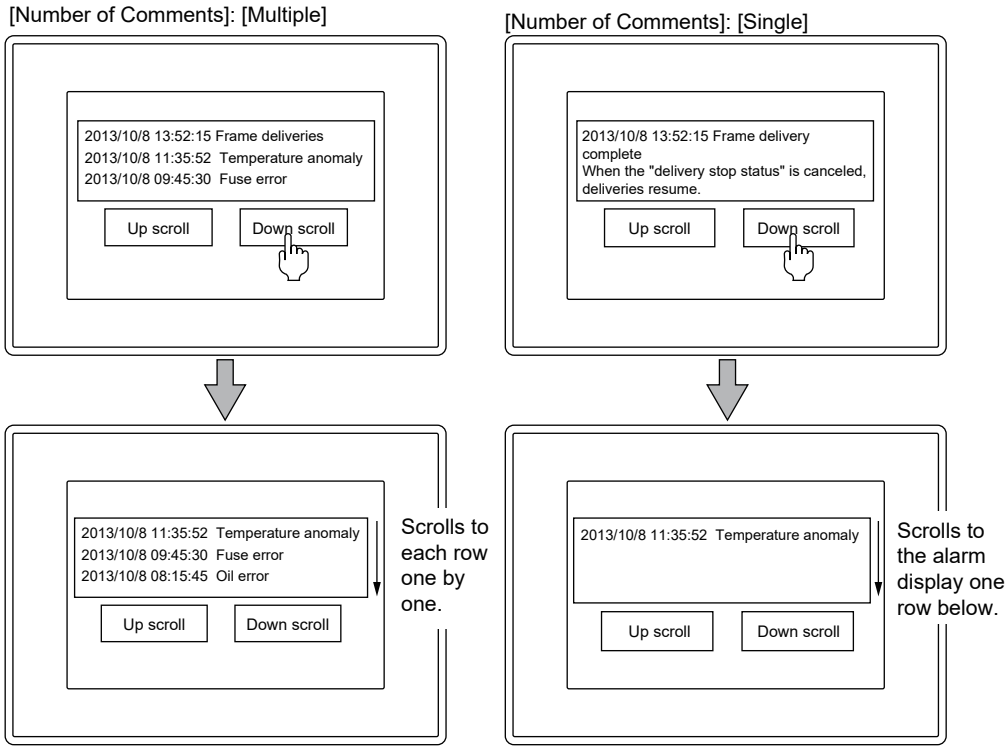


37.2.6 Scroll

The part of a comment that extends off the display range can be checked by scrolling the simple alarm to the part.

To perform scrolling, create a touch switch for the system alarm.

☞ Page 1530 Touch switches for simple alarm displays



37.2.7 About the detail display

The detail display can be set only when [Multiple] is selected for [Number of Comments] in the [Device] tab.

☞ Page 1534 [Device] tab

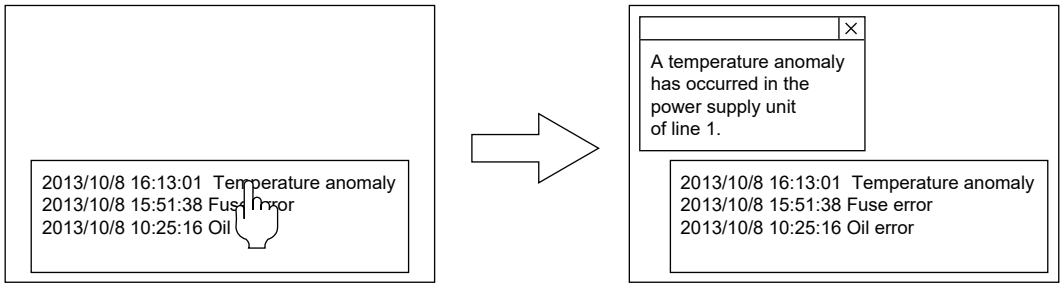
Available screens

When setting the causes of alarms and corrective actions as the target for the detail display, the screen used for the display can be selected from three types.

■Comment window

Displays a comment a user registers.

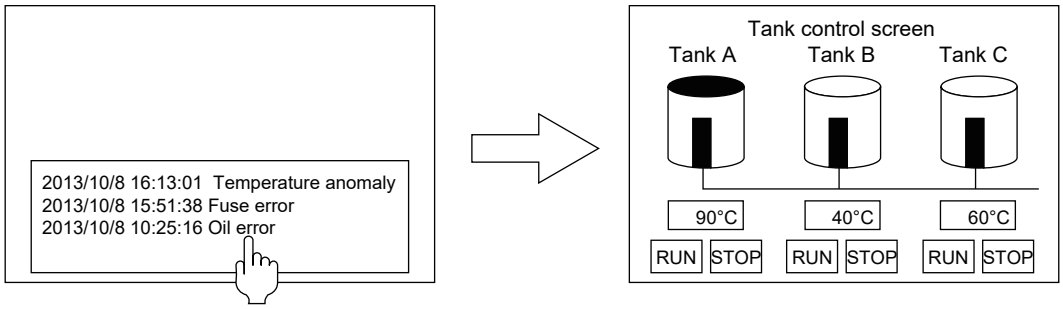
In the detail display, a comment different from the one for the simple alarm can be displayed.



Base screen 1 | Base screen 1 + Comment window

■Base screen

Displays the specified base screen.

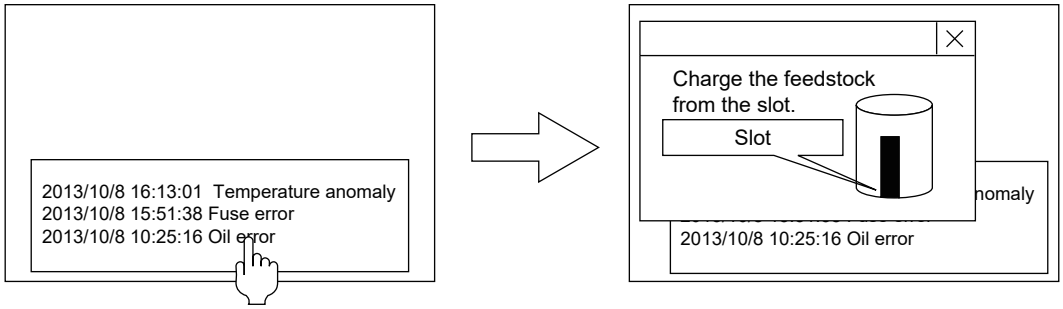


Base screen 1 | Base screen 5

■Window screen

Displays a specified window screen.

A specified window screen can be displayed using overlap window 1.



Base screen 1 | Base screen 1 + Window screen 10

PART 7

Relation between the screen where the simple alarm is set and the screen used for the detail display

Switching: Switches the screen where the simple alarm is set to the screen used for the detail display.

Simultaneous display: Leaves displayed the screen where the simple alarm is set and displays the screen used for the detail display.

Screen for which the simple alarm is set	Screen for the detail display		
	Comment window	Window screen	Base screen
Base screen	Simultaneous display	Simultaneous display	Switching
Overlap window 1		Switching	Simultaneous display
Overlap window 2		Simultaneous display	
Overlap window 3			
Overlap window 4			
Overlap window 5			
Superimpose window 1			
Superimpose window 2			

Specify the comment number to be displayed or the offset value of the screen number

When [Detail No. Offset] in the [Device] tab is set, the offset value for the detail display can be specified.

☞ Page 1534 [Device] tab

The targets which can be specified by the offset value for the detail display are as follows.

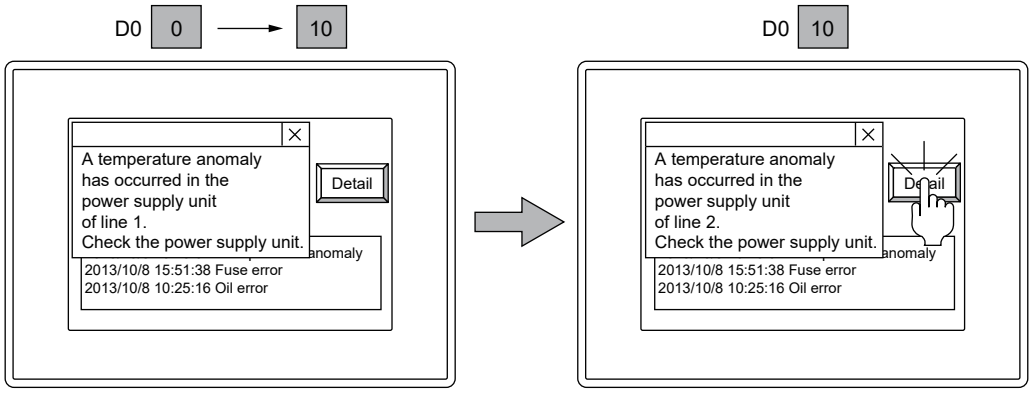
- Comment number to be displayed in the comment window
- Base screen numbers and window screen numbers

While monitoring with the GOT, you can switch the comment number or screen number with a device.

Ex.

When setting D0 for [Detail No. Offset] and registering comments as follows

Comment No.	Comment
1	A temperature anomaly has occurred in the power supply unit of line 1. Check the power supply unit.
2	Replace the fuse of the power supply unit of line 1.
. . .	. . .
11	A temperature anomaly has occurred in the power supply unit of line 2. Check the power supply unit.
12	Replace the fuse of the power supply unit of line 2.



Comment No.1 is displayed.

Comment No.11 is displayed.

Point

Changing comments of the simple alarm

Comments of the simple alarm cannot be changed in [Detail No. Offset].

When changing a comment of the simple alarm with an offset device, set [Comment No. Offset] in the [Extended] tab.

☞ Page 1539 [Extended] tab

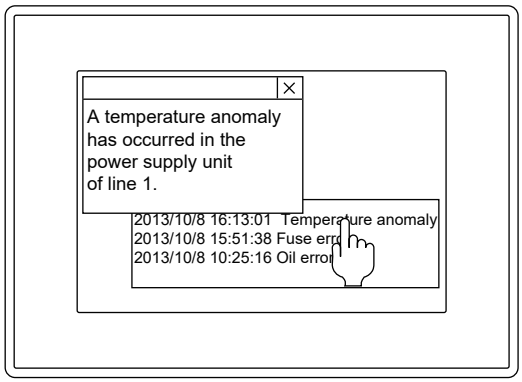
Display method

Select the method of displaying the detail display from the following two types.

■Touch operation

Touch the simple alarm directly to display the detail display.

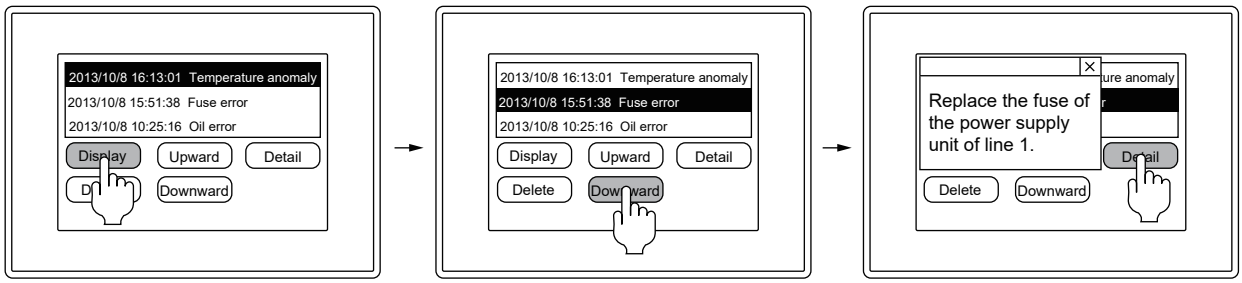
☞ Page 1529 Operating by pressing the simple alarm directly



■Touch switch

Create a touch switch for the detail display to display the detail display.

☞ Page 1530 Touch switches for simple alarm displays



Display the cursor.

Move the cursor to the alarm for the detailed display (upward/downward).

Display the details.

37.2.8 Operating by pressing the simple alarm directly

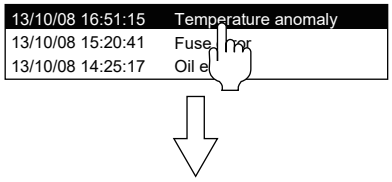
By setting [Touch Mode] in the [Device] tab, the following operations can be performed.

☞ Page 1534 [Device] tab

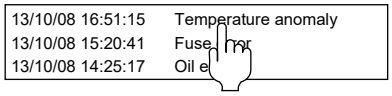
Selecting [Selection] for [Touch Mode]

An alarm can be selected at the direct touch of the simple alarm display.

The touched alarm is selected.



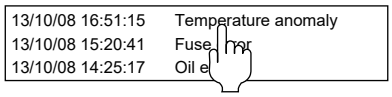
When the alarm is touched again, the selection is canceled.



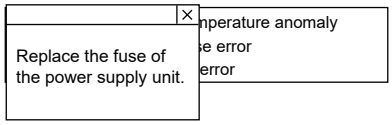
Selecting [Operation] for [Touch Mode]

The detail display can be displayed at the direct touch of the simple alarm display.

The touched alarm is selected.



When the alarm is touched again, the details are displayed.



PART 7

37.2.9 Touch switches for simple alarm displays

Touch switches for the simple alarm display is available by reading from the library of GT Designer3.

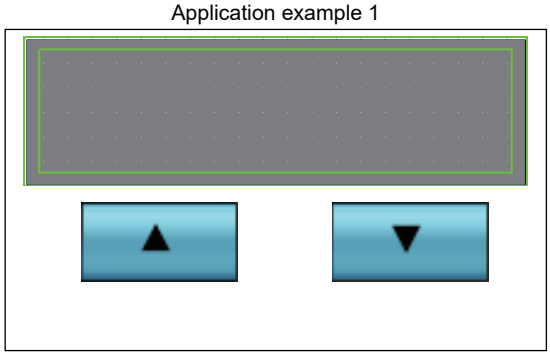
The text and shape of each touch switch are user-changeable.

When key codes are set for touch switches, touch switches for the simple alarm display can be created by a user.

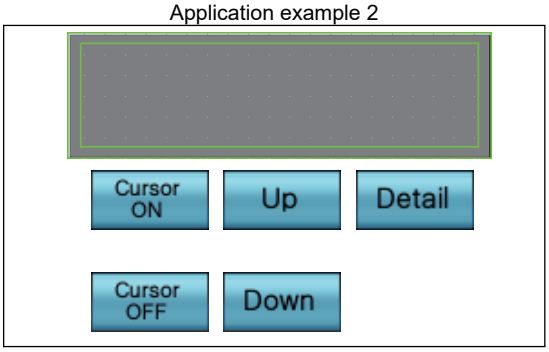
☞ Page 1199 [Switch] dialog

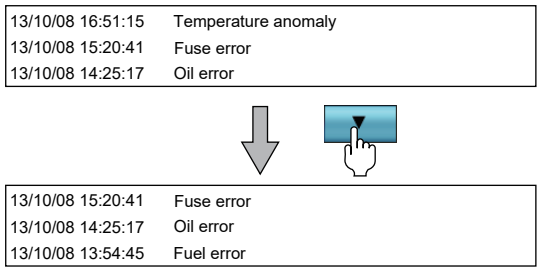
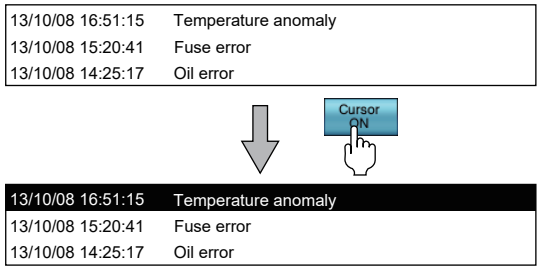
☞ Page 1251 [Key Code Switch] dialog

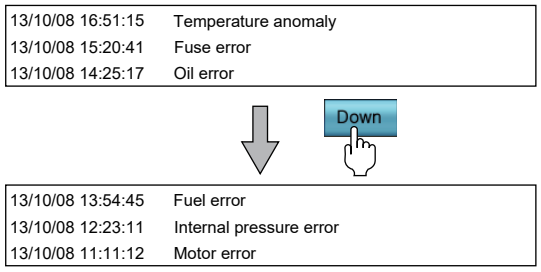
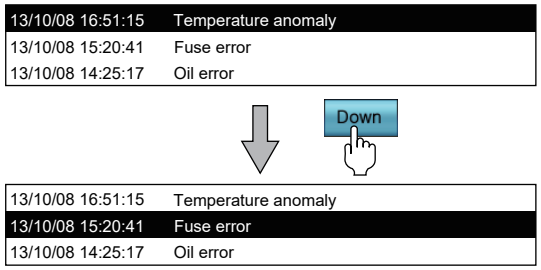
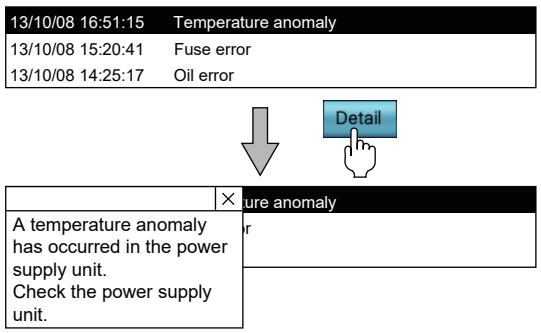
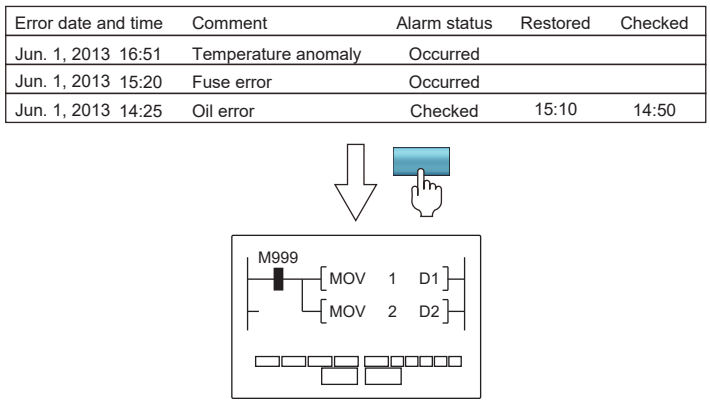
Application example 1

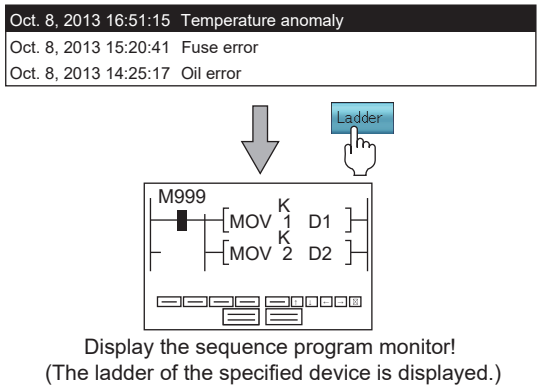
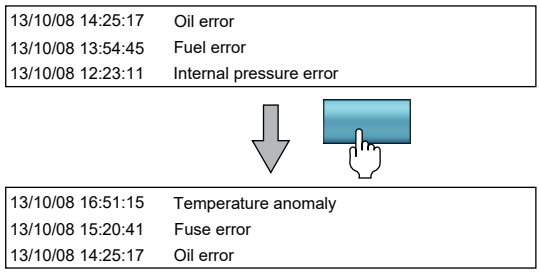


Application example 2



Touch switch	Key code (HEX)	Description
Scroll up by one line	00F2	Switches the display between one row above and one row below. This function is available only when the cursor is hidden.
Scroll down by one line	00F3	 Scroll down one row.
Show cursor	FFB0	Displays or hides the cursor.
Hide cursor	FFB1	 Display the cursor.

Touch switch	Key code (HEX)	Description
Move cursor upward Up	FFB2	• When the cursor is hidden Displays the previous page or next page. (by page)  Display the next page. • While the cursor is displayed Moves the cursor up or down. (by row)  Move the cursor.
Move cursor downward Down	FFB3	
Display detail Detail	FFB8	Displays the detail screen for a selected alarm.  Display the detailed screen.
Displays the ladder (sequence program monitor (iQ-R/iQ-L ladder)).	FFBA	Initiates the coil search and factor search for an alarm device automatically in a specified program file and displays the device in the sequence program monitor. (One-touch ladder jump function) Specify the search mode and the program file to be searched in the [User Alarm Observation] dialog. ☞ Page 2045 [User Alarm Observation] dialog  The ladder monitor screen of the specified device is displayed.
Displays the ladder (sequence program monitor (iQ-F Ladder)).	FFC3	
Displays the ladder (sequence program monitor (Q/L ladder)).	FFBD	

Touch switch	Key code (HEX)	Description
Displays the ladder. 	FFBC	Initiates the coil search and factor search for an alarm device automatically in a specified program file. The search hit is displayed on the following screen. (One-touch ladder jump function) • Ladder monitor screen of the sequence program monitor (iQ-F ladder) Specify the search mode and the program file to be searched in the [User Alarm Observation] dialog. ☞ Page 2045 [User Alarm Observation] dialog  Display the sequence program monitor! (The ladder of the specified device is displayed.)
Display first alarm	FFBF	Displays the first of the alarms, which are sorted in the order set for [Sort], in the top row. While the cursor is being displayed, touching this touch switch hides the cursor. Example) When [Latest] is selected for [Sort]  Display the first alarm.

Point

Touch switches working differently depending on the display status

There are touch switches working differently depending on the display status.

When the cursor is hidden, the move cursor upward (FFB2h) and move cursor downward (FFB3h) display the previous page and next page respectively by page. When the cursor is hidden, they move the cursor upward and downward respectively by row.

37.2.10 Operations performed using the object gesture function

The display of objects can be operated using gestures.

For information on operations using gestures, refer to the following.

☞ Page 507 Operating objects with gestures (object gesture function)

37.3 [Simple Alarm Display] dialog

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Operating procedure

1. Select [Object] → [Alarm Display] → [Simple Alarm Display] from the menu.
2. Click the position to place a simple alarm display.
3. Double-click the simple alarm display to display the setting dialog.

☞ Page 1534 [Device] tab
☞ Page 1537 [Style] tab
☞ Page 1539 [Extended] tab
☞ Page 1540 [Trigger] tab

37.3.1 [Device] tab

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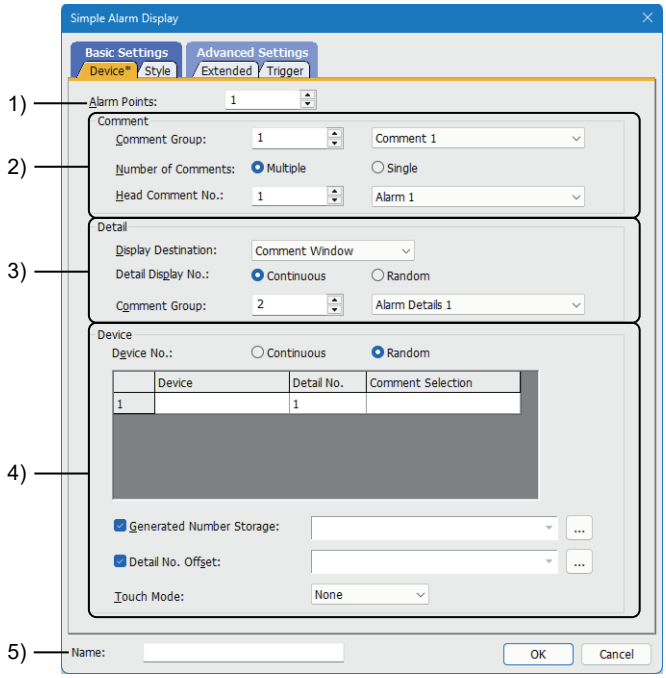
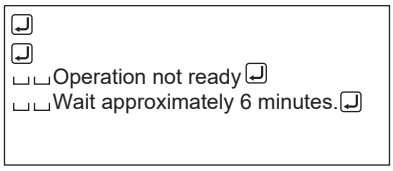
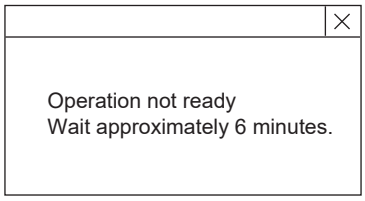


Item			Description
1)	[Alarm Points]		Set the number of devices to be monitored. The setting range is [1] to [8192].
2)	[Comment]	[Comment Group]	Set the comment group number to be used. The setting range is [1] to [500].
		[Number of Comments]	Select the number of comments to be displayed in the display frame. The following shows selectable items. • [Multiple] • [Single]
		[Head Comment No.]	Set the comment number displayed when an alarm occurs. The setting range is [1] to [32767]. The comment number set for this item is assigned to the start device in the device tab. From the number set for this item, numbers are set successively. The number of the set successive numbers is the same as that of the devices to be monitored. Example) Start device: M100 [Head Comment No.]: 1 Monitored device Comment No. (basic comment) M100 ..... 1 Temperature anomaly ——— Head comment No. M101 ..... 2 Fuse error M102 ..... 3 Oil error } Comments are assigned consecutive numbers starting from the head comment number.

Item			Description
3)	[Detail]	[Display Destination]	This item can be selected only when [Multiple] is selected for [Comment]. Select the setting method of the detail display. The following shows selectable items. • [Not Display]: Does not display the detail display. • [Comment Window]: Displays the detail display in the window for the detail display. In the comment window, registered comments are displayed. • [Base Screen]: Displays a base screen for the detail display. • [Window Screen]: Displays a window screen for the detail display. The window screen is displayed using overlap window 1. The following shows the display method of the comment window. • Number of characters that can be displayed in a comment window Up to 418 one-byte characters (11 lines of 38 characters) are displayed. Up to 209 two-byte characters (11 lines of 19 characters) are displayed. • Display position of the comment window A comment window is displayed on the base screen. The window can be moved and closed in the same way that operates window screens. • Display of comments Text size is fixed to one time high and one time wide. Regardless of the settings made when comments are registered, a blink and HQ characters are not displayed. • Display of comment rows From the top left of the comment window, the registered comments are displayed. When a comment is longer than the display range of the comment window, the comment is wrapped around to be displayed. To display the comment in the center of the comment window, adjust the position of the comment by inserting line feeds.  When the comment is registered  When the comment window is viewed
3)	[Detail]	[Detail Display No.]	When [Comment Window], [Base Screen], or [Window Screen] is selected for [Display Destination], this item can be selected. Select the method of setting comment numbers, window screen numbers, or base screen numbers. The following shows selectable items. • [Continuous]: Sets consecutive comment numbers, window screen numbers, or base screen numbers starting from a set comment number, window screen number, or base screen number. • [Random]: Set the numbers one by one.
		[Comment Group]	This item can be selected only when [Comment Window] is selected for [Display Destination]. Set the comment group assigned to the comment to be displayed in the comment window. The setting range is [1] to [500].

Item			Description
4)	[Device]	[Device No.]	Select the display method of the device to be monitored. The following shows selectable items. • [Continuous]: Sets consecutive devices starting from a set device. • [Random]: Set the numbers one by one.
		[Device]	Set the device to be monitored. ☞ Page 834 How to set devices, labels, and tags
		[Detail No.]	When [Comment Window], [Base Screen], or [Window Screen] is selected for [Display Destination], this item can be selected. Set a comment number, window screen number, and base screen number. The following shows the setting range. • Comment No.: [1] to [32767] • Window screen No., base screen No.: [0] to [32767]
		[Comment Selection]	Displays the comment and screen title set for [Detail No.] of [Device]. A comment number, window screen number, or base screen number can be set by selecting a comment or screen title for this item.
		[Generated Number Storage]	Set a device in which the number of alarms that have occurred (number of devices that have turned on) is stored. ☞ Page 834 How to set devices, labels, and tags
		[Detail No. Offset]	When [Comment Window], [Base Screen], or [Window Screen] is selected for [Display Destination], this item can be set. The display of the detail display can be switched with a single device value. The data length of the set device is fixed to 16 bits. The device value set for this item is added to the comment number, base screen number, or window screen number set for [Detail No.] of [Device]. ☞ Page 963 Offset
		[Touch Mode]	This item can be selected only when [Multiple] is selected for [Comment]. Select the operation performed when the simple alarm display is pressed. The following shows selectable items. • [None]: Disables touch operations. • [Selection]: Selects a touched alarm. • [Operation] Displays the detail screen of a touched alarm.
5)	[Name]		Set the object name. The name is displayed in places such as the data browser and property sheet. The setting can also be changed in other tabs. Up to 100 characters can be set.

Precautions

■Monitoring array-type global labels

When [Continuous] is selected for [Device No.] in the [Simple Alarm Display] dialog ([Device] tab) and an array-type global label is set, the device assigned for monitoring may not be monitored properly.

To solve the above problem, take one of the following corrective actions.

- Directly set the device assigned to the global label for the simple alarm display.
- Select [Random] for [Device No.] in the [Simple Alarm Display] dialog ([Device] tab).
- Use a multiple of 8 to set the number of array elements for the global label on GX Works3.

■Monitoring primitive data type global labels set using the consecutive device setting (one point)

When [Continuous] is selected for [Device No.] in the [Simple Alarm Display] dialog ([Device] tab) and a primitive data type global label is set with one device point, the system alarm (326: The data type of labels/tags do not match.) occurs.

To solve the above problem, take one of the following corrective actions.

- Select [Random] for [Device No.] in the [Simple Alarm Display] dialog ([Device] tab).
- Set an array-type global label.

37.3.2 [Style] tab

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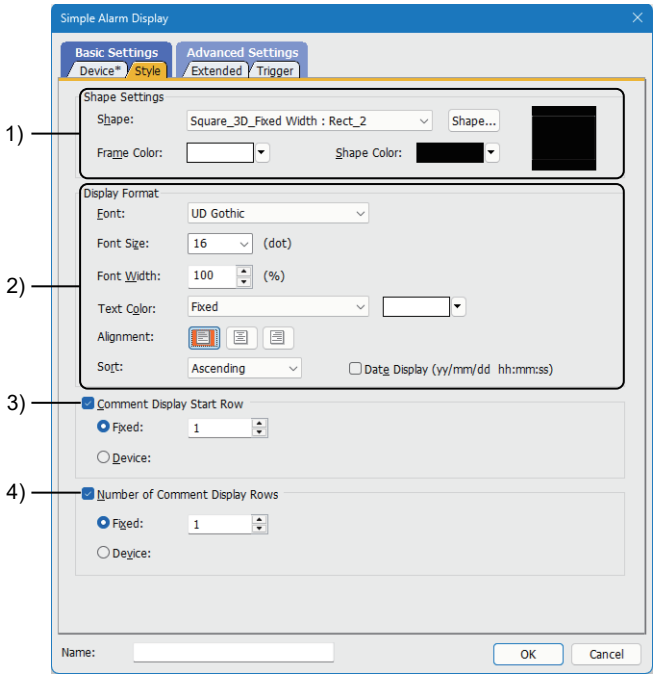

Item			Description
1)	[Shape Settings]	[Shape]	Select the shape to be set for the object from the list or with the [Shape] button. ☞ Page 1044 Object shape
		[Frame Color]	Select a frame color for the shape. ☞ Page 988 Color settings
		[Shape Color]	Select the color of the shape. ☞ Page 988 Color settings
		Preview	Displays the preview of the screen.

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Item			Description
2)	[Display Format]	[Font]	Select a font for the text to be displayed. The following shows selectable items. • [UD Gothic] • [UD Mincho]
		[Font Size]	Set a vertical text size. The setting range is [8] dots to [540] dots. ☞ Page 74 Specifications of displayable characters
		[Font Width]	Set a horizontal text size. The horizontal size is specified with the magnification relative to [Font Size] (vertical text size). The setting range is [6]% to [1600]%.
		[Text Color]	Set the text color. ☞ Page 988 Color settings The following shows selectable items. • [Fixed]: Displays text only in the color set as a text color. • [Comment Attribute]: Selects the text color according to the character attribute set in the comment group.
		[Alignment]	This item can be set only when [Single] is selected for [Number of Comments] in the [Device] tab. Select the horizontal position of the text.
		[Sort]	Select the type of the order in which alarms are displayed. The following shows selectable items. • [Ascending] • [Descending] • [Oldest] • [Latest] When the devices to be monitored are set randomly and [Ascending] or [Descending] is selected, alarms are displayed in the order in which the devices are set.
		[Date Display (yy/mm/dd hh:mm:ss)]	Displays the date and time of the occurrences of alarms in the simple alarm display. For the year, the lower 2 digits are displayed. The time is displayed in the 24-hour time format.
3)	[Comment Display Start Row]		When setting a comment involving multiple rows, set the row from which the comment is displayed. Depending on the selection, the method of setting the row from which the comment is displayed varies. • [Fixed]: Set by entering directly. The setting range is [1] to [32767]. • [Device]: Set the device value as the start row to be displayed. ☞ Page 834 How to set devices, labels, and tags If the comment is displayed in blank characters, check if the row from which the comment is display is set outside the range of the comment rows.
4)	[Number of Comment Display Rows]		This item can be set only when [Single] is selected for [Number of Comments] on the [Device] tab. When setting a multiple-line comment, set the number of the lines to be displayed. Depending on the selection, the method of setting the number of lines to be displayed differs. • [Fixed]: Set by entering directly. The setting range is [1] to [32767]. • [Device]: Set the device value as the number of rows to be displayed. ☞ Page 834 How to set devices, labels, and tags

37.3.3 [Extended] tab

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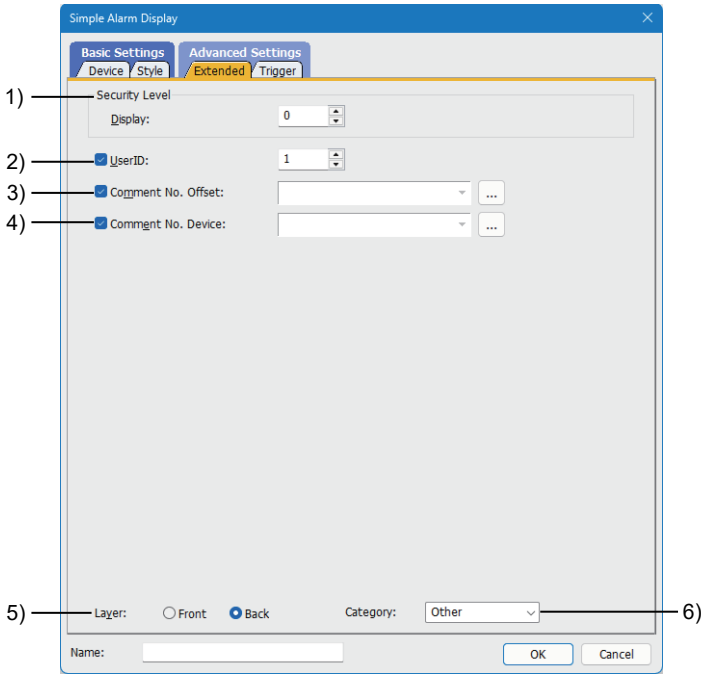

Item		Description
1)	[Security Level]	Set a security level when using the security function. The setting range is [0] to [15]. If you do not use the security, select [0].
2)	[User ID]	Select this item to set the user ID. The setting range is [1] to [65535]. With the setting of user ID, the target ID (object) for an operation can be specified with a touch switch. Hence touch switch operations can be performed as required. For secure operations of the touch switches for system alarm displays, set user ID. To specify the user ID of the object to be operated with a touch switch, set [User ID for a key input] or [Individually set user ID for key input]. For information on touch switches, refer to the following. ☞ Page 1199 [Switch] dialog ☞ Page 1251 [Key Code Switch] dialog
3)	[Comment No. Offset]	Comments displayed in the simple alarm can be switched with a single device value. The device value set for this item is added to the comment number set for [Head Comment No.] of [Device]. ☞ Page 963 Offset
4)	[Comment No. Device]	Set a device that stores the comment number of an alarm. Depending on the selection for [Number of Comments], the comment number assigned to the alarm to be stored in the device differs. • [Number of Comments] is [Multiple]: The comment number of the comment under the cursor is stored. • [Number of Comments] is [Single]: The comment number of the displayed alarm is stored. When displaying the cursor, make the following settings. • Select [Selection] for [Touch Mode]. • Place the touch switches for the simple alarm display. ☞ Page 1199 [Switch] dialog ☞ Page 1251 [Key Code Switch] dialog
5)	[Layer]	Switches layers to be placed. The following shows selectable items. • [Front] • [Back]
6)	[Category]	Select the category to assign the object. ☞ Page 1121 Managing figures and objects by category

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37.3.4 [Trigger] tab

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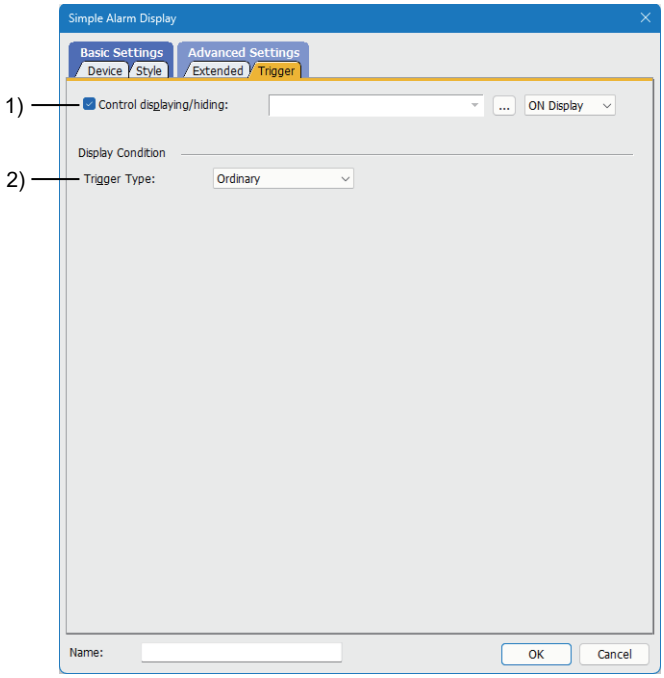

Item		Description
1)	[Control displaying/hiding]	Set the control device to display or hide all the objects including the shape frame. When the set device is in either the ON or OFF status, select whether or not to display the object. The following shows selectable items. • [ON Display] • [OFF Display] ☞ Page 834 How to set devices, labels, and tags
2)	[Trigger Type]	Select a trigger condition to display the object. The following shows selectable items. • [Ordinary] • [ON] • [OFF] • [Range] • [Bit Trigger] ☞ Page 968 Trigger type settings

37.4 Relevant settings

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Configure the relevant settings in addition to the specific settings for the simple alarm display as required.
The following shows the functions that are available by configuring the relevant settings.

37.4.1 GOT environmental settings (System information)

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Select [Common] → [GOT Environmental Setting] → [System Information] from the menu to display the [Environmental Setting] dialog.
☞ Page 576 Setting a device which controls the GOT operations or notifies the GOT status ([System Information])

Function	Setting item
Notifying the key codes set to the input keys when there is an input using a text input, touch switch, or other objects (Write device)	[Key Code Input]
Turning off the Key Input signal (Read device: System signal 1-1.b3)	[System Signal 1-1]
Disabling all the key inputs (Read device: System signal 1-1.b9)	[System Signal 1-1]
Notifying a key input (Write device: System signal 2-1.b3)	[System Signal 2-1]

38 Placing a system alarm display

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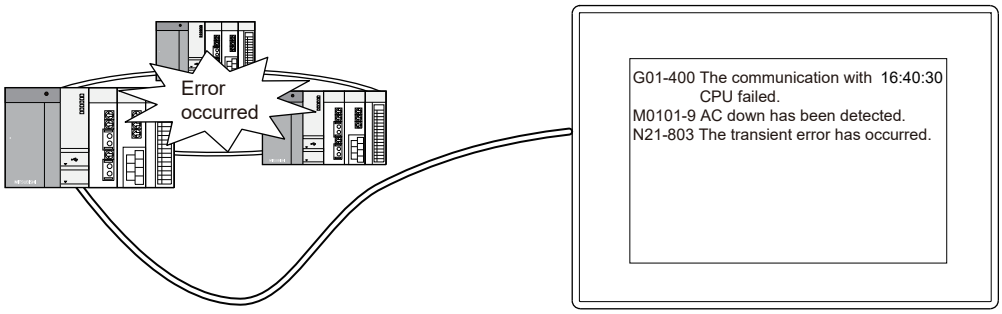
This function displays the error codes and error messages of errors in the GOT, controller, or network.
The status an error causes and the cause of the error can be checked.
The registration of the comments to be displayed in the system alarm is not necessary. (They are registered in the GOT)



☞ Page 1543 Specifications of the system alarm display
☞ Page 1545 How to use the system alarm display
☞ Page 1547 [System Alarm Display] dialog
☞ Page 1549 Relevant settings
For details on alarms, refer to the following.
☞ Page 2075 Collecting alarms by monitoring the system

38.1 Specifications of the system alarm display

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38.1.1 Maximum number of objects that can be placed on one screen

One system alarm display can be placed on one screen.

38.1.2 Types of system alarms

There are the following three types of system alarms.

• CPU error

Indicates an error of a controller.

• GOT error

Indicates an error of the GOT.

A GOT Mobile error, which occurs on a GOT Mobile function client, is categorized as a GOT error.

• Network error

Indicates an error of the communication unit mounted on the GOT.

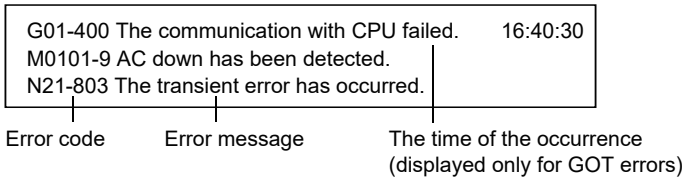
38.1.3 How to collect data

The data of alarm status is always collected in the cycle of 3 seconds and retained in the GOT, even if a screen on which no system alarm is placed is displayed.

38.1.4 Contents displayed in the system alarm

In the system alarm, error codes, error messages, and the time of occurrence are displayed.

The error codes and the error messages to be displayed are registered in the GOT as the default, so creating by a user is not necessary.



38.1.5 Displaying the time of occurrences of alarms

For the time of occurrences, the clock data of the GOT is used.

For the precautions and restrictions of the clock function which manages the GOT clock data, refer to the following.

☞ Page 635 Setting the GOT time setting method ([Time Setting])

PART 7

Precautions

■Controllers for which system alarms are not displayed in the GOT

Errors which occur in the following controllers cannot be displayed in the system alarm of the GOT.
Check the errors with the software for the controllers.

- SIEMENS PLC CPU
- Inverter

■How to delete the messages of GOT errors

GOT errors are not deleted from the system alarm even if the cause of the alarms is eliminated.
To delete the messages, turn on the following device for the system information function.
GOT Error Reset signal (System signal 1-1.b13)
☞ Page 576 Setting a device which controls the GOT operations or notifies the GOT status ([System Information])

■How to delete the messages of network errors

The messages of network errors that occur in the CC-Link communication unit are not deleted even if the alarm causes are eliminated until the GOT is powered off or reset.

38.2 How to use the system alarm display

GT37 SoftGOT3000

38.2.1 Placing a system alarm display

Place a system alarm display on a screen editor.

☞ Page 1001 Placing figures and objects

38.2.2 Editing a system alarm display

Edit a system alarm display on the screen editor.

☞ Page 1003 Selecting figures and objects on the screen editor

☞ Page 1007 Resizing

38.2.3 Configuring the settings for a system alarm display

Configure the settings of a system alarm display on the screen editor.

Common settings for objects

☞ Page 1032 Settings common to figures and objects

System alarm display settings

☞ Page 1547 [System Alarm Display] dialog

38.2.4 How to display alarms

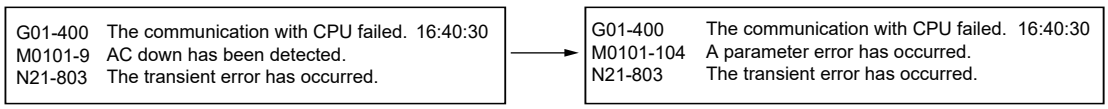
Maximum number of the alarms that can be displayed

The system alarm displays three types of alarms in different rows for each type, and up to three rows can be displayed.

When a new alarm is detected, the alarm display being displayed is updated.

Ex.

When a controller detects a new alarm (parameter error)



The error display of controllers is updated.
(M0101-9→M0101-104)

Order of priority in which alarms are displayed

If the display range is two rows or less, alarms are displayed in the following order of priority.

1) GOT error

2) CPU error

3) Network error

When the number of the occurrences of alarms exceeds the display range, low-priority alarms cannot be displayed.

Also, an error code, error message, or time that cannot be displayed in one row of the display range is not displayed.

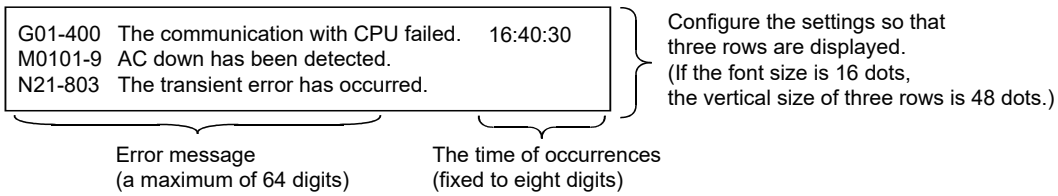
PART 7

38.2.5 How to adjust the display range

To set a display range in which alarm messages are fully displayed, adjust the range as shown below.

If the screen size of the GOT is smaller than the sizes shown below, reduce the font size.

Example) when [Font Width] is [100%]



If the font size is 16 dots, the alarms are displayed using 576 dots.
Enlarge the size until the time of occurrences on the right is displayed.

38.2.6 Corrective actions on the cause of the alarm of each type and error codes

For details, refer to the following manuals.

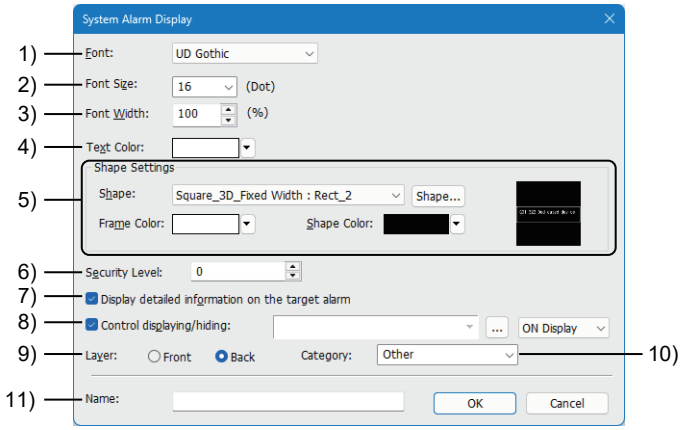
User's manual of the GOT used

38.3 [System Alarm Display] dialog

GT37 SoftGOT3000

Operating procedure

1. Select [Object] → [Alarm Display] → [System Alarm Display] from the menu.
2. Click the position to place a system alarm display.
3. Double-click the system alarm display to display the setting dialog.



Item			Description
1)	[Font]		Select the font of the displayed text. The following shows selectable items. • [UD Gothic] • [UD Mincho]
2)	[Font Size]		Set a vertical text size. The setting range is [8] dots to [540] dots. ☞ Page 74 Specifications of displayable characters
3)	[Font Width]		Set a horizontal text size. The horizontal size is specified with the magnification relative to [Font Size] (vertical text size). The setting range is [6]% to [1600]%.
4)	[Text Color]		Set the text color. ☞ Page 988 Color settings
5)	[Shape Settings]	[Shape]	Set a shape for an object. When [None] is selected, no figure is displayed. Click the [Shape] button to select shapes other than those in the list box. ☞ Page 1044 Object shape
		[Frame Color], [Shape Color]	Select the color of the frame of the shape and shape.
6)	[Security Level]		Set a security level when using the security. The setting range is [0] to [15]. If you do not use the security, select [0]. ☞ Page 3038 Restricting display and operation on the GOT (Screen security)
7)	[Display detailed information on the target alarm]		Displays detailed information added to system alarms.
8)	[Control displaying/hiding]		Set the control device to display or hide all the objects including the shape frame. When the set device is in either the ON or OFF status, select whether or not to display the object. The following shows selectable items. • [ON Display] • [OFF Display] ☞ Page 834 How to set devices, labels, and tags

PART 7

Item		Description
9)	[Layer]	Switches layers to be placed. The following shows selectable items. • [Front] • [Back]
10)	[Category]	Select the category to assign the object. ☞ Page 1121 Managing figures and objects by category
11)	[Name]	Set the object name. The name is displayed in places such as the data browser and property sheet. Up to 100 characters can be set.

38.4 Relevant settings

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Configure the relevant settings in addition to the specific settings for the system alarm display as required.
The following shows the functions that are available by configuring the relevant settings.

38.4.1 GOT environmental settings (System information)

Select [Common] → [GOT Environmental Setting] → [System Information] from the menu to display the [Environmental Setting] dialog.

☞ Page 576 Setting a device which controls the GOT operations or notifies the GOT status ([System Information])

Function	Setting item
Resetting system alarms and system information (GOT error code, GOT Error Detection signal) (Read device: System signal 1-1.b13)	[System Signal 1-1]

38.4.2 GOT internal device

☞ Page 3581 GOT special register (GS)

Function	Setting item
Storing the channel No. that has been assigned to the channel where a system alarm (GOT error) occurs (Write device)	GS262
Storing the channel No. that has been assigned to the channel where a system alarm (CPU error) occurs (Write device)	GS263
Storing the channel No. that has been assigned to the channel where a system alarm (network error) occurs (Write device)	GS264

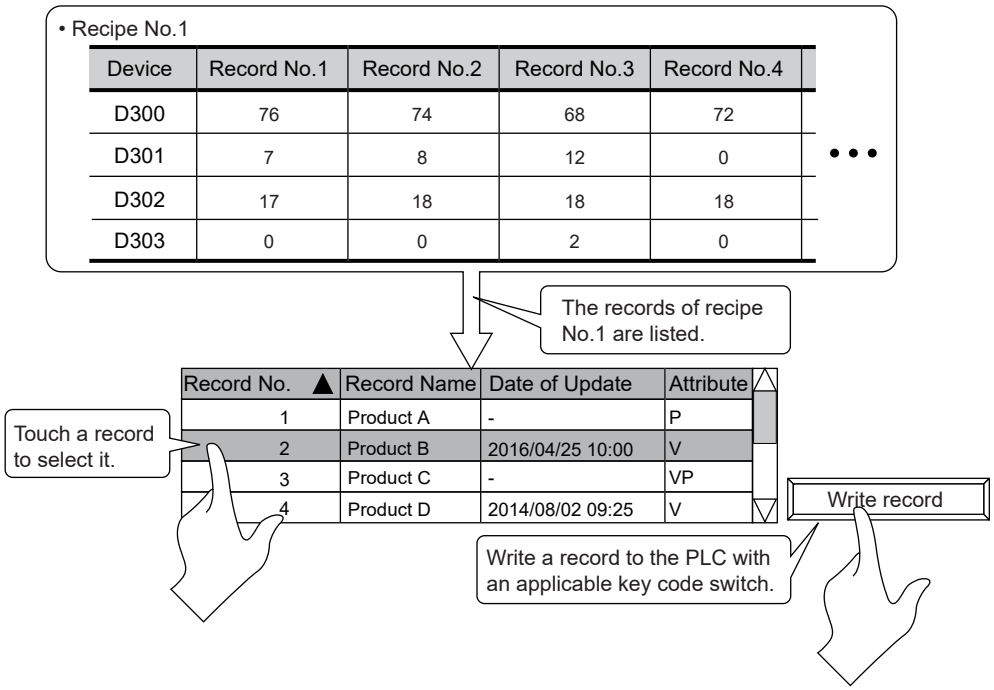
39 Placing a recipe display (record list)

GT37 SoftGOT3000

This function lists the records of a recipe on the GOT.

You can perform the following manipulations on the records listed on the object by using applicable key code switches.

- Renaming a record
- Reading a record
- Writing a record
- Verifying a record
- Deleting a record



☞ Page 1551 Specifications of the recipe display (record list)
☞ Page 1552 How to use the recipe display (record list)
☞ Page 1563 [Recipe Display (Record List)] dialog
☞ Page 1576 Relevant settings

This object function must be used in combination with the recipe function.

For details on the recipe function, refer to the following.

☞ Page 2243 Writing or reading values to multiple devices ([Recipe])

39.1 Specifications of the recipe display (record list)

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The following shows the specifications of the recipe display (record list).

39.1.1 System application (extended function)

To use the recipe display (record list), a system application (extended function) of [Recipe Display (Record List)] is required.
Placing the recipe display (record list) incorporates the application into the package data automatically.
☞ Page 1563 [Recipe Display (Record List)] dialog
To use the function with GT SoftGOT3000, the application is not required.

39.1.2 Maximum number of objects on one screen

One recipe display (record list) object can be placed on one screen.

39.1.3 Maximum number of objects displayed at one time

One recipe display (record list) object can be displayed at one time.
Multiple recipe display (record list) objects cannot operate simultaneously.
When a recipe display (record list) object is displayed on the GOT, even if you call up a screen having another recipe display (record list) object, the object does not appear on the GOT.

39.1.4 Maximum numbers of recipes and record rows displayed on the object

The records of one recipe can be displayed on the recipe display (record list) object.
When the recipe number is specified with a device value, switching between recipes is available.
Up to 64 record rows can be displayed on the object.

39.1.5 Key code switch

The recipe display (record list) is operable using key code switches.
Place the following key code switches on the screen as necessary.

Key code	Operation	Description
FFF0h	[Show cursor]	Display the cursor on a record row to select the row.
FFF1h	[Hide cursor]	Hide the cursor.
FFEFh	[Update list]	Update the list.
FFF4h	[List Displacement Scroll Up]	Scroll the list up the specified number of rows.
FFF5h	[List Displacement Scroll Down]	Scroll the list down the specified number of rows.
FFF6h	[List Page Scroll Up]	Scroll the list up one page.
FFF7h	[List Page Scroll Down]	Scroll the list down one page.
FFF2h	[Move cursor upward]	Move the cursor up one row.
FFF3h	[Move cursor downward]	Move the cursor down one row.
FFCAh	[Rename record]	Rename a record.
FFCBh	[Save record]	Read a record from the PLC.
FFCCh	[Load record]	Write a record to the PLC.
FFCDh	[Verify record]	Verify the device values of a record against those of the PLC.
FFB6h	[Delete record]	Delete a record.
FFCEh	[Cancel recipe operation]	Cancel the reading, writing, or verifying of a record.

39.2 How to use the recipe display (record list)

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39.2.1 Setting the recipe function

To use a recipe display (record list), the recipe function must be set.

☞ Page 2255 How to use the recipe

39.2.2 Placing a recipe display (record list)

The following shows the procedure for setting a recipe display (record list).

Operating procedure

1. Place a recipe display (record list) on the screen editor.

☞ Page 1001 Placing figures and objects

2. Upon placement of the recipe display (record list), key code switches are also placed.

The user ID of the recipe display (record list) is assigned to each key code switch.

Delete unnecessary key code switches.

Place additional key code switches as necessary.

☞ Page 1251 [Key Code Switch] dialog

3. Configure the settings of the recipe display (record list).

☞ Page 1563 [Recipe Display (Record List)] dialog

For the settings common to the objects, refer to the following.

☞ Page 1032 Settings common to figures and objects

Precautions

■User ID assigned to key code switches

If you change the user ID of the recipe display (record list), also change the set value of [User ID for a key input] for each switch.

Otherwise, the recipe display (record list) is inoperable using the switches.

☞ Page 1251 [Key Code Switch] dialog

■When placed from the [Recipe] dialog

If you place a recipe display (record list) by using the [Create a new recipe display (record list)] button in the [Recipe] dialog, the settings of the following items in the [Options] dialog are not applied.

[Place figures/objects sequentially]

[Deselect figures/objects once they are placed]

[Display the setting dialog once figures/objects are placed]

☞ Page 2311 [Recipe] dialog

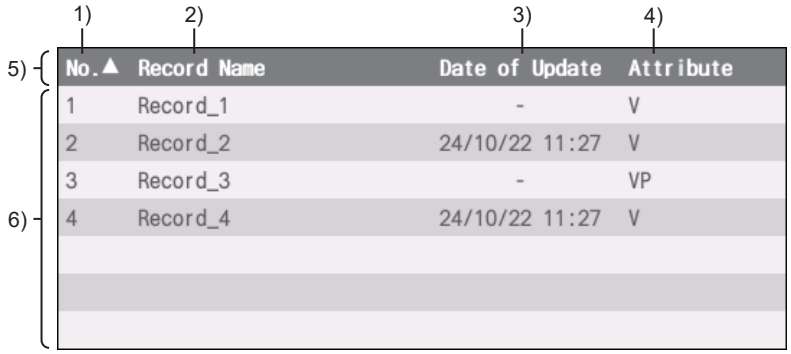
☞ Page 199 Customizing the settings related to editing operations

39.2.3 Operating a recipe display (record list)

The following shows how to operate a recipe display (record list).

List layout

The following shows the list layout of the recipe display (record list).



Item		Description
1)	[No.]	Displays the record numbers.
2)	[Record Name]	Displays the record names. If the name of a record is unspecified, the relevant cell is left blank.
3)	[Date of Update]	Displays the update date and time of each record. If a record is not read from the PLC, a hyphen [-] is displayed.
4)	[Attribute]	Displays the record attributes that indicate whether each record is readable or writable. [V]: The record can be written to a PLC. [P]: The record cannot be read to the GOT. (Overwrite-protected record) [VP]: The record can be written to a PLC, but cannot be read to the GOT. [-]: The record does not have an initial device value and can be read to the GOT.
5)	Title row	Displays the column headers. Touch a column header to sort the record list in ascending or descending order based on the column.
6)	Record rows	Each row displays one record. Touch a record row to select the record, and touch the row again to deselect the record.

Slide operation of the recipe display (record list)

You can slide the recipe display (record list) without using the object gesture function.

Reading, writing, or deleting a record

You can read, write, or delete a record selected on the recipe display (record list).

To perform these operations, use applicable key code switches.

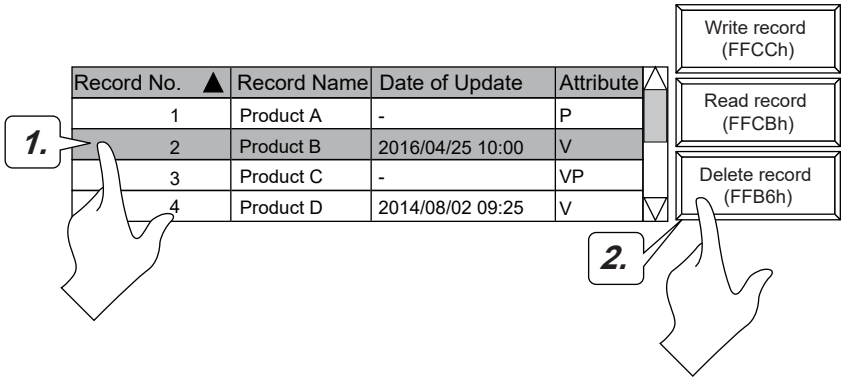
Place the following key code switches in advance.

- FFCBh: [Save record]
- FFCCh: [Load record]
- FFB6h: [Delete record]

Operating procedure

1. Touch a target record on the recipe display (record list) to select it.

2. Touch an applicable key code switch to write, read, or delete the selected record.



You can specify the name of the target record by using specific devices. To do this, enable the setting for the Control Target Record Name devices.

For details on the Control Target Record Name devices, refer to the following.

☞ Page 1557 Specifying the name of a manipulation target record by using specific devices

Renaming a record

You can rename a record selected on the recipe display (record list).

Up to 32 ASCII or Unicode characters are usable for a record name.

To specify a new record name, use the Control Target Record Name devices.

Set the Control Target Record Name devices in advance.

☞ Page 1573 [Extended] tab

☞ Page 1557 Specifying the name of a manipulation target record by using specific devices

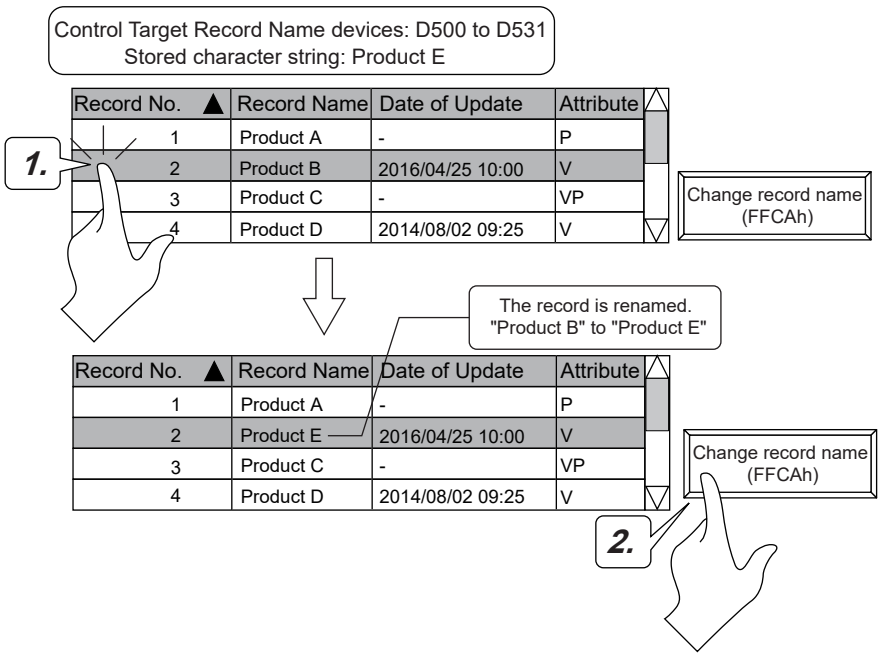
To perform the rename operation, use an applicable key code switch.

Place the following key code switch in advance.

- FFCAh: [Rename record]

Operating procedure

1. Touch a target record on the recipe display (record list) to select it.
2. Touch the applicable key code switch to rename the selected record.



Verifying a record

You can verify the device values of a record selected on the recipe display (record list) against those of the PLC.

To perform verification, use an applicable key code switch.

Place the following key code switch in advance.

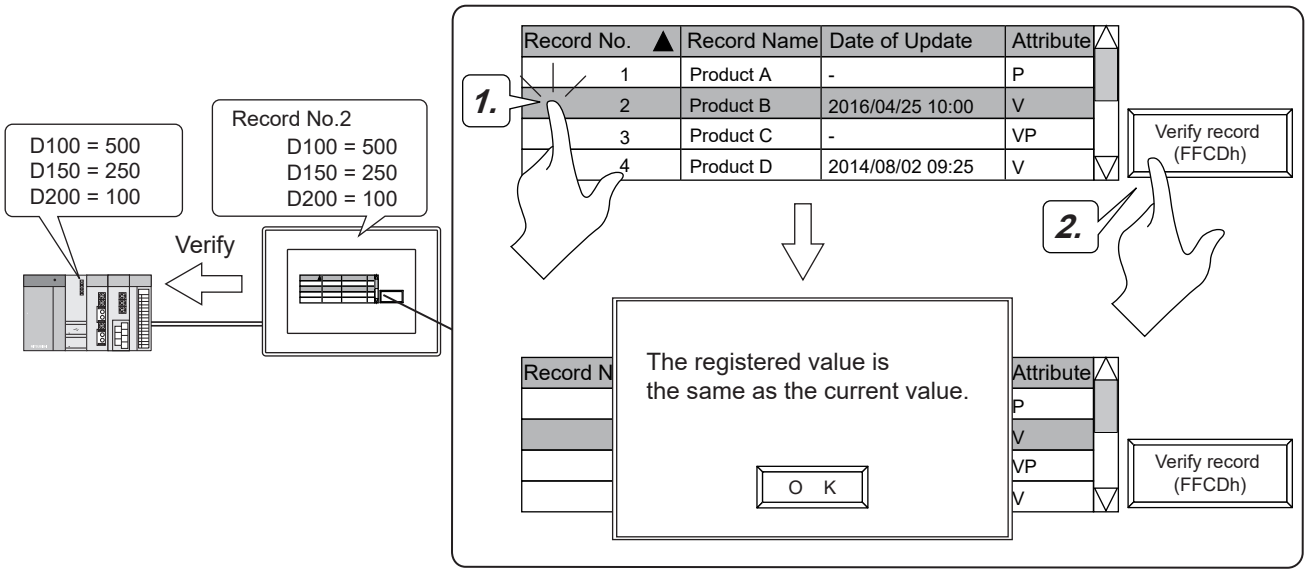
- FFCDh: [Verify record]

Operating procedure

1. Touch a target record on the recipe display (record list) to select it.

2. Touch an applicable key code switch to verify the device values of the selected record against those of the PLC.

The verification results are shown in a dialog.



You can specify the name of the target record by using specific devices. To do this, enable the setting for the Control Target Record Name devices.

For details on the Control Target Record Name devices, refer to the following.

☞ Page 1557 Specifying the name of a manipulation target record by using specific devices

39.2.4 Notification and control by using specific devices

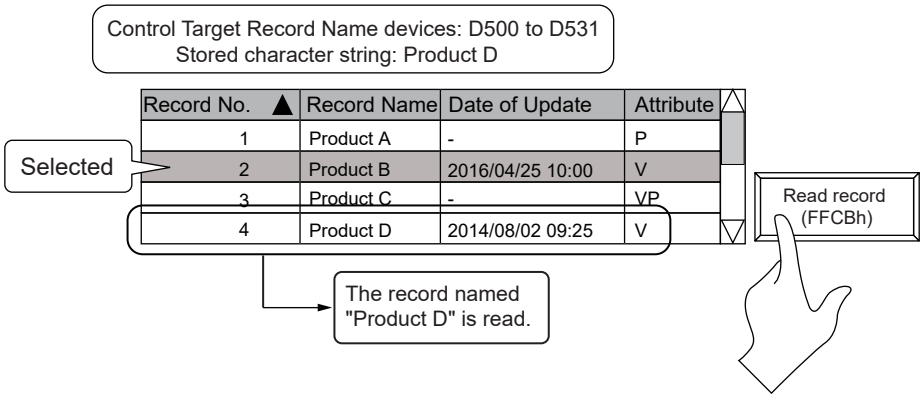
The following shows how to make notification or exercise control relevant to the recipe display (record list) by using specific devices.

Specifying the name of a manipulation target record by using specific devices

To use specific devices to specify the name of a record targeted for manipulation with key code switches, enable the setting for the Control Target Record Name devices.

The record whose name is specified using the Control Target Record Name devices always becomes the manipulation target even if another record is selected on the recipe display (record list).

Example) Reading a record



To specify the Control Target Record Name devices, set [Control target record name] on the [Extended] tab in the [Recipe Display (Record List)] dialog.

☞ Page 1573 [Extended] tab

You can specify a word device or word-specified bit device.

Specify the target record name within 32 ASCII or Unicode characters.

For storing ASCII characters as the record name, the number of consecutive devices to be used is half of the maximum number of characters set for [Cursor row record name].

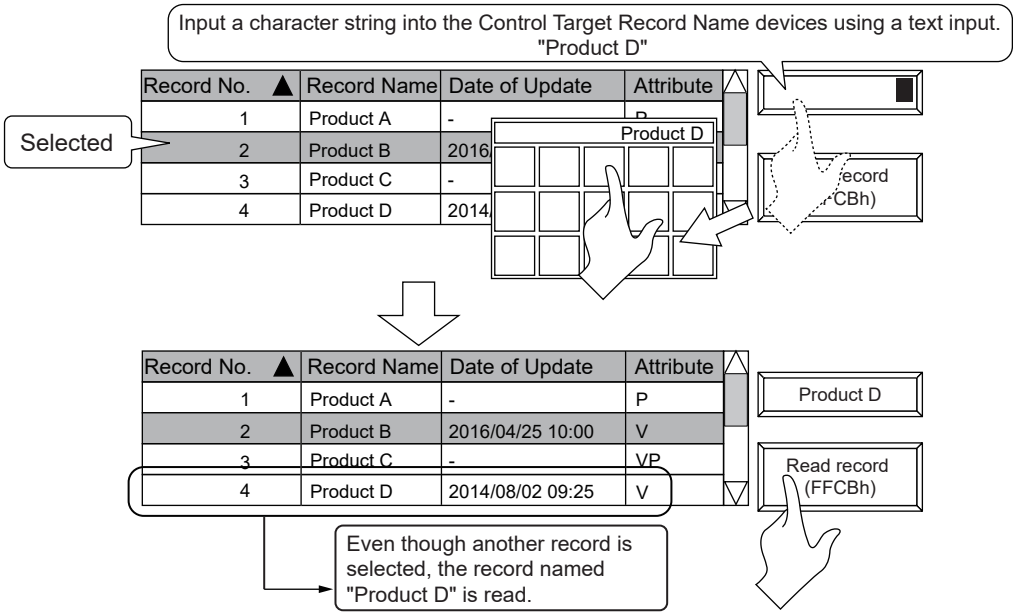
For storing Unicode characters as the record name, the number of consecutive devices to be used equals the maximum number of characters set for [Cursor row record name].

Point

When the record name selected on the recipe display (record list) differs from the one specified using the Control Target Record Name devices, the latter is always targeted for manipulation using the key code switches.

To manipulate a record selected on the recipe display (record list), clear the values of the Control Target Record Name devices first.

Example) When reading a record

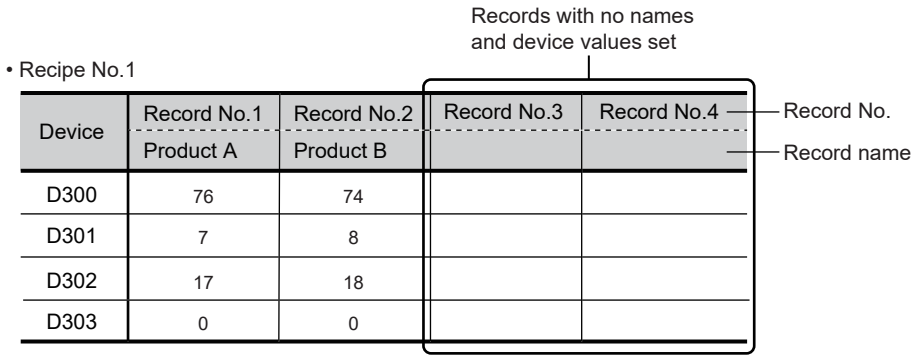


■Reading a record

The GOT reads the device values from the PLC to a target record when the applicable key code switch is touched. The character string stored in the Control Target Record Name devices is compared with the names of records in the target recipe. Consequently, the GOT reads the device values from the PLC to the record that has the exact match name.
If multiple records have the exact match name, the GOT reads the device values from the PLC to the lowest numbered record.
If the record selected on the recipe display (record list) has the exact match name, the GOT reads the device values from the PLC to the selected record.
If no record has the exact match name, the GOT reads the device values from the PLC to the lowest numbered blank record (that has no name and device value).
In this case, the record is named with the character string stored in the Control Target Record Name devices.
If the Control Target Record Name devices store no character string, the GOT reads the device values from the PLC to the record selected on the recipe display (record list).
If no record is selected, the GOT does not perform record reading.

Point

When you use the Control Target Record Name devices to read a record, preset a blank record that has no name and device value.
If the record specified with the Control Target Record Name devices is nonexistent, the read data is written to the blank record.
If a blank record is nonexistent, a system alarm occurs in the above case.
Moreover, the number of records in the recipe is unchangeable on the GOT.
However, if you preset several blank records, you can write the read data to the blank records on the GOT.
☞ Page 2255 How to use the recipe



■Writing a record

The GOT writes the device values of a target record to the PLC when the applicable key code switch is touched. The character string stored in the Control Target Record Name devices is compared with the names of records in the target recipe. Consequently, the GOT writes the device values to the PLC from the record that has the exact match name.
If multiple records have the exact match name, the GOT writes the device values to the PLC from the lowest numbered record.
If the record selected on the recipe display (record list) has the exact match name, the GOT writes the device values to the PLC from the selected record.
If no record has the exact match name, the GOT does not perform record writing.
If the Control Target Record Name devices store no character string, the GOT writes the device values to the PLC from the record selected on the recipe display (record list).
If no record is selected, the GOT does not perform record writing.

■Verifying a record

The GOT verifies the device values of a target record against those of the PLC when the applicable key code switch is touched. The character string stored in the Control Target Record Name devices is compared with the names of records in the target recipe. Consequently, the GOT verifies the device values of the record that has the exact match name.
If multiple records have the exact match name, the GOT verifies the device values of the lowest numbered record.
If the record selected on the recipe display (record list) has the exact match name, the GOT verifies the device values of the selected record.
If no record has the exact match name, the GOT does not perform record verification.
If the Control Target Record Name devices store no character string, the GOT verifies the device values of the record selected on the recipe display (record list).
If no record is selected, the GOT does not perform record verification.

■Deleting a record

The GOT deletes the contents of a target record when the applicable key code switch is touched. The character string stored in the Control Target Record Name devices is compared with the names of records in the target recipe. Consequently, the GOT deletes the contents of the record that has the exact match name.
If multiple records have the exact match name, the GOT deletes the contents of the lowest numbered record.
If the record selected on the recipe display (record list) has the exact match name, the GOT deletes the contents of the selected record.
If no record has the exact match name, the GOT does not perform record deletion.
If the Control Target Record Name devices store no character string, the GOT deletes the contents of the record selected on the recipe display (record list).
If no record is selected, the GOT does not perform record deletion.

■Renaming a record

The GOT renames the record selected on the recipe display (record list) when the applicable key code switch is touched. The record is renamed with the character string stored in the Control Target Record Name devices.
The record rename is not performed in the following cases.

- The Control Target Record Name devices are not set.
- The Control Target Record Name devices store no character string.

Narrowing down the records to be displayed

To narrow down the records to be displayed on the recipe display (record list) by specifying a character string included in the record names, enable the setting for the Narrow Down Record Names devices.

- Example

Narrow Down Record Names devices: D600 to D631
Stored character string: Bolt

Recipe display (record list)

No. ▲	Record Name	Date of Update	Attribute
1	Bolt M3	-	VP
2	Nut M3	-	VP
3	Flange Bolt M3	-	VP
4	Flange Nut M3	-	VP
5	Bolt M8	-	VP
6	Nut M8	-	VP
7	Flange Bolt M8	-	VP
8	Flange Nut M8	-	VP

Recipe display (record list)

No. ▲	Record Name	Date of Update	Attribute
1	Bolt M3	-	VP
3	Flange Bolt M3	-	VP
5	Bolt M8	-	VP
7	Flange Bolt M8	-	VP

The object lists the record names that include the character string specified using the Narrow Down Record Names devices.

To specify the Narrow Down Record Names devices, set [Narrow down record names] on the [Extended] tab in the [Recipe Display (Record List)] dialog.

☞ Page 1573 [Extended] tab

You can specify a word device or word-specified bit device.

Specify the character string (narrowing criteria) within 32 ASCII or Unicode characters.

For storing ASCII characters as the narrowing criteria, the number of consecutive devices to be used is half of the maximum number of characters set for [Narrow down record names].

For storing Unicode characters as the narrowing criteria, the number of consecutive devices to be used equals the maximum number of characters set for [Narrow down record names].

Precautions

You cannot specify a record name ending with a one-byte space by using Control Target Record Name devices. (The one-byte space is deleted.)

When you set a record name in the [Recipe] dialog, do not append a one-byte space to the record name.

Notifying the selected record name

To notify the name of a record selected on the recipe display (record list), enable the setting for the Cursor Row Record Name devices.

The Cursor Row Record Name devices store the name of a record selected on the recipe display (record list).

If you deselect the selected record on the recipe display (record list), the character string stored in the Cursor Row Record Name devices is cleared.

To specify the Cursor Row Record Name devices, set [Cursor row record name] on the [Extended] tab in the [Recipe Display (Record List)] dialog.

☞ Page 1573 [Extended] tab

You can specify a word device or word-specified bit device.

The record name is notified within 32 ASCII or Unicode characters.

■For the record name using ASCII characters

The number of consecutive devices to be used is half of the maximum number of characters set for [Cursor row record name].
If the number of the stored characters is less than the maximum number of characters, the stored characters are padded with NULL characters.
If the consecutive devices store an odd number of characters from lower-order bytes, 0 is stored in the higher-order bytes of the device that stores the last character.
If the consecutive devices store an odd number of characters from higher-order bytes, 0 is stored in the lower-order bytes of the device that stores the last character.

■For the record name using Unicode characters

The number of consecutive devices to be used equals the maximum number of characters set for [Cursor row record name].
If the number of the stored characters is less than the maximum number of characters, the stored characters are padded with NULL characters.

Notifying the record manipulation status

To notify the execution status of the manipulation performed on the recipe display (record list), enable the setting for the Notify Recipe Status device.
The Notify Recipe Status device notifies the execution status as shown below.

Bit number	Description
b0	Turns on when the GOT writes a record to the PLC by using the recipe display (record list). Turns off after the record writing is complete.
b1	Turns on when the GOT reads a record from the PLC by using the recipe display (record list). Turns off after the record reading is complete.
b2	Turns on when the GOT verifies the device values of a record selected on the recipe display (record list) against those of the PLC. Turns off after the record verification is complete.
b3	Turns on when the GOT acquires the records to be displayed on the recipe display (record list). Turns off after the record acquisition is complete.
b4 to b15	Use prohibited

To specify the Notify Recipe Status device, set [Notify the recipe status] on the [Extended] tab in the [Recipe Display (Record List)] dialog.
☞ Page 1573 [Extended] tab
You can specify a signed 16-bit binary word device or word-specified bit device.

Notifying the number of displayable records

To notify the number of records displayable on the recipe display (record list), enable the setting for the Number of Currently Displayed Records device.
To specify the Number of Currently Displayed Records device, set [Number of currently displayed records] on the [Extended] tab in the [Recipe Display (Record List)] dialog.
☞ Page 1573 [Extended] tab
You can specify a signed 16-bit binary word device or word-specified bit device.

39.3 [Recipe Display (Record List)] dialog

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Operating procedure

1. Select [Object] → [Recipe Display (Record List)] from the menu.
2. Click the position to place a recipe display (record list).
3. Double-click the recipe display (record list) to display the setting dialog.

☞ Page 1564 [Recipe Setting] tab
☞ Page 1566 [Display] tab
☞ Page 1569 [Text] tab
☞ Page 1571 [Style] tab
☞ Page 1573 [Extended] tab
☞ Page 1575 [Trigger] tab

39.3.1 [Recipe Setting] tab

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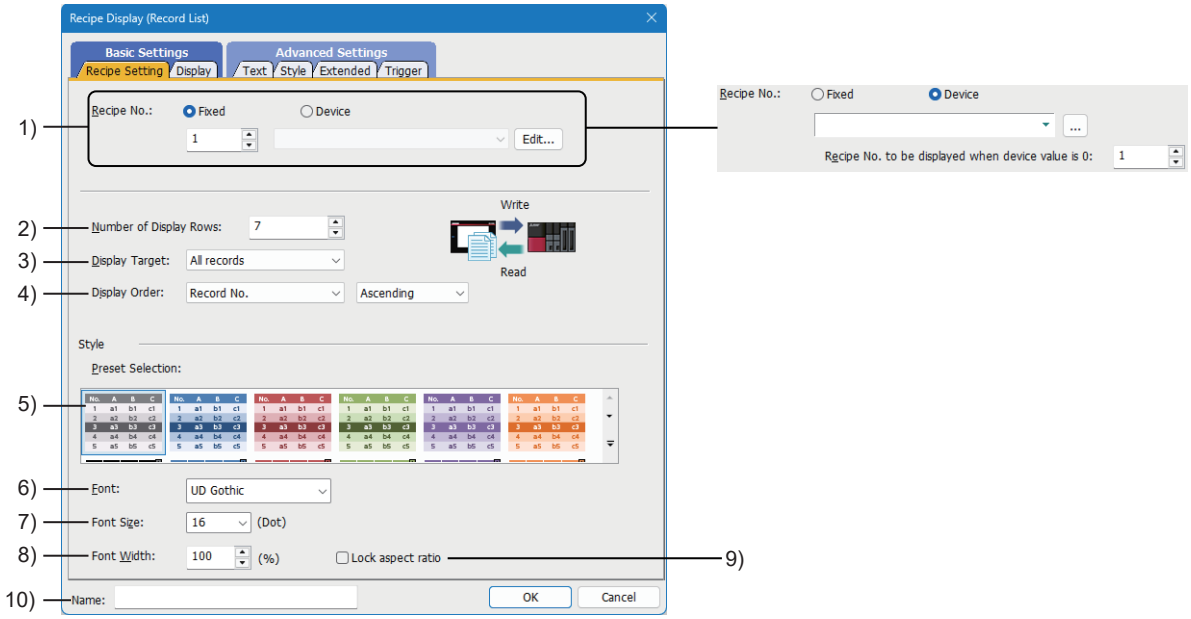
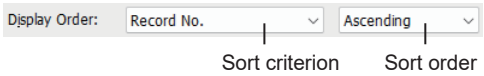
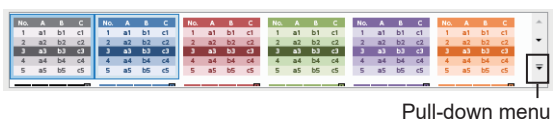


Item			Description
1)	[Recipe No.]	—	Set the method of specifying a recipe number to display records on the recipe display (record list).
		[Fixed]	Displays the records of a recipe with a fixed recipe number. Select this item and enter a recipe number. The setting range is [1] to [32767].
		[Device]	Select this item to display the records of a recipe whose recipe number is specified with a device value. Select this item and set the device. ☞ Page 834 How to set devices, labels, and tags
		[Recipe No. to be displayed when device value is 0]	When selecting [Device] for [Recipe No.], set this item. Specify a recipe number to display target records when the set device stores 0. The setting range is [1] to [32767].
2)	[Number of Display Rows]		Set the maximum number of record rows to be displayed. The setting range is [1] row to [64] rows.
3)	[Display Target]		Select the records targeted for display. • [All records]: Displays all records of a recipe. • [Writable records]: Displays the writable records of a recipe. • [Readable records]: Displays the readable records of a recipe.
4)	[Display Order]		Set the order in which records are displayed for the first time. The selectable sort criteria are [Record No.], [Record Name], [Date of Update], and [Attribute]. The selectable sort orders are [Ascending] and [Descending]. 
5)	[Preset Selection]		Select the design of the recipe display (record list). Click the pull-down menu button to display all designs. 

Item		Description
6)	[Font]	Select the font of the text to be displayed. • [UD Gothic] • [UD Mincho] • [UDP Gothic] • [UDP Mincho]
7)	[Font Size]	Set a vertical text size. The setting range is [8] dots to [540] dots.
8)	[Font Width]	Set a horizontal text size. The horizontal size is specified with the magnification relative to [Font Size] (vertical text size). The setting range is [6]% to [1600]%.
9)	[Lock aspect ratio]	Select this item to fix the aspect ratio of the font. When this item is selected, the setting of [Font Width] is disabled.
10)	[Name]	Set the object name. The name is displayed in places such as the data browser and property sheet. The setting can also be changed in other tabs. Up to 100 characters can be set.

39.3.2 [Display] tab

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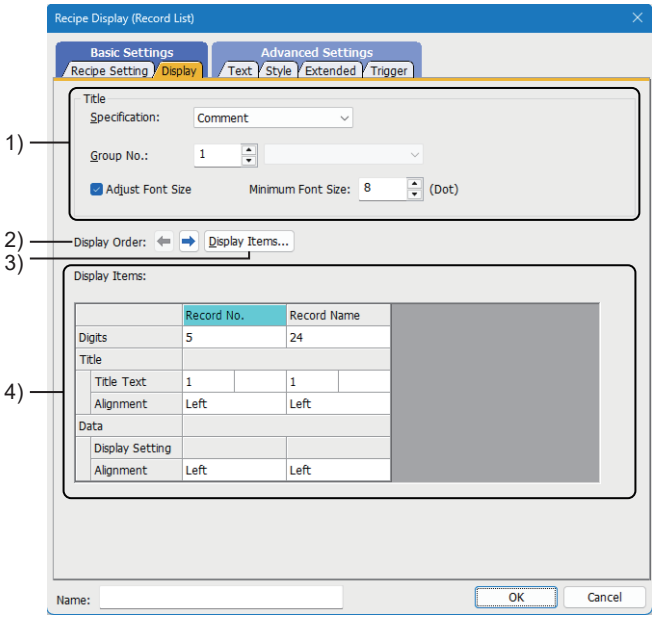
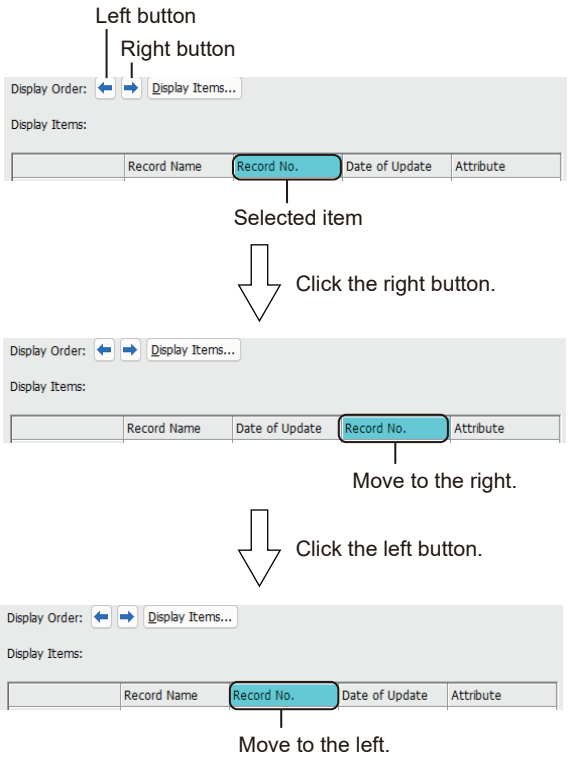
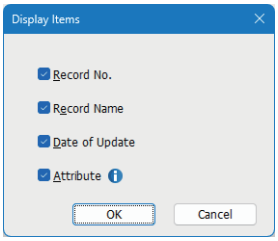


Item			Description
1)	[Title]	[Specification]	Select the method of specifying the text to be displayed in the title. The following shows selectable items. • [Direct] Select this item to input the text to be displayed in the title directly into [Title] in [Contents]. • [Comment] Select this item to display the text to be displayed in the title using the comment in the comment group. • [None] Select this item not to display the title.
		[Group No.]	Only when [Comment] is selected for [Specification], this item can be set. Set the comment group number to be used.
		[Adjust Font Size]	The font size is automatically adjusted according to the object size. When this item is deselected, a line feed is automatically inserted.
		[Minimum Font Size]	This item can be set only when [Comment] is selected for [Specification] and [Adjust Font Size] is set. Set the minimum font size applied when the font size is automatically adjusted. The setting range is [8] dots to [540] dots.

Item		Description
2)	[Display Order]	Set the order in which the columns of [Display Items] are displayed. Click the right or left arrow button to move the selected column. 
3)	[Display Items] button	Displays the [Display Items] dialog. Select an item to be displayed on the recipe display (record list).  • [Record No.] Displays the record numbers. • [Record Name] Displays the record names. • [Date of Update] Displays the update date and time of each record. • [Attribute] Displays the record attributes that indicate whether each record is readable or writable.

Item				Description
4)	[Display Items]	—		Set the details of the display items.
		[Digits]		Set the number of digits to be displayed in each column. The setting range is [1] digit to [128] digits.
		[Title]	[Title Text]	Set the column headers to be displayed in the title row. This setting depends on the selection for [Specification]. • [Direct] Enter text directly. The number of the characters must be within the set value of [Digits]. • [Comment] Set a comment No. or comment. • [None] Not settable
			[Alignment]	Select the horizontal position for the text to be displayed in the title row. The following shows selectable items. • [Left] • [Center] • [Right]
		[Data]	[Display Setting]	Set the display format of the update date and time. Click the [...] button to specify the date and time format in the [Date/Time Setting] dialog. ☞ Page 3684 [Date/Time Setting] dialog (screen)
			[Alignment]	Select the horizontal position for the text to be displayed in the record rows. The following shows selectable items. • [Left] • [Center] • [Right]

39.3.3 [Text] tab

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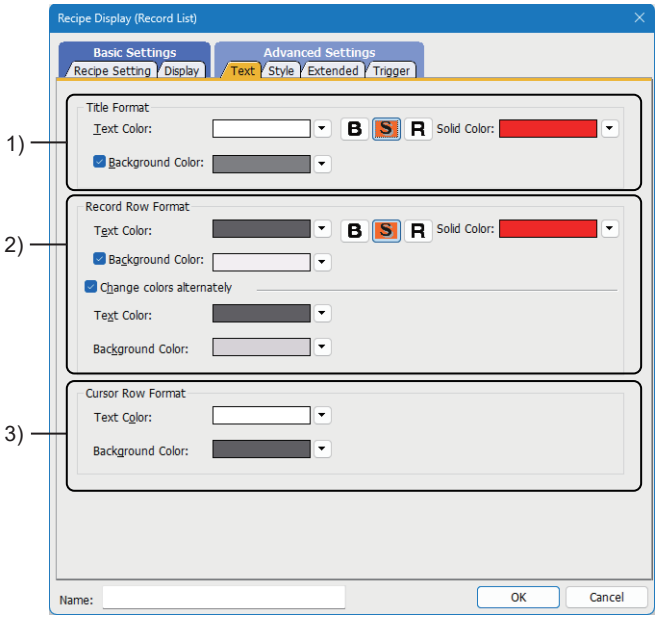
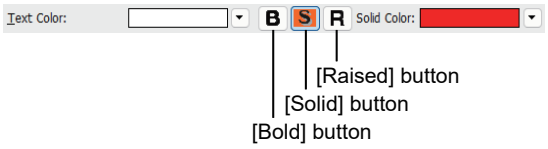


Item			Description
1)	[Title Format]	—	Set the format of the title row.
		[Text Color]	Set the color and style of the text to be displayed in the title row. One style ([Bold], [Solid], or [Raised]) is settable only.  • [Text Color] Set the text color. ☞ Page 988 Color settings • [Bold] button Displays the text in bold. • [Solid] button Displays the text with a shadow. • [Raised] button Displays the text embossed. • [Solid Color] When [Solid] or [Raised] is selected as the text style, set the color of the shadow. ☞ Page 988 Color settings
		[Background Color]	Set the background color of the title row.

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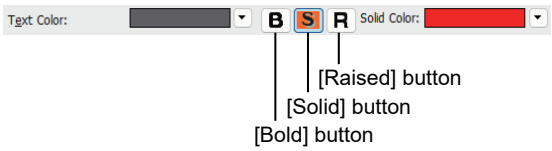
Item			Description
2)	[Record Row Format]	—	Set the format of the record rows.
		[Text Color]	Set the color and style of the text to be displayed in the record rows. One style ([Bold], [Solid], or [Raised]) is settable only.  • [Text Color] Set the text color. ☞ Page 988 Color settings • [Bold] button Displays the text in bold. • [Solid] button Displays the text with a shadow. • [Raised] button Displays the text embossed. • [Solid Color] When [Solid] or [Raised] is selected as the text style, set the color of the shadow. ☞ Page 988 Color settings
		[Background Color]	Set the background color of the record rows.
		[Change colors alternately]	Set [Text Color] and [Background Color] for the even-numbered record rows. ☞ Page 988 Color settings
3)	[Cursor Row Format]	—	Set the format of the selected row.
		[Text Color]	Set the color of the text to be displayed in the selected row. ☞ Page 988 Color settings
		[Background Color]	Set the background color of the selected row. ☞ Page 988 Color settings

39.3.4 [Style] tab

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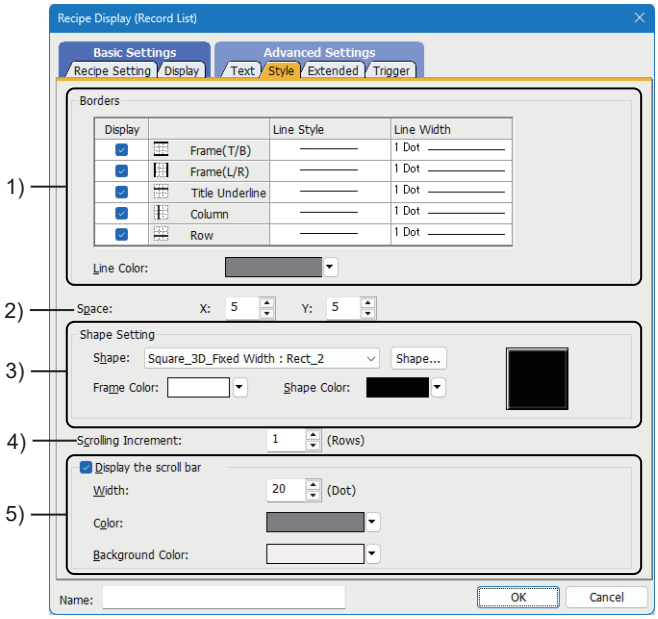
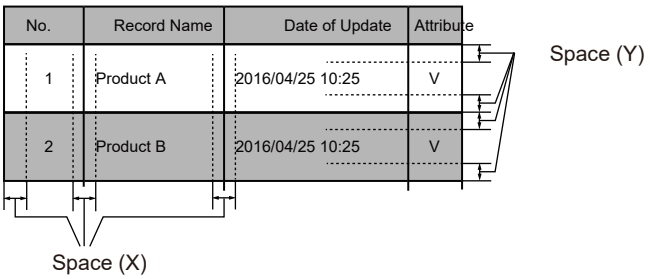
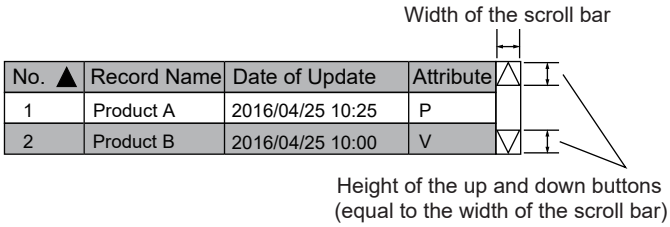


Item			Description
1)	[Borders]	[Display]	Displays a border at the selected position. The following shows display items. • [Frame (T/B)] • [Frame (L/R)] • [Title Underline] • [Column] • [Row]
		[Line Style]	Select the style of ruled lines. The following shows selectable items. • Solid line • Dotted line • Broken line • One-dot chain line • Two-dot chain line
		[Line Width]	Select the width of ruled lines. The following shows selectable items. • [1 Dot] • [2 Dot] • [3 Dot] • [4 Dot] • [5 Dot] • [6 Dot] • [7 Dot]
		[Line Color]	Set the ruled line color. ☞ Page 988 Color settings
2)	[Space]		Set the space between the text to be displayed and the ruled lines of the table. The setting range is [0] to [32]. The following illustrates the space [X] and [Y]. 

Item			Description
3)	[Shape Setting]	[Shape]	Select the shape to be set for the object from the list or with the [Shape] button. ☞ Page 1044 Object shape
		[Frame Color]	Select the frame color of the shape. ☞ Page 988 Color settings
		[Shape Color]	Select the color of the shape. ☞ Page 988 Color settings
4)	[Scrolling Increment]		Set the number of rows to be scrolled in the recipe display (record list) when an arrow key on the scroll bar or a key code switch (FFF4h or FFF5h) is touched. The setting range is [1] row to [64] rows.
5)	[Display the scroll bar]	—	Displays or hides the scroll bar.
		[Width]	Specify the width of the scroll bar. The up or down button on the scroll bar is a square. Accordingly, the width and height of the button equal the width of the scroll bar. The setting range is [16] dots to [64] dots. 
		[Color]	Set the color of the scroll bar. ☞ Page 988 Color settings
		[Background Color]	Set the background color of the scroll bar. ☞ Page 988 Color settings

39.3.5 [Extended] tab

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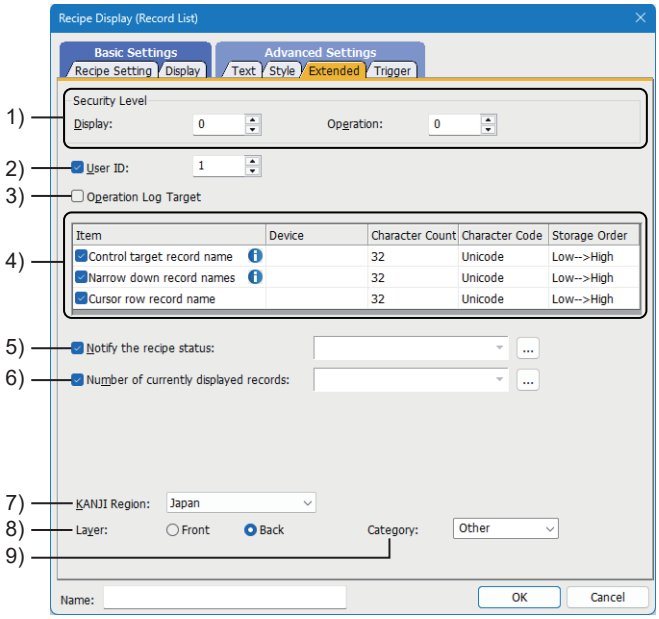

Item		Description
1)	[Security Level]	Set a security level when using the security. The setting range is [0] to [15]. If you do not use the security, select [0]. The set value of [Operation] must be greater than that of [Display]. ☞ Page 3038 Restricting display and operation on the GOT (Screen security)
2)	[User ID]	Select this item to set the user ID. The setting range is [1] to [65535]. The following operations can be performed when user ID numbers are set. • Identifying the object that is operated with a key code switch ☞ Page 1251 [Key Code Switch] dialog • Setting the position where the cursor is displayed at screen switching ☞ Page 546 Setting for switching the language displayed on the GOT ([Language Switching]) • Identifying the object that is targeted for the operation log function ☞ Page 1909 Configuring the settings for collecting the GOT operation history ([Operation Log])
3)	[Operation Log Target]	Select this item to target the object for the operation log. ☞ Page 1909 Configuring the settings for collecting the GOT operation history ([Operation Log])

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Item			Description
4)	Setting the devices for control and notification	—	Set the control and notification devices for the recipe display (record list).
		[Item]	Select necessary items for control or notification. • [Control target record name] ☞ Page 1557 Specifying the name of a manipulation target record by using specific devices Enables the setting for the Control Target Record Name devices. • [Narrow down record names] Enables the setting for the Narrow Down Record Names devices. ☞ Page 1561 Narrowing down the records to be displayed • [Cursor row record name] Enables the setting for the Cursor Row Record Name devices. ☞ Page 1561 Notifying the selected record name
		[Device]	Set the first device of consecutive devices to be used for control or notification. You can specify a word device or word-specified bit device. The number of the consecutive devices varies with the settings of [Character Count] and [Character Code]. When [Character Code] is set to [ASCII], the number of the consecutive devices equals half of the set value of [Character Count]. When [Character Code] is set to [Unicode], the number of the consecutive devices equals the set value of [Character Count]. ☞ Page 834 How to set devices, labels, and tags
		[Character Count]	Set the maximum number of characters to be stored in the devices for control or notification. The setting range is [1] to [32].
		[Character Code]	Select the character code of the character string to be stored in the devices for control. The following shows selectable items. • [ASCII] • [Unicode]
		[Storage Order]	Select the order in which character codes are stored. The following shows selectable items. • [Low → High] • [High → Low]
5)	[Notify the recipe status]		Enables the setting for the Notify Recipe Status device. ☞ Page 1562 Notifying the record manipulation status Select this item and specify the Notify Recipe Status device. ☞ Page 834 How to set devices, labels, and tags
6)	[Number of currently displayed records]		Enables the setting for the Number of Currently Displayed Records device. ☞ Page 1562 Notifying the number of displayable records Select this item and specify the Number of Currently Displayed Records device. ☞ Page 834 How to set devices, labels, and tags
7)	[KANJI Region]		Select the KANJI region of the text to be displayed. The following shows selectable items. • [Japan] • [China(GB)-Mincho] • [China(Big5)-Gothic]
8)	[Layer]		Switches layers to be placed. The following shows selectable items. • [Front] • [Back]
9)	[Category]		Select the category to assign the object. ☞ Page 1121 Managing figures and objects by category

39.3.6 [Trigger] tab

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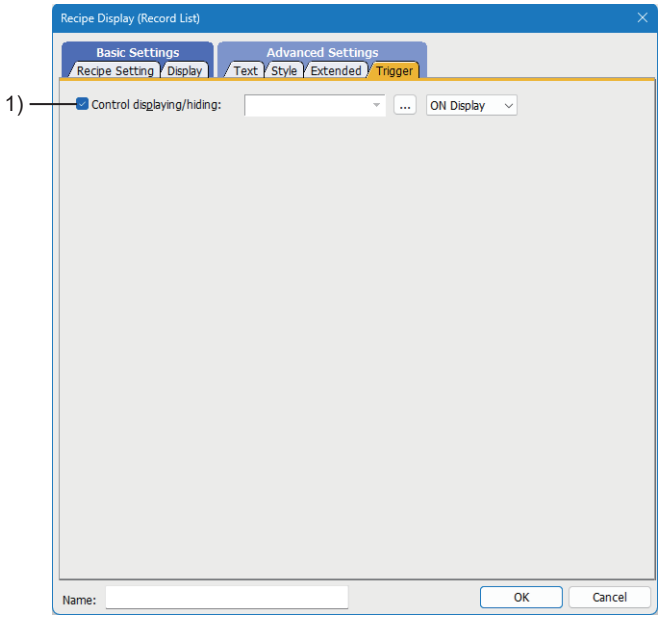

Item		Description
1)	[Control displaying/hiding]	Set the control device to display or hide all the objects including the shape frame. When the set device is in either the ON or OFF status, select whether or not to display the object. The following shows selectable items. • [ON Display] • [OFF Display]

PART 7

39.4 Relevant settings

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Configure the relevant settings in addition to the specific settings for the recipe display (record list) as required.
The following shows the functions that are available by configuring the relevant settings.

39.4.1 GOT environmental settings (System information)

Select [Common] → [GOT Environmental Setting] → [System Information] from the menu to display the [Environmental Setting] dialog.

☞ Page 576 Setting a device which controls the GOT operations or notifies the GOT status ([System Information])

Function	Setting item
Notifying that the recipe process (reading or writing) is being executed (Write device: System signal 2-1.b10)	[System Signal 2-1]

39.4.2 GOT internal device

☞ Page 3581 GOT special register (GS)

Function	Setting item
Notifying the recipe number for the records displayed on the recipe display (record list)*1 (Write device)	GS1013
Notifying the record number selected on the recipe display (record list)*1 (Write device)	GS1014
Storing the record number of the manipulated record while GS1809.b0 is on. (Write device)	GS1015
Notifying the record manipulation result while GS1809.b0 is on. (Write device)	GS1016.b0 to GS1016.b2 GS1016.b11 to GS1016.b15
Displaying no confirmation or notification dialog during a record manipulation. (Read device)	GS1809.b0
Clearing the record manipulation result that has been notified by GS1016. (Read device)	GS1809.b15

*1 For information on how to link the recipe function with the recipe display (record list) by using GS1013 and GS1014, refer to the following.

☞ Page 2296 Link with the recipe display (record list) by using GOT special registers

Precautions

■Precautions for using the Recipe Display (Record List) Record Manipulation Result (GS1016)

If you manipulate a record while GS1016 is on, you cannot distinguish between the previous and current manipulation results. Before manipulation, turn on the Recipe Display (Record List) Control device (GS1809.b15) to turn off GS1016.

40 Placing a line graph

☞ Page 1578 Overview of the line graph
☞ Page 1580 How to use the line graph
☞ Page 1582 Specifications of the line graph
☞ Page 1583 Setting a line graph
☞ Page 1584 [Line Graph] dialog

PART 7

40.1 Overview of the line graph

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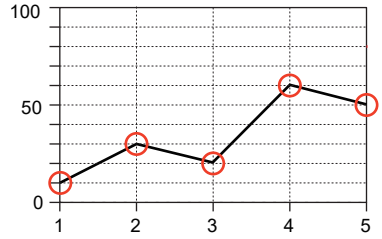
The line graph is an object that collects the current values of a group of multiple devices in a batch and displays the values in a single graph.

A single line represents a group of devices. Each point (circled in red in the figure below) on the line indicates the value of a device in the device group.



Use a single line or multiple lines depending on the purpose.

☞ Page 1578 Expressing values of multiple devices with a single line

☞ Page 1579 Expressing values of multiple device groups with multiple lines

Expressing values of multiple devices with a single line

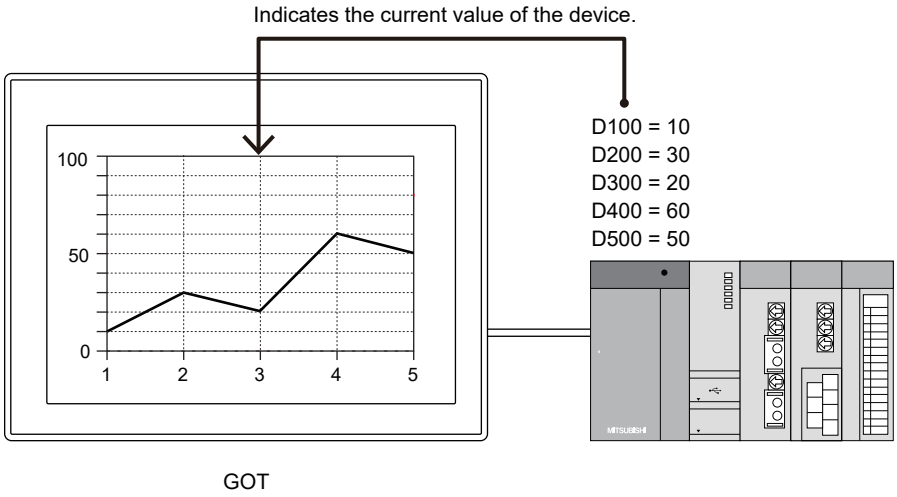
The following shows an example of expressing values of multiple devices with a single line.

Ex.

Expressing production volumes of lines 1 to 5 with a single line

The points on the line represent the values of the following PLC devices.

- [D100]: Production volume of line 1
- [D200]: Production number of line 2
- [D300]: Production number of line 3
- [D400]: Production number of line 4
- [D500]: Production number of line 5



Expressing values of multiple device groups with multiple lines

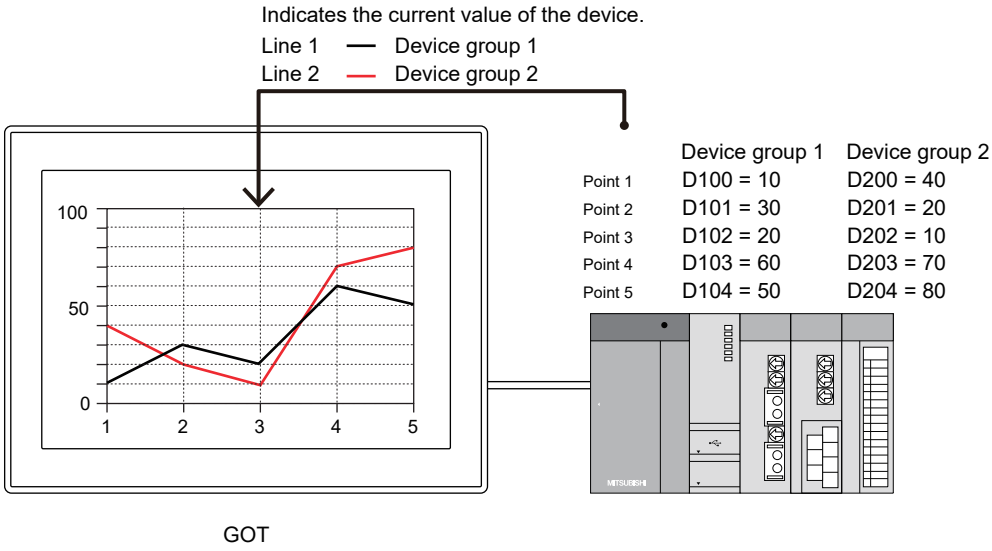
Multiple lines can be displayed on a single graph.

Since each line represents each device group, the graph visualizes the data sizes of multiple device groups.

Ex.

Checking the production status of each line by displaying lines for production control data sets of line 1 and 2

- Device group 1 ([D100] to [D104]): Data of line 1
- Device group 2 ([D200] to [D204]): Data of line 2



PART 7

40.2 How to use the line graph

Set two sets of values, the upper and lower limits of the device values and the vertical upper and lower limits of the graph scale values.

This enables you to use the graph in the following two ways.

☞ Page 1580 Indicating the device value

☞ Page 1581 Indicating the percentage against the total

Indicating the device value

When the same upper and lower limit values are used for the device values and the vertical scale values, each point indicates the device value.

Ex.

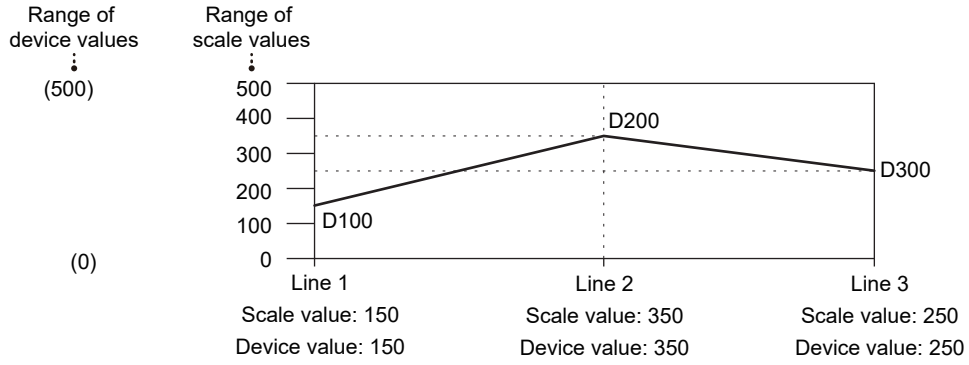
When monitoring the following devices and expressing the production volumes of line 1 to 3 in a line graph

Monitored device	Value to be stored
[D100]	Production volume of line 1
[D200]	Production volume of line 2
[D300]	Production volume of line 3

Range of the device value: 0 to 500

Range of the scale value: 0 to 500

The line graph shows the device values (production volumes).



Indicating the percentage against the total

When the different ranges are set for the device values and the scale values, each point indicates the position relative to the upper and lower limits of the device value.

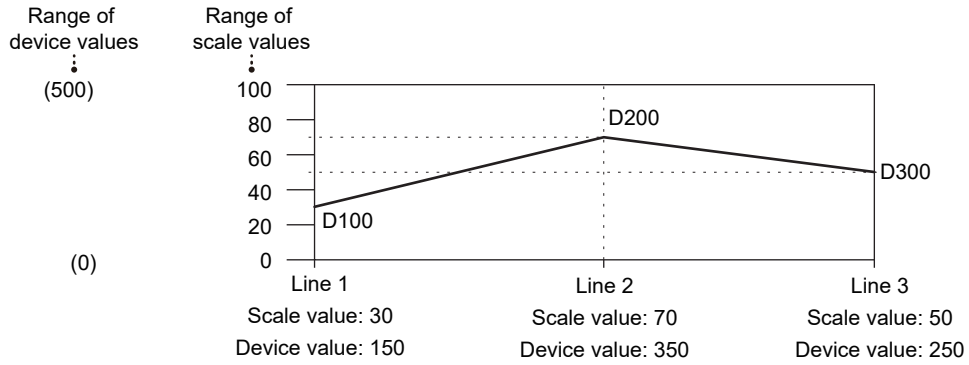
Ex.

When monitoring the same devices as above and expressing the production rates (%) of line 1 to 3 in a line graph

Range of the device value: 0 to 500

Range of the scale value: 0 to 100

The device values and the corresponding scale values are as follows.



Point

The following setting items are related to the above.

- [Lower Limit] and [Upper Limit] in the [Data] tab

☞ Page 1584 [Data] tab

- [Lower Limit] (vertical) and [Upper Limit] (vertical) in the [Style] tab

☞ Page 1587 [Style] tab

40.3 Specifications of the line graph

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☞ Page 1582 Maximum number of objects that can be placed on one screen
☞ Page 1582 Number of word devices that can be monitored
☞ Page 1582 Line graph size
☞ Page 1582 Display when the upper or lower limit has exceeded
☞ Page 1582 Conversion to a bar graph

40.3.1 Maximum number of objects that can be placed on one screen

Up to 32 line graphs can be placed on one screen.

40.3.2 Number of word devices that can be monitored

Up to eight lines can be displayed with one object.
With a single line, up to 500 word devices (points) can be monitored.

40.3.3 Line graph size

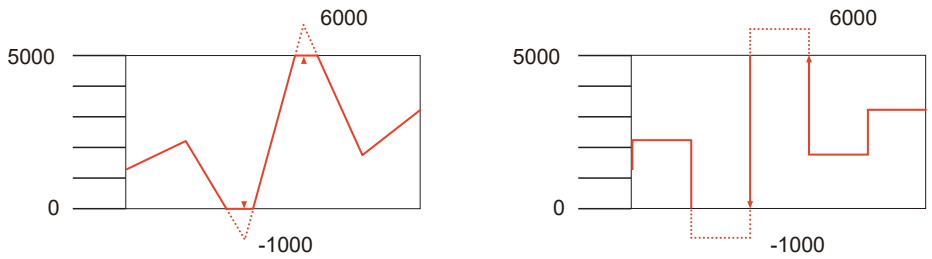
The following shows the minimum and maximum line graph sizes.

Size	Size (dot)
Minimum	16 × 16
Maximum	6000 × 6000

40.3.4 Display when the upper or lower limit has exceeded

If the monitored device value exceeds the upper or lower, ▼ or ▲ appears in the direction of protrusion.
▼ or ▲ appears in the color of the relevant line.

(Example of the display with steps)



40.3.5 Conversion to a bar graph

The object type can be switched between the line graph and the bar graph.

☞ Page 1584 [Data] tab

The common settings are retained even when the object type is switched.
When there are differences between the items on the screens before and after the switching, values in the deleted items are discarded, and initial values are set in the added items.
When there are differences between the settable ranges, values closest to the original values are set.

40.4 Setting a line graph

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Use the following procedure to place a line graph and configure operation settings.

Operating procedure

1. Select [Object] → [Graph] → [Line Graph], and click the position to place the line graph.

☞ Page 1001 Placing figures and objects

2. Double-click the line graph to display the [Line Graph] dialog.
3. Configure operation settings in each tab of the [Line Graph] dialog.

☞ Page 1584 [Line Graph] dialog

For the settings common among objects and editing except operation settings, refer to the following.

☞ Page 995 Basics of figures and objects

40.5 [Line Graph] dialog

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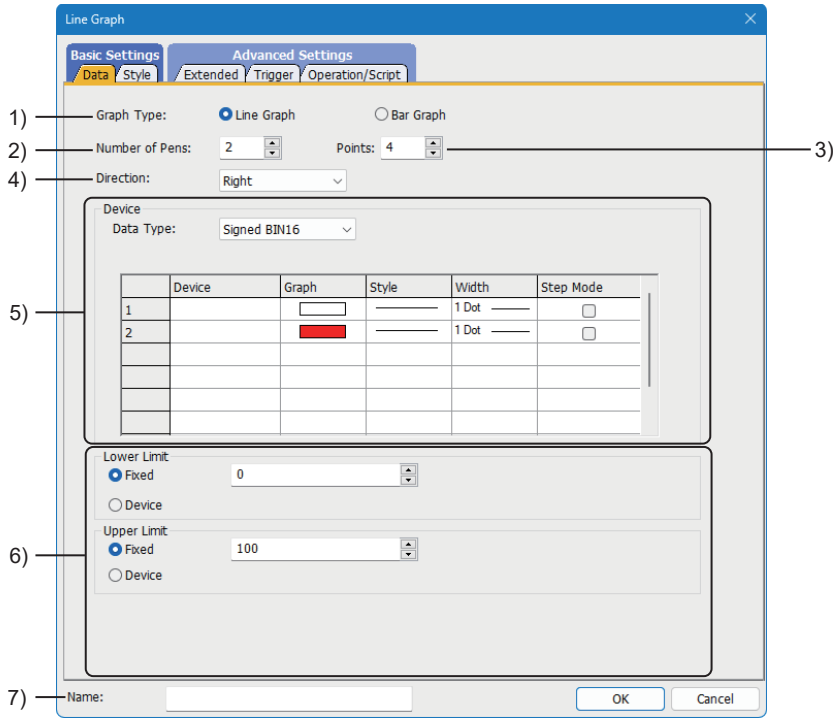
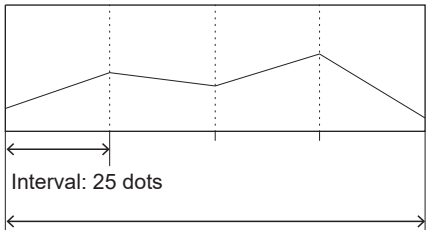
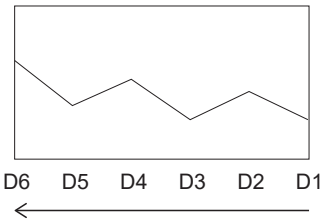
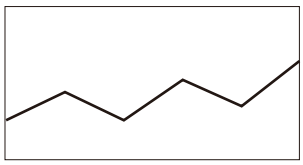
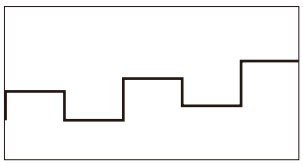
☞ Page 1584 [Data] tab
☞ Page 1587 [Style] tab
☞ Page 1589 [Extended] tab
☞ Page 1590 [Trigger] tab
☞ Page 1591 [Operation/Script] tab

40.5.1 [Data] tab

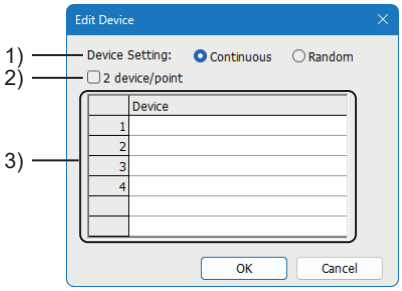
Specify the graph type, and set the device to be monitored, data type, upper and lower limits of the device value and others.

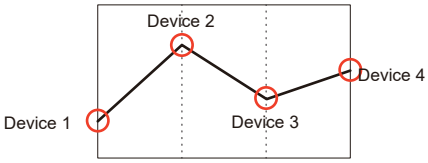
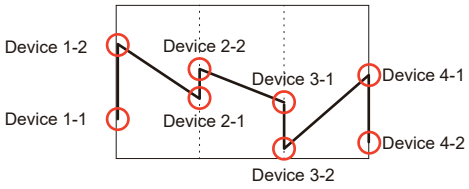


Item		Description
1)	[Graph Type]	Select [Line Graph].
2)	[Number of Pens]	Set the number of lines to be displayed. The setting range is [1] to [8].
3)	[Points]	Set the number of points (number of monitored devices) to be displayed on a line. The setting range is [2] to [500]. The interval between points is the value obtained by dividing the X-axis display range (dots) of the graph equally. If the number of points is set to be larger than the number of dots in the X-axis display range, the graph will not be displayed according to the specified number of points. Set the number of dots in the X-axis display range to be equal to or greater than the number of points. Example) X-axis display range: 100 dots, number of points: 5  X-axis display range: 100 dots

Item			Description
4)	[Direction]		Select the display direction of the graph. The devices are lined up in the order they are set. [Right] [Left] 
5)	[Device]	[Data Type]	Select the data type of the word device.
		[Device]	Set a word device to be monitored. Click a cell in the [Device] column to display the [Edit] button. The [Edit Device] dialog appears. Set a device to be monitored. For the [Edit Device] dialog, refer to the following. ☞ Page 1586 [Edit Device] dialog
		[Graph]	Select the color of the line.
		[Style]	Select the style of the line.
		[Width]	Select the width of the line.
		[Step Mode]	Select this item to display the line by steps. Display without steps  Display with steps  Either [Step Mode] or [2 device/point] can be enabled.
6)	[Lower Limit] [Upper Limit]		Specify the range of the device value (upper and lower limits). Specify fixed values or devices. If devices are used, the values can be changed dynamically. ☞ Page 834 How to set devices, labels, and tags The setting range depends on the selection for [Data Type]. For the graph display when the range of the device value has exceeded, refer to the following. ☞ Page 1582 Display when the upper or lower limit has exceeded
7)	[Name]		Set the object name. The name is displayed in places such as the data browser and property sheet. The setting can also be changed in other tabs. Up to 100 characters can be set.

[Edit Device] dialog



Item		Description
1)	[Device Setting]	Select how to set multiple devices. Select [Continuous] when monitoring consecutive devices. Select [Random] when monitoring non-consecutive devices. When a PLC that supports continuous read is used, the screen display can be refreshed faster with [Continuous].
2)	[2 device/point]	Select this item to display two device values on the same vertical axis. With this function, each sets of two values can be displayed with a vertical line between them. [2 device/point]: Deselected One value is displayed per point.  [2 device/point]: Selected Two values are displayed per point. Twice as many devices are monitored.  Either [Step Mode] or [2 device/point] can be enabled. When [Step Mode] is selected, selecting [2 device/point] deselects [Step Mode] automatically.
3)	[Device]	Set a word device to be monitored. When selecting [Continuous] for [Device Setting], set the start device of consecutive devices in the first row. When the start device is set, the subsequent devices are automatically set according to the number set to [Points]. When selecting [Random] for [Device], set each device manually. ☞ Page 834 How to set devices, labels, and tags

Precautions

■When monitoring a global label

When monitoring a device of a primitive data type global label, select [Random] for [Device Setting].

If [Continuous] is selected, and a device of a primitive data type global label is set, system alarm 326 occurs.

When setting consecutive devices, set an array-type global label.

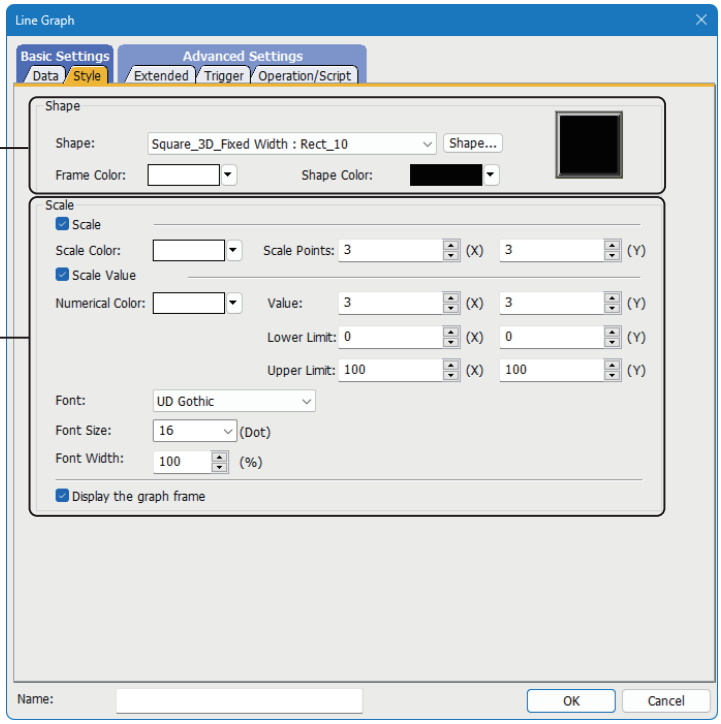
■Insufficient number of devices

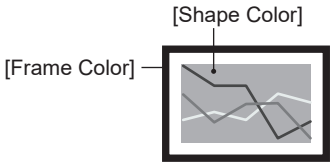
If the number of devices is insufficient to display the specified graph, system alarm 307 occurs and the object is not displayed.

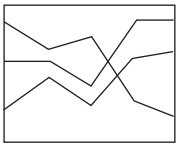
40.5.2 [Style] tab

For mobile screens, some setting items are not available.

Configure the frame shape settings, scale mark and scale value display settings, and other settings.



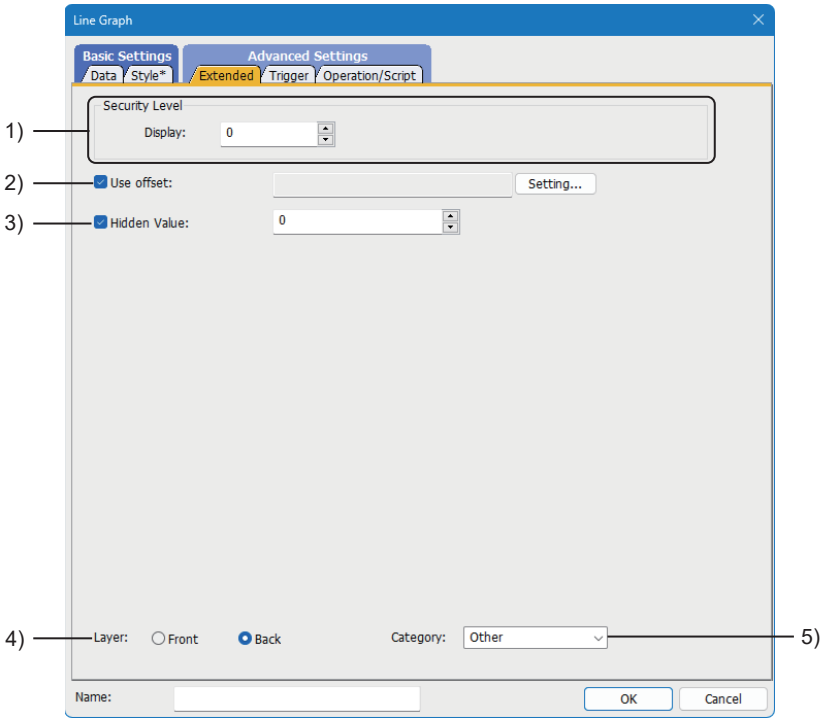
Item			Description
1)	[Shape]	[Shape]	Set the shape to be placed behind the line graph. Use this item when enclosing the object with a frame or others. This eliminates the need of placing another frame shape and enables automatic resizing according to the object size. To use a readily available design set, select one from the list box. When not selecting one from the list box, click the [Shape] button and set one on the displayed [Image List] screen. ☞ Page 1044 Object shape When selecting a shape from [Basic Figure], set a frame color and a shape color. 
		[Frame Color]	Select a frame color.
		[Shape Color]	Select a fill color of the shape.

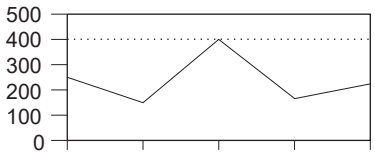
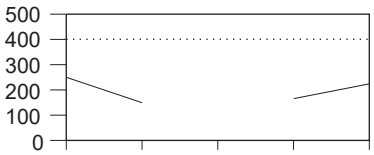
Item			Description
2)	[Scale]	—	Select this item to display scale marks. When selecting this item, set the following items.
		[Scale Color]	Set the color of the scale marks. ☞ Page 988 Color settings
		[Scale Points] (X, Y)	Set the number of scale marks to be displayed on the vertical and horizontal axes. The setting range is [0] and [2] to [101].
	[Scale Value]	—	Select this item to display numerical values on the scale. When selecting this item, set the following items.
		[Numerical Color]	Set the color of the scale values. ☞ Page 988 Color settings
		[Value] (X, Y)	Set the number of scale values to be displayed on the vertical and horizontal axes. The setting range is [0] and [2] to [101].
		[Lower Limit] (X, Y) [Upper Limit] (X, Y)	Set the upper and lower limits of the scale value on the vertical and horizontal axes. The setting range differs depending on the setting of [Data Type] in the [Data] tab. The selectable range of 64-bit devices is the same as that of 32-bit devices. When [Upper Limit], [Lower Limit], and [Value] are set, the scale values are automatically calculated and displayed.
		[Font]	Select a font for the scale values.
		[Font Size]	Select a vertical size for the scale values. The setting range is [8] dots to [540] dots.
		[Font Width]	Specify a horizontal size for the scale values. The horizontal size is specified with the magnification relative to [Font Size] (vertical text size). The setting range is [6]% to [1600]%. Note that the size per character is always within the range of [8] dots to [540] dots.
	[Display the graph frame]		Select this item to display the frame of the graph. With a graph frame  Without a graph frame

40.5.3 [Extended] tab

For mobile screens, some setting items are not available.

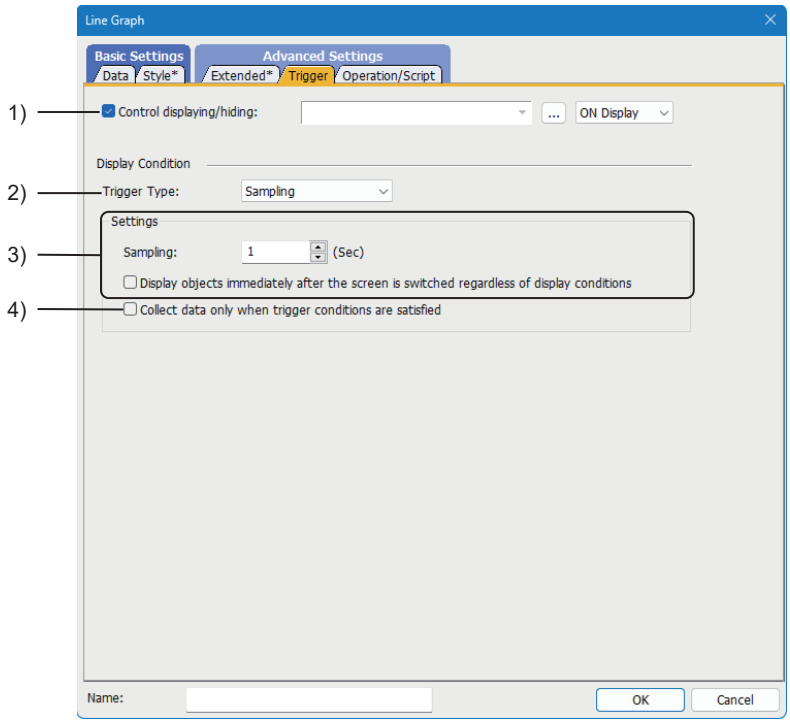
Set the security level of the object and use/nonuse of the offset function.



Item		Description
1)	[Security Level]	Set the security level. The setting range is [0] to [15]. If you do not use the security function of the GOT, select [0]. ☞ Page 3038 Restricting display and operation on the GOT (Screen security)
2)	[Use offset]	Configure the settings to monitor the status of multiple devices by switching between them with a single device. After selecting this item, set the offset device. The monitored device is the one with the offset device value added to the device set in [Device] in the [Data] tab. ☞ Page 963 Offset
3)	[Hidden Value]	To specify a device value not to be displayed on the graph line, select this item and set the target device value. When [Hidden Value] is not selected  When [400] is set to [Hidden Value] 
4)	[Layer]	Select the layer to place the object. ☞ Page 65 Layer
5)	[Category]	Select the category to assign the object. ☞ Page 1121 Managing figures and objects by category

40.5.4 [Trigger] tab

Set the trigger condition to display the object.



Item		Description
1)	[Control displaying/hiding]	Enables the setting to display the object only when requirements are met. Set the following as requirements. • Control device (bit device or bit-specified word device) • When to display: When the control device is on or off
2)	[Trigger Type]	Select a trigger condition to display the object. For details on the trigger types, refer to the following. ☞ Page 969 Trigger types settable for the object display condition If there are many monitored devices, setting [Trigger Type] to [Ordinary] may delay the processing of the object. In that case, change [Trigger Type] to [Sampling] and set 2 seconds or more for [Sampling].
3)	[Settings]	For the details of each item, refer to the following. ☞ Page 972 Settings by trigger type
4)	[Collect data only when trigger conditions are satisfied]	This item is settable when [Rise], [Fall], [Rise/Fall], [Sampling], [ON Sampling], or [OFF Sampling] is selected for [Trigger Type]. Select this item to collect data only when the trigger condition set to [Trigger Type] is satisfied. Normally, the GOT communicates with the controller even when the trigger condition is not satisfied. When this function is enabled, the GOT communicates with the controller only when the trigger condition is satisfied. The communication load between the GOT and the controller can be reduced. This is useful when the object display does not need frequent refresh.

Precautions

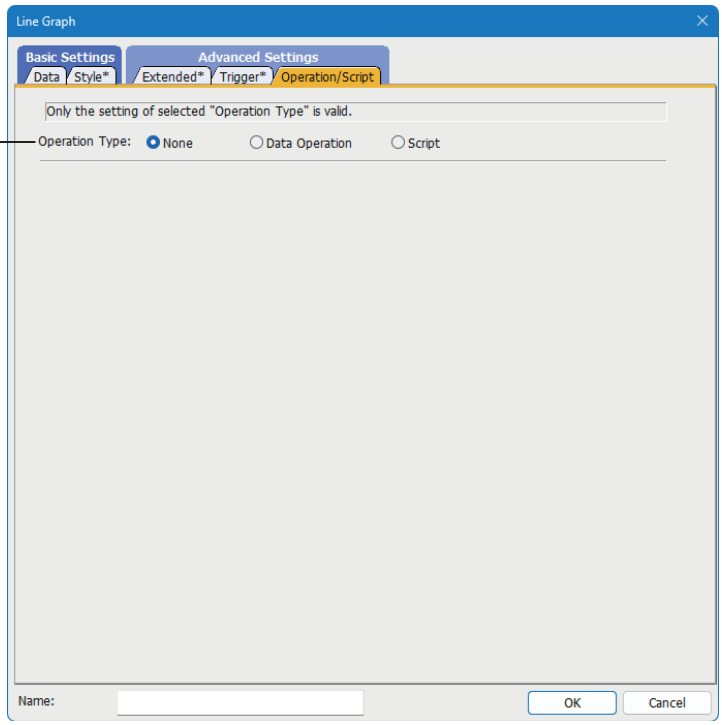
■About [Collect data only when trigger conditions are satisfied]

- If consecutive graph refresh and display is required, it is recommended to disable [Collect data only when trigger conditions are satisfied].
- When [Trigger Type] is set to [Sampling], [ON Sampling], or [OFF Sampling], if a short cycle is set, communication may be delayed, lowering screen refresh performance even if [Collect data only when trigger conditions are satisfied] is enabled.
- When [Collect data only when trigger conditions are satisfied] is enabled, a trigger satisfied for an object being refreshed by the previous trigger will become invalid.
- When [Collect data only when trigger conditions are satisfied] is enabled, the time from when the trigger condition is satisfied to when the object display is refreshed will be longer than when the setting is disabled.

40.5.5 [Operation/Script] tab

For mobile screens, some setting items are not available.

Set whether to perform an operation or a script with the device value handled by the object.



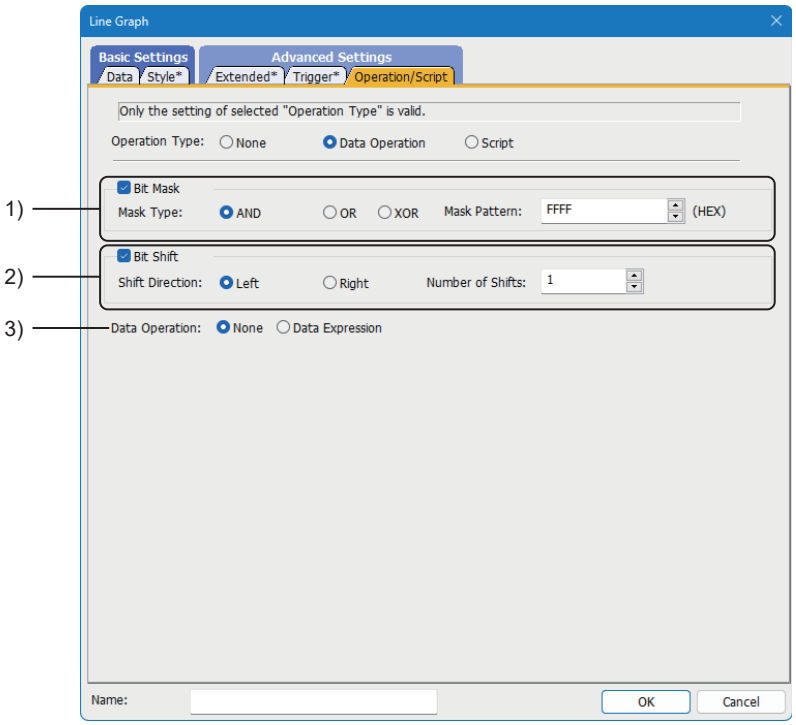
Item			Description
1)	[Operation Type]	[None]	Does not use the data operation function and the script function.
		[Data Operation]	Set the expression used for the data operation function. For the setting method, refer to the following. ☞ Page 1592 [Data Operation]
		[Script]	Set the expressions for the script function. For the setting method, refer to the following. ☞ Page 1593 [Script]

PART 7

[Data Operation]

For details on the data operation settings, refer to the following.

☞ Page 1053 How to set the data operation

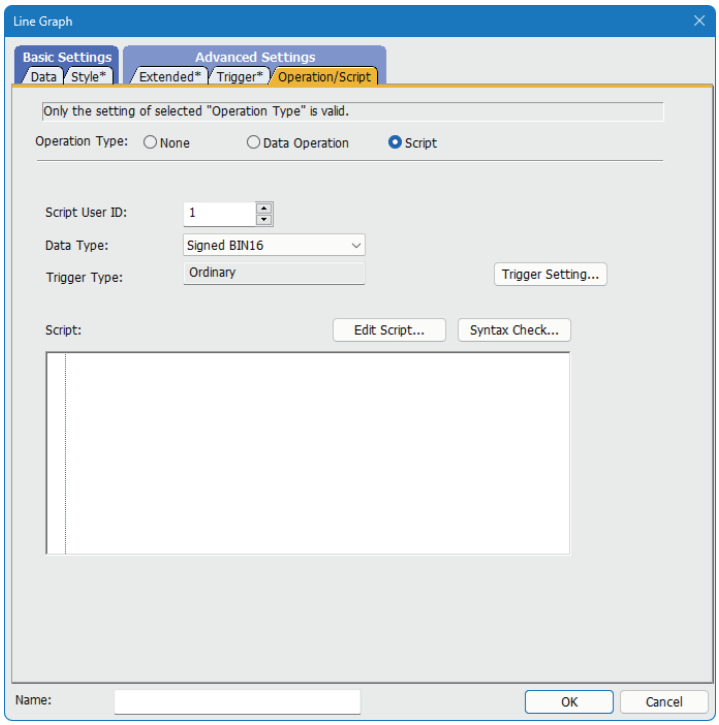


Item			Description
1)	[Bit Mask]	-	Set the operation of mask processing.
		[Mask Type]	Select the type of mask processing. The following shows selectable items. • [AND]: Logical AND • [OR]: Logical OR • [XOR]: Exclusive OR
		[Mask Pattern]	Set a pattern value to mask in hexadecimal. The setting range differs depending on the setting of [Data Type] in the [Data] tab.
2)	[Bit Shift]	-	Set the operation of shift processing.
		[Shift Direction]	Select a shifting direction.
		[Number of Shifts]	Set the number of bits to be shifted. The setting range differs depending on the setting of [Data Type] in the [Data] tab.
3)	[Data Operation]	—	Data operation is performed with the value stored in the monitored device. The line graph displays the value after the operation.
		[None]	Data operation is not performed.
		[Data Expression]	Data operation is performed. Click the [Exp] button to set an expression in the [Edit Data Expression] dialog. ☞ Page 1054 [Edit Data Expression] dialog

[Script]

For the script settings, refer to the following.

☞ Page 2447 Object script



■Relationship between the object settings and object properties

Object settings can be read (referenced) or written (changed) using object properties.

The following shows the correspondence between readable/writable object properties and the setting items in the object setting dialog.

○: Available

×: Not available

—: No applicable setting item

Setting dialog		Object property			
Tab name	Setting item	Property name	Read	Write	Timing for reflecting the setting change*1
—	—	active	○	○	Upon the setting change
		x	○	○	When the screen is updated
		y	○	○	When the screen is updated
		width	○	×	×
		height	○	×	×
[Style]	[Frame Color]	frame_color	○	×	×
	[Shape Color]	plate_color	○	○	When the object is updated
	[Lower Limit] (X)	scale_min[0]	○	○	When the screen is updated
	[Lower Limit] (Y)	scale_min[1]	○	○	When the screen is updated
	[Upper Limit] (X)	scale_max[0]	○	○	When the screen is updated
	[Upper Limit] (Y)	scale_max[1]	○	○	When the screen is updated
[Extended]	[Security Level]	security	○	○	When the screen is updated

*1 For information on how long it takes for object property settings to be reflected on the screen, refer to the following page.

☞ Page 2456 Timing at which the setting change of an object property is reflected

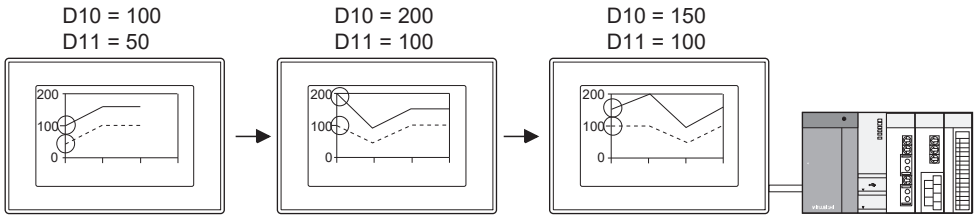
41 Placing a trend graph

☞ Page 1594 Overview of the trend graph
☞ Page 1595 Specifications of the trend graph
☞ Page 1596 How to use the trend graph
☞ Page 1605 [Trend Graph] dialog
☞ Page 1623 Relevant settings

41.1 Overview of the trend graph

GT37 SoftGOT3000

This function continuously collects and displays word device values in a graph.



Graph 1 (-): D10
Graph 2 (---): D11

The graph is displayed up to the edge of the display range.

As data collection continues, the graph will scroll to show the new data.

41.2 Specifications of the trend graph

GT37 SoftGOT3000

The following shows the specifications of the trend graph.

41.2.1 Settable numbers

Maximum number of trend graphs on one screen

Up to 32 trend graph and historical trend graph objects can be placed on one screen.
When [Collect data only when trigger conditions are satisfied] is selected, up to 256 objects can be placed for one project.
When multiple screens are opened using a set overlay screen, a total of 32 trend graph and historical trend graph objects can be placed on both the calling and called screens.
When multiple window screens are opened through an overlap window, superimpose window, user-created key window, or user-created dialog, up to 32 trend graph objects can be placed on each screen.

Maximum number of lines in one trend graph

Up to 32 lines can be displayed in one trend graph.

Maximum number of points

Up to 1024 points can be displayed on one trend graph line.

41.2.2 Difference between trend graphs and historical trend graphs

To accumulate data, use historical trend graphs.
Historical trend graphs displays data collected and accumulated with logging as graphs.
☞ Page 1669 Placing a scatter graph
☞ Page 2194 Collecting device data ([Logging])
Trend graphs do not accumulate collected data.

PART 7

41.3 How to use the trend graph

GT37 SoftGOT3000

The following shows how to use the trend graph.

41.3.1 Placing a trend graph

The following shows how to place a trend graph.

Operating procedure

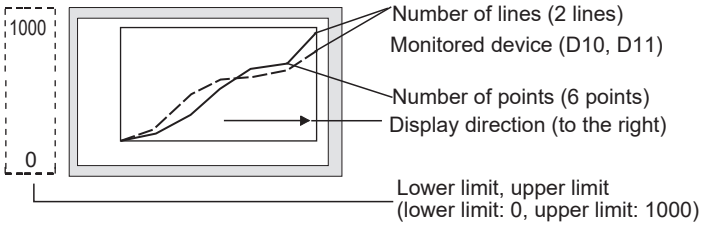
1. Select [Object] → [Graph] → [Trend Graph] from the menu.
2. Click the position to place a trend graph.
3. Adjust the frame size of the trend graph.
4. Double-click the placed trend graph to display the setting dialog.

☞ Page 1605 [Trend Graph] dialog

5. Display the [Data] tab.

☞ Page 1606 [Data] tab

6. Set the number of lines and points to be displayed in the trend graph.

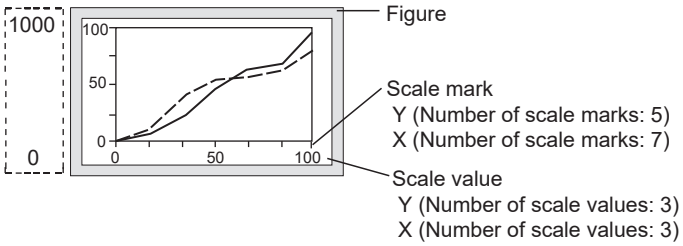


7. Set a device to be monitored.

☞ Page 834 How to set devices, labels, and tags

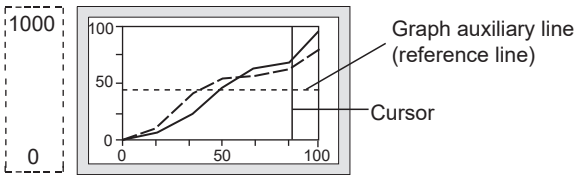
8. Set [Lower Limit] and [Upper Limit].
9. Set the scale and figure in the [Style] tab.

☞ Page 1612 [Style] tab



10. Set the graph assistance line and cursor attribute in the [Auxiliary Line/Cursor] tab.

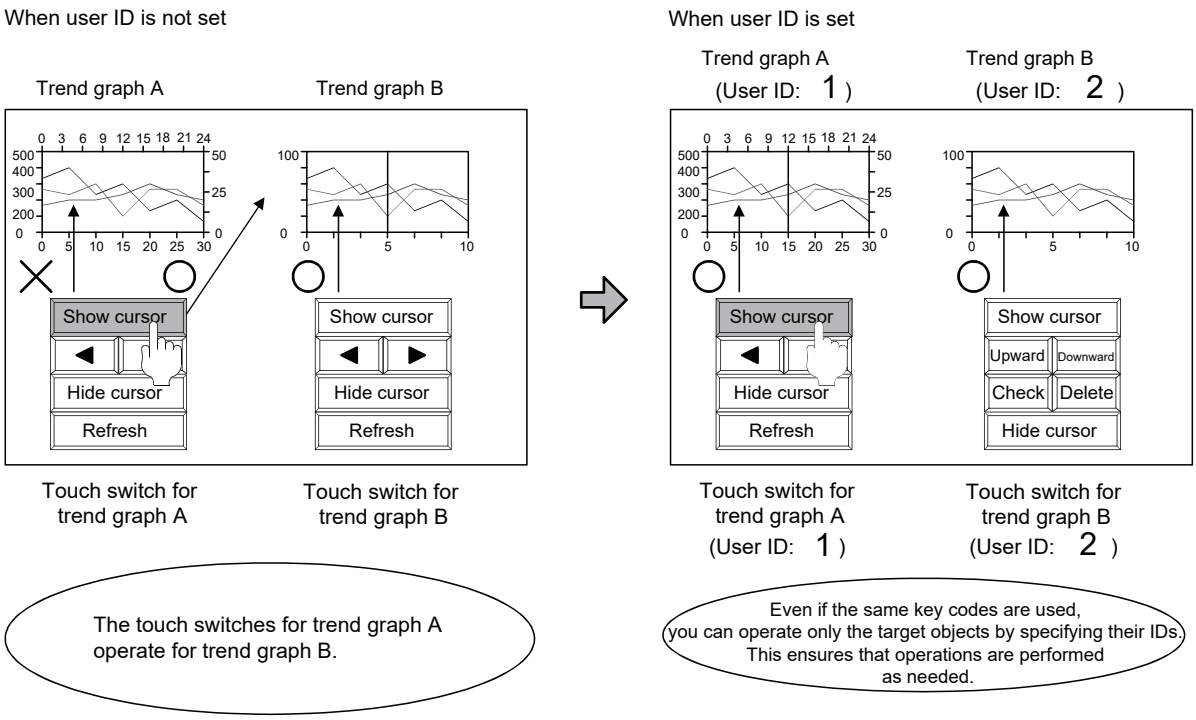
☞ Page 1615 [Auxiliary Line/Cursor] tab



11. Click the [OK] button to complete the trend graph settings.

41.3.2 Identifying multiple trend graphs (setting user IDs)

When you use touch switches to which key codes are assigned to operate multiple objects on one screen, touching a touch switch may operate an unintended object.
Setting a user ID limits the objects operated when the touch switch is touched.



The following shows the setting procedure.

Settings of a trend graph

Operating procedure

1. Double-click the trend graph placed on the screen editor.

The [Trend Graph] dialog appears.

☞ Page 1605 [Trend Graph] dialog

2. Enable [User ID] in the [Extended] tab, and specify the number.

☞ Page 1617 [Extended] tab

The number is used to define the target object as the object that operates when the touch switch is touched.

Do not set [User ID] that is already used for other objects.

Settings of a touch switch

Operating procedure

1. Display the [Switch] dialog.

For details on the switch, refer to the following.

☞ Page 1191 Placing a touch switch

2. Click the [Key Code] button in the [Action] tab.

3. Enable [Individually set user ID for a key input] and specify a number.

Set the same number as the number specified in [User ID] of [Trend Graph].

41.3.3 Storing the data of each graph in devices

The following values displayed in each graph can be stored in devices.

- Value under the cursor
- Maximum value
- Minimum value
- Average value

Even though data operation is set, the value before the data operation is stored.

How to store the data to the device

Set the devices to store values under [Graph Information] in the [Data] tab.

Set the devices and select the data options to be collected.

☞ Page 1606 [Data] tab

Timing when values are stored in devices

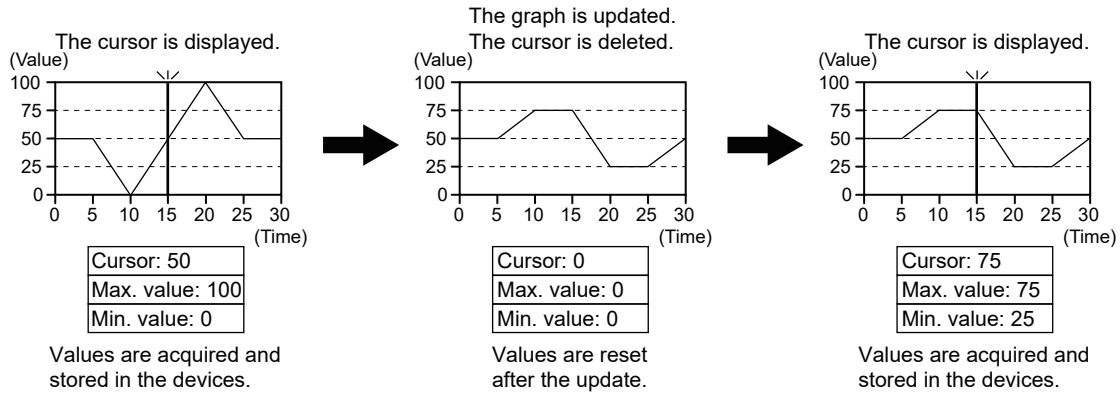
Values are stored in devices at the following timings.

- When a cursor is displayed on a graph
- When a cursor is moved
- When a historical trend graph is operated with a touch switch with a cursor displayed

The maximum, minimum, and average values are constantly acquired and stored in devices.

Ex.

Storing the value under the cursor, maximum value, and minimum value



41.3.4 Storing time data in devices

The time of the cursor display position, display range beginning position, and display range end position of the graph can be stored to the device by using the Time device.

How to store the data to the device

Data is stored in the upper eight bits and lower eight bits of set devices.
Numerical values are stored in BCD.

Ex.
When [Device] is set to [D100]

Item	Device	Description
[yymm]	D100	• b15 to b8: The year is stored. • b7 to b0: The month is stored.
[ddhh]	D101	• b15 to b8: The day is stored. • b7 to b0: The time (hour) is stored.
[mmss]	D102	• b15 to b8: The time (minute) is stored. • b7 to b0: The time (second) is stored.
[Day]	D103	• b15 to b8: None • b7 to b0: The day of the week is stored as a numerical value. The following shows the numerical values corresponding to the days. • 0: Sunday • 1: Monday • 2: Tuesday • 3: Wednesday • 4: Thursday • 5: Friday • 6: Saturday

Storage timing and values stored to devices

■Timing when the value is stored

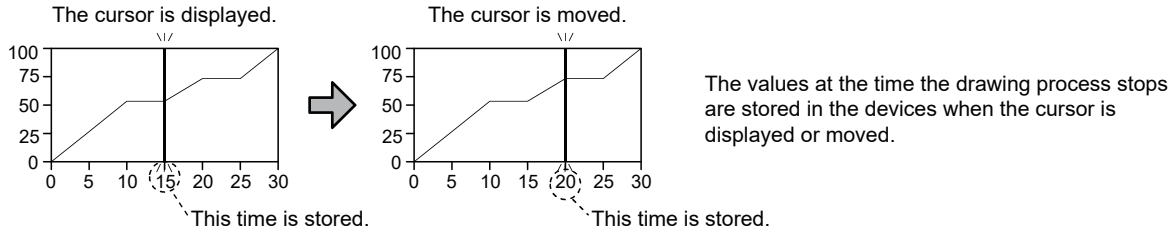
With the following timings, values are stored to devices.

- When a cursor is displayed on a graph
- When a cursor is moved
- When a historical trend graph is operated with a touch switch with a cursor displayed

■Values to be stored

When a cursor is displayed on the graph, the drawing processing of the graph stops.
The values at the stop of the draw processing are stored to devices.

Example) Storing a time in the device



The values at the time the drawing process stops are stored in the devices when the cursor is displayed or moved.

Displaying time data in the numerical display

Time data can be displayed in the numerical display.

The following shows the setting procedure.

Operating procedure

1. Display the setting dialog for the placed numerical display ([Numerical Display] dialog).

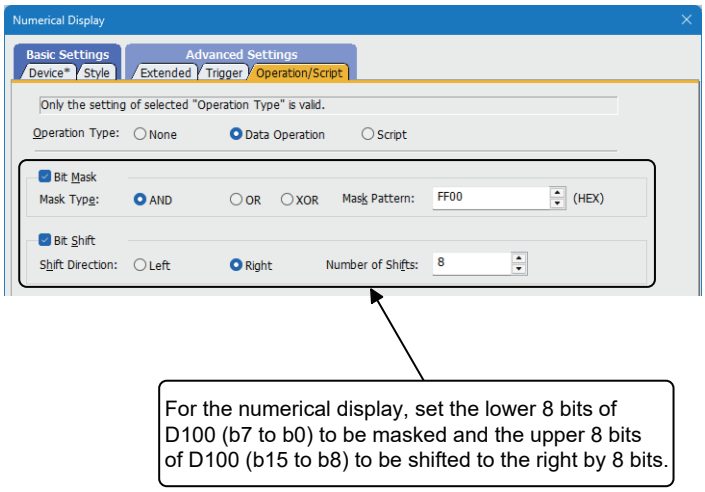
For details on the numerical display, refer to the following.

☞ Page 1305 Placing a numerical display or numerical input object

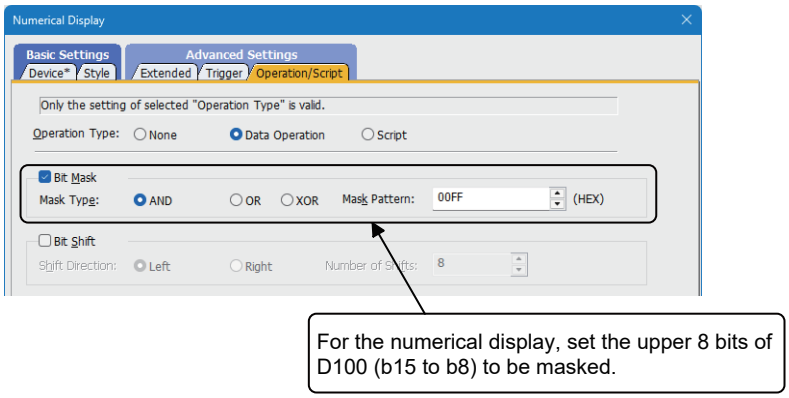
2. Select [BCD16], [BCD32], or [BCD64] for [Data Type] in the [Device] tab.

3. Set the mask processing and shift processing in the [Operation/Script] tab.

- When displaying upper 8 bits (year)



- When displaying lower 8 bits (month)



41.3.5 Displaying the data obtained at specified time in the center (time specification jump function)

By using the display position time device and a touch switch, the data obtained at specified time can be displayed in the center of the trend graph.
When no time is obtained at the specified time, the data which has the nearest specified date is displayed.
When the multiple values are obtained at the nearest time, the first detected value is displayed.

How to store the data to the device

Set a device to store the data in the upper eight bits and lower eight bits.
Numerical values are stored in BCD16.

Ex.
When [Device] is set to [D100]

Item	Device	Description
[yymm]	D100	• b15 to b8: The year is stored. • b7 to b0: The month is stored.
[ddhh]	D101	• b15 to b8: The day is stored. • b7 to b0: The time (hour) is stored.
[mmss]	D102	• b15 to b8: The time (minute) is stored. • b7 to b0: The time (second) is stored.

Setting procedure

■Settings of a touch switch

To use time specification jump function, the following touch switches are required.

- Touch switch for displaying the specified time
- Touch switch for restarting the drawing processing of the graph

If the time specification jump function is used, the drawing processing of the graph stops.
A touch switch for restarting the drawing processing of the graph is required.
The following shows the setting procedure.

Operating procedure

1. Display the setting dialog for the placed switch ([Switch] dialog).

For details on the switch, refer to the following.

☞ Page 1191 Placing a touch switch

2. Click the [Key Code] button in the [Action] tab.

3. Set the key cord according to the touch switch to be created.

- When setting a touch switch for displaying the specified time

Set [Code Setting] to [FFD4].

- When setting a touch switch for restarting the drawing processing of the graph

Set [Code Setting] to [FFEF].

Point

Using the library data

Touch switches are registered in the library.

☞ Page 1061 Using the data registered in the library

■Settings of a trend graph

Operating procedure

1. Double-click the trend graph placed on the screen editor.

The [Trend Graph] dialog appears.

☞ Page 1605 [Trend Graph] dialog

2. Enable [Display Position Time] in the [Extended] tab, and specify a device.

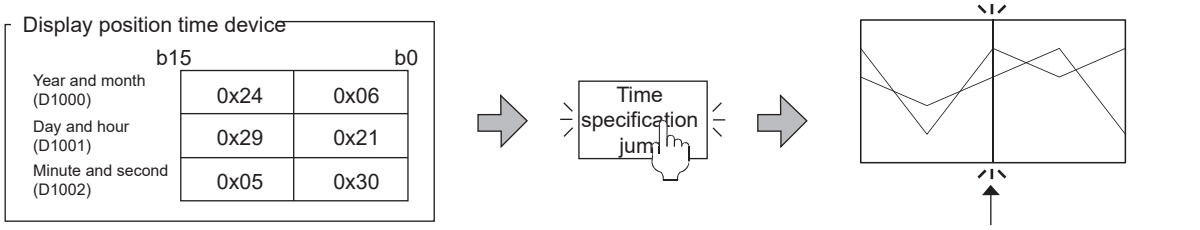
☞ Page 1617 [Extended] tab

Operation example

The following shows the operation examples.

Ex.

Setting [D1000] in [Display Position Time Device] and displaying the data of Jun. 29, 2024 21:05:30



Set the time to be displayed in the Display Position Time Device.

Touch the touch switch for which the key code (FFD4h) has been set.

The data obtained at the specified time (Jun. 29, 2024, 21:05:30) can be displayed in the center.

Precautions

■When time data is being searched for

When time data is being searched for, the historical trend graph cannot be operated.

■When no data can be displayed on the trend graph

When no data can be displayed on the trend graph, the time specification jump function is not executed.

■When displaying the data displayed near the start or end point

If the data obtained at specified time is near the start or end point, it may not be displayed in the center of the graph.

41.3.6 Setting [Collect data only when trigger conditions are satisfied]

Selecting [Collect data only when trigger conditions are satisfied] can reduce the number of communications.
Various graphs can be combined.
The following shows the setting procedure.

Operating procedure

1. Select [Object] → [Graph] → [Trend Graph] from the menu.
2. Click the position to place a trend graph.
3. Double-click the placed trend graph to display the setting dialog.

☞ Page 1605 [Trend Graph] dialog

4. Display the [Trigger] tab.

☞ Page 1619 [Trigger] tab

5. Select [Rise], [Fall], [Rise/Fall], [Sampling], [ON Sampling], or [OFF Sampling] for [Trigger Type].
6. Select [Collect data only when trigger conditions are satisfied].

The [Collect data only when trigger conditions are satisfied] setting is effective if a graph does not require frequent refresh.
However, when the graph requires frequent refresh and display, [Collect data only when trigger conditions are satisfied] should be deselected (device values are collected through constant communication).
The setting of [Collect data only when trigger conditions are satisfied] may cause the delay of the screen refresh or incorrect display of the screen.

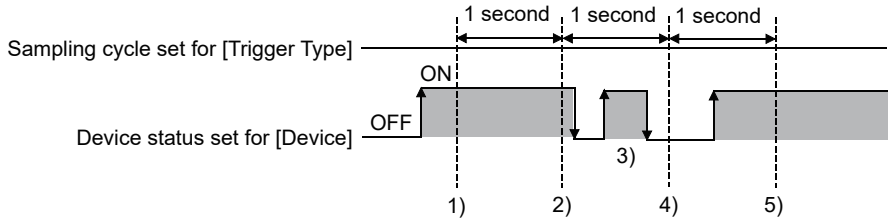
41.3.7 Cause and solution when the graph display is not refreshed in a specified cycle

If [ON Sampling] or [OFF Sampling] is selected, the graph display may not be refreshed in a specified cycle.

Cause

The device status is checked in the sampling cycles set for [Trigger Type].
If the condition is not satisfied at the timing of the check, the display is not refreshed.

Ex.
[Trigger Type] is set to [ON Sampling] and [Sampling] is set to [1] second



- The display of the trend graph is refreshed at timing 1).
- The display of the trend graph is refreshed at timing 2).
- At timing 3), the display of the trend graph is not refreshed because the timing does not match the end of one cycle and thus the condition is not checked.
- At timing 4), the display of the trend graph is not refreshed because the device condition is not satisfied.
- The display of the trend graph is refreshed at timing 5).

Solution

The sampling cycle set for [Trigger Type] does not depend on the device status.
(The sampling cycle does not change whether the device is turned on or off.)
The following shows the setting procedure to start the cycle according to the device status.

Operating procedure

1. Select [Rise] or [Fall] for [Trigger Type].
2. Create a sequence program that turns the device on or off when the display should be refreshed.

41.3.8 Operation to clear the collected data

The following shows the operation to clear the display of the graph or the collected data (to clear the device value to 0).

- The screen is switched.
- The utility screen is displayed.
- The language is switched.
- The security level is switched.
- The station number is switched.
- When the trend graph is displayed in the superimpose window, the base screen is switched.

41.4 [Trend Graph] dialog

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The trend graph is an object that constantly collects data in word devices and display it in a graph.

Operating procedure

1. Select [Object] → [Graph] → [Trend Graph] from the menu.
2. Click the position to place a trend graph.
3. Double-click the placed trend graph to display the setting dialog.

☞ Page 1606 [Data] tab
☞ Page 1612 [Style] tab
☞ Page 1615 [Auxiliary Line/Cursor] tab
☞ Page 1618 [External Output] tab
☞ Page 1619 [Trigger] tab
☞ Page 1620 [Operation/Script] tab

41.4.1 [Data] tab

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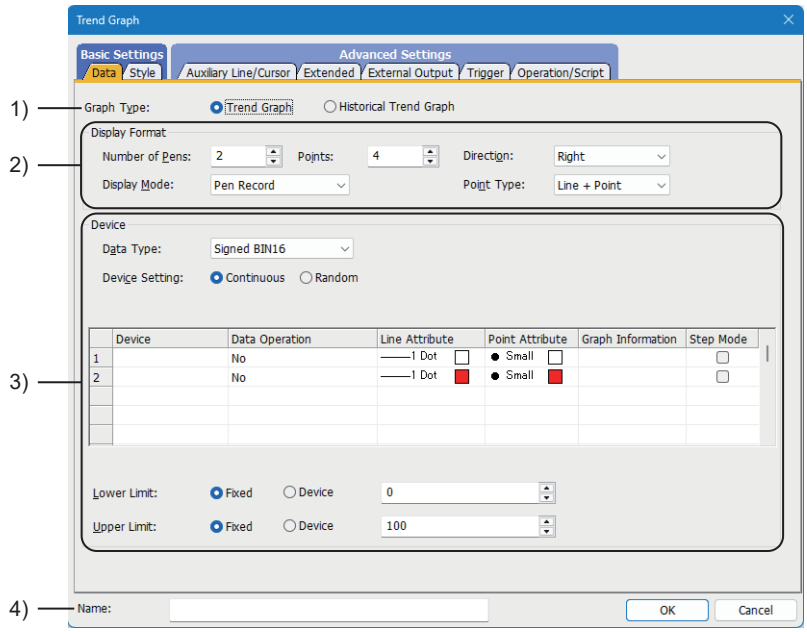
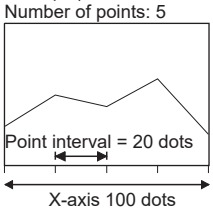
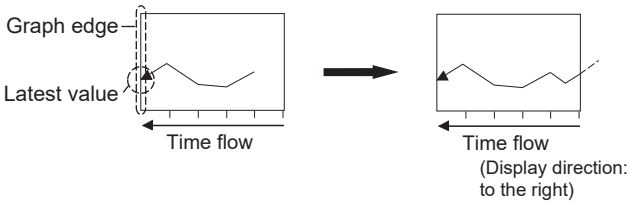
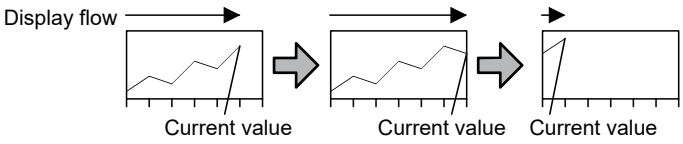
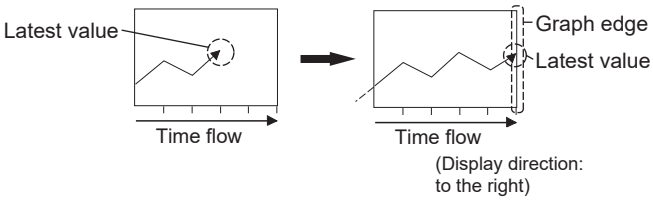
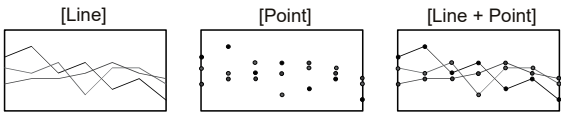
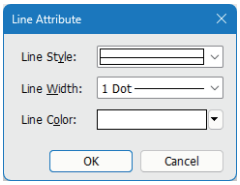
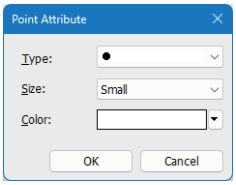
Set the target device to be monitored and the scatter graph status corresponding to the device value.

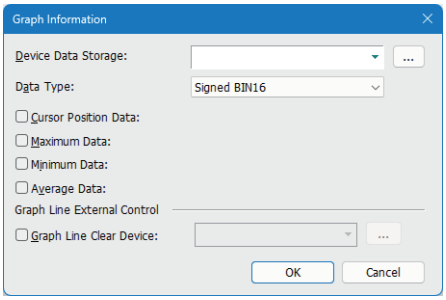
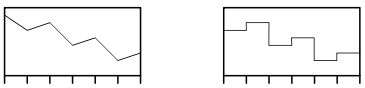


Item			Description
1)	[Graph Type]		Select the graph to be set. The following shows selectable items. • [Trend Graph] • [Historical Trend Graph]
2)	[Display Format]	[Number of Pens]	Set the number of lines to be displayed in the trend graph. The setting range is [1] to [32].

Item			Description
2)	[Display Format]	[Points]	Set the number of points to be displayed on a line of the trend graph. The setting range is [2] to [1024]. Depending on the number of points and X-axis display range, the interval between points is adjusted automatically. Example) Number of points: 5 
		[Direction]	Select the display direction of the graph. The following shows selectable items. • [Up] • [Down] • [Left] • [Right]
		[Display Mode]	The following shows how to draw the trend graph. The following shows selectable items. • [Pen Record] The line of the graph is drawn by moving the whole graph to [Direction]. The point indicating the latest value is always drawn at the graph edge.  • [One by One] The current value is displayed in the display direction. When the graph is drawn fully in a display range, the graph being displayed is cleared and a new graph is drawn.  • [Next Point Movement] The line of the graph is drawn to [Direction]. The point indicating the latest value moves to the display direction. Once the point indicating the latest value reaches to the graph edge, the point is drawn at the graph edge constantly. 
		[Point Type]	Select the point type. The following shows selectable items. • [Line] • [Point] • [Line + Point] 

Item				Description
3)	[Device]	[Data Type]		Select the data type of the word device. The following shows selectable items. • [Signed BIN8] • [Unsigned BIN8] • [Signed BIN16] • [Unsigned BIN16] • [Signed BIN32] • [Unsigned BIN32] • [Signed BIN64] • [Unsigned BIN64] • [BCD16] • [BCD32] • [BCD64] • [Real(32bit)] • [Real(64bit)]
		[Device Setting]		Select how to set the device. The following shows selectable items. • [Continuous] Automatically inputs consecutive devices in the table of [Device] when a start device is set. • [Random] Select this item when setting devices one by one.
		[Device]		Set the device to be monitored. ☞ Page 834 How to set devices, labels, and tags
		[Data Operation]		Set this item to execute the data operation. ☞ Page 1054 [Edit Data Expression] dialog
		[Line Attribute]	—	Set the attribute of the line. When [Line] or [Line + Point] is selected for [Point Type], set this item. 
			[Style]	Select the style of the line. The following shows selectable items. • Solid line • Dotted line • Broken line • One-dot chain line • Two-dot chain line
			[Width]	Select the width of the line. The following shows selectable items. • [1 Dot] • [2 Dot] • [3 Dot] • [4 Dot] • [5 Dot] • [6 Dot] • [7 Dot]
			[Color]	Select the color of the line.

Item				Description
3)	[Device]	[Point Attribute]	—	Set the attribute of the points. When [Point] or [Line + Point] is selected for [Point Type], set this item. 
			[Type]	Select the style of the point. The following shows selectable items. 0: ●, 1: ■, 2: ▲, 3: +, 4: ○, 5: □ 6: △, 7: ×, 8: ▼, 9: ◀, 10: ▶, 11: ◆ 12: ▽, 13: ◁, 14: ▷, 15: ◇,
			[Size]	Select the size of the point. The following shows selectable items. • [Large]: 9 dots • [Medium]: 7 dots • [Small]: 5 dots • [Very small]: 3 dots • [Point]: 1 dot Only when [0] is selected for [Type], [Very small] or [Point] can be selected.
			[Color]	Set the color of the point.

Item				Description
3)	[Device]	[Graph Information]	—	Set the device in which the information displayed on the graph is stored or device that clears the line of the graph. For the timings when values are stored in the devices set for [Maximum Data], [Minimum Data], and [Average Data], refer to the following. ☞ Page 1598 Storing the data of each graph in devices 
			[Device Data Storage]	Set the device in which the graph information is stored. The successive devices following the device set in this item are assigned automatically to [Cursor Position Data] or later items. Set each item optionally. Using the GOT internal device is recommended for this setting. Even though data operation is set, the value before the data operation is stored.
			[Data Type]	Select the data type of the word device in which graph information is stored. Select the same data type as that of the device to be monitored. The following shows selectable items. • [Signed BIN8] • [Unsigned BIN8] • [Signed BIN16] • [Unsigned BIN16] • [Signed BIN32] • [Unsigned BIN32] • [Signed BIN64] • [Unsigned BIN64] • [BCD16] • [BCD32] • [BCD64] • [Real(32bit)] • [Real(64bit)]
			[Cursor Position Data]	Select this item to store the value of device positioned by the cursor. The device is assigned automatically.
			[Maximum Data]	Select this item to store the maximum value of the device values displayed on the graph is to be stored. The device is assigned automatically.
			[Minimum Data]	Select this item to store the minimum value of the device values displayed on the graph. The device is assigned automatically.
			[Average Data]	Select this item to store the average value of the device values displayed on the graph. The device is assigned automatically.
			[Graph Line Clear Device]	Select this item to clear the line of the graph using a device. After selecting this item, set the device.
		[Step Mode]		Select this item to display the line of the trend graph by steps. 
		[Lower Limit] and [Upper Limit]		Select whether to specify the display range (lower and upper limit values) of the trend graph with the fixed value or with the device value. The following shows selectable items. • [Fixed]: Specify a constant. • [Device]: Specify a device value. ☞ Page 834 How to set devices, labels, and tags The setting ranges of [Lower Limit] and [Upper Limit] differ depending on the item selected for [Data Type].

Item		Description
4)	[Name]	Set the object name. The name is displayed in places such as the data browser and property sheet. The setting can also be changed in other tabs. Up to 100 characters can be set.

41.4.2 [Style] tab

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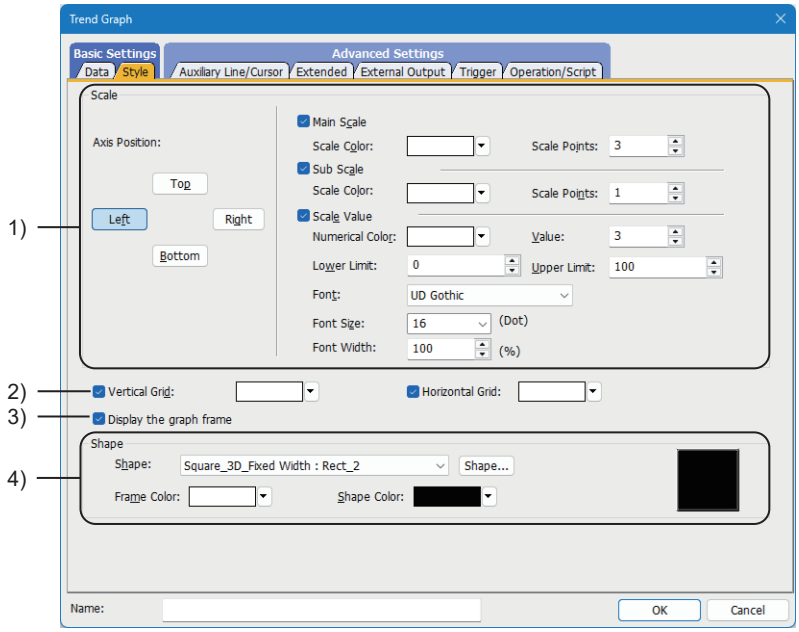
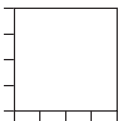
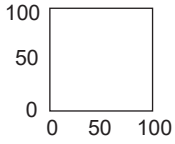
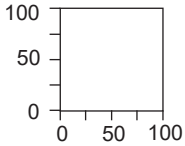
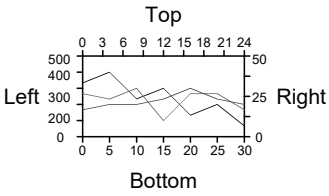
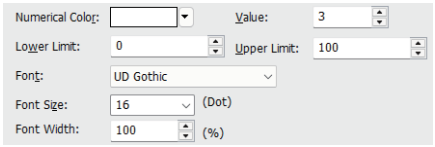
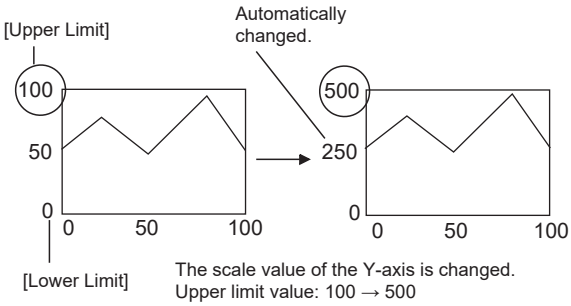
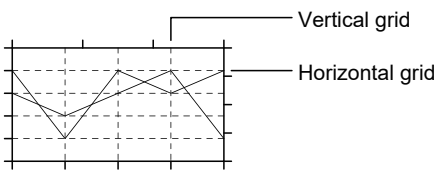
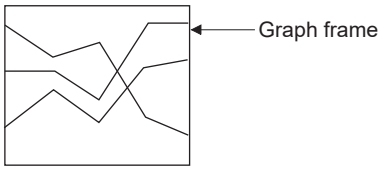
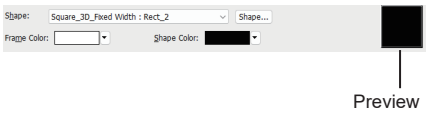
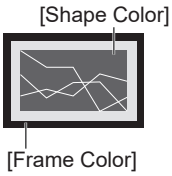
For mobile screens, some setting items are not available.

☞ Page 2742 Usable functions



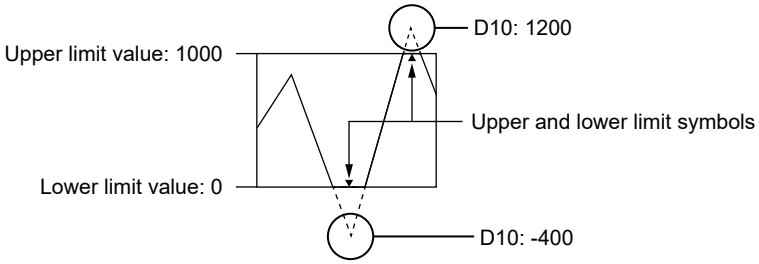
Item			Description
1)	[Scale]	—	Displays scale marks and scale values in the trend graph.  Scale mark display (X: 5) (Y: 5)  Scale value display (X: 3) (Y: 3)  Both scale marks and scale values are displayed.
		[Axis Position]	Select the position where the line or scale value is displayed. The following shows selectable items. • [Left] button • [Right] button • [Top] button • [Bottom] button After selecting the position, set the line or scale value. 
		[Main Scale]	Set this item to display scale marks. • [Scale Color] Set the color of the scale marks. • [Scale Points] Set the number of scale marks. The setting range is [2] to [101].

Item			Description
1)	[Scale]	[Sub Scale]	Set this item to place scale marks between the ones set in [Main Scale]. • [Scale Color] Set the color of the sub-scale marks. • [Scale Points] Set the number of sub-scale marks. The setting range is [1] to [9].
		[Scale Value]	Set this item to display numeric characters as the scale value.  • [Numerical Color] Set the color of numeric characters. • [Value] Set the number of numeric characters. The setting range is [2] to [11]. • [Lower Limit] and [Upper Limit] Set the lower limit and upper limit of the numerical value. Changes in this setting are automatically applied to the display.  Depending on the item selected for [Data Type] in the [Data] tab, the setting range is different. The selectable range of 64-bit devices is the same as that of 32-bit devices. • [Font] Select a font for scale values. The setting range is [UD Gothic] or [UD Mincho]. • [Font Size] Select a font size. The setting range is [8] dots to [540] dots. • [Font Width] Set a horizontal text size. The horizontal size is specified with the magnification relative to [Font Size] (vertical text size). The setting range is [6]% to [1600]%.
2)	[Vertical Grid] or [Horizontal Grid]		Select this item to display the horizontal or vertical grid. The number of grids is the same as the number set in [Scale Points] of [Main Scale] and [Sub Scale]. The bottom and left setting in [Axis Position] is prioritized.  After setting this item, select a grid color.

Item			Description
3)	[Display the graph frame]		Select this item to display the frame of the graph. 
4)	[Shape]	[Shape]	Set the shape of the trend graph. When [None] is selected, no figure is displayed. Click the [Shape] button to select shapes other than those in the list box. ☞ Page 1045 How to set the object shape When selecting a figure from [Basic Figure], set a frame color and a shape color.  • [Frame Color] Set the color of the frame. • [Shape Color] Set the color of the shape.  • Preview Displays the preview of the set shape.

Precautions

The trend graph does not display a device value that is above the upper limit or below the lower limit.
In such a case, the upper or lower limit symbol appears at the position where the device value is hidden from view.



To hide the upper and lower limit symbols, turn on GS450.b10.
☞ Page 1623 GOT internal device

41.4.3 [Auxiliary Line/Cursor] tab

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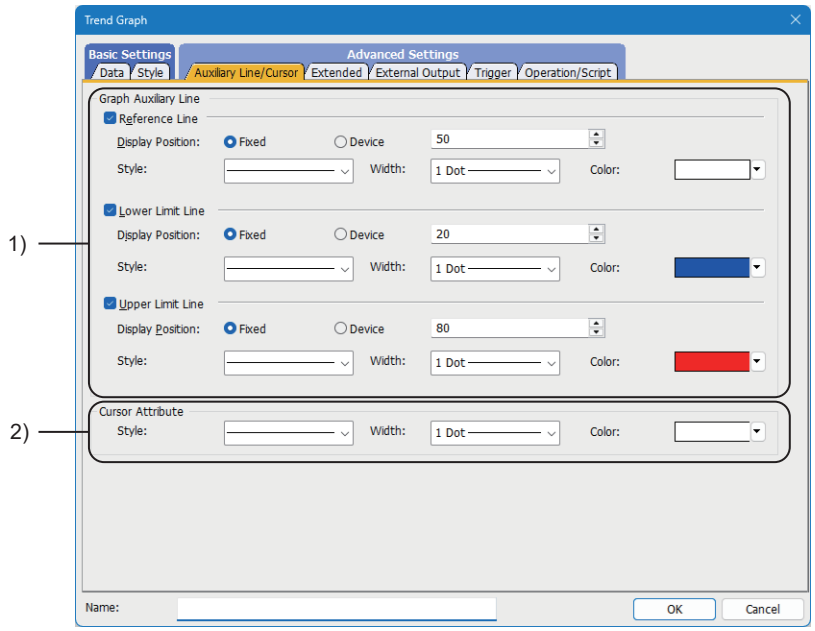
Set the auxiliary line and attribute of the cursor.



Item				Description
1)	[Graph Auxiliary Line]	[Reference Line], [Lower Limit Line], and [Upper Limit Line]	—	Set this item to place a reference line on the graph.
			[Display Position]	Select whether to specify the line position using a fixed value or device value. The following shows selectable items. • [Fixed] Specify a constant. • [Device] Specify a device value. ☞ Page 834 How to set devices, labels, and tags
			[Style]	Select the style of the line. The following shows selectable items. • Solid line • Dotted line • Broken line • One-dot chain line • Two-dot chain line
			[Width]	Select the width of the line. The following shows selectable items. • [1 Dot] • [2 Dot] • [3 Dot] • [4 Dot] • [5 Dot] • [6 Dot] • [7 Dot]
			[Color]	Select the color of the line.

Item			Description
2)	[Cursor Attribute]	—	Set the attribute of the cursor.
		[Style]	Select the style of the line. The following shows selectable items. • Solid line • Dotted line • Broken line • One-dot chain line • Two-dot chain line
		[Width]	Select the width of the line. The following shows selectable items. • [1 Dot] • [2 Dot] • [3 Dot] • [4 Dot] • [5 Dot] • [6 Dot] • [7 Dot]
		[Color]	Select the color of the line.

41.4.4 [Extended] tab

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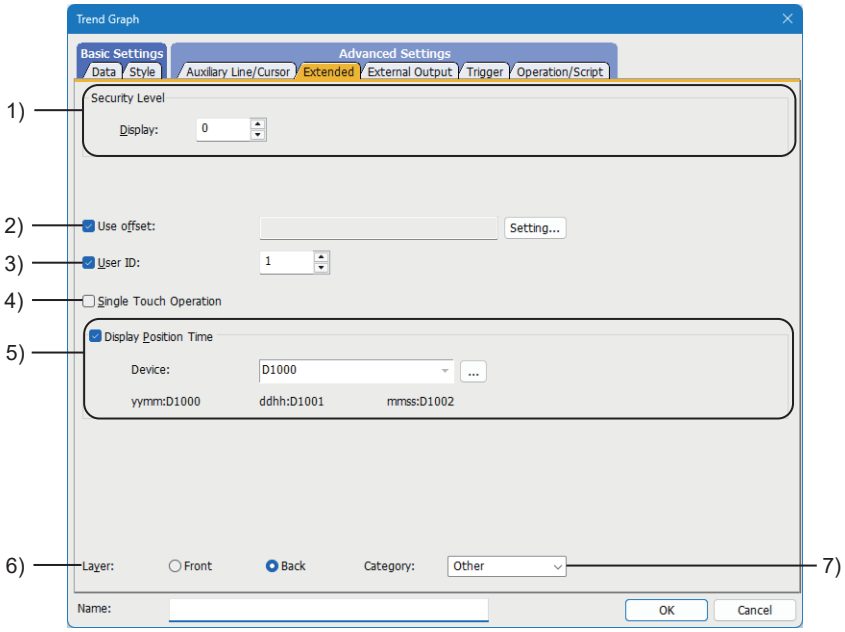
For mobile screens, some setting items are not available.

☞ Page 2742 Usable functions



Item			Description
1)	[Security Level]		Set the security level when using the security function. The setting range is [1] to [15]. Set the level to [0] when the security function is not used. ☞ Page 3038 Restricting display and operation on the GOT (Screen security)
2)	[Use offset]		Select this item to monitor multiple devices by switching between them. After selecting this item, set the offset device. ☞ Page 963 Offset
3)	[User ID]		Select this item to set the user ID. The setting range is [1] to [65535]. ☞ Page 1597 Identifying multiple trend graphs (setting user IDs)
4)	[Single Touch Operation]		Select this item to display a cursor at the touched place.
5)	[Display Position Time]	—	Set this item to display the data obtained at specified time in the center of the graph when the touch switch is touched.
		[Device]	Set the device in which the time data is stored. The three successive devices following the device set in this item are automatically assigned to [yymm], [ddhh], and [mmss]. The time data is stored in the upper eight bits and lower eight bits of each set device. The data type of the devices is BCD. ☞ Page 1601 Displaying the data obtained at specified time in the center (time specification jump function)
6)	[Layer]		Select the layer to arrange the object on. The following shows selectable items. • [Front] • [Back] ☞ Page 1055 Superimposition of figures and objects
7)	[Category]		Select the category to assign the object. ☞ Page 1121 Managing figures and objects by category

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41.4.5 [External Output] tab

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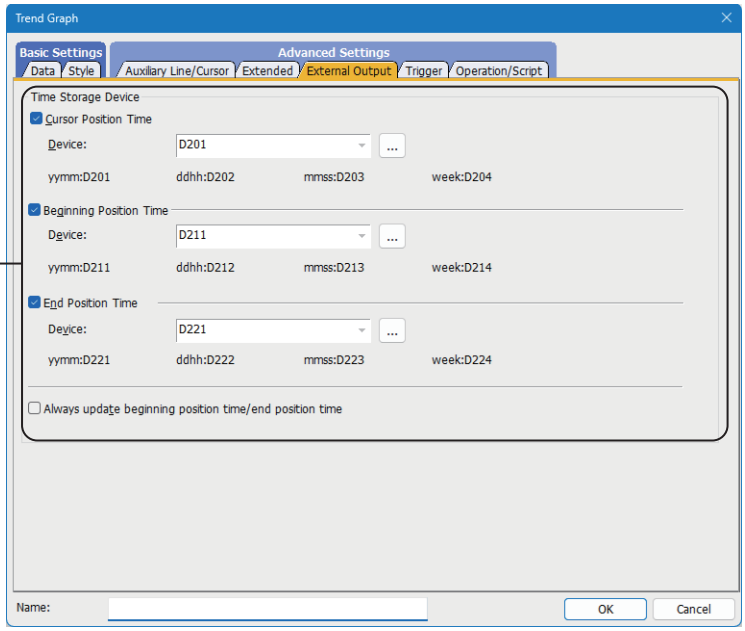

Item			Description
1)	[Time Storage Device]	—	Stores each time data. The four successive devices following the device set in this item are automatically assigned to [yymm], [ddhh], [mmss], and [Day]. The time data is stored in the upper eight bits and lower eight bits of each set device. The data type of the devices is BCD. For information on how to display the time data stored in the device in the numerical display, refer to the following. ☞ Page 1599 Storing time data in devices
		[Cursor Position Time]	Set this item to store the time of the cursor display position. After selecting this item, set the device.
		[Beginning Position Time]	Set this item to store the time at the beginning position of the graph. After selecting this item, set the device.
		[End Position Time]	Set this item to store the time at the end position of the graph. After selecting this item, set the device.
		[Always update beginning position time/end position time]	Select this item to constantly store the latest value in the Time device (beginning position time and end position time). New data obtained at specified time is stored every graph refresh.

41.4.6 [Trigger] tab

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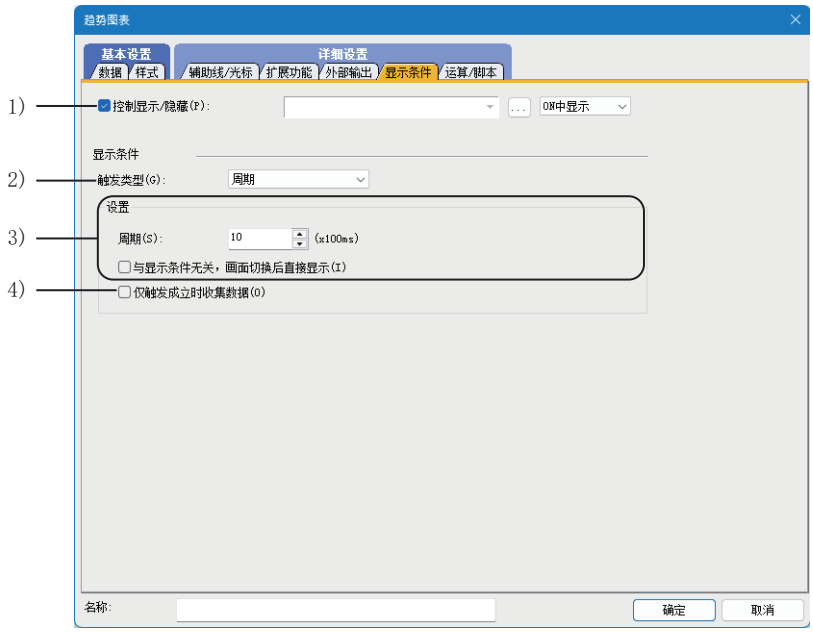
Set the trigger condition to display the object.



Item		Description
1)	[Control displaying/ hiding]	Set the control device to display or hide all the objects including the shape frame. When the set device is in either the ON or OFF status, select whether or not to display the object. The following shows selectable items. • [ON Display] • [OFF Display] ☞ Page 834 How to set devices, labels, and tags
2)	[Trigger Type]	Select a trigger condition to display the object. The following shows selectable items. • [Rise] • [Fall] • [Rise/Fall] • [Sampling] • [ON Sampling] • [OFF Sampling]
3)	[Settings]	For details on each setting, refer to the following. ☞ Page 972 Settings by trigger type
4)	[Collect data only when trigger conditions are satisfied]	Select this item to collect data only when the trigger set for [Trigger Type] is satisfied. When [Rise], [Fall], [Rise/Fall], [Sampling], [ON Sampling], or [OFF Sampling] is selected, this setting is available. The graph communicates with the controller even when the trigger is off. To reduce the communication load between the GOT and the controller, allow communications only when the trigger is on.

41.4.7 [Operation/Script] tab

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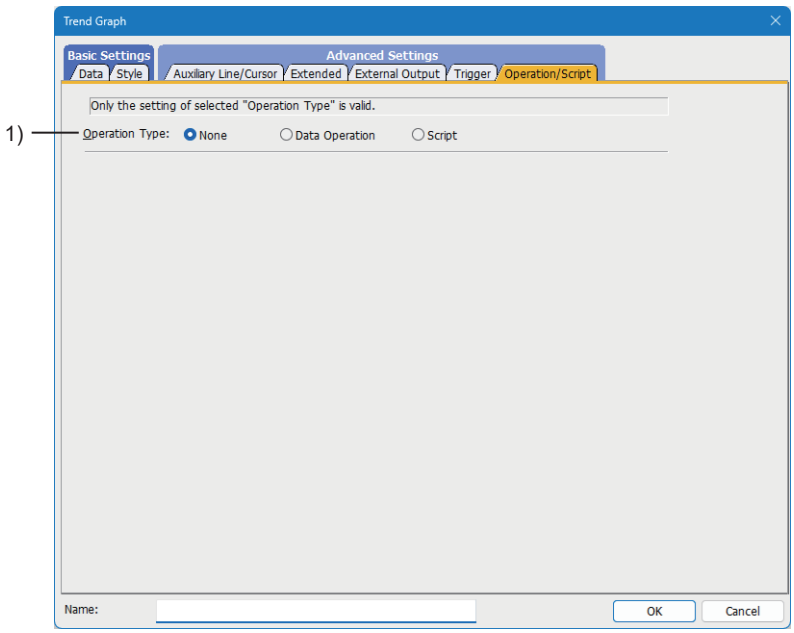
For mobile screens, some setting items are not available.

☞ Page 2742 Usable functions

Set an expression for monitoring using the data operation function or the script function.

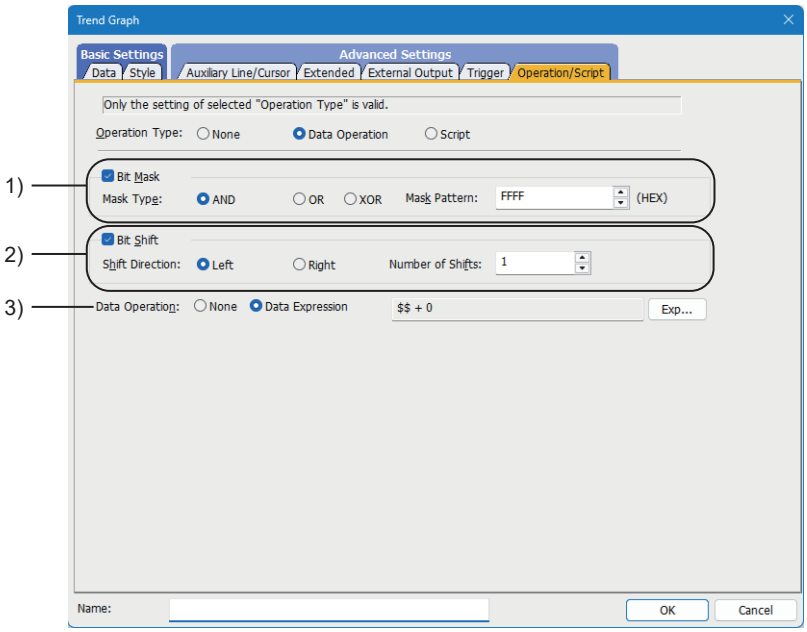


Item		Description
1)	[Operation Type]	To use the data operation or script, select an operation type. The following shows selectable items. • [None] Select this item if the data operation and script are unnecessary. • [Data Operation] Set the expression used for the data operation. ☞ Page 1621 [Data Operation] • [Script] Set the expressions for the script function. ☞ Page 1622 [Script]

[Data Operation]

For details on the data operation settings, refer to the following.

☞ Page 1053 How to set the data operation



Item			Description
1)	[Bit Mask]	—	Set the operation of mask processing.
		[Mask Type]	Select the type of mask processing. • [AND] Logical AND • [OR] Logical OR • [XOR] Exclusive OR
		[Mask Pattern]	Set a pattern value to mask in hexadecimal. The setting range differs depending on the setting of [Data Type] in the [Data] tab.
2)	[Bit Shift]	—	Set the operation of shift processing.
		[Shift Direction]	Select a shifting direction. • [Left] Shifts to the left. • [Right] Shifts to the right.
		[Number of Shifts]	Set the number of bits to be shifted. The setting range differs depending on the setting of [Data Type] in the [Data] tab.
3)	[Data Operation]		Set the format of the expression. The following shows selectable items. • [None] Does not perform the data operation by using the expression. • [Data Expression] Performs the data operation by using the expression. Click the [Exp] button to set the format of the expression in the [Edit Data Expression] dialog.

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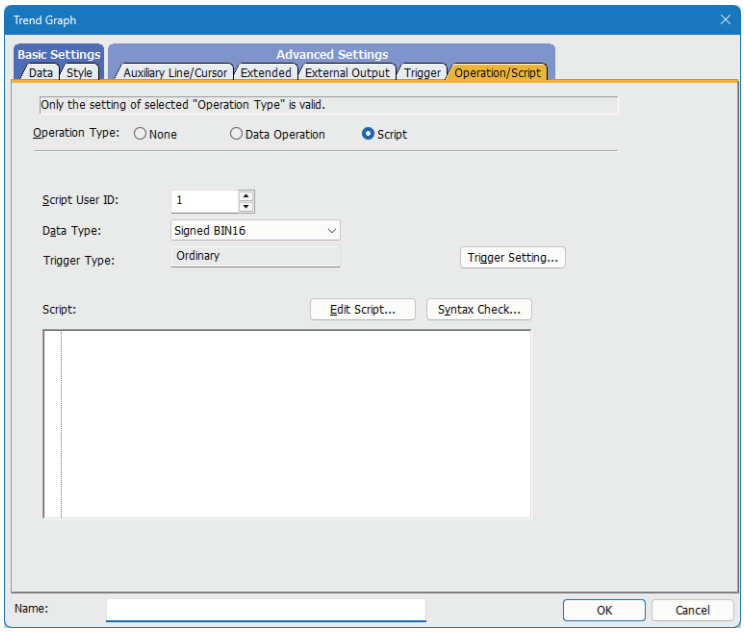
[Script]

For the script settings, refer to the following.

☞ Page 2447 Object script



■Relationship between the object settings and object properties

Object settings can be read (referenced) or written (changed) using object properties.

The following shows the correspondence between the relevant settings in the object setting dialog and the object properties.

○: Available

×: Not available

—: No applicable setting item

Setting dialog		Object property			
Tab name	**Setting item**	**Property name**	**Read**	**Write**	**Timing for reflecting the setting change*1**
—	—	active	○	○	Upon the setting change
		x	○	○	When the screen is updated
		y	○	○	When the screen is updated
		width	○	×	×
		height	○	×	×
[Data]	[Lower Limit] (X (lower side))	scale_min[0]	○	○	When the screen is updated
	[Lower Limit] (Y (left side))	scale_min[1]	○	○	When the screen is updated
	[Lower Limit] (Y (upper side))	scale_min[2]	○	○	When the screen is updated
	[Lower Limit] (Y (right side))	scale_min[3]	○	○	When the screen is updated
	[Upper Limit] (X (lower side))	scale_max[0]	○	○	When the screen is updated
	[Upper Limit] (Y (left side))	scale_max[1]	○	○	When the screen is updated
	[Upper Limit] (Y (upper side))	scale_max[2]	○	○	When the screen is updated
	[Upper Limit] (Y (right side))	scale_max[3]	○	○	When the screen is updated
[Style]	[Frame Color]	frame_color	○	×	×
	[Shape Color]	plate_color	○	○	When the screen is updated
[Extended]	[Security Level]	security	○	○	When the screen is updated

*1 For the timing at which the setting change of an object property is reflected, refer to the following.

☞ Page 2456 Timing at which the setting change of an object property is reflected

41.5 Relevant settings

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Configure the relevant settings in addition to the specific settings for the trend graph as required.
The following shows the functions that are available by configuring the relevant settings.

41.5.1 GOT internal device

☞ Page 3581 GOT special register (GS)

Function	Setting item
Hiding the upper and lower limit symbols	GS450.b10

PART 7

42 Placing a bar graph

☞ Page 1625 Overview of the bar graph
☞ Page 1626 How to use the bar graph
☞ Page 1628 Specifications of the bar graph
☞ Page 1630 Setting a bar graph
☞ Page 1631 [Bar Graph] dialog

42.1 Overview of the bar graph

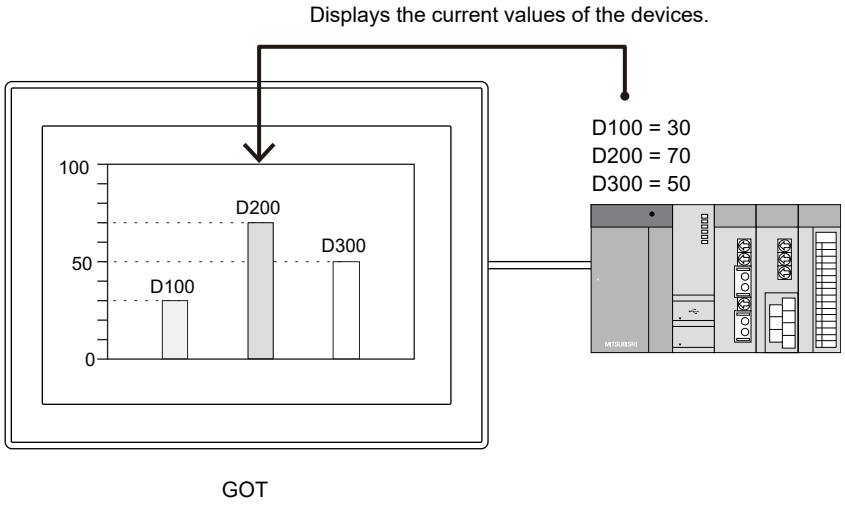
GT37 SoftGOT3000

The bar graph is an object that collects the current values of multiple devices in a batch and displays the values in a single graph.
The value of one device is represented by one bar.

Ex.
When the following three devices are monitored in the bar graph and the device value of each device ranges from 0 to 100

- [D100]
- [D200]
- [D300]

The values of the PLC devices [D100], [D200], and [D300] are represented by the bars in the bar graph.



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42.2 How to use the bar graph

Set two sets of values, the upper and lower limits of the device values and the upper and lower limits of the graph scale values.

Doing so enables the following two uses.

☞ Page 1626 Indicating the device value

☞ Page 1627 Indicating the percentage against the total

Indicating the device value

When the same upper and lower limit values are used for the device values and the scale values, each bar indicates the device value.

Ex.

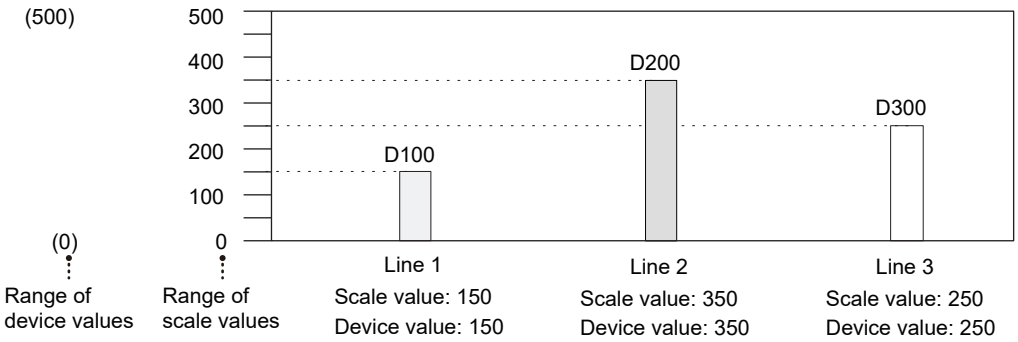
When monitoring the following devices and expressing the production volumes of line 1 to 3 in a bar graph

Monitored device	Value to be stored
[D100]	Production volume of line 1
[D200]	Production volume of line 2
[D300]	Production volume of line 3

Range of the device value: 0 to 500

Range of the scale value: 0 to 500

The bar graph shows the device values (production volumes).



Indicating the percentage against the total

When the different ranges are set for the device values and the scale values, each bar indicates the position relative to the upper and lower limits of the device value.

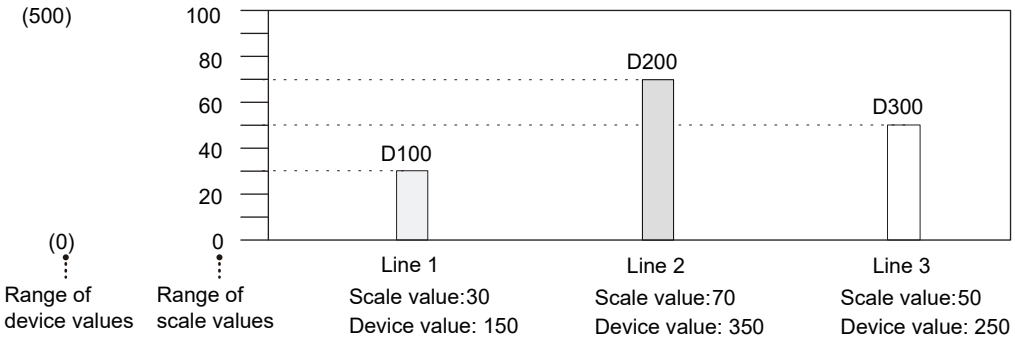
Ex.

When monitoring the same devices as above and expressing the production rates (%) of line 1 to 3 in a bar graph

Range of the device value: 0 to 500

Range of the scale value: 0 to 100

The device values and the corresponding scale values are as follows.



Point

The following setting items are related to the above.

- [Lower Limit] and [Upper Limit] in the [Data] tab

☞ Page 1631 [Data] tab

- [Lower Limit] and [Upper Limit] in the [Style] tab

☞ Page 1633 [Style] tab

42.3 Specifications of the bar graph

GT37 SoftGOT3000

☞ Page 1628 Maximum number of objects on one screen
☞ Page 1628 Number of word devices that can be monitored
☞ Page 1628 Bar graph size
☞ Page 1628 Display when the lower or upper limit is exceeded
☞ Page 1629 Conversion to a line graph

42.3.1 Maximum number of objects on one screen

Up to 1024 bar graphs can be placed on one screen.
Up to 256 objects for which [Collect data only when trigger conditions are satisfied] is set can be placed for one project.

42.3.2 Number of word devices that can be monitored

With a single object, up to 500 word devices (bars) can be monitored.

42.3.3 Bar graph size

The following shows the minimum and maximum bar graph sizes.

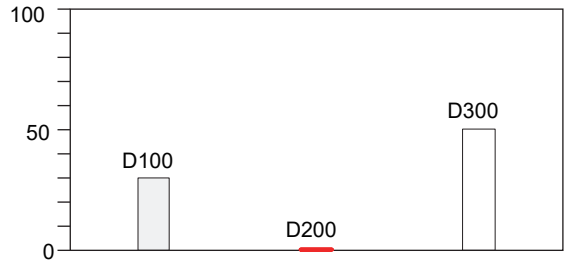
Size	Size (dot)
Minimum	16 × 16
Maximum	6000 × 6000

42.3.4 Display when the lower or upper limit is exceeded

If the monitored device value equals to or below the lower limit, the lower limit is indicated.
If the monitored device value equals to or above the upper limit, the upper limit is indicated.

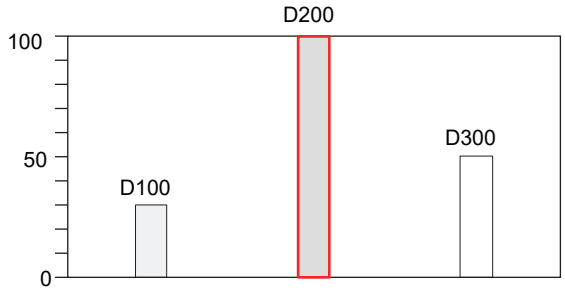
Ex.
A bar graph with the device value set to a lower limit of [0] and an upper limit of [100]
When the device value of [D200] is [-50], the lower limit [0] is indicated.
When the device value of [D200] is [180], the upper limit [100] is indicated.

When the value is equal to or smaller than the lower limit.



When the device value is [-50]
The lower limit [0] is displayed.

When the value is equal to or larger than the upper limit



When the device value is [180]
The upper limit [100] is displayed.

42.3.5 Conversion to a line graph

The object type can be switched between the bar graph and the line graph.

☞ Page 1631 [Data] tab

The common settings are retained even when the object type is switched.

When there are differences between the items on the screens before and after the switching, values in the deleted items are discarded, and initial values are set in the added items.

When there are differences between the settable ranges, values closest to the original values are set.

42.4 Setting a bar graph

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Use the following procedure to place a bar graph and configure operation settings.

Operating procedure

1. Select [Object] → [Graph] → [Bar Graph], and click the position to place the bar graph.

☞ Page 1001 Placing figures and objects

2. Double-click the bar graph to display the [Bar Graph] dialog.

3. Configure operation settings in each tab of the [Bar Graph] dialog.

☞ Page 1631 [Bar Graph] dialog

For the operations common to all objects or editing operations except operation settings, refer to the following.

☞ Page 995 Basics of figures and objects

42.5 [Bar Graph] dialog

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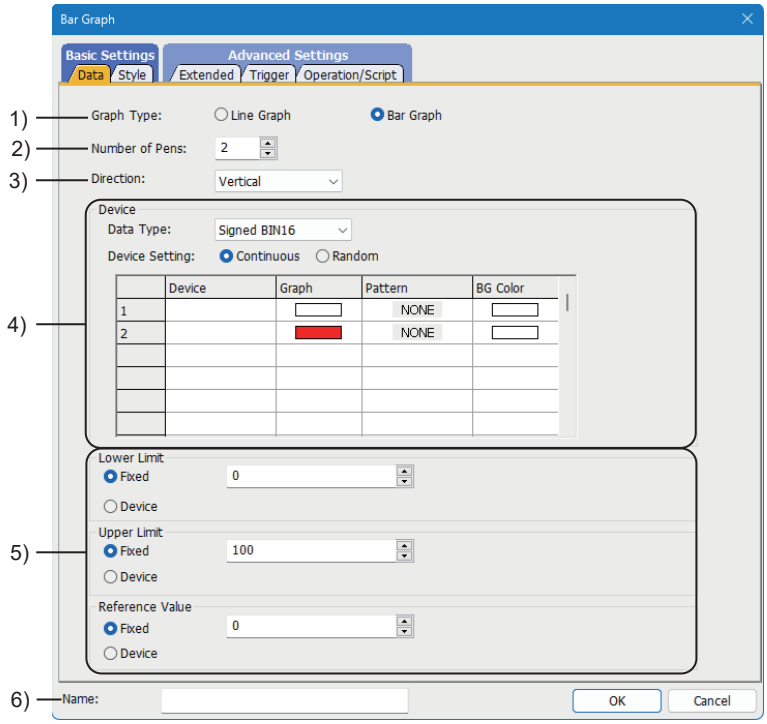
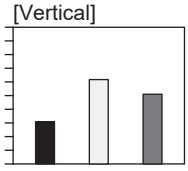
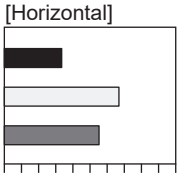
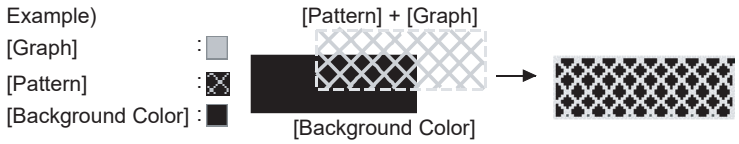
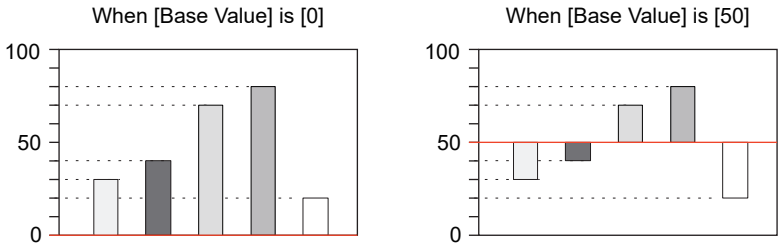
☞ Page 1631 [Data] tab
☞ Page 1633 [Style] tab
☞ Page 1635 [Extended] tab
☞ Page 1636 [Trigger] tab
☞ Page 1637 [Operation/Script] tab

42.5.1 [Data] tab

Specify the graph type, and set the device to be monitored, data type, upper and lower limits of the device value and others.



Item		Description
1)	[Graph Type]	Select [Bar Graph].
2)	[Number of Pens]	Set the number of bars to be displayed. Set the number of bars to be displayed. The setting range is [1] to [500].
3)	[Direction]	Select the display direction of the graph. [Vertical]  [Horizontal] 

Item			Description
4)	[Device]	[Data Type]	Select the data type of the word device.
		[Device Setting]	Select how to set multiple devices. Select [Continuous] when monitoring consecutive devices. Select [Random] when monitoring non-consecutive devices. When a PLC that supports continuous read is used, the screen display can be refreshed faster with [Continuous].
		[Device]	Set a word device to be monitored. When selecting [Continuous] for [Device], set the start device of consecutive devices. When the start device is set, the subsequent devices are automatically set according to the number set to [Number of Pens]. When selecting [Random] for [Device], set each device manually. ☞ Page 834 How to set devices, labels, and tags
		[Graph] [Pattern] [BG Color]	Select the colors, patterns, and background colors for the bars. The pattern is displayed in the graph color on the background color. When [None] is selected for [Pattern], [BG Color] is not set. 
5)	[Lower Limit] [Upper Limit]		Specify the range of the device value (lower and upper limits). Specify fixed values or devices. Devices can be used to change the values dynamically. ☞ Page 834 How to set devices, labels, and tags The setting range depends on the selection for [Data Type].
	[Reference Value]		Specify the reference value for the graph. The graph is displayed in the upper and the lower limit directions with the reference value as the boundary value. Example) Depending on the value of [Reference Value], the bar graph display changes as follows. [Lower Limit]: [0] [Upper Limit]: [100] 
6)	[Name]		Set the object name. The name is displayed in the data browser, property sheet, and others. The setting can also be changed in other tabs. Up to 100 characters can be set.

Precautions

■When monitoring a global label

When monitoring a device of a primitive data type global label, select [Random] for [Device Setting].

If [Continuous] is selected, system error 326 occurs.

When setting consecutive devices, set an array-type global label.

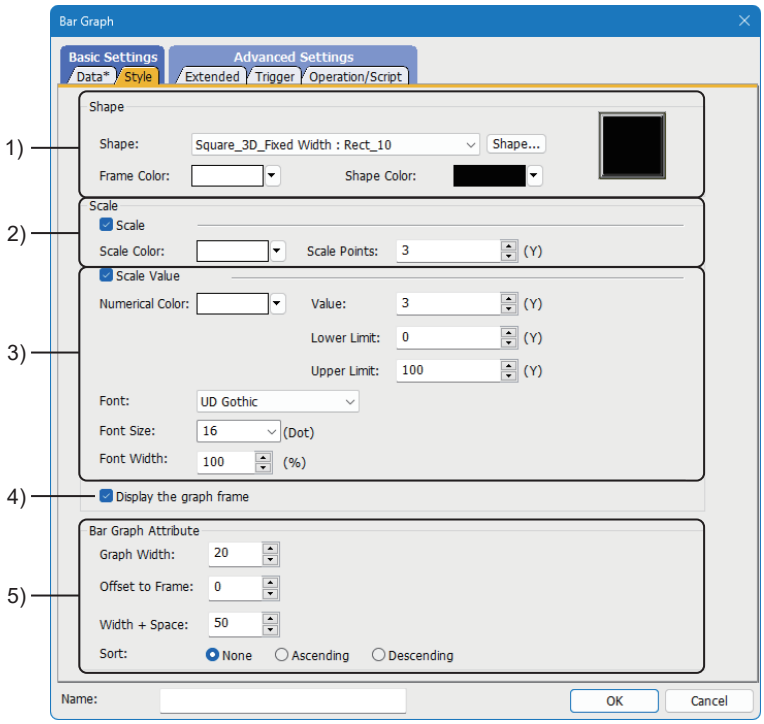
■Insufficient number of devices

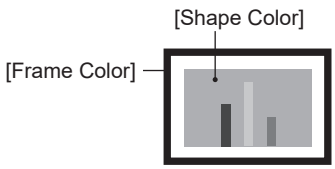
If the number of devices is insufficient to display the specified graph, system alarm 307 occurs and the object is not displayed.

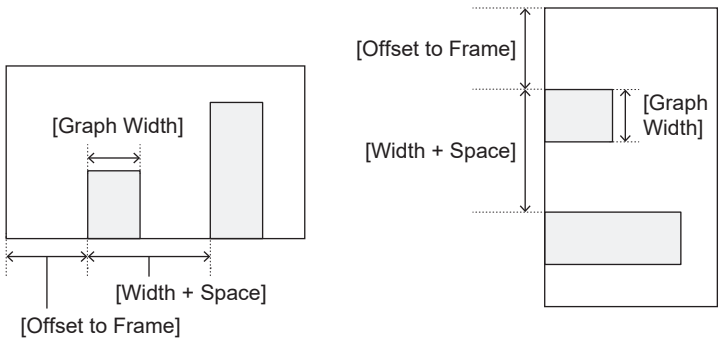
42.5.2 [Style] tab

For mobile screens, some setting items are not available.

Configure the frame shape settings, scale mark and scale value display settings, bar width and bar interval settings, and other settings.



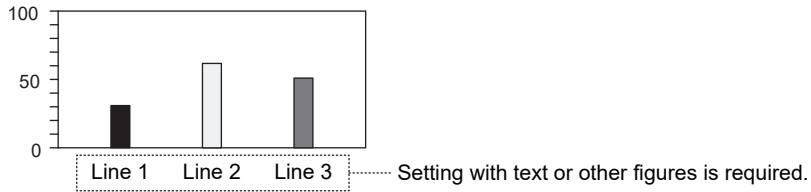
Item			Description
1)	[Shape]	[Shape]	Set the shape to be placed behind the bar graph. Use this item when enclosing the object with a frame or others. This eliminates the need of placing another frame shape and enables automatic resizing according to the object size. To use a readily available design set, select one from the list box. When not selecting one from the list box, click the [Shape] button and set one on the displayed [Image List] screen. ☞ Page 1044 Object shape When selecting a shape from [Basic Figure], set a frame color and a shape color. 
		[Frame Color]	Select a frame color.
		[Shape Color]	Select a fill color of the shape.
2)	[Scale]	—	Select this item to display scale marks. When selecting this item, configure the following settings.
		[Scale Color]	Set the color of the scale marks. ☞ Page 988 Color settings
		[Scale Points]	Set the number of scale marks. The setting range is [2] to [101].

Item			Description
3)	[Scale Value]	—	Select this item to display numerical values on the scale. When selecting this item, configure the following settings.
		[Numerical Color]	Set the color of the scale values. ☞ Page 988 Color settings
		[Value]	Set the number of scale values to be displayed. The setting range is [2] to [101].
		[Lower Limit] [Upper Limit]	Set the upper and lower limits of the scale value. The setting range depends on the setting of [Data Type] in the [Data] tab. The setting range of 64-bit devices is the same as that of 32-bit devices. When [Upper Limit], [Lower Limit], and [Value] are set, the scale values are automatically calculated and displayed.
		[Font]	Select a font for the scale values.
		[Font Size]	Select a vertical size for the scale values. The setting range is [8] dots to [540] dots.
		[Font Width]	Specify a horizontal size for the scale values. The horizontal size is specified with the magnification relative to [Font Size] (vertical text size). The setting range is [6]% to [1600]%. Note that the size per character is always within the range of [8] dots to [540] dots.
4)	[Display the graph frame]		Select this item to display the frame of the graph.
5)	[Bar Graph Attribute]	-	Set the width, display spacing, and sort order for the bar graph. 
		[Graph Width]	Set the width per bar. The setting range is [1] dot to [500] dots. The bar width includes one dot of the boundary line (vertical: left side, horizontal: top side).
		[Offset to Frame]	Set the space between the origin point and the bar nearest to the origin point. The setting range is [0] dot to [100] dots.
		[Width + Space]	Set the interval from the start of a bar to the start of the next bar. The setting range is [1] dot to [500] dots.
		[Sort]	Select a sort order when sorting the bars by the size of the device value. • [None]: The bars are sorted in the order of the set devices. • [Ascending]: The bars are sorted by the device values in ascending order. • [Descending]: The bars are sorted by the device values in descending order.

Precautions

There is no function to set items in the horizontal or vertical axis of the bar graph.

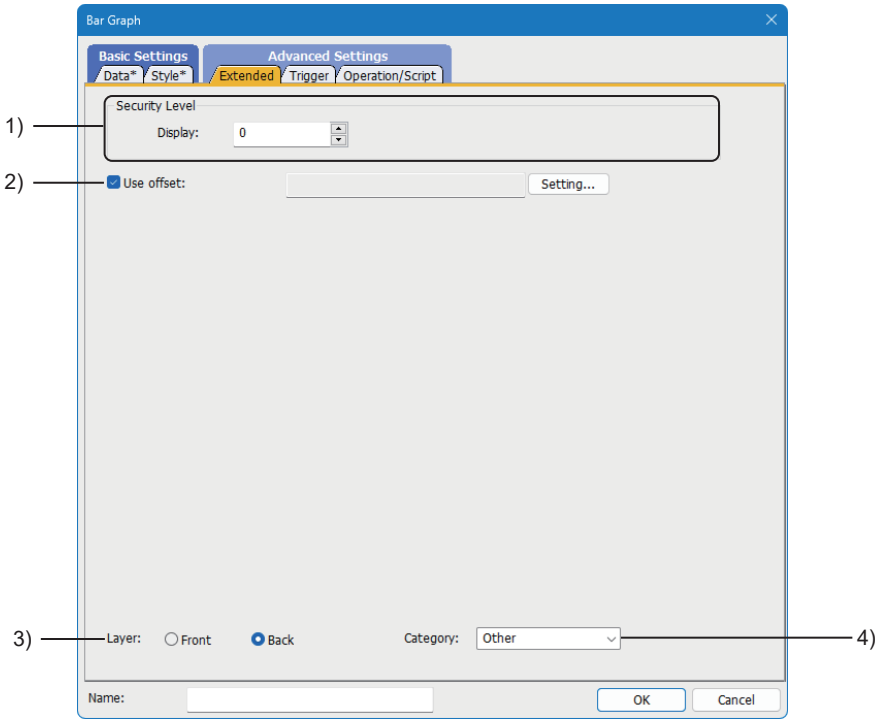
Use [Text] or other figures as necessary.



42.5.3 [Extended] tab

For mobile screens, some setting items are not available.

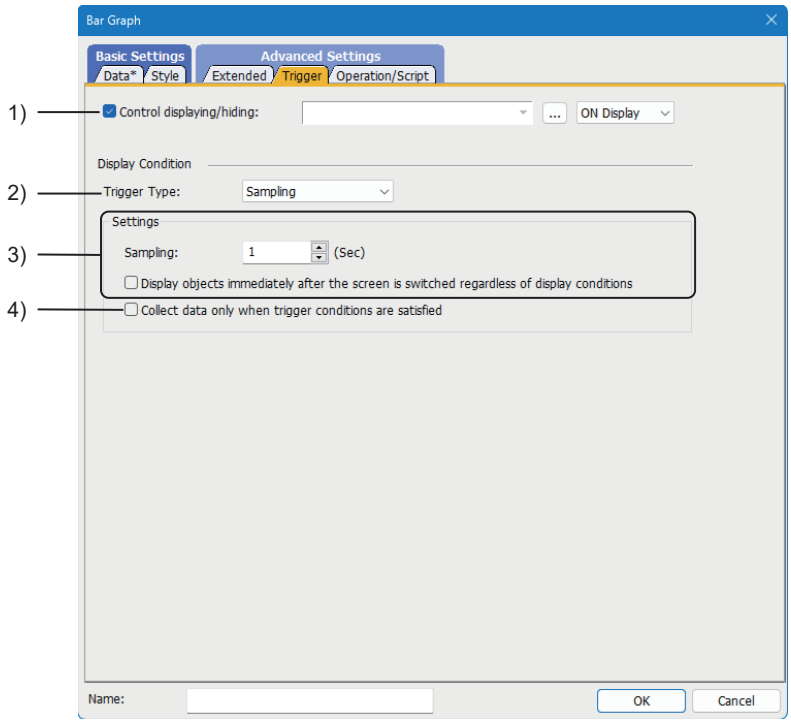
Set the security level of the object and use/nonuse of the offset function.



Item		Description
1)	[Security Level]	Set the security level. The setting range is [0] to [15]. If you do not use the security function of the GOT, select [0]. ☞ Page 3038 Restricting display and operation on the GOT (Screen security)
2)	[Use offset]	Configure the settings to monitor the statuses of multiple devices by switching between them with a single device. Select this item, and set an offset device. The monitored device is the one with the offset device value added to the device set in [Device] in the [Data] tab. ☞ Page 963 Offset
3)	[Layer]	Select the layer to place the object. ☞ Page 65 Layer
4)	[Category]	Select the category to assign the object. ☞ Page 1121 Managing figures and objects by category

42.5.4 [Trigger] tab

Set the trigger condition to display the object.



Item		Description
1)	[Control displaying/hiding]	Enables the setting to display the object only when requirements are met. Set the following as requirements. • Control device (bit device or bit-specified word device) • When to display: When the control device is on or off
2)	[Trigger Type]	Select a trigger condition to display the object. For details on the trigger types, refer to the following. ☞ Page 969 Trigger types settable for the object display condition
3)	[Settings]	For the settings of each item, refer to the following. ☞ Page 972 Settings by trigger type
4)	[Collect data only when trigger conditions are satisfied]	This item is settable when [Rise], [Fall], [Rise/Fall], [Sampling], [ON Sampling], or [OFF Sampling] is selected for [Trigger Type]. Select this item to collect data only when the trigger condition set to [Trigger Type] is satisfied. Normally, the GOT communicates with the controller even when the trigger condition is not satisfied. When this function is enabled, the GOT communicates with the controller only when the trigger condition is satisfied. The communication load between the GOT and the controller can be reduced. This is useful when the object display does not need frequent refresh.

Precautions

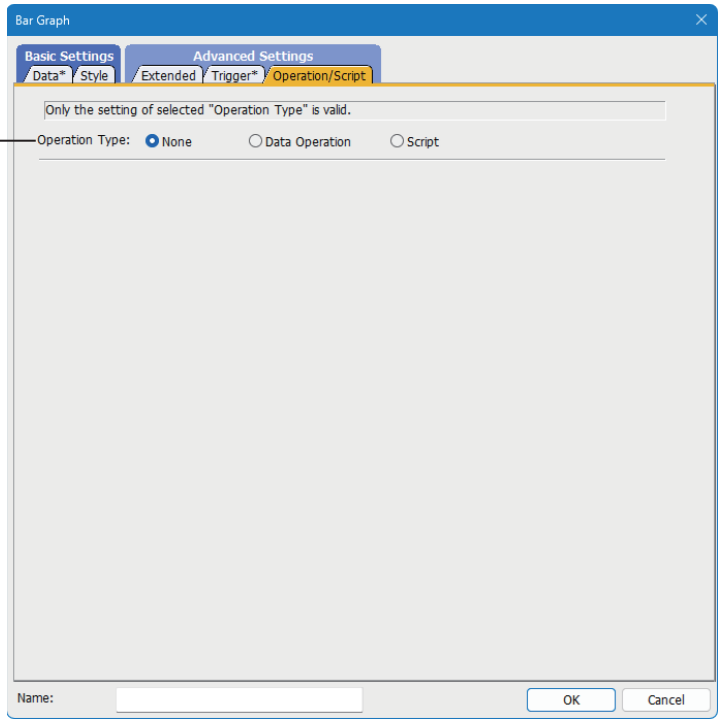
■About [Collect data only when trigger conditions are satisfied]

- If consecutive graph refresh and display is required, it is recommended to disable [Collect data only when trigger conditions are satisfied].
- When [Trigger Type] is set to [Sampling], [ON Sampling], or [OFF Sampling], if a short cycle is set, communication may be delayed, lowering screen refresh performance even if [Collect data only when trigger conditions are satisfied] is enabled.
- When [Collect data only when trigger conditions are satisfied] is enabled, a trigger satisfied for an object being refreshed by the previous trigger will become invalid.
- When [Collect data only when trigger conditions are satisfied] is enabled, the time from when the trigger condition is satisfied to when the object display is refreshed will be longer than when the setting is disabled.

42.5.5 [Operation/Script] tab

For mobile screens, some setting items are not available.

Set whether to perform an operation or a script with the device value handled by the object.

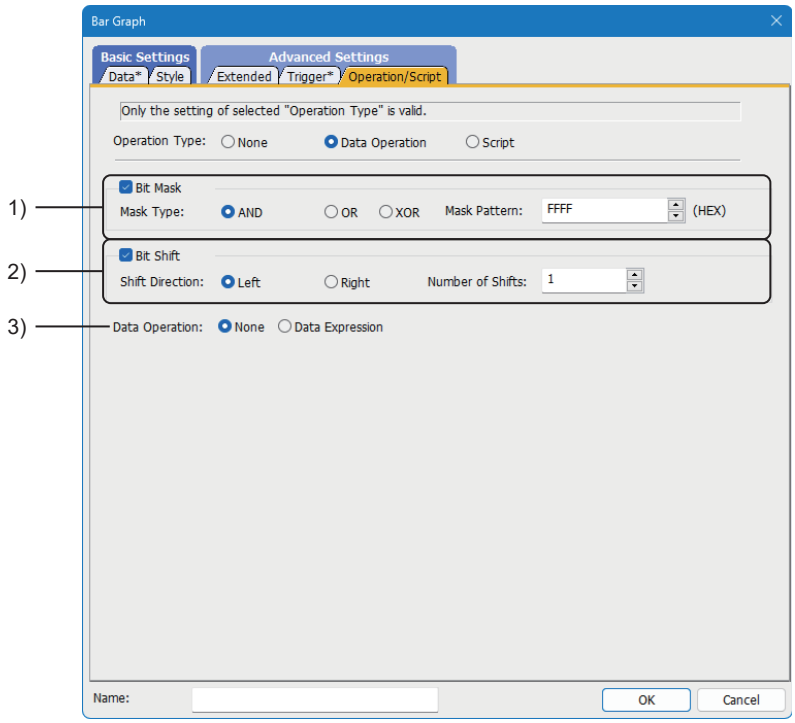


Item			Description
1)	[Operation Type]	[None]	Does not use the data operation function and the script function.
		[Data Operation]	Set the expression used for the data operation function. For the setting method, refer to the following. ☞ Page 1638 [Data Operation]
		[Script]	Set the expressions for the script function. For the setting method, refer to the following. ☞ Page 1639 [Script]

[Data Operation]

For details on the data operation settings, refer to the following.

☞ Page 1053 How to set the data operation

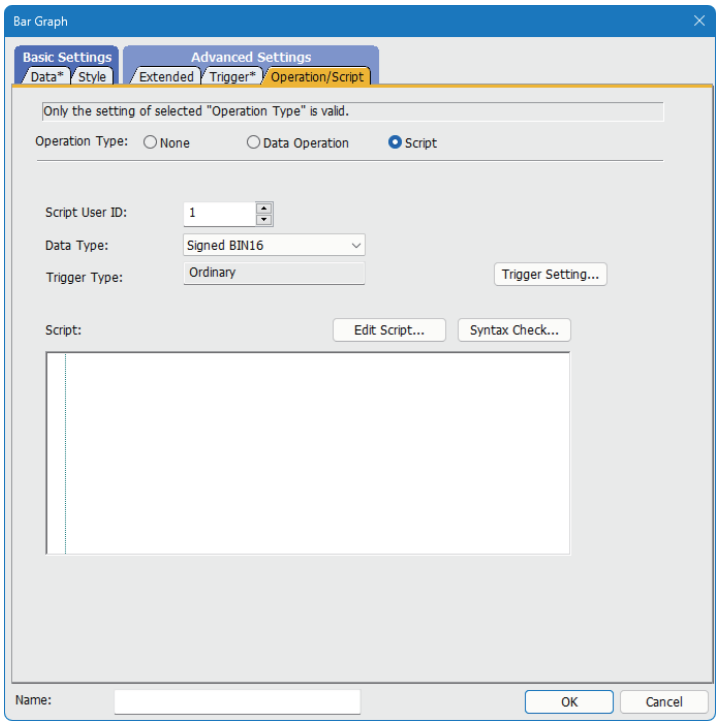


Item			Description
1)	[Bit Mask]	-	Set the operation of mask processing.
		[Mask Type]	Select the type of mask processing. The following shows selectable items. • [AND]: Logical AND • [OR]: Logical OR • [XOR]: Exclusive OR
		[Mask Pattern]	Set a pattern value to mask in hexadecimal. The setting range depends on the setting of [Data Type] in the [Data] tab.
2)	[Bit Shift]	-	Set the operation of shift processing.
		[Shift Direction]	Select a shifting direction.
		[Number of Shifts]	Set the number of bits to be shifted. The setting range depends on the setting of [Data Type] in the [Data] tab.
3)	[Data Operation]	—	Performs the data operation using the value stored in the monitored device. The bar graph displays the value after the operation.
		[None]	Does not perform the data operation.
		[Data Expression]	Performs the data operation. Click the [Exp] button to set an expression in the [Edit Data Expression] dialog. ☞ Page 1054 [Edit Data Expression] dialog

[Script]

For details on the script settings, refer to the following.

☞ Page 2447 Object script



■Correspondence between the object settings and the object properties

The object settings can be read (referenced) or written (changed) using the object property.

The following shows the correspondence between readable/writable object properties and the setting items in the object setting dialog.

○: Available

×: Not available

—: No applicable setting item

Setting dialog		Object property			
Tab name	Setting item	Property name	Read	Write	Timing for reflecting the setting change*1
—	—	active	○	○	Upon the setting change
		x	○	○	When the screen is updated
		y	○	○	When the screen is updated
		width	○	×	×
		height	○	×	×
[Style]	[Frame Color]	frame_color	○	×	×
	[Shape Color]	plate_color	○	○	When the object is updated
	[Lower Limit] (X)	scale_min[0]	○	○	When the screen is updated
	[Lower Limit] (Y)	scale_min[1]	○	○	When the screen is updated
	[Upper Limit] (X)	scale_max[0]	○	○	When the screen is updated
	[Upper Limit] (Y)	scale_max[1]	○	○	When the screen is updated
[Extended]	[Security Level]	security	○	○	When the screen is updated

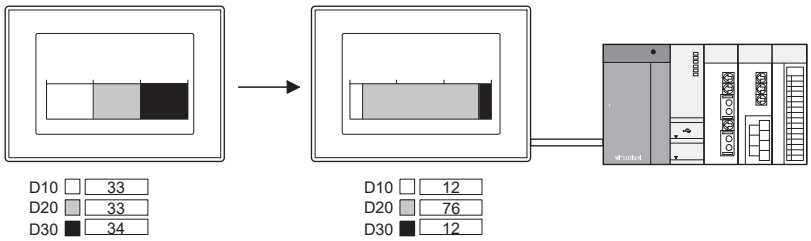
*1 For the timing at which the setting change of an object property is reflected, refer to the following.

☞ Page 2456 Timing at which the setting change of an object property is reflected

43 Placing a bar graph

GT37 SoftGOT3000

This function collects multiple word device values in a batch and displays the ratio of each value to all the collected values in graph form.



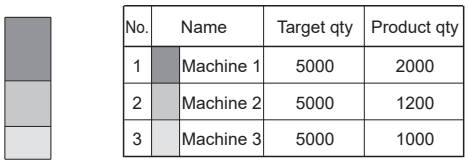
☞ Page 1641 Specifications of the bar graph
☞ Page 1642 How to use the bar graph
☞ Page 1645 [Bar(Rectangle)] dialog

Application example

■Displaying the graph on the same screen as the historical data list display

By displaying the graph on the same screen as the historical data list display, the device status can be described more effectively.

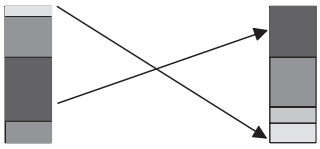
☞ Page 1495 Placing a historical data list display



No.	Name	Target qty	Product qty
1	Machine 1	5000	2000
2	Machine 2	5000	1200
3	Machine 3	5000	1000

■Sorting the graph segments according to the device values

The graph can be sorted in ascending or descending order of the device values.



43.1 Specifications of the bar graph

GT37 SoftGOT3000

The following shows the bar graph specifications.

43.1.1 Settable numbers

Maximum number of bar graphs that can be placed

Up to 32 bar graphs and pie graphs can be placed on one screen.

When [Collect data only when trigger conditions are satisfied] is selected, up to 256 objects can be placed for one project.

Number of values that can be displayed (number of word devices that can be monitored)

Up to 32 values can be displayed on one bar graph.

PART 7

43.2 How to use the bar graph

GT37 SoftGOT3000

The following shows how to use a bar graph.

43.2.1 Placing a bar graph

The following shows how to place a bar graph.

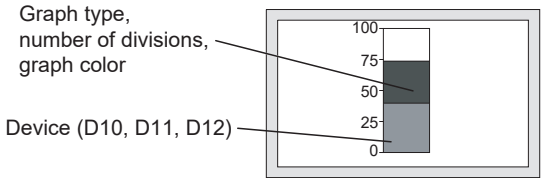
Operating procedure

1. Select [Object] → [Graph] → [Bar(Rectangle)] from the menu.
2. Click the position to place a bar graph.
3. Adjust the frame size of the bar graph.
4. Double-click the bar graph to display the setting dialog.

☞ Page 1645 [Bar(Rectangle)] dialog

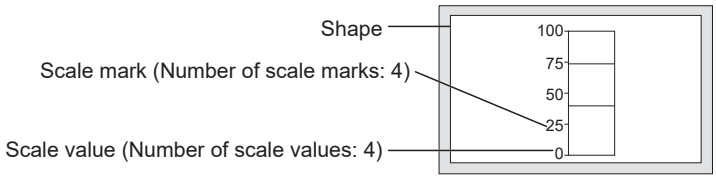
5. Set the number of divisions (number of the word devices to be monitored), devices to be monitored, and graph color in the [Data] tab.

☞ Page 1646 [Data] tab



6. Configure the figure and scale settings in the [Style] tab.

☞ Page 1648 [Style] tab



7. Click the [OK] button to complete the bar graph settings.

43.2.2 Setting [Collect data only when trigger conditions are satisfied]

Selecting [Collect data only when trigger conditions are satisfied] can reduce the number of communications.
Various graphs can be combined.

Operating procedure

1. Select [Object] → [Graph] → [Bar(Rectangle)] from the menu.
2. Click the position to place a bar graph.
3. Double-click the bar graph to display the setting dialog.

☞ Page 1645 [Bar(Rectangle)] dialog

4. Display the [Trigger] tab.

☞ Page 1651 [Trigger] tab

5. Select [Rise], [Fall], [Rise/Fall], [Sampling], [ON Sampling], or [OFF Sampling] for [Trigger Type].
6. Select [Collect data only when trigger conditions are satisfied].

The [Collect data only when trigger conditions are satisfied] setting is effective if a graph does not require frequent refresh. However, when the graph requires frequent refresh and display, [Collect data only when trigger conditions are satisfied] should be deselected (device values are collected through constant communication).
The setting of [Collect data only when trigger conditions are satisfied] may cause the delay of the screen refresh or incorrect display of the screen.

43.2.3 Cause and solution when the graph display is not refreshed in a specified cycle

Refresh timing when [ON Sampling] or [OFF Sampling] is selected

The graph display may not be refreshed in the set cycle.

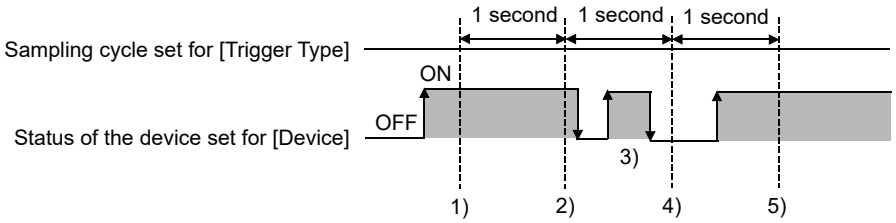
■Cause

The device status is checked in the sampling cycles set for [Trigger Type].

If the condition is not satisfied at the timing of the check, the display is not refreshed.

Ex.

[Trigger Type] is set to [ON Sampling] and [Sampling] is set to [1] second



- The display of the bar graph is refreshed at timing 1).
- The display of the bar graph is refreshed at timing 2).
- At timing 3), the display of the bar graph is not refreshed because the timing does not match the end of one cycle and thus the condition is not checked.
- At timing 4), the display of the bar graph is not refreshed because the device condition is not satisfied.
- The display of the bar graph is refreshed at timing 5).

■Solution

The sampling cycle set for [Trigger Type] does not depend on the device status.

(The sampling cycle does not change whether the device is turned on or off.)

The following shows the setting procedure to start the cycle according to the device status.

Operating procedure

1. Select [Rise] or [Fall] for [Trigger Type].
2. Create a sequence program that turns the device on or off when the display should be refreshed.

Refresh timing when [Sampling], [ON Sampling], or [OFF Sampling] is selected

The sampling cycle count starts and is reset at the following timing.

- When the bar graph is displayed (due to screen switching, a security level change, or other cases)
- When the language switches
- When the security level changes

After the execution of any of the events, the display is refreshed at the start timing of the sampling cycle.

43.3 [Bar(Rectangle)] dialog

GT37 SoftGOT3000

The bar graph object collects multiple word device values in a batch and displays the ratio of each value to the total collected values in graph form.

Operating procedure

1. Select [Object] → [Graph] → [Bar(Rectangle)] from the menu.
2. Click the position to place a bar graph.
3. Double-click the bar graph to display the setting dialog.

☞ Page 1646 [Data] tab
☞ Page 1648 [Style] tab
☞ Page 1650 [Extended] tab
☞ Page 1651 [Trigger] tab
☞ Page 1652 [Operation/Script] tab

43.3.1 [Data] tab

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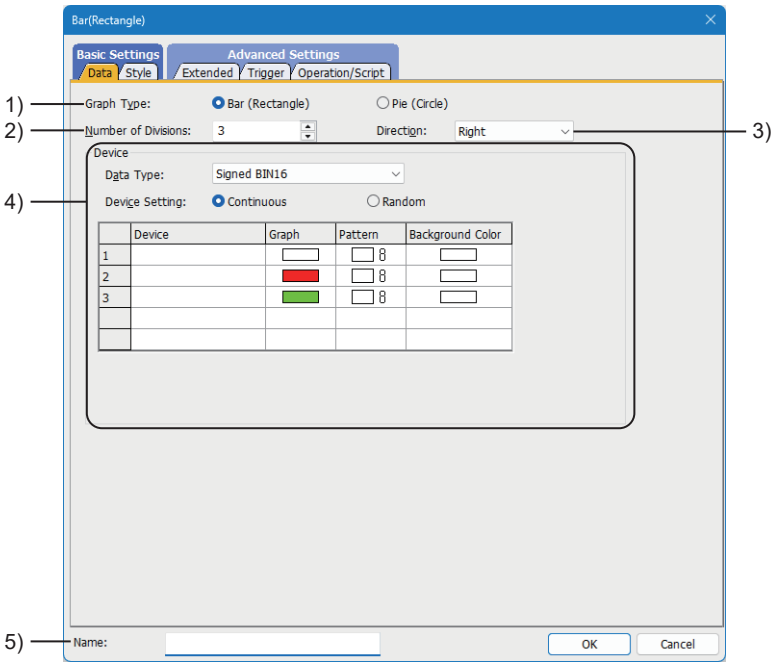
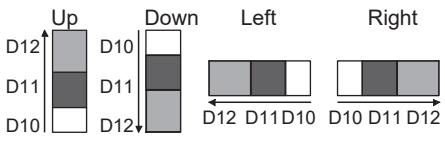
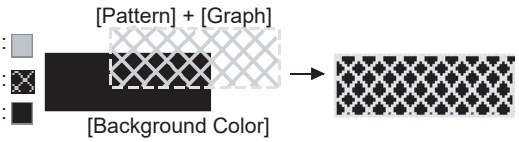
Set the device to be monitored and the bar graph status corresponding to the device value.



Item		Description
1)	[Graph Type]	Select the graph to be set. The following shows selectable items. • [Bar(Rectangle)] • [Pie(Circle)]
2)	[Number of Divisions]	Set the number of values that can be displayed (number of word devices that can be monitored). The setting range is [2] to [32].
3)	[Direction]	Select the display direction of the graph. The following shows selectable items. • [Up] • [Down] • [Left] • [Right] 

Item			Description
4)	[Device]	[Data Type]	Select the data type of the word device. The following shows selectable items. • [Signed BIN8] • [Unsigned BIN8] • [Signed BIN16] • [Unsigned BIN16] • [Signed BIN32] • [Unsigned BIN32] • [Signed BIN64] • [Unsigned BIN64] • [BCD16] • [BCD32] • [BCD64] • [Real(32bit)] • [Real(64bit)]
		[Device Setting]	Select how to set the device. The following shows selectable items. • [Continuous]: Automatically inputs consecutive devices in the table of [Device] when a start device is set. • [Random]: Select this item when setting devices one by one.
		[Device]	Set the device to be monitored. ☞ Page 834 How to set devices, labels, and tags
		[Graph]	Select the color of the bar.
		[Pattern], [Background Color]	Select the pattern and the background color to be used for the bar. Example) [Graph] : [Pattern] : [Background Color]: 
5)	[Name]		Set the object name. The name is displayed in places such as the data browser and property sheet. The name can also be changed in other tabs. Up to 100 characters can be set.

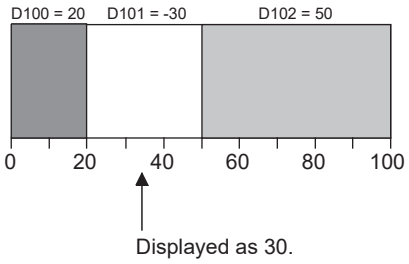
Precautions

■When the monitored device value is negative

When the monitored device value is negative, its absolute value is displayed in the bar graph.

Ex.

When the value of D101 is -30

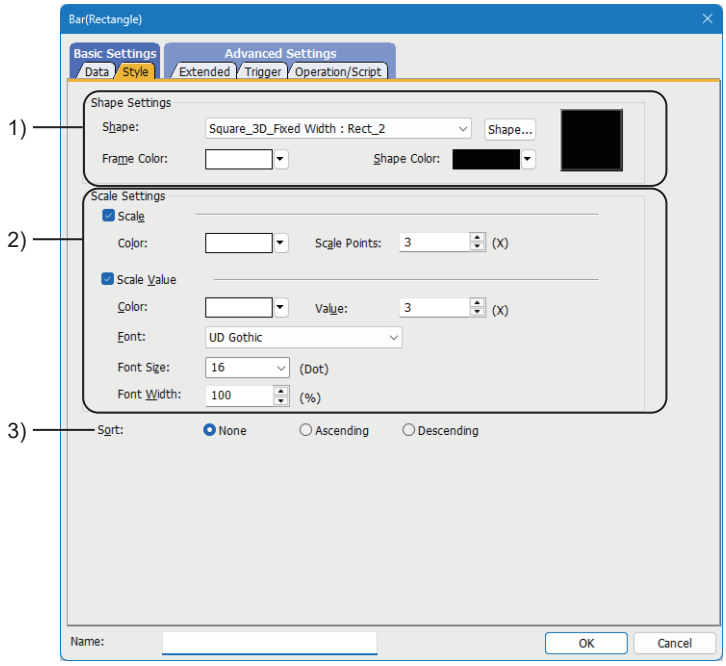


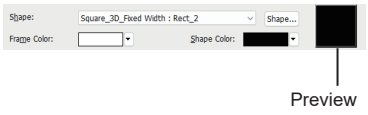
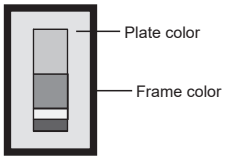
43.3.2 [Style] tab

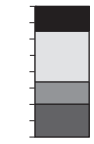
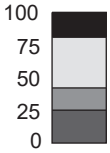
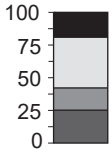
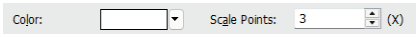
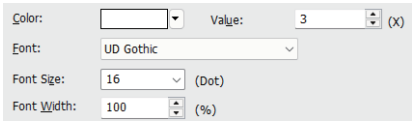
GT37 SoftGOT3000

For mobile screens, some setting items are not available.

☞ Page 2742 Usable functions



Item			Description
1)	[Shape Settings]	[Shape]	Set the shape of the bar graph. When [None] is selected, no figure is displayed. Click the [Shape] button to select shapes other than those in the list box. ☞ Page 1045 How to set the object shape When selecting a figure from [Basic Figure], set a frame color and a figure color.  • [Frame Color] Set the color of the frame. • [Shape Color] Set the color of the shape.  • Preview Displays the preview of the set shape.

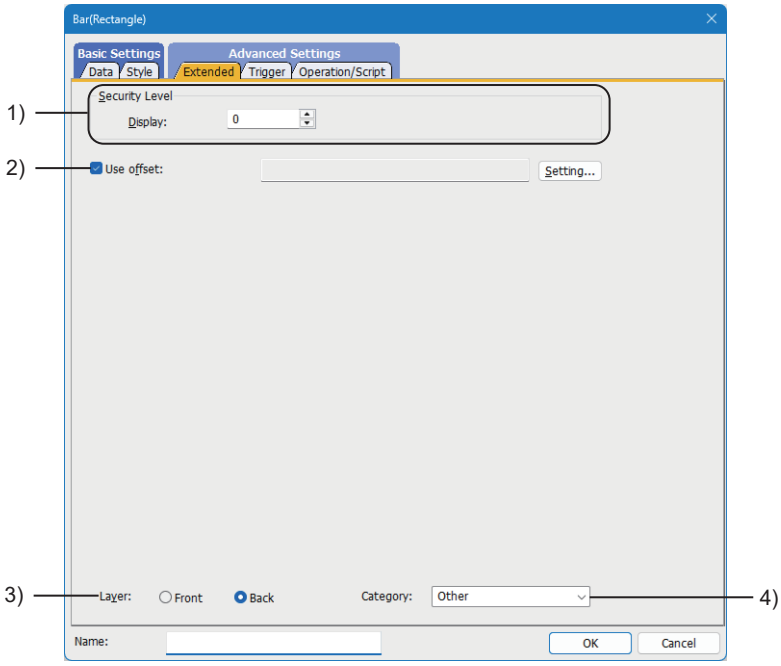
Item			Description
2)	[Scale Settings]	—	Displays scale marks and scale values in the bar graph.  Number of scale marks: 9  Number of scale values: 5  Both scale marks and scale values are displayed.
		[Scale]	Set this item to display scale marks.  • [Color] Set the color of the scale marks. • [Scale Points] Set the number of scale marks. The setting range is [0] and [2] to [101].
		[Scale Value]	Set this item to display numeric characters as the scale value.  • [Color] Set the color of numeric characters. • [Value] Set the number of numeric characters. The setting range is [0] and [2] to [101]. • [Font] Select a font for scale values. The following shows selectable items. [UD Gothic] [UD Mincho] • [Font Size] Set a vertical text size. The setting range is [8] dots to [540] dots. • [Font Width] Set a horizontal text size. The horizontal size is specified with the magnification relative to [Font Size] (vertical text size). The setting range is [6]% to [1600]%.
3)	[Sort]		Select the sorting order when sorting the graph in ascending or descending order of the device values. The following shows selectable items. • [None] • [Ascending] • [Descending] [Ascending] [Descending]

43.3.3 [Extended] tab

GT37 SoftGOT3000

For mobile screens, some setting items are not available.

☞ Page 2742 Usable functions

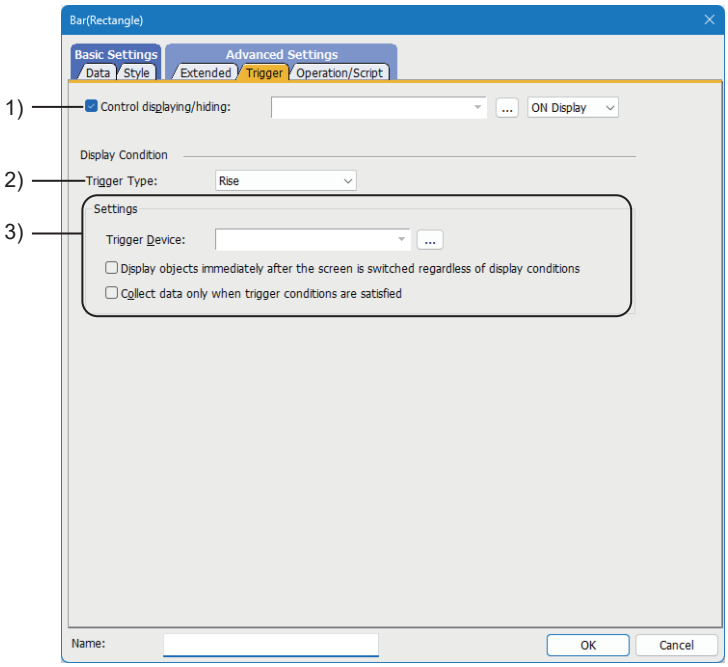


Item		Description
1)	[Security Level]	Set the security level when using the security function. The setting range is [1] to [15]. Set the level to [0] when the security function is not used. ☞ Page 3038 Restricting display and operation on the GOT (Screen security)
2)	[Use offset]	Select this item to monitor multiple devices by switching between them. After selecting this item, set the offset device. ☞ Page 963 Offset
3)	[Layer]	Select the layer to arrange the object on. The following shows selectable items. • [Front] • [Back] ☞ Page 1055 Superimposition of figures and objects
4)	[Category]	Select the category to assign the object. ☞ Page 1121 Managing figures and objects by category

43.3.4 [Trigger] tab

GT37 SoftGOT3000

Set the trigger condition to display the object.



Item		Description
1)	[Control displaying/hiding]	Set the control device to display or hide all the objects including the shape frame. When the set device is in either the ON or OFF status, select whether or not to display the object. The following shows selectable items. • [ON Display] • [OFF Display] ☞ Page 834 How to set devices, labels, and tags
2)	[Trigger Type]	Select the condition of displaying the object. The following shows selectable items. • [Ordinary] • [ON] • [OFF] • [Rise] • [Fall] • [Rise/Fall] • [Sampling] • [Range] • [Bit Trigger] • [ON Sampling] • [OFF Sampling]
3)	[Settings]	For details on each setting, refer to the following. ☞ Page 972 Settings by trigger type
4)	[Collect data only when trigger conditions are satisfied]	Select this item to collect data only when the trigger set for [Trigger Type] is satisfied. When [Rise], [Fall], [Rise/Fall], [Sampling], [ON Sampling], or [OFF Sampling] is selected, this setting is available. The graph communicates with the controller even when the trigger is off. To reduce the communication load between the GOT and the controller, allow communications only when the trigger is on.

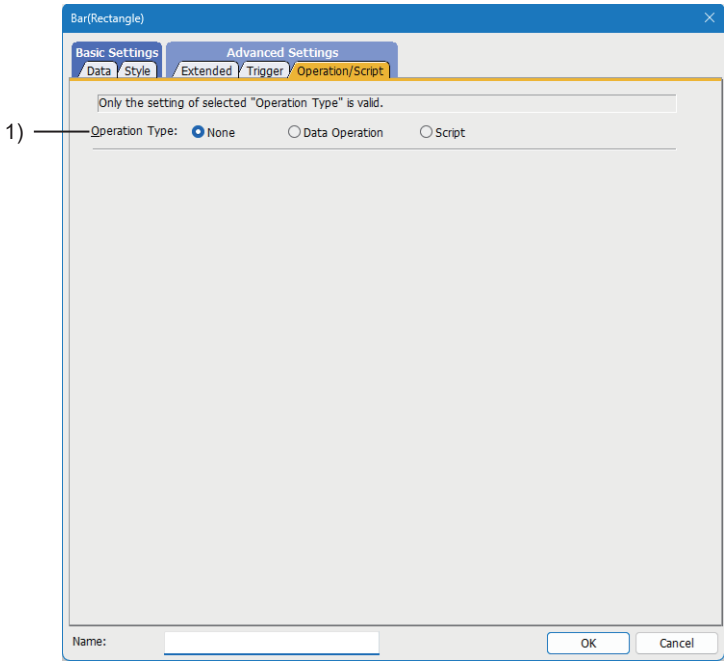
43.3.5 [Operation/Script] tab

GT37 SoftGOT3000

For mobile screens, some setting items are not available.

☞ Page 2742 Usable functions

Set an expression for monitoring using the data operation function or the script function.

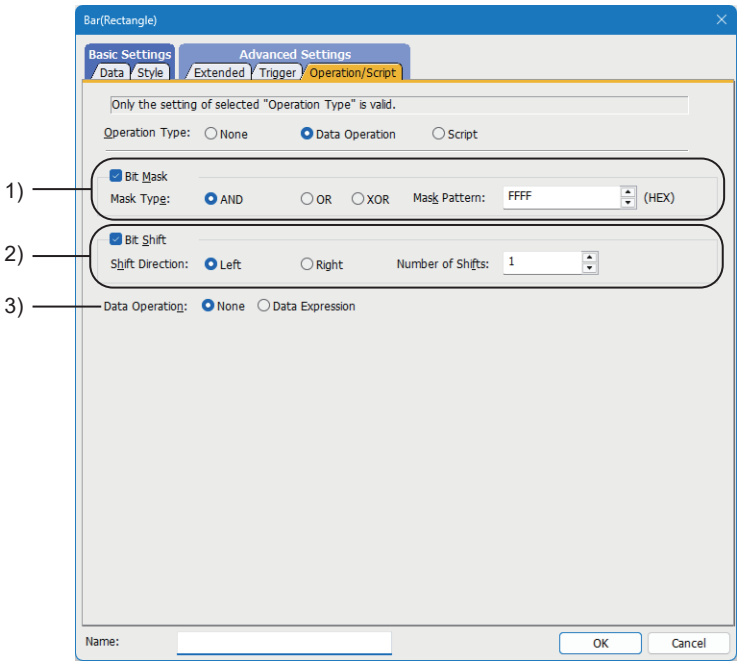


Item		Description
1)	[Operation Type]	To use the data operation or script, select an operation type. The following shows selectable items. • [None] Select this item if the data operation and script are unnecessary. • [Data Operation] Set the expression used for the data operation. ☞ Page 1653 [Data Operation] • [Script] Set the expressions for the script function. ☞ Page 1654 [Script]

[Data Operation]

For the data operation function settings, refer to the following.

☞ Page 1053 How to set the data operation

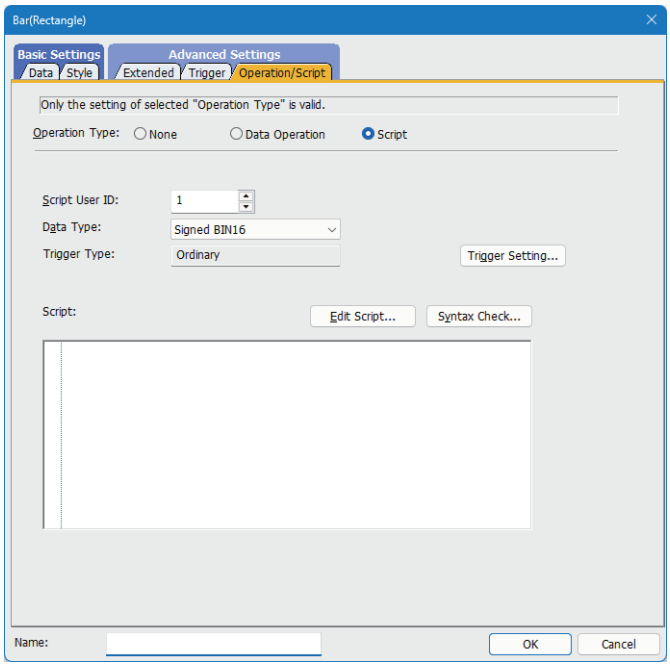


Item			Description
1)	[Bit Mask]	—	Set the operation of mask processing.
		[Mask Type]	Select the type of mask processing. • [AND]: Logical AND • [OR]: Logical OR • [XOR]: Exclusive OR
		[Mask Pattern]	Set a pattern value to mask in hexadecimal. The setting range differs depending on the setting of [Data Type] in the [Data] tab.
2)	[Bit Shift]	—	Set the operation of shift processing.
		[Shift Direction]	Select a shifting direction. • [Left]: Left-shift • [Right]: Right-shift
		[Number of Shifts]	Set the number of bits to be shifted. The setting range differs depending on the setting of [Data Type] in the [Data] tab.
3)	[Data Operation]		Set the format of the expression. The following shows selectable items. • [None]: Does not perform the data operation by using the expression. • [Data Expression]: Performs the data operation by using the expression. Click the [Exp] button to set the format of the expression in the [Edit Data Expression] dialog.

[Script]

For the script settings, refer to the following.

☞ Page 2447 Object script



■Relationship between the object settings and object properties

Object settings can be read (referenced) or written (changed) using object properties.

The following shows the correspondence between the relevant settings in the object setting dialog and the object properties.

○: Available

×: Not available

—: No applicable setting item

Setting dialog		Object property			
Tab name	**Setting item**	**Property name**	**Read**	**Write**	**Timing for reflecting the setting change*1**
—	—	active	○	○	Upon the setting change
		x	○	○	When the screen is updated
		y	○	○	When the screen is updated
		width	○	×	×
		height	○	×	×
[Style]	[Frame Color]	frame_color	○	×	×
	[Shape Color]	plate_color	○	○	When the object is updated
[Extended]	[Security Level]	security	○	○	When the screen is updated

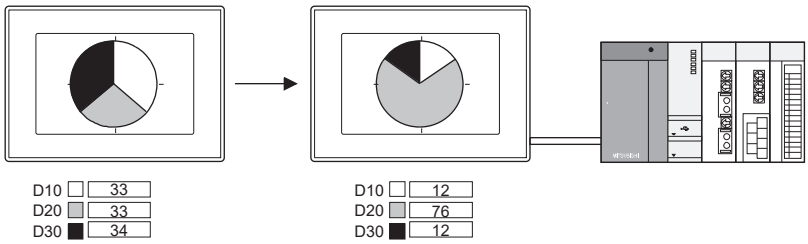
*1 For the timing at which the setting change of an object property is reflected, refer to the following.

☞ Page 2456 Timing at which the setting change of an object property is reflected

44 Placing a pie graph

GT37 SoftGOT3000

This function collects multiple word device values in a batch and displays the ratio of each value to all the collected values in a pie graph.

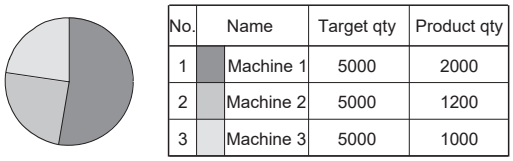


☞ Page 1656 Specifications of the pie graph
☞ Page 1657 How to use the pie graph
☞ Page 1660 [Pie(Circle)] dialog

• Displaying the graph on the same screen as the historical data list display

By displaying the graph on the same screen as the historical data list display, the device status can be described more effectively.

☞ Page 1495 Placing a historical data list display



No.	Name	Target qty	Product qty
1	Machine 1	5000	2000
2	Machine 2	5000	1200
3	Machine 3	5000	1000

• Sorting the graph segments according to the device values

The graph can be sorted in ascending or descending order of the device values.

PART 7

44.1 Specifications of the pie graph

GT37 SoftGOT3000

The following shows the specifications of the pie graph.

44.1.1 Settable numbers

Maximum number of pie graphs that can be placed

Up to 32 pie graphs and bar graphs can be placed on one screen.

When [Collect data only when trigger conditions are satisfied] is selected, up to 256 objects can be placed for one project.

Number of values that can be displayed (number of word devices that can be monitored)

Up to 32 values can be displayed on one pie graph.

44.2 How to use the pie graph

GT37 SoftGOT3000

The following shows how to use a pie graph.

44.2.1 Placing a pie graph

The following shows how to place a pie graph.

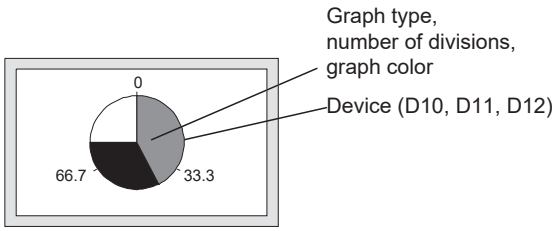
Operating procedure

1. Select [Object] → [Graph] → [Pie(Circle)] from the menu.
2. Click the position to place a pie graph.
3. Adjust the frame size of the pie graph.
4. Double-click the pie graph to display the setting dialog.

☞ Page 1660 [Pie(Circle)] dialog

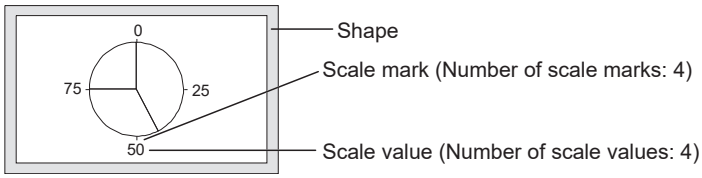
5. Set the number of divisions (number of the word devices to be monitored), devices to be monitored, and graph color in the [Data] tab.

☞ Page 1660 [Data] tab



6. Configure the figure and scale settings in the [Style] tab.

☞ Page 1662 [Style] tab



7. Click the [OK] button to complete the pie graph settings.

PART 7

44.2.2 Setting [Collect data only when trigger conditions are satisfied]

Selecting [Collect data only when trigger conditions are satisfied] can reduce the number of communications.
Various graphs can be combined.

Operating procedure

1. Select [Object] → [Graph] → [Pie(Circle)] from the menu.
2. Click the position to place a pie graph.
3. Double-click the pie graph to display the setting dialog.

☞ Page 1660 [Pie(Circle)] dialog

4. Display the [Trigger] tab.

☞ Page 1665 [Trigger] tab

5. Select [Rise], [Fall], [Rise/Fall], [Sampling], [ON Sampling], or [OFF Sampling] for [Trigger Type].
6. Select [Collect data only when trigger conditions are satisfied].

The [Collect data only when trigger conditions are satisfied] setting is effective if a graph does not require frequent refresh.
However, when the graph requires frequent refresh and display, [Collect data only when trigger conditions are satisfied] should be deselected (device values are collected through constant communication).
The setting of [Collect data only when trigger conditions are satisfied] may cause the delay of the screen refresh or incorrect display of the screen.

44.2.3 Cause and solution when the graph display is not refreshed in a specified cycle

Refresh timing when [ON Sampling] or [OFF Sampling] is selected

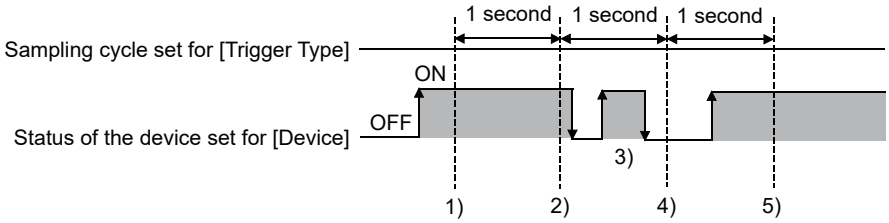
The graph display may not be refreshed in the set cycle.

■Cause

The device status is checked in the sampling cycles set for [Trigger Type].

If the condition is not satisfied at the timing of the check, the display is not refreshed.

Example) [Trigger Type] is set to [ON Sampling] and [Sampling] is set to [1] second



- The display of the pie graph is refreshed at timing 1).
- The display of the pie graph is refreshed at timing 2).
- At timing 3), the display of the pie graph is not refreshed because the timing does not match the end of one cycle and thus the condition is not checked.
- At timing 4), the display of the pie graph is not refreshed because the device condition is not satisfied.
- The display of the pie graph is refreshed at timing 5).

■Solution

The sampling cycle set for [Trigger Type] does not depend on the device status.

(The sampling cycle does not change whether the device is turned on or off.)

The following shows the setting procedure to start the cycle according to the device status.

Operating procedure

1. Select [Rise] or [Fall] for [Trigger Type].
2. Create a sequence program that turns the device on or off when the display should be refreshed.

Refresh timing when [Sampling], [ON Sampling], or [OFF Sampling] is selected

The sampling cycle count starts and is reset at the following timing.

- When the pie graph is displayed (due to screen switching, a security level change, or other cases)
- When the language switches
- When the security level changes

After the execution of any of the events, the display is refreshed at the start timing of the sampling cycle.

44.3 [Pie(Circle)] dialog

GT37 SoftGOT3000

The pie graph object collects multiple word device values in a batch and displays the ratio of each value to the total collected values in the form of a pie graph.

Operating procedure

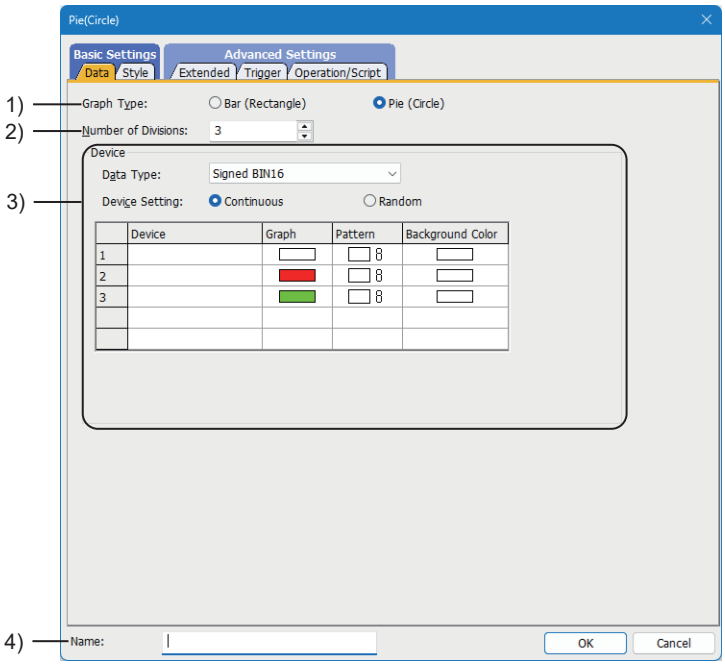
1. Select [Object] → [Graph] → [Pie(Circle)] from the menu.
2. Click the position to place a pie graph.
3. Double-click the pie graph to display the setting dialog.

☞ Page 1660 [Data] tab
☞ Page 1662 [Style] tab
☞ Page 1664 [Extended] tab
☞ Page 1665 [Trigger] tab
☞ Page 1666 [Operation/Script] tab

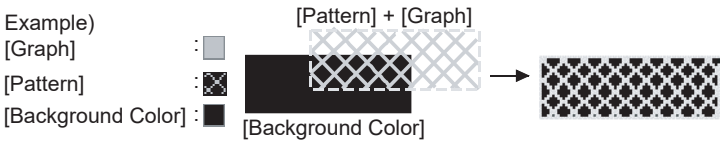
44.3.1 [Data] tab

GT37 SoftGOT3000

Set the device to be monitored and the pie graph status corresponding to the device value.



Item		Description
1)	[Graph Type]	Select the graph to be set. The following shows selectable items. • [Bar(Rectangle)] • [Pie(Circle)]
2)	[Number of Divisions]	Set the number of values that can be displayed (number of word devices that can be monitored). The setting range is [2] to [32].

Item			Description
3)	[Device]	[Data Type]	Select the data type of the word device. The following shows selectable items. • [Signed BIN8] • [Unsigned BIN8] • [Signed BIN16] • [Unsigned BIN16] • [Signed BIN32] • [Unsigned BIN32] • [Signed BIN64] • [Unsigned BIN64] • [BCD16] • [BCD32] • [BCD64] • [Real(32bit)] • [Real(64bit)]
		[Device Setting]	Select how to set the device. The following shows selectable items. • [Continuous]: Automatically inputs consecutive devices in the table of [Device] when a start device is set. • [Random]: Select this item when setting devices one by one.
		[Device]	Set the device to be monitored. ☞ Page 834 How to set devices, labels, and tags
		[Graph]	Select the color of the pie.
		[Pattern], [Background Color]	Select the pattern and the background color to be used for the pie. 
4)	[Name]		Set the object name. The name is displayed in places such as the data browser and property sheet. The name can also be changed in other tabs. Up to 100 characters can be set.

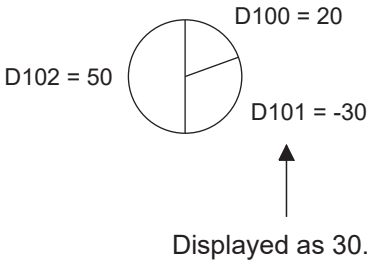
Precautions

■When the monitored device value is negative

When the monitored device value is negative, its absolute value is displayed in the pie graph.

Ex.

When the value of D101 is -30

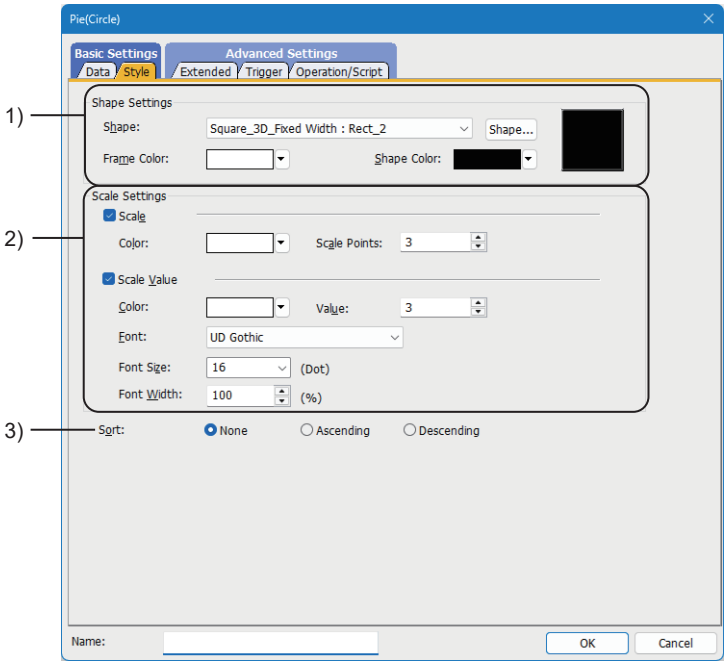


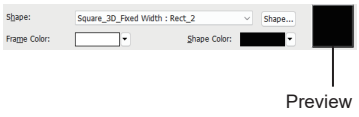
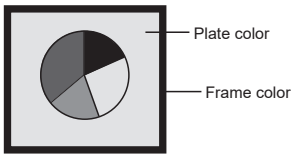
44.3.2 [Style] tab

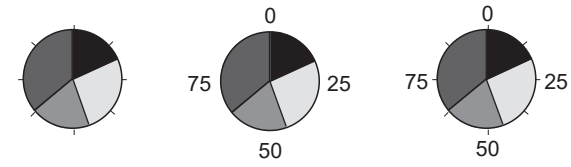
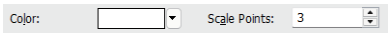
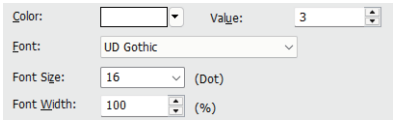
GT37 SoftGOT3000

For mobile screens, some setting items are not available.

☞ Page 2742 Usable functions



Item			Description
1)	[Shape Settings]	[Shape]	Set the shape of the pie graph. When [None] is selected, no figure is displayed. Click the [Shape] button to select shapes other than those in the list box. ☞ Page 1045 How to set the object shape When selecting a figure from [Basic Figure], set a frame color and a figure color. 
		[Frame Color]	Set the color of the frame.
		[Shape Color]	Set the color of the shape. 
		Preview	Displays the preview of the set shape.

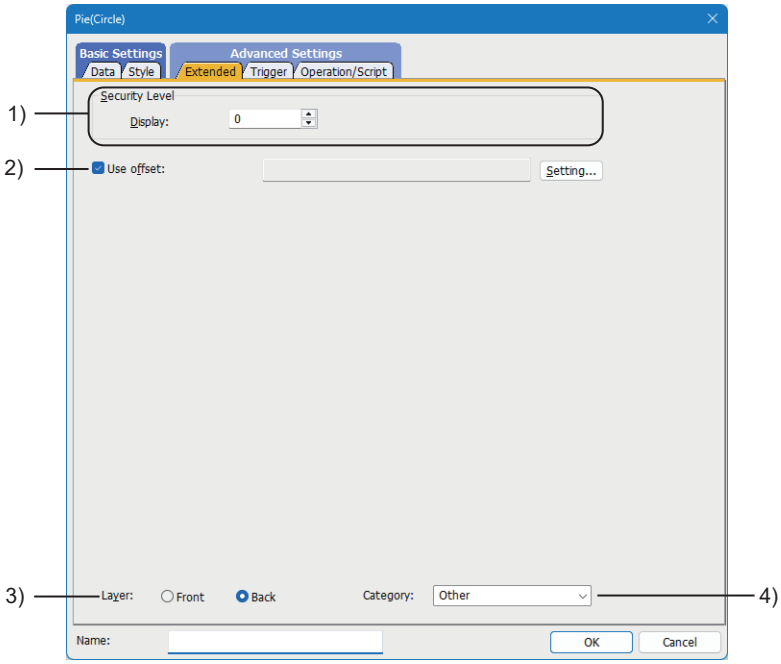
Item			Description
2)	[Scale Settings]	—	Displays scale marks and scale values in the pie graph.  Number of scale marks: 8 Number of scale values: 4 Both scale marks and scale values are displayed.
		[Scale]	Set this item to display scale marks.  • [Color] Set the color of the scale marks. • [Scale Points] Set the number of scale marks. The setting range is [0] and [2] to [101].
		[Scale Value]	Set this item to display numeric characters as the scale value.  • [Color] Set the color of numeric characters. • [Value] Set the number of numeric characters. The setting range is [0] and [2] to [101]. • [Font] Select a font for scale values. The following shows selectable items. [UD Gothic] [UD Mincho] • [Font Size] Set a vertical text size. The setting range is [8] dots to [540] dots. • [Font Width] Set a horizontal text size. The horizontal size is specified with the magnification relative to [Font Size] (vertical text size). The setting range is [6]% to [1600]%.
3)	[Sort]		Select the sorting order when sorting the graph in ascending or descending order of the device values. The following shows selectable items. • [None] • [Ascending] • [Descending] [Ascending] [Descending]

44.3.3 [Extended] tab

GT37 SoftGOT3000

For mobile screens, some setting items are not available.

☞ Page 2742 Usable functions

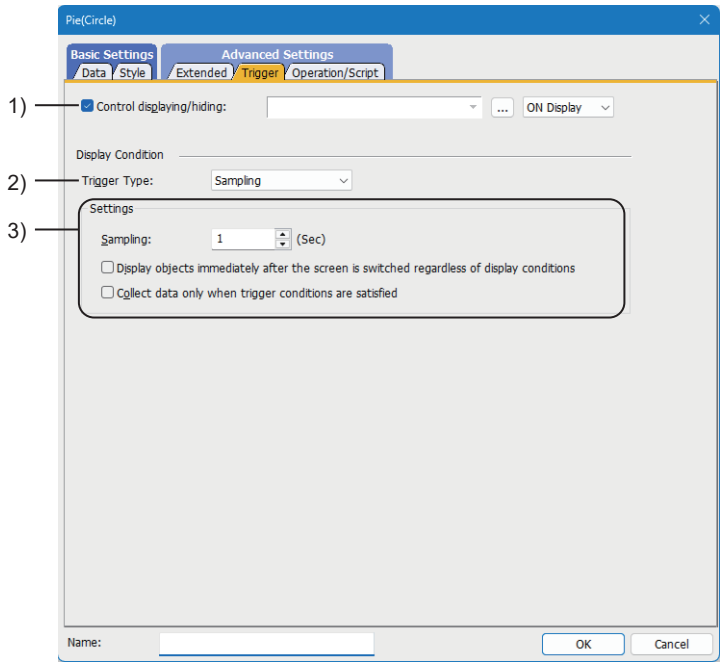


Item		Description
1)	[Security Level]	Set the security level when using the security function. The setting range is [1] to [15]. Set the level to [0] when the security function is not used. ☞ Page 3038 Restricting display and operation on the GOT (Screen security)
2)	[Use offset]	Select this item to monitor multiple devices by switching between them. After selecting this item, set the offset device. ☞ Page 963 Offset
3)	[Layer]	Select the layer to arrange the object on. The following shows selectable items. • [Front] • [Back] ☞ Page 1055 Superimposition of figures and objects
4)	[Category]	Select the category to assign the object. ☞ Page 1121 Managing figures and objects by category

44.3.4 [Trigger] tab

GT37 SoftGOT3000

Set the trigger condition to display the object.



Item		Description
1)	[Control displaying/hiding]	Set the control device to display or hide all the objects including the shape frame. When the set device is in either the ON or OFF status, select whether or not to display the object. The following shows selectable items. • [ON Display] • [OFF Display] ☞ Page 834 How to set devices, labels, and tags
2)	[Trigger Type]	Select the condition of displaying the object. The following shows selectable items. • [Ordinary] • [ON] • [OFF] • [Rise] • [Fall] • [Rise/Fall] • [Sampling] • [Range] • [Bit Trigger] • [ON Sampling] • [OFF Sampling]
3)	[Settings]	For details on each setting, refer to the following. ☞ Page 972 Settings by trigger type
4)	[Collect data only when trigger conditions are satisfied]	Select this item to collect data only when the trigger set for [Trigger Type] is satisfied. When [Rise], [Fall], [Rise/Fall], [Sampling], [ON Sampling], or [OFF Sampling] is selected, this setting is available. The graph communicates with the controller even when the trigger is off. To reduce the communication load between the GOT and the controller, allow communications only when the trigger is on.

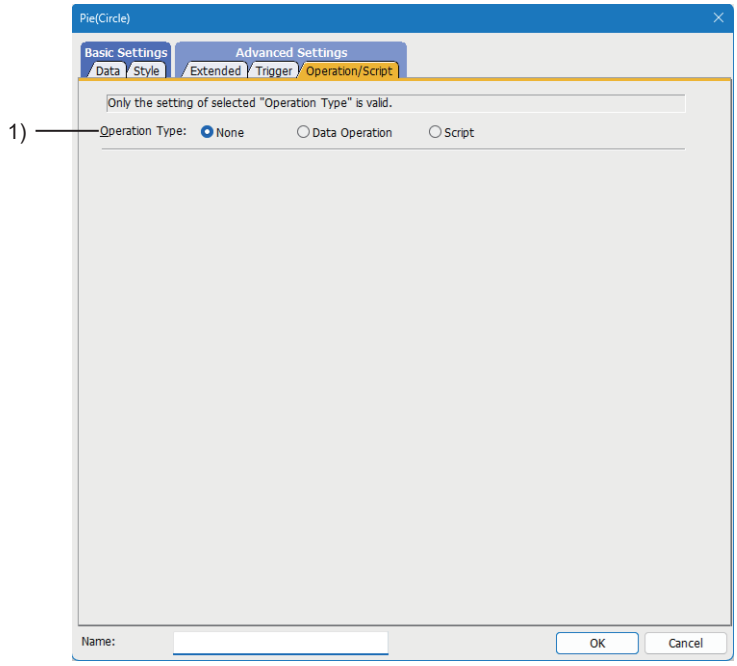
44.3.5 [Operation/Script] tab

GT37 SoftGOT3000

For mobile screens, some setting items are not available.

☞ Page 2742 Usable functions

Set an expression for monitoring using the data operation function or the script function.

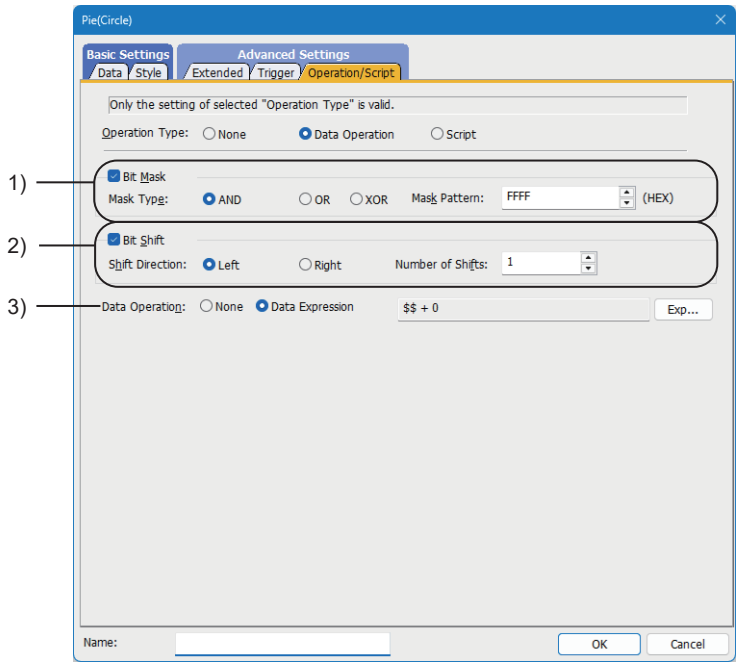


Item		Description
1)	[Operation Type]	To use the data operation or script, select an operation type. The following shows selectable items. • [None] Select this item if the data operation and script are unnecessary. • [Data Operation] Set the expression used for the data operation. ☞ Page 1667 [Data Operation] • [Script] Set the expressions for the script function. ☞ Page 1668 [Script]

[Data Operation]

For the data operation function settings, refer to the following.

☞ Page 1053 How to set the data operation

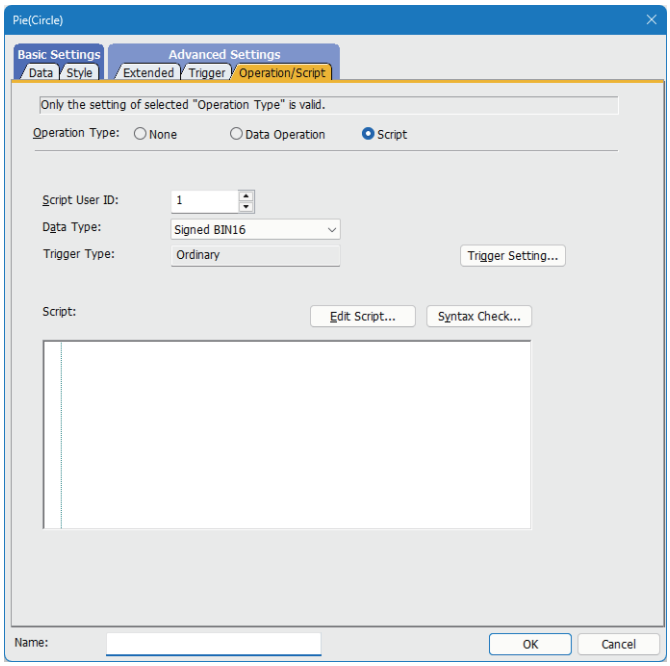


Item			Description
1)	[Bit Mask]	—	Set the operation of mask processing.
		[Mask Type]	Select the type of mask processing. • [AND]: Logical AND • [OR]: Logical OR • [XOR]: Exclusive OR
		[Mask Pattern]	Set a pattern value to mask in hexadecimal. The setting range differs depending on the setting of [Data Type] in the [Data] tab.
2)	[Bit Shift]	—	Set the operation of shift processing.
		[Shift Direction]	Select a shifting direction. • [Left]: Left-shift • [Right]: Right-shift
		[Number of Shifts]	Set the number of bits to be shifted. The setting range differs depending on the setting of [Data Type] in the [Data] tab.
3)	[Data Operation]		Set the format of the expression. The following shows selectable items. • [None]: Does not perform the data operation by using the expression. • [Data Expression]: Performs the data operation by using the expression. Click the [Exp] button to set the format of the expression in the [Edit Data Expression] dialog.

[Script]

For the script settings, refer to the following.

☞ Page 2447 Object script



■Relationship between the object settings and object properties

Object settings can be read (referenced) or written (changed) using object properties.

The following shows the correspondence between the relevant settings in the object setting dialog and the object properties.

○: Available

×: Not available

—: No applicable setting item

Setting dialog		Object property			
Tab name	Setting item	Property name	Read	Write	Timing for reflecting the setting change*1
—	—	active	○	○	Upon the setting change
		x	○	○	When the screen is updated
		y	○	○	When the screen is updated
		width	○	×	×
		height	○	×	×
[Style]	[Frame Color]	frame_color	○	×	×
	[Shape Color]	plate_color	○	○	When the object is updated
[Extended]	[Security Level]	security	○	○	When the screen is updated

*1 For the timing at which the setting change of an object property is reflected, refer to the following.

☞ Page 2456 Timing at which the setting change of an object property is reflected

45 Placing a scatter graph

☞ Page 1669 Overview of the scatter graph
☞ Page 1671 Specifications of the scatter graph
☞ Page 1672 How to use the scatter graph
☞ Page 1680 [Scatter Graph] dialog

45.1 Overview of the scatter graph

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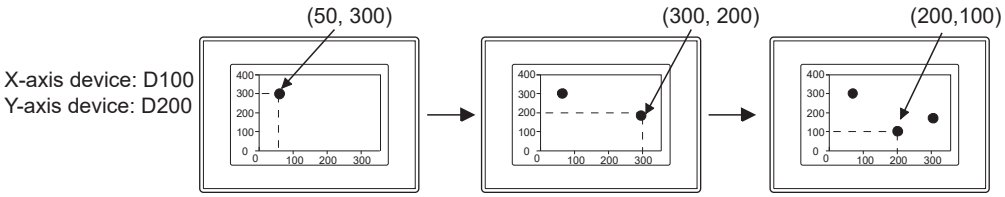
This function displays a graph using the values of two word devices as the coordinates of X-axis and Y-axis.
The following two types of the scatter graph are available.

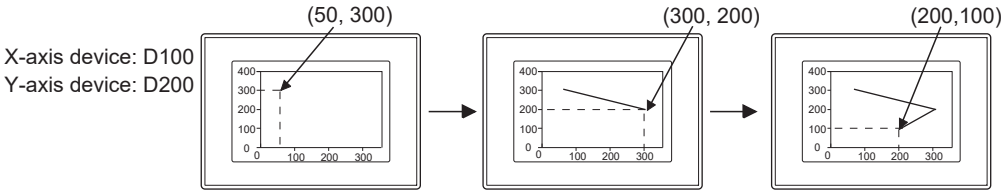
45.1.1 Sample

Collects two word device values and displays the values as a single point.
When the graph is refreshed, the new point is displayed with the previously displayed points. (Locus)

When the display attribute is set to "Point"



When the display attribute is set to "Line"



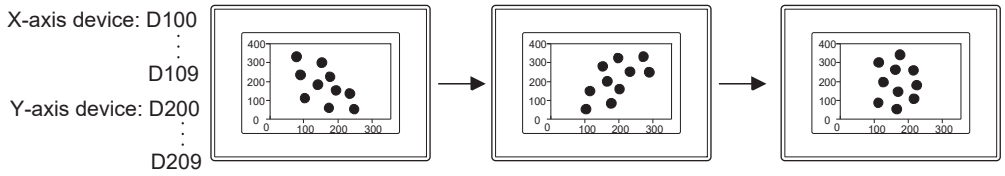
PART 7

45.1.2 Batch display

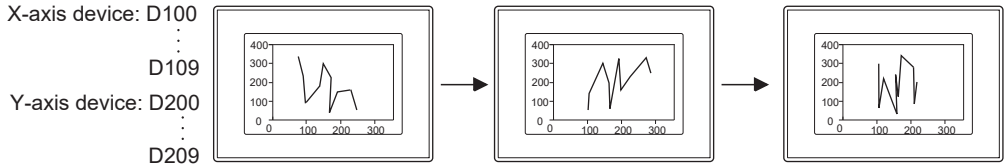
Collects multiple sets of two word device values and displays them as multiple points.

You can select whether the points displayed previously are held or deleted when updating the display of the graph.

When the display attribute is set to "Point"



When the display attribute is set to "Line"



45.2 Specifications of the scatter graph

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The following shows the specifications of the scatter graph.

45.2.1 Settable numbers

Maximum number of scatter graphs on one screen

Up to 24 objects can be placed on one screen.

Up to 16 scatter graphs for which [Store Memory] is set can be placed for one project.

When [Collect data only when trigger conditions are satisfied] is selected, up to 256 objects can be placed for one project.

Number of points that can be displayed (by two word device values)

Up to 500 points can be displayed on one scatter graph.

Behavior when the number of plots exceeds 1000

Under the following conditions, if the number of the plotted points or lines exceeds 1000, the oldest point or line is deleted and a new one is plotted.

- [Graph Type] is set to [Sample], and [Store Memory] is deselected.
- [Graph Type] is set to [Batch], [Display Mode] is set to [Locus], and [Store Memory] is deselected.

For information on the [Graph Type] settings, refer to the following.

☞ Page 1680 [Data] tab

PART 7

45.3 How to use the scatter graph

GT37 SoftGOT3000

The following shows how to use a scatter graph.

45.3.1 Placing a scatter graph

The following shows how to place the scatter graph.

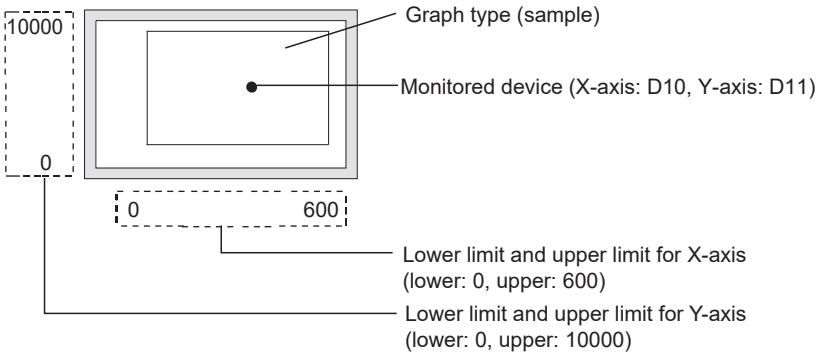
Operating procedure

1. Select [Object] → [Graph] → [Scatter Graph] from the menu.
2. Click the position to place a scatter graph.
3. Adjust the frame size of the scatter graph.
4. Double-click the scatter graph to display the setting dialog.

☞ Page 1680 [Scatter Graph] dialog

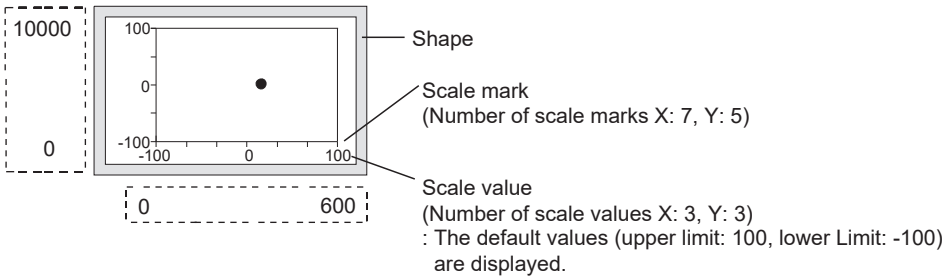
5. Set the graph type, device, upper limit value, and lower limit value in the [Data] tab.

☞ Page 1680 [Data] tab



6. Set the scale and figure on the [Style] tab.

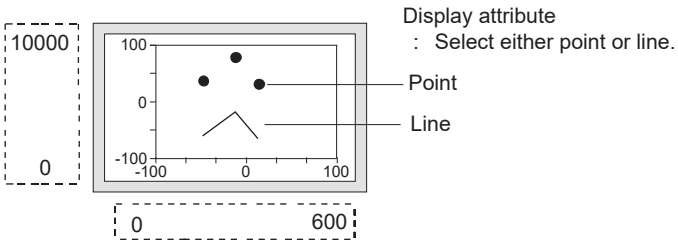
☞ Page 1682 [Style] tab



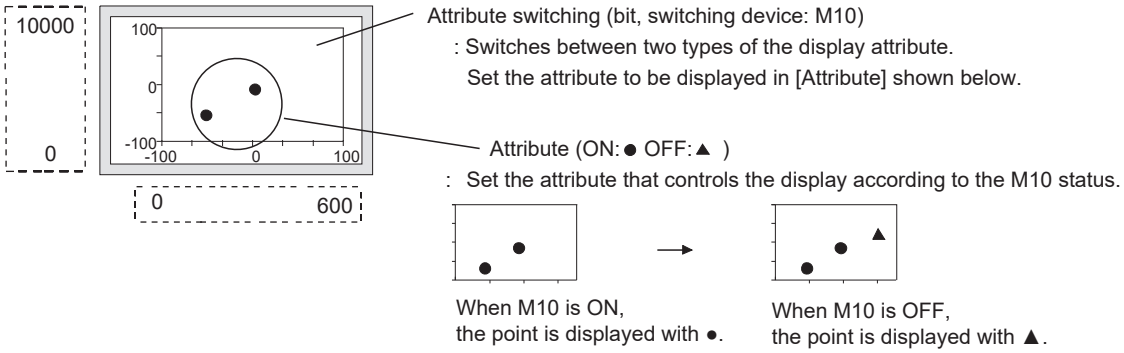
7. Set the display type and attribute switching of the graph on the [Point/Line Attribute] tab.

☞ Page 1684 [Point/Line Attribute] tab

• Display method



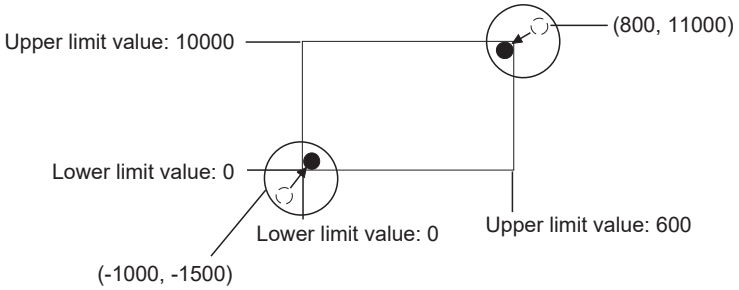
• Attribute switching



8. Click the [OK] button to complete the scatter graph settings.

Precautions

If the monitored device value falls below the lower limit, the lower limit value is displayed instead of the device value.
When the monitored device value exceeds the upper limit value, the display of the upper limit value is applied.



45.3.2 Setting [Collect data only when trigger conditions are satisfied]

Selecting [Collect data only when trigger conditions are satisfied] can reduce the number of communications.
Various graphs can be combined.
The following shows the setting procedure.

Operating procedure

1. Select [Object] → [Graph] → [Scatter Graph] from the menu.
2. Click the position to place a scatter graph.
3. Double-click the scatter graph to display the setting dialog.

☞ Page 1680 [Scatter Graph] dialog

4. Display the [Trigger] tab.

☞ Page 1689 [Trigger] tab

5. Select [Rise], [Fall], [Rise/Fall], [Sampling], [ON Sampling], or [OFF Sampling] for [Trigger Type].
6. Select [Collect data only when trigger conditions are satisfied].

The [Collect data only when trigger conditions are satisfied] setting is effective if a graph does not require frequent refresh.
However, when the graph requires frequent refresh and display, [Collect data only when trigger conditions are satisfied] should be deselected (device values are collected through constant communication).
The setting of [Collect data only when trigger conditions are satisfied] may cause the delay of the screen refresh or incorrect display of the screen.

45.3.3 Cause and solution when the graph display is not refreshed in a specified cycle

Refresh timing when [ON Sampling] or [OFF Sampling] is selected

The graph display may not be refreshed in the set cycle.

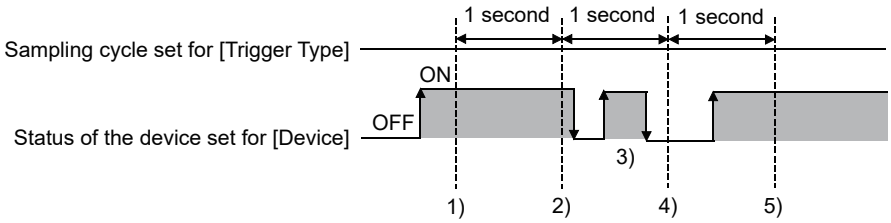
■Cause

The device status is checked in the sampling cycles set for [Trigger Type].

If the condition is not satisfied at the timing of the check, the display is not refreshed.

Ex.

[Trigger Type] is set to [ON Sampling] and [Sampling] is set to [1] second



- The display of the scatter graph is refreshed at timing 1).
- The display of the scatter graph is refreshed at timing 2).
- At timing 3), the display of the scatter graph is not refreshed because the timing does not match the end of one cycle and thus the condition is not checked.
- At timing 4), the display of the scatter graph is not refreshed because the device condition is not satisfied.
- The display of the scatter graph is refreshed at timing 5).

■Solution

The sampling cycle set for [Trigger Type] does not depend on the device status.

(The sampling cycle does not change whether the device is turned on or off.)

The following shows the setting procedure to start the cycle according to the device status.

Operating procedure

1. Select [Rise] or [Fall] for [Trigger Type].
2. Create a sequence program that turns the device on or off when the display should be refreshed.

Refresh timing when [Sampling], [ON Sampling], or [OFF Sampling] is selected

Depending on the setting of [Store Memory], the refresh timing is different.

■When the memory storage is to be executed

The following shows the start and reset timing of the count of the cycle.

- When the scatter graph is displayed (in screen switching, a security level change, or other possible cases)
- The language is switched.
- The station number is switched.
- The security level is switched.

After the execution of any of the events above, the display is refreshed at the start timing of the sampling cycle.

■When the memory storage is not to be executed

The following shows the start and reset timing of the count of the cycle.

- The GOT is started.
- Package data is written into the GOT.
- The drive information is displayed.
- An operation that resets the GOT is executed in the utility.

After the execution of any of the events above, the display is refreshed at the start timing of the sampling cycle.

45.3.4 Memory storage

The following operations clear the display of the graph or data (device value: 0). To save the data, set [Store Memory].
Set [Store Memory] in the [Extended] tab.

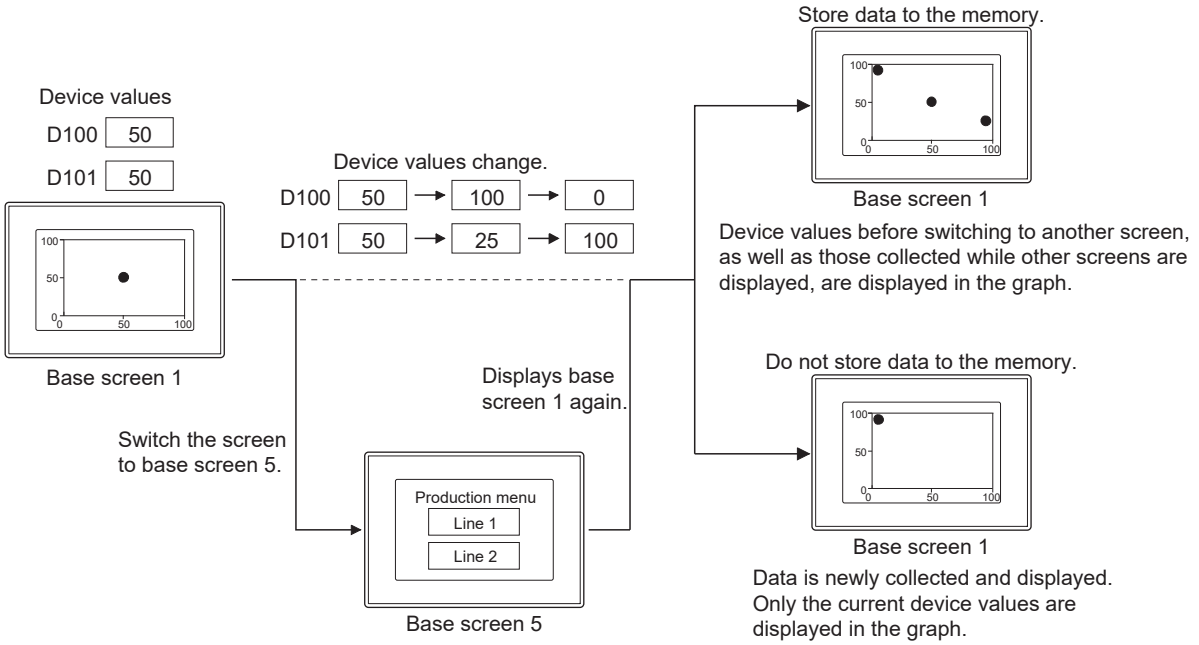
Item		[Store Memory] is deselected	[Store Memory] is selected
Switching the screen or utility	Switching from the screen for which a scatter graph is set to the screen for which no scatter graph is set	The device value is held.	The device value is held.
	Switching from the screen for which no scatter graph is set to the screen for which a scatter graph is set	• The display is cleared. • The device value is cleared to 0.	• The display is held. • The device value is held.
Switching the language switching device			
Switching the base screen while a scatter graph is displayed on the superimpose window			
Switching the security level*1			
Switching the station No. switching device			

*1 When [Store Memory] is not set, if you change the security level by selecting [Common] → [GOT Environmental Setting] → [Security] from the menu or with the set level device, the display of the graph is cleared and the device value becomes 0.

Ex.

Action at screen switching

- [Graph Type]: [Sample]
- X-axis device: D100
- Y-axis device: D101



Precautions

When [Store Memory] is set, system alarms do not display the following information.

- Screen number
- Definition screen number

Maximum number of displayed points that can be saved to the memory

Up to 4096 points displayed in the scatter graph can be saved in the internal memory.
The maximum number of data collections to the memory varies with the selection for [Graph Type] on the [Data] tab in the [Scatter Graph] dialog.
When [Sample] is selected: 4096
When [Batch] is selected: 4096/Number of displayed points (The fractional portion is rounded off.)
In [Operation at frequency over time] on the [Extended] tab, set the operation to be executed when the number of displayed points exceeds the upper limit.

- [Interrupt]: Interrupts the data collection.
- [Initialize and Continue]: Clears the data in the internal memory and the display on the scatter graph, and resumes the data collection.

Point

Using the system alarm
You can use the system alarm to display an error code and error message when the number of collections of device values saved in the memory exceeds the upper limit.
☞ Page 2075 Collecting alarms by monitoring the system

Clear timing of the display contents stored in the memory

The following shows the clear timing of the display contents stored in the memory.

- The condition of the clear trigger is satisfied.
- When [Initialize and Continue] is selected in [Operation at frequency over time], the number of collected points that can be stored in the memory exceeds the maximum.
- The GOT is reset or turned off.
- Package data is written into the GOT.
- The drive information is displayed.
- An operation that causes the GOT reset at the setup of the utility is executed.

45.3.5 Writing the cumulative count and average value

The cumulative collection count and average value of the data, maximum value, and minimum value collected in the scatter graph can be written to a device.

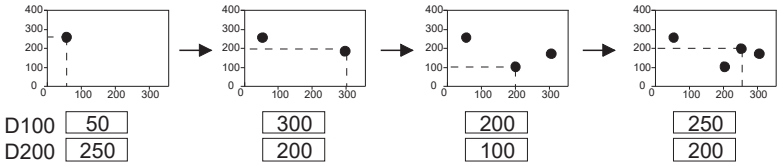
The following shows an example.

- X-device (horizontal): D100
- Y-device (vertical): D200

Detail		Written value
Cumulative count		4
X-axis	Average value*1	200
	Maximum value*2	300
	Minimum value*2	50
Y-axis	Average value*1	187
	Maximum value*2	250
	Minimum value*2	100

*1 The value rounded down after the decimal point is written to [Average Value Write].
When [Data Type] (in the [Data] tab) of the device to be monitored is a real number, a value including the decimal is written.
An average value is calculated from the values collected at each collection, and an error may occur.

*2 The device value exceeding the maximum value or minimum value of the scatter graph to be monitored is written as the maximum value or minimum value.



Maximum number of collections that can be counted in the cumulative count or average value

The maximum number of collections that can be counted in the cumulative count or average value varies depending on [Data Type] of the device set in the [Data] tab of the [Scatter Graph] dialog.

[Data Type]	Maximum number of collections	Remarks
[Signed BIN8] [Unsigned BIN8] [Signed BIN16] [Unsigned BIN16] [Signed BIN32] [Unsigned BIN32] [Signed BIN64] [Unsigned BIN64] [BCD32] [BCD64] [Real(32bit)] [Real(64bit)]	65535	For [Signed BIN8] or [Unsigned BIN8], data is written to the lower-order byte (0 to 255) of the device.
[BCD16]	9999	—

Set the operation that is executed when the cumulative count exceeds the maximum number of collections in [Operation at frequency over time] in the [Extended] tab.

- Interrupt: Data collection is interrupted.
- Initialize and continue: The internal memory and display of the scatter graph are initialized, and new data is collected.

Point

Using the system alarm

You can use the system alarm to display an error code and error message when the cumulative count exceeds the upper limit.

☞ Page 2075 Collecting alarms by monitoring the system

Initialization timing of the cumulative count, average value, maximum value, and minimum value

The value 0 is written to the cumulative count, average value, maximum value, and minimum value.

The following shows the initialization timing.

- The condition of the clear trigger (in the [Trigger] tab) is satisfied.
- When [Operation at frequency over time] is set to [Initialize and Continue], the cumulative count exceeds the limit.
- The screen is switched.*1
- The security level is switched.
- The station number is switched.

*1 When you switch a base screen or window screen having a scatter graph to another screen, the cumulative count and average value are retained. When you switch back to the base screen or window screen having the scatter graph, the cumulative count and average value will be initialized.
The scatter graph placed on the superimpose window is initialized when the base screen is switched.

When the cumulative count and average value are written and the memory storage are used simultaneously

Use [Cumulative/Average] and [Store Memory] simultaneously to collect the cumulative count and average value continuously, regardless of the screen switching.

Up to the maximum number of collections for the memory storage, the cumulative count and average value can be written.

For the maximum number of collections for the memory storage, refer to the following.

☞ Page 1677 Maximum number of displayed points that can be saved to the memory

45.4 [Scatter Graph] dialog

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The scatter graph is an object that displays a graph using the values of two word devices as the coordinates of X-axis and Y-axis.

Operating procedure

1. Select [Object] → [Graph] → [Scatter Graph] from the menu.
2. Click the position to place a scatter graph.
3. Double-click the scatter graph to display the setting dialog.

☞ Page 1680 [Data] tab
☞ Page 1682 [Style] tab
☞ Page 1684 [Point/Line Attribute] tab
☞ Page 1687 [Extended] tab
☞ Page 1689 [Trigger] tab
☞ Page 1690 [Operation/Script] tab

45.4.1 [Data] tab

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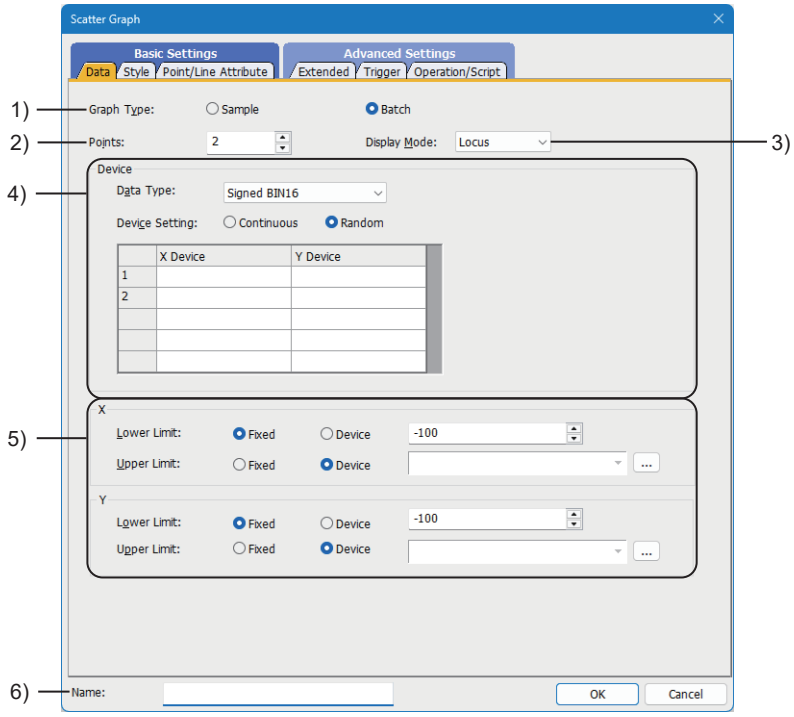
Set the target device to be monitored and the trend graph status corresponding to the device value.



Item		Description
1)	[Graph Type]	Select the graph to be set. The following shows selectable items. • [Sample] • [Batch]
2)	[Points]	Set this item when [Batch] is selected for [Graph Type]. Set the number of points to be displayed in a scatter graph. The setting range is [2] to [500].

Item			Description
3)	[Display Mode]		Set this item when [Batch] is selected for [Graph Type]. Select the refresh method of the display of the graph. The following shows selectable items. • [Replace] Only the latest data is displayed. • [Locus] The latest data is displayed on the graph displayed previously.
4)	[Device]	[Data Type]	Select the data type of the word device. The following shows selectable items. • [Signed BIN8] • [Unsigned BIN8] • [Signed BIN16] • [Unsigned BIN16] • [Signed BIN32] • [Unsigned BIN32] • [Signed BIN64] • [Unsigned BIN64] • [BCD16] • [BCD32] • [BCD64] • [Real(32bit)] • [Real(64bit)]
		[Device Setting]	Select the display method of the devices in each of X-axis and Y-axis. The following shows selectable items. • [Continuous]: Automatically inputs consecutive devices in the table of [Device] when a start device is set. • [Random]: Select this item when setting devices one by one.
		[X Device] and [Y Device]	Set the devices to be monitored for X-axis and Y-axis. ☞ Page 834 How to set devices, labels, and tags
5)	[X] and [Y]		Set the display range in the scatter graph (lower limit and upper limit) for each axis. Select whether to use a fixed value or device value. The following shows selectable items. • [Fixed]: Specify a constant. • [Device]: Specify a device value. ☞ Page 834 How to set devices, labels, and tags The setting ranges of [Lower Limit] and [Upper Limit] differ depending on the item selected for [Data Type].
6)	[Name]		Set the object name. The name is displayed in places such as the data browser and property sheet. The setting can also be changed in other tabs. Up to 100 characters can be set.

45.4.2 [Style] tab

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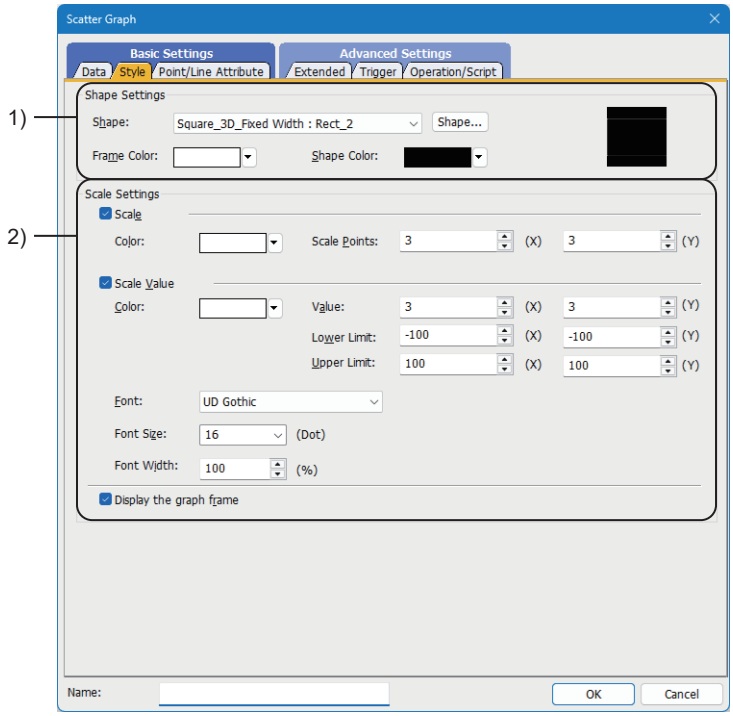
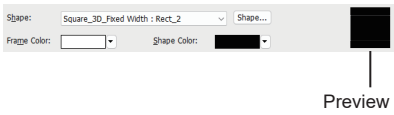
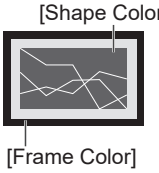
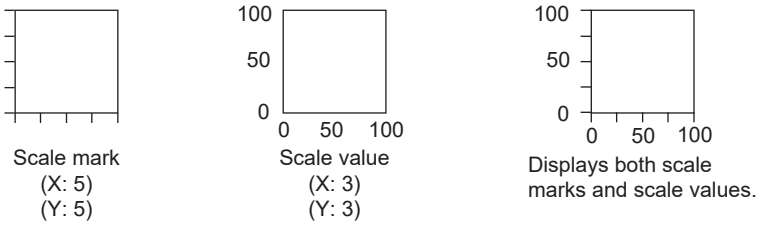
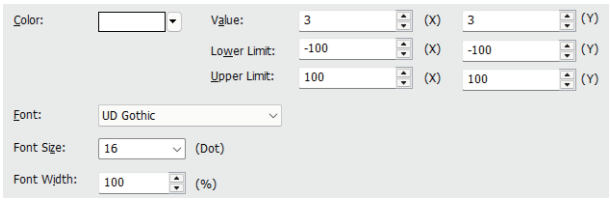
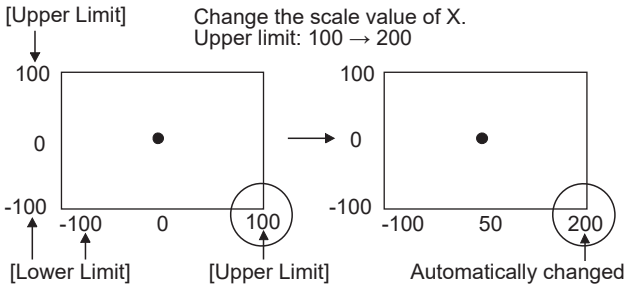
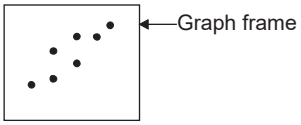
For mobile screens, some setting items are not available.

☞ Page 2742 Usable functions



Item			Description
1)	[Shape Settings]	[Shape]	Set the shape of the scatter graph. When [None] is selected, no figure is displayed. Click the [Shape] button to select shapes other than those in the list box. ☞ Page 1045 How to set the object shape When selecting a figure from [Basic Figure], set a frame color and a shape color.  • [Frame Color] Set the color of the frame. • [Shape Color] Set the color of the shape.  • Preview Displays the preview of the set shape.

Item			Description
2)	[Scale Settings]	—	Displays scale marks and scale values in the scatter graph. 
		[Scale]	Set this item to display scale marks. • [Color] Set the color of the scale marks. • [Scale Points] ([Horizontal] and [Vertical]) Set the number of scale marks. The setting range is [0] and [2] to [101].
		[Scale Value]	Set this item to display numeric characters as the scale value.  • [Color] Set the color of numeric characters. • [Value] ([Horizontal] and [Vertical]) Set the number of numeric characters. The setting range is [0] and [2] to [101]. • [Lower Limit] ([Horizontal] and [Vertical]) and [Upper Limit] ([Horizontal] and [Vertical]) Set the lower limit and upper limit of the numerical value. Changes in this setting are automatically applied to the display.  Depending on the item selected for [Data Type] in the [Data] tab, the setting range is different. The selectable range of 64-bit devices is the same as that of 32-bit devices. • [Font] Select a font for scale values. The setting range is [UD Gothic] or [UD Mincho]. • [Font Size] Select a font size. The setting range is [8] dots to [540] dots. • [Font Width] Set a horizontal text size. The horizontal size is specified with the magnification relative to [Font Size] (vertical text size). The setting range is [6]% to [1600]%.
		[Display the graph frame]	Select this item to display the frame of the graph. 

45.4.3 [Point/Line Attribute] tab

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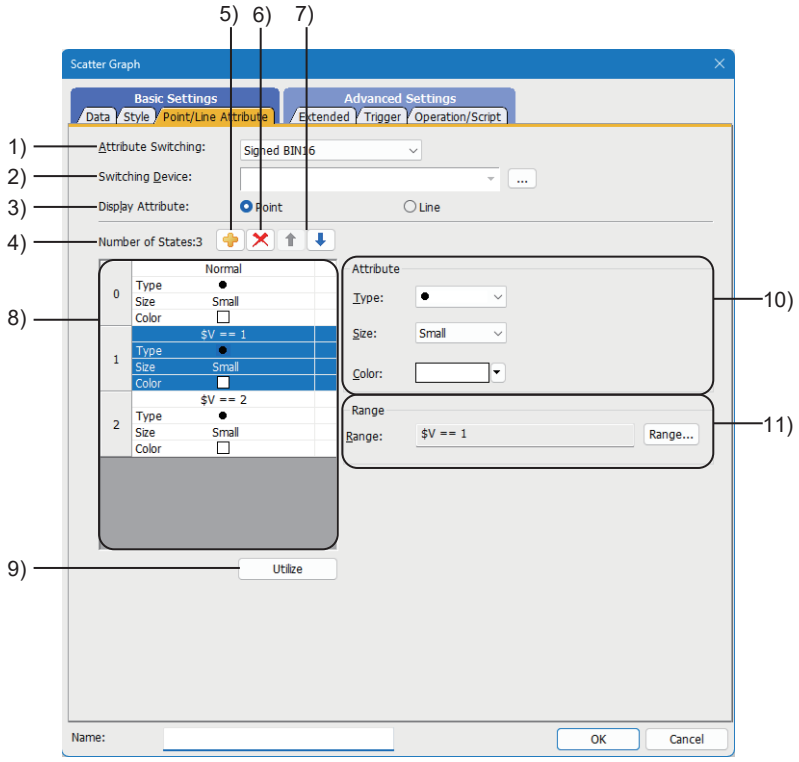
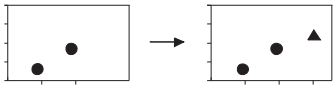
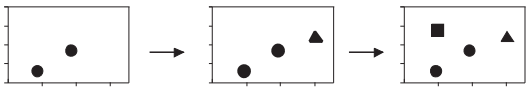
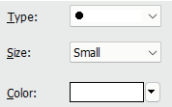
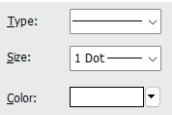
Set the status of points or lines of the graph corresponding to the device value.

For the conditions, refer to the following.

☞ Page 1038 Control with conditions



Item		Description
1)	[Attribute Switching]	Select the switching type in which the display attribute of the scatter graph (type of points and lines, size, or color) is switched. The following shows selectable items. • [Fixed] The display attribute is not switched. Points or lines are displayed in the display attribute set in the [Style] tab. • [Bit] Switches two types of the display attribute according to the bit device status. • [Signed BIN8] Switches multiple display attributes with 8-bit devices. • [Signed BIN16] Switches multiple display attributes by the value of the word device (16-bit binary value). • [BCD16] Switches multiple display attributes by the value of the word device (16-bit BCD value). Example 1) • [Attribute Switching]: [Bit] • [Switching Device]: [M10]  M10: ON → M10: OFF The points are displayed with ●. → The points are displayed with ▲. Example 2) • [Attribute Switching]: [Signed BIN16] • [Switching Device]: [D10]  D10 = 1 → D10 = 10 → D10 < 100 The points are displayed with ●. → The points are displayed with ▲. → The points are displayed with ■.
2)	[Switching Device]	Set the display switching device. ☞ Page 834 How to set devices, labels, and tags
3)	[Display Attribute]	Select the display attribute of the scatter graph. The following shows selectable items. • [Point] • [Line]
4)	[Number of States]	The number of the set conditions
5)	Add button	Adds a new condition.
6)	Delete button	Deletes the selected condition.
7)	Up button, down button	Changes the priority order of the conditions in the preview list.
8)	Preview list	Displays set conditions.
9)	[Utilize] button	Creates a new condition utilizing the selected condition.

Item			Description
10)	[Attribute] (When selecting [Point] for [Display Attribute])	—	Set the attribute of the points. 
		[Type]	Select the style of the point. The following shows selectable items. ●, ■, ▲, +, ○, □, △, ×
		[Size]	Select the size of the point. The following shows selectable items. • [Small] • [Medium] • [Large]
		[Color]	Set the color of the point.
	[Attribute] (When selecting [Line] for [Display Attribute])	—	Set the attribute of the line. 
		[Type]	Select the style of the line. The following shows selectable items. • Solid line • Dotted line • Broken line • One-dot chain line • Two-dot chain line
		[Size]	Select the width of the line. The following shows selectable items. • [1 Dot] • [2 Dot] • [3 Dot] • [4 Dot] • [5 Dot] • [6 Dot] • [7 Dot]
		[Color]	Select the color of the line.
11)	[Range]	[Range]	Set the display range of the conditions selected in the preview list. When setting the value of the word device as the condition, click the [Range] button to display the [Edit Range] dialog, and then set the conditional expression. ☞ Page 1038 Control with conditions

45.4.4 [Extended] tab

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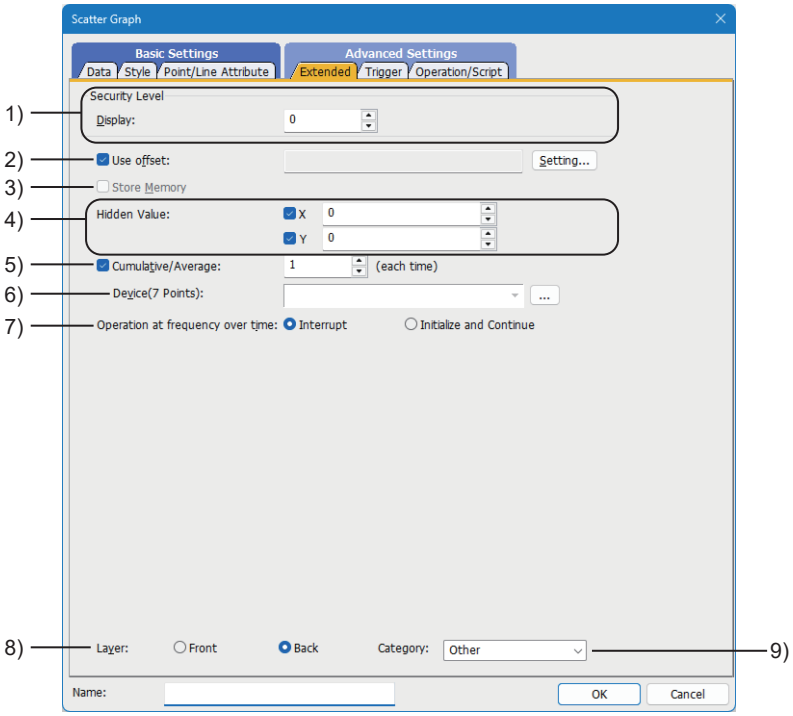
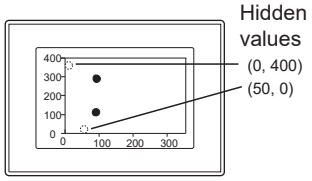
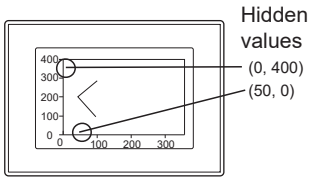
For mobile screens, some setting items are not available.

☞ Page 2742 Usable functions



Item		Description
1)	[Security Level]	Set the security level when using the security function. The setting range is [1] to [15]. Set the level to [0] when the security function is not used. ☞ Page 3038 Restricting display and operation on the GOT (Screen security)
2)	[Use offset]	Select this item to monitor multiple devices by switching between them. After selecting this item, set the offset device. ☞ Page 963 Offset If this item is set, [Store Memory] cannot be set.
3)	[Store Memory]	Select this item to continue data collection while a screen which displays no scatter graph is displayed. The data of the points displayed on the graph is stored to the internal memory of the GOT. ☞ Page 1676 Memory storage If this item is set, [Use Offset] cannot be set.
4)	[Hidden Value]	Select this item to hide a specific value in the scatter graph for each of X-axis and Y-axis. Example) [Hidden Value] is set to 0 for both of X-axis and Y-axis.  When the display attribute is set to "point"  When the display attribute is set to "line"

Item		Description
5)	[Cumulative/Average]	Select this item to write the cumulative count and average value, maximum value, and minimum value of the collected data to devices. ☞ Page 1678 Writing the cumulative count and average value After selecting this item, set the interval of writing the cumulative count, average value, maximum value, and minimum value to devices. The setting range is [1] to [36000]. The value set in [Hidden Value] is not included in the cumulative count, average value, maximum value, and minimum value. If the cumulative count, average value, maximum value, or minimum value is being written, the display of the object may be delayed when short intervals are set as the condition for the data storage or display.
6)	[Device(7 Points)]	Set the device to be used for [Cumulative/Average]. Seven successive devices are automatically set from the specified device.
7)	[Operation at frequency over time]	Select the operation that is executed when the number of displays of the memory storage or the number of data collections exceeds the limit. For the limit, refer to the following. ☞ Page 1677 Maximum number of displayed points that can be saved to the memory ☞ Page 1679 Maximum number of collections that can be counted in the cumulative count or average value ☞ Page 1679 When the cumulative count and average value are written and the memory storage are used simultaneously The following shows selectable items. • [Interrupt]: Data collection is interrupted and the display of the graph is not refreshed. • [Initialize and Continue]: After the display of the graph is deleted and the memory storage, cumulative count, average value, maximum value, and minimum value are initialized, the data collection resumes.
8)	[Layer]	Select the layer to arrange the object on. The following shows selectable items. • [Front] • [Back] ☞ Page 1055 Superimposition of figures and objects
9)	[Category]	Select the category to assign the object. ☞ Page 1121 Managing figures and objects by category

45.4.5 [Trigger] tab

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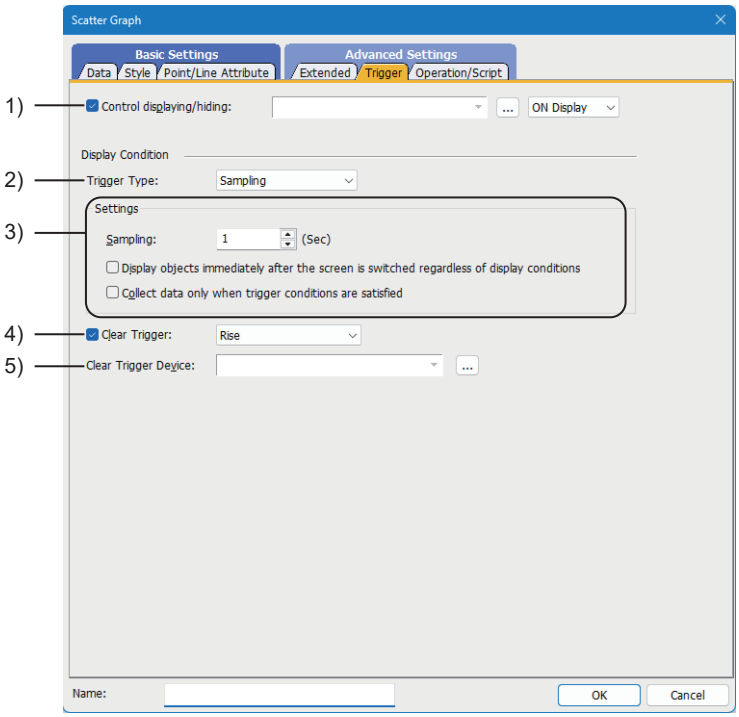
Set the trigger condition to display the object.



Item		Description
1)	[Control displaying/hiding]	Set the control device to display or hide all the objects including the shape frame. When the set device is in either the ON or OFF status, select whether or not to display the object. The following shows selectable items. • [ON Display] • [OFF Display] ☞ Page 834 How to set devices, labels, and tags
2)	[Trigger Type]	Select a trigger condition to display the object. The following shows selectable items. • [Ordinary] • [Rise] • [Fall] • [Rise/Fall] • [Sampling] • [ON Sampling] • [OFF Sampling] The selectable items vary depending on the GOT model. For details, refer to the following. ☞ Page 970 Specifications of the trigger types
3)	[Settings]	For details on each setting, refer to the following. ☞ Page 972 Settings by trigger type
4)	[Collect data only when trigger conditions are satisfied]	Select this item to collect data only when the trigger set for [Trigger Type] is satisfied. When [Rise], [Fall], [Rise/Fall], [Sampling], [ON Sampling], or [OFF Sampling] is selected, this setting is available. The graph communicates with the controller even when the trigger is off. To reduce the communication load between the GOT and the controller, allow communications only when the trigger is on.
5)	[Clear Trigger]	Select this item to use the trigger that clears the display of the graph. After setting this item, select the clear timing of the display of the graph. The following shows selectable items. • [Rise]: The display is cleared at the rise of the bit device (OFF → ON). • [Fall]: The display is cleared at the fall of the bit device (ON → OFF). [Clear Trigger] clears the display of the graph, cumulative count, and average value stored in the memory.
6)	[Clear Trigger Device]	Set a device used for the clear trigger.

PART 7

45.4.6 [Operation/Script] tab

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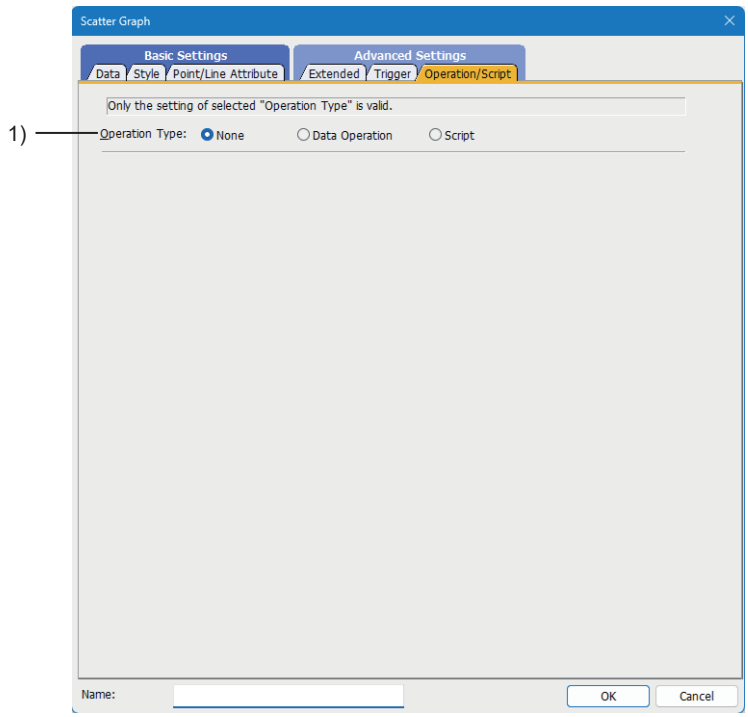
For mobile screens, some setting items are not available.

☞ Page 2742 Usable functions

Set an expression for monitoring using the data operation function or the script function.

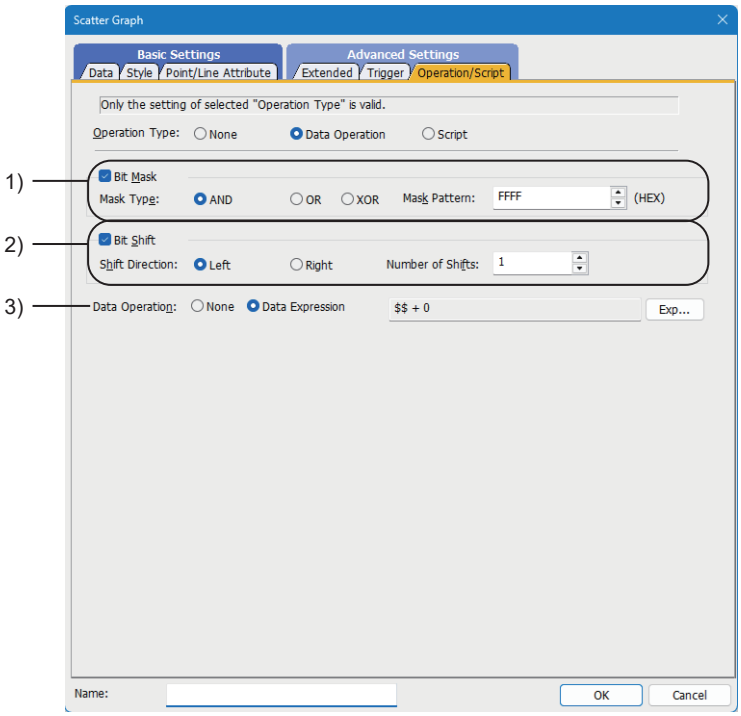


Item		Description
1)	[Operation Type]	To use the data operation or script, select an operation type. The following shows selectable items. • [None] Select this item if the data operation and script are unnecessary. • [Data Operation] Set the expression used for the data operation. ☞ Page 1691 [Data Operation] • [Script] Set the expressions for the script function. ☞ Page 1692 [Script]

[Data Operation]

For details on the data operation settings, refer to the following.

☞ Page 1053 How to set the data operation

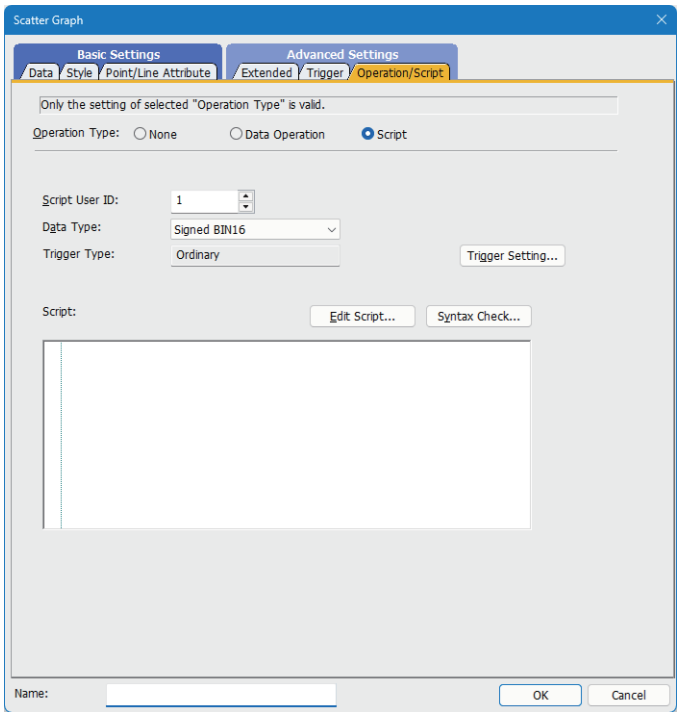


Item			Description
1)	[Bit Mask]	—	Set the operation of mask processing.
		[Mask Type]	Select the type of mask processing. • [AND]: Logical AND • [OR]: Logical OR • [XOR]: Exclusive OR
		[Mask Pattern]	Set a pattern value to mask in hexadecimal. The setting range differs depending on the setting of [Data Type] in the [Data] tab.
2)	[Bit Shift]	—	Set the operation of shift processing.
		[Shift Direction]	Select a shifting direction. • [Left]: Left-shift • [Right]: Right-shift
		[Number of Shifts]	Set the number of bits to be shifted. The setting range differs depending on the setting of [Data Type] in the [Data] tab.
3)	[Data Operation]		Set the format of the expression. The following shows selectable items. • [None]: Does not perform the data operation by using the expression. • [Data Expression]: Performs the data operation by using the expression. Click the [Exp] button to set the format of the expression in the [Edit Data Expression] dialog.

[Script]

For the script settings, refer to the following.

☞ Page 2447 Object script



■Relationship between the object settings and object properties

Object settings can be read (referenced) or written (changed) using object properties.

The following shows the correspondence between the relevant settings in the object setting dialog and the object properties.

○: Available

×: Not available

—: No applicable setting item

Setting dialog		Object property			
Tab name	**Setting item**	**Property name**	**Read**	**Write**	**Timing for reflecting the setting change*1**
—	—	active	○	○	Upon the setting change
		x	○	○	When the screen is updated
		y	○	○	When the screen is updated
		width	○	×	×
		height	○	×	×
[Data]	[Lower Limit] (X)	scale_min[0]	○	○	When the object is updated
	[Lower Limit] (Y)	scale_min[1]	○	○	When the object is updated
	[Upper Limit] (X)	scale_max[0]	○	○	When the object is updated
	[Upper Limit] (Y)	scale_max[1]	○	○	When the object is updated
[Style]	[Frame Color]	frame_color	○	×	×
	[Shape Color]	plate_color	○	○	When the object is updated
[Point/Line Attribute]	[Color]	graph_color	○	○	When the object is updated
[Extended]	[Security Level]	security	○	○	When the screen is updated

*1 For the timing at which the setting change of an object property is reflected, refer to the following.

☞ Page 2456 Timing at which the setting change of an object property is reflected

46 Placing a historical trend graph

☞ Page 1693 Overview of the historical trend graph
☞ Page 1693 Specifications of the historical trend graph
☞ Page 1702 How to use the historical graph
☞ Page 1710 [Historical Trend Graph] dialog
☞ Page 1729 Relevant settings

46.1 Overview of the historical trend graph

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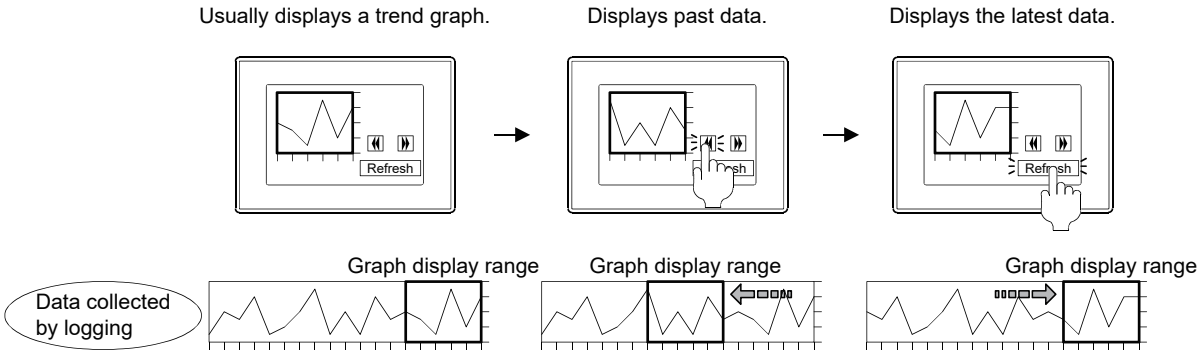
This function displays the device data collected by logging in chronological order in a trend graph.



46.2 Specifications of the historical trend graph

GT37 SoftGOT3000

The following shows the specifications of the historical trend graph.

46.2.1 Settable numbers

Maximum number of historical trend graphs on one screen

Up to 32 trend graph and historical trend graph objects can be placed on one screen.
When multiple screens are opened using a set overlay screen, a total of 32 trend graph and historical trend graph objects can be placed on both the calling and called screens.
When multiple window screens are opened through an overlap window, superimpose window, user-created key window, or user-created dialog, up to 32 trend graph objects can be placed on each screen.

Maximum number of lines on one historical trend graph

Up to 32 lines can be displayed in one trend graph.

Maximum number of points

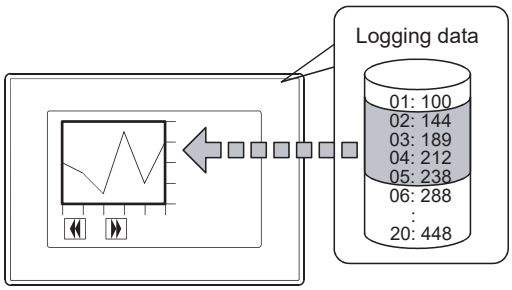
Up to 1024 points can be displayed on one trend graph line.

46.2.2 Relationship with the logging function

The data collected and stored in the buffering area or memory card by logging is displayed in a graph.

☞ Page 2194 Collecting device data ([Logging])

The stored data is used, enabling display of both the latest and old data in a graph.



Displays accumulated data in a graph.

A historical trend graph displays only the data of one logging ID.

To display the data of multiple logging IDs, set multiple historical trend graphs.

Precautions

■When the device type is set to the string in a logging setting

When [Device Type] is set to [String] in a logging setting, a system alarm occurs and the graph using the setting is not displayed.

■Precautions for designing a screen

If you place a historical trend graph by using the [Create a new historical trend graph] button in the [Logging] dialog, the settings of the following items in the [Options] dialog are not applied.

- [Place figures/objects sequentially]
- [Deselect figures/objects once they are placed]
- [Display the setting dialog once figures/objects are placed]

☞ Page 2228 [Logging] dialog

☞ Page 199 Customizing the settings related to editing operations

46.2.3 Difference from the trend graph

The trend graph collects data and displays it.

The trend graph does not require the setting of logging, and the data is not stored.

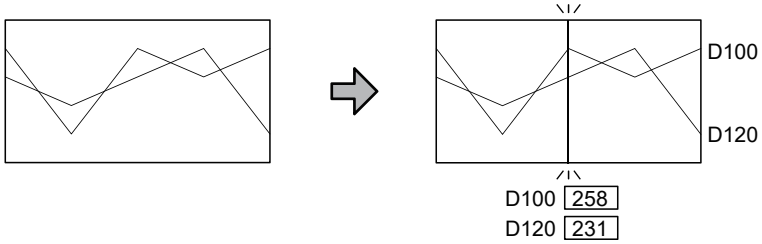
☞ Page 1577 Placing a line graph

46.2.4 Useful function

The following explains the useful functions for using the historical trend graph.

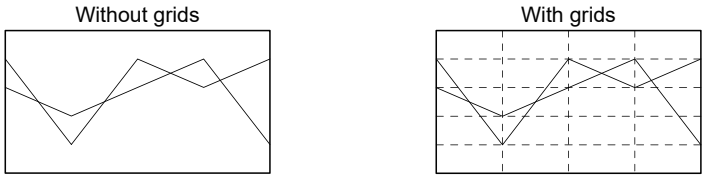
Displaying a cursor

A cursor can be displayed and moved on the graph using the touch switch to which the key code is assigned.
With the setting of the single touch operation, the cursor can be displayed on or moved to the touched position directly.
The device value of the position where the cursor is displayed can be output to the device set in the [Graph Information] dialog.
While a cursor is displayed, the display of the graph stops.



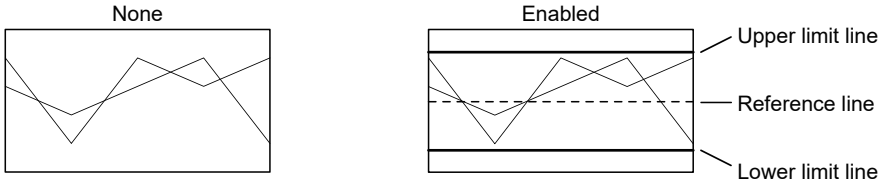
Displaying grids

Grids can be displayed on a graph.



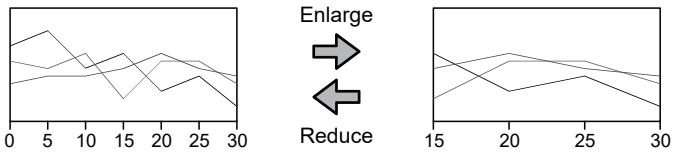
Displaying a reference line, lower limit lime, and upper limit line

A reference line, lower limit lime, and upper limit line can be displayed on a graph.



Enlarging or reducing the time axis

The time axis can be enlarged or reduced by using the touch switch to which the key code is assigned.



■Data displayed upon enlargement or reduction

When enlarging or reducing the time axis, you can select whether to always display the latest data or stop the graph update to display the current data.

■Displaying the magnification

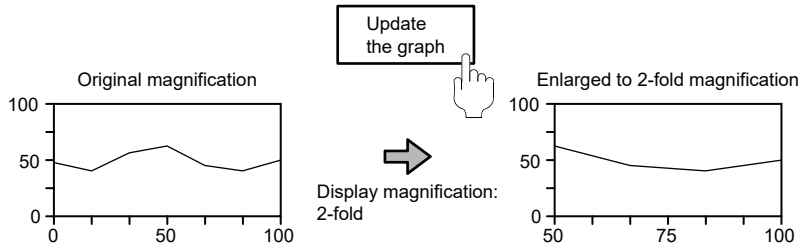
You can store the magnification factor being used to a specific device.
Thus, the current magnification is displayable with the numerical display.

Magnification for displaying the latest data

When the latest data is displayed with the touch switch, screen switching, or graph offset function, you can specify a magnification factor to display the data.

Ex.

When [Graph display magnification for latest data display] is set to [2-fold]

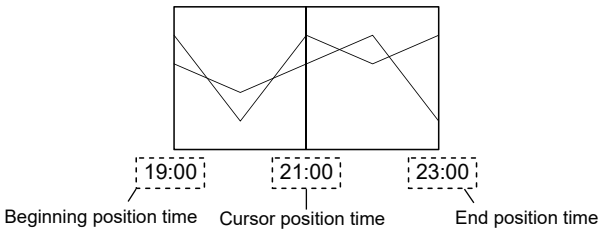


External output of date data

When [Always update Beginning Position Time/End Position Time] in the [Extended] tab is set, the latest beginning position time and end position time can be output constantly to the Time device.

The beginning position time, end position time, and cursor position time can be output to the Time device by using the touch switch to which the key code is assigned.

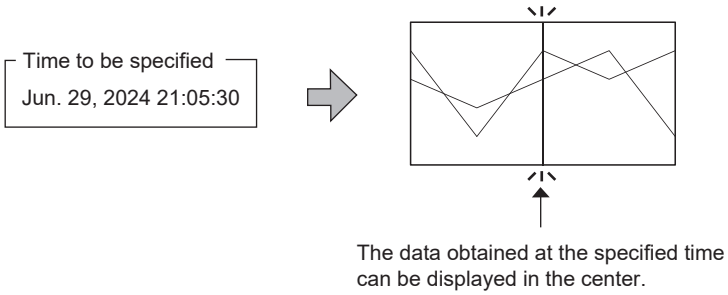
While the data is output to the device, the display of the graph stops.



Displaying data obtained at specified time

The data obtained at specified time can be displayed by using the touch switch to which the key code is assigned.

While the data obtained at specified time is displayed, the display of the graph stops.



Displaying data of historical trend graphs in historical data list displays

The data displayed with a cursor in a historical trend graph can be displayed in a historical data list display.

☞ Page 1495 Placing a historical data list display

Holding the graph display state displayed before screen switching

The GOT holds the display state of the historical trend graph displayed before screen switching and displays the same graph state after switching back to the graph screen.

Before using this setting, set the Logging Count device.

☞ Page 2194 Collecting device data ([Logging])

Use the Historical Trend Graph Display Mode signal (GS450.b9) to set the historical trend graph display mode.

- ON: Holds the display state displayed before screen switching.
- OFF: Not hold the display state displayed before screen switching.

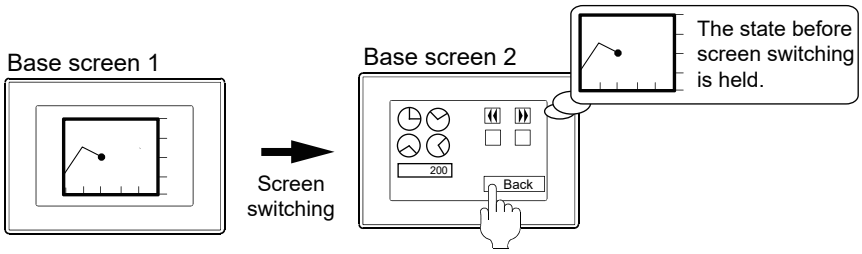
The GOT checks this signal every screen switching.

■Action at screen switching

If a screen is switched while GS450.b9 is on, the GOT operates as follows.

- Screen on which the historical trend graph is displayed → another screen

The GOT holds the display state of the historical trend graph.

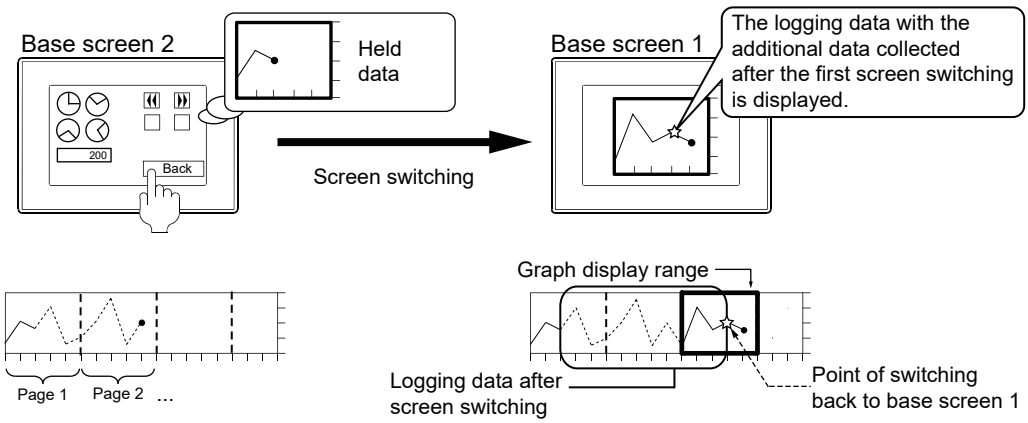


- Other screens → screen on which the historical trend graph is displayed

The GOT restores and displays the previous historical trend graph based on the held data.

When the amount of the logging data has increased since the first screen switching, the increased logging data is added to the graph.

If no data is retained, the GOT displays the latest logging data.

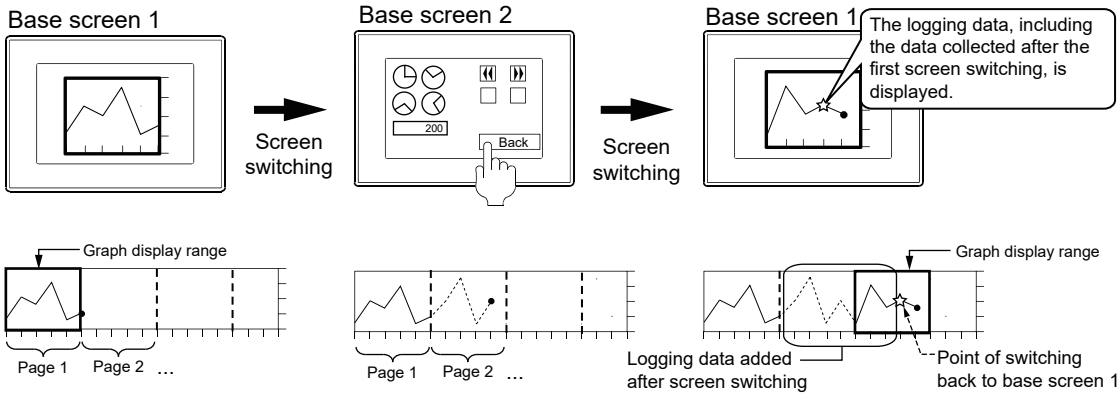


■Action example

The following shows an example of the following action: base screen 1 (on which a historical trend graph is placed) is switched to base screen 2, and then base screen 1 is displayed again.

• When GS450.b9 is on (displaying the latest data)

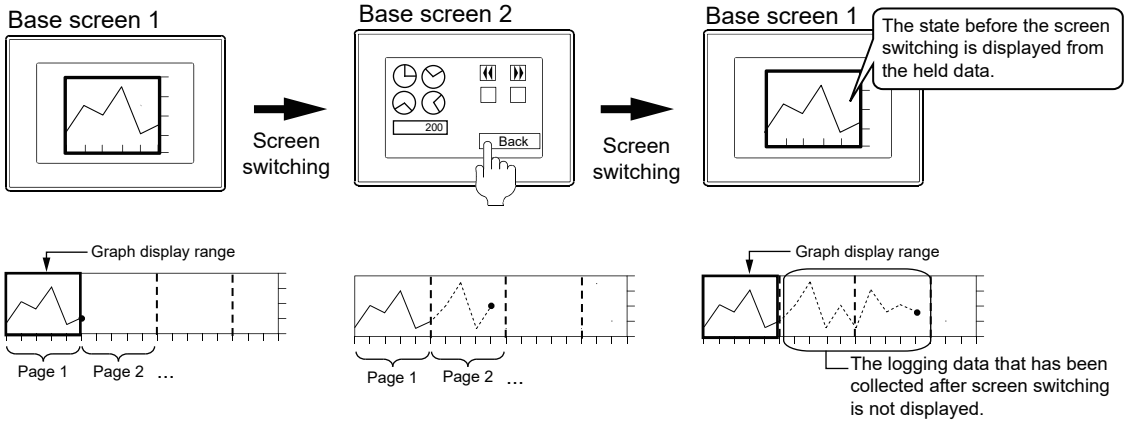
After the logging data that has been collected after the screen is switched is added to the held data, the logging data is displayed.



• When GS450.b9 is on (displaying the past data)

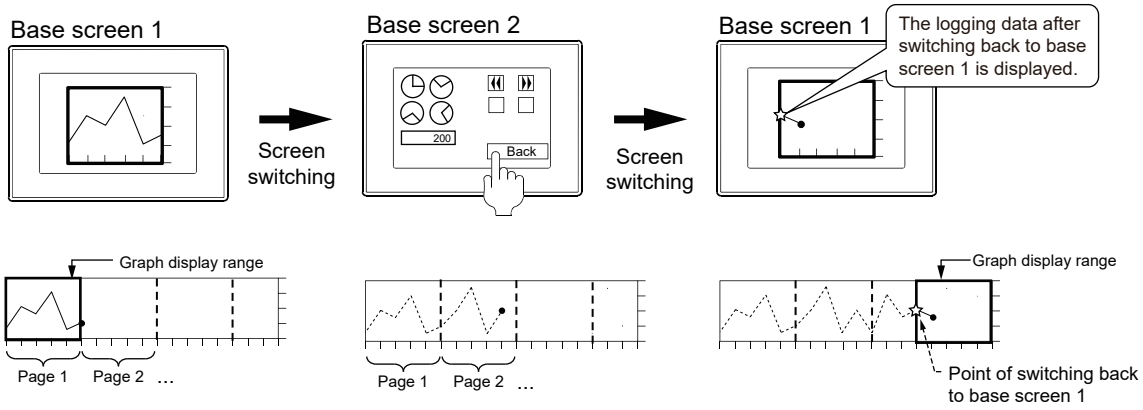
The state before the screen is switched is displayed.

The logging data that has been collected after the screen is switched is not displayed.



• When GS450.b9 is off

The logging data after base screen 1 is displayed again is displayed.



■Restrictions

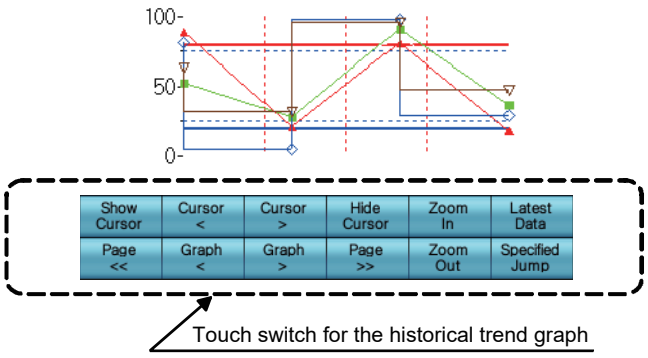
When the logging ID to be monitored by the historical trend graph is set using a device, pay attention when changing the logging ID.

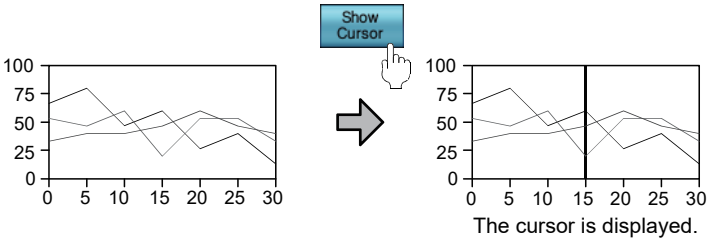
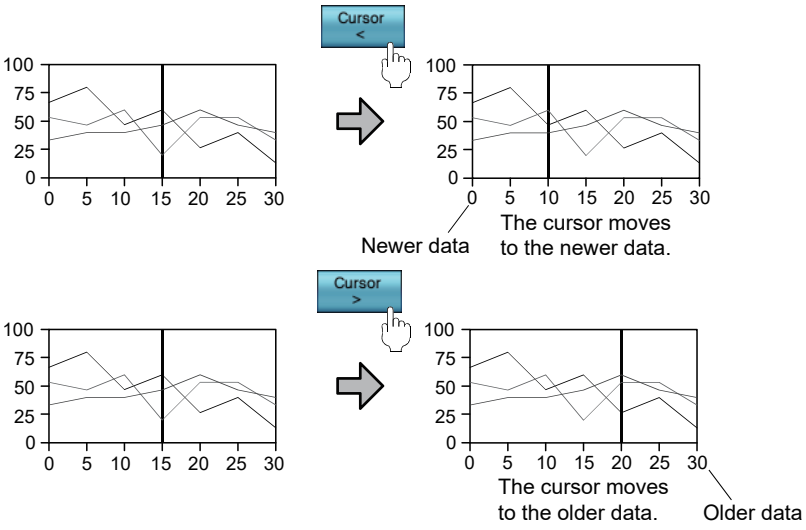
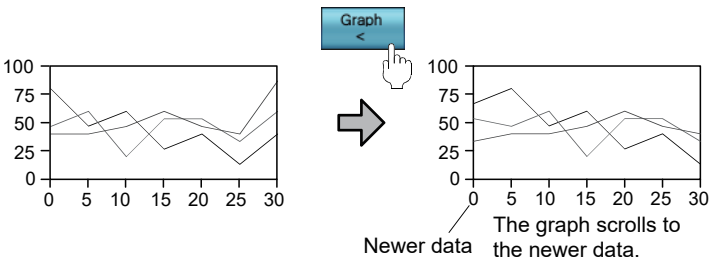
If the logging ID to be monitored is changed after the display state is held, the display state is discarded.

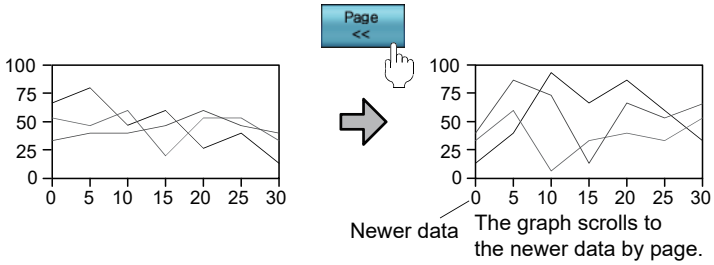
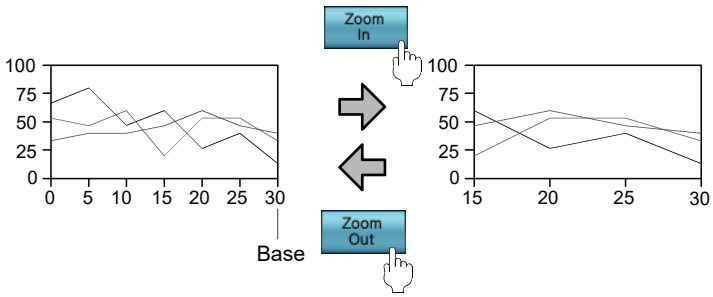
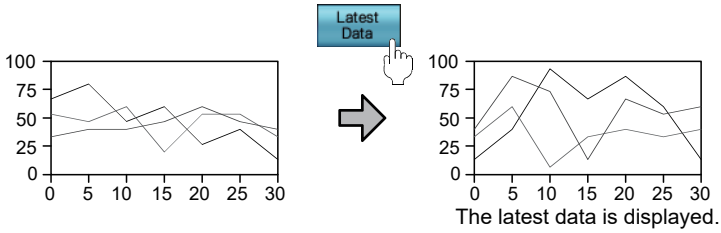
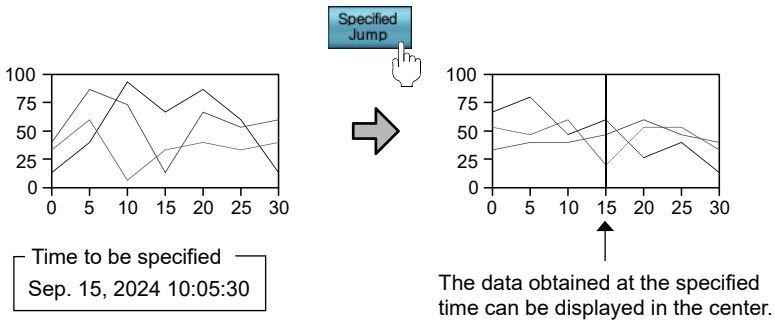
Even when the screen is returned to the screen on which the historical trend graph is placed, the state before the screen switching is not restored and the latest logging data is displayed.

46.2.5 Touch switches for a historical trend graph

Touch switches for the historical trend graph are available by reading them from the library of GT Designer3.
The text and shape of each touch switch are user-changeable.
When key codes are set for touch switches, touch switches for the historical trend graph can be created by a user.



Touch switch	Key code	Description
Show cursor Show Cursor	FFF0h	Displays or deletes the cursor. Displays the cursor in the center of the graph. 
Hide cursor Hide Cursor	FFF1h	
Graph Cursor Next Cursor <	FFF2h	Moves the cursor to the new or past data. Example) When [Display Mode] is set to [Pen Record] and [Direction] is set to [Right] 
Graph Cursor Previous Cursor >	FFF3h	
Graph Next Graph <	FFF4h	Scrolls the graph right or left. Example) When [Display Mode] is set to [Pen Record] and [Direction] is set to [Right] 
Graph Previous Graph >	FFF5h	

Touch switch	Key code	Description
Graph Next Page Scroll 	FFF6h	Moves the graph right or left in units of page. Example) When [Display Mode] is set to [Pen Record] and [Direction] is set to [Right] 
Graph Previous Page Scroll 	FFF7h	
Time Axis Expansion 	FFF8h	Enlarges or reduces the time axis by using the axis of new data as the reference. You can enlarge the time axis until the graph displays two points. The scope of reducing the time axis varies with the setting of [Shrink the graph to be less than its full scale]. • When [Shrink the graph to be less than its full scale] is selected The time axis can be reduced to a magnification of 1/128. • When [Shrink the graph to be less than its full scale] is deselected The time axis can be reduced to the original magnification. For the setting of [Shrink the graph to be less than its full scale], refer to the following. ☞ Page 1721 [Extended] tab 
Time Axis Reduction 	FFF9h	
Latest data 	FFEFh	Displays the latest data. 
Move display position to the specified time 	FFD4h	Displays the time data stored in the Display Position Time Specification device in the center. (Time specification jump function) Using the time specification jump function may change the graph display magnification as shown below. • When a graph has been enlarged from the original magnification The graph display magnification returns to the original magnification after this function is used. • When a graph has been reduced from the original magnification The graph display magnification remains unchanged after this function is used. 

46.3 How to use the historical graph

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The following shows how to use the historical trend graph.

46.3.1 Setting logging

To use a historical trend graph, the logging setting is required.

☞ Page 2194 Collecting device data ([Logging])

46.3.2 Placing a historical trend graph

The following shows how to place the historical trend graph.

Operating procedure

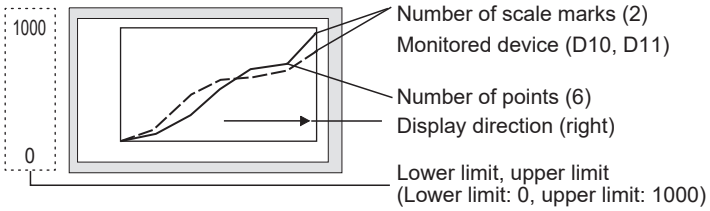
1. Select [Object] → [Graph] → [Historical Trend Graph] from the menu.
2. Click the position to place a historical trend graph.
3. Adjust the frame size of the historical trend graph.
4. Double-click the historical trend graph to display the setting dialog.

☞ Page 1710 [Historical Trend Graph] dialog

5. Display the [Data] tab.

☞ Page 1710 [Data] tab

6. Set the number of lines and points to be displayed on the historical trend graph.

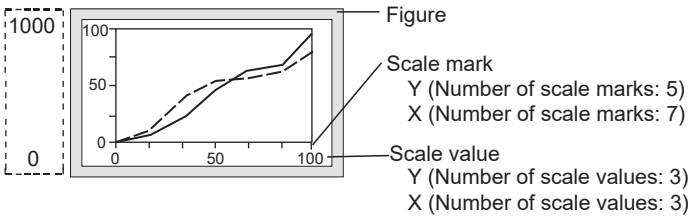


7. Set a device to be monitored.

☞ Page 834 How to set devices, labels, and tags

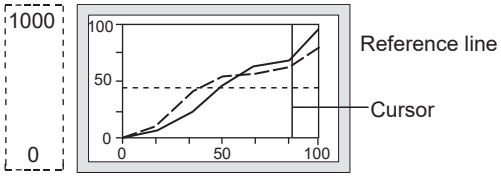
8. Set [Lower Limit] and [Upper Limit].
9. Set the scale and figure in the [Style] tab.

☞ Page 1716 [Style] tab



10. Set the graph assistance line and cursor attribute in the [Auxiliary Line/Cursor] tab.

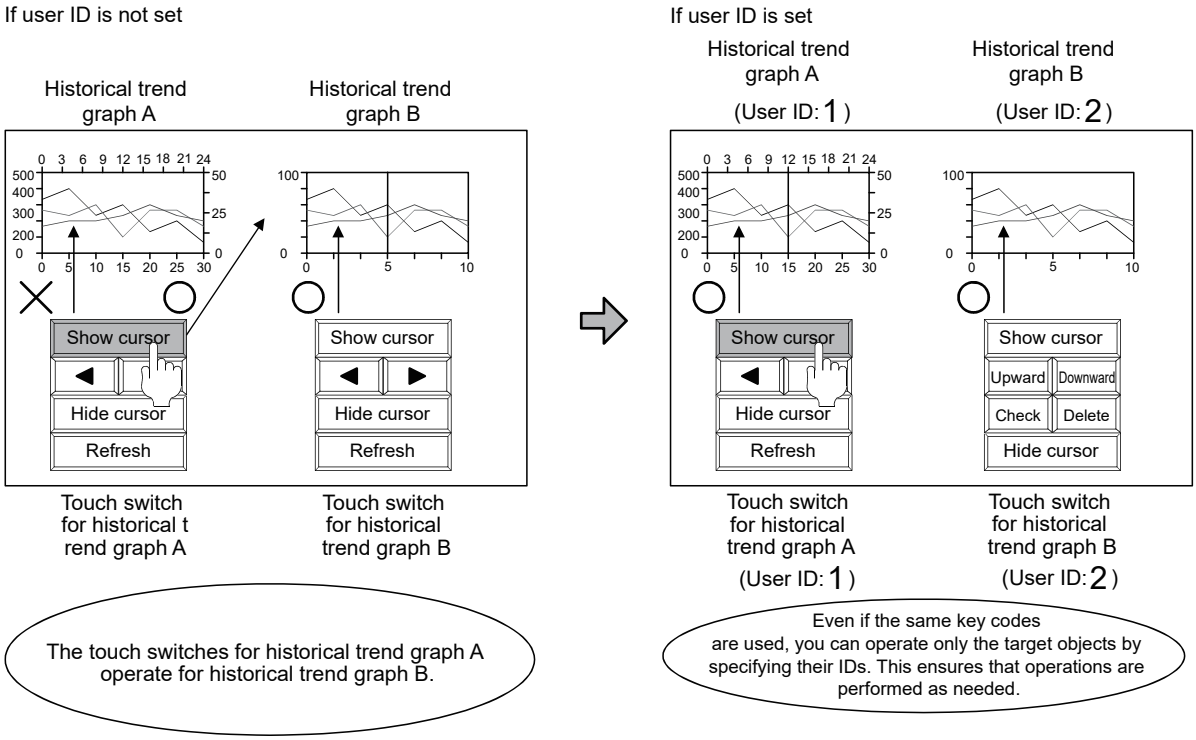
☞ Page 1719 [Auxiliary Line/Cursor] tab



11. Click the [OK] button to complete the historical trend graph settings.

46.3.3 Identifying multiple historical trend graphs (setting user IDs)

When you use touch switches to which key codes are assigned to operate multiple objects on one screen, touching a touch switch may operate an unintended object.
Setting a user ID limits the objects operated when the touch switch is touched.



The following shows the setting procedure.

Settings of the historical trend graph

Operating procedure

1. Double-click the historical trend graph on the screen editor.

The [Historical Trend Graph] dialog appears.

☞ Page 1710 [Historical Trend Graph] dialog

2. Enable [User ID] in the [Extended] tab, and specify the number.

☞ Page 1721 [Extended] tab

The number is used to define the target object as the object that operates when the touch switch is touched.

Do not set [User ID] that is already used for other objects.

Settings of a touch switch

Operating procedure

1. Display the [Switch] dialog.

For details on the switch, refer to the following.

☞ Page 1191 Placing a touch switch

2. Click the [Key Code] button in the [Action] tab.

3. Enable [Individually set user ID for a key input] and specify a number.

Set the same number as the number specified in [User ID] of [Historical Trend Graph].

46.3.4 Storing the data of each graph in devices

The following values displayed in each graph can be stored in devices.

- Value under the cursor
- Maximum value
- Minimum value
- Average value

Even though data operation is set, the value before the data operation is stored.

How to store the data to the device

Set the devices to store values under [Graph Information] in the [Data] tab.

Set the devices and select the data options to be collected.

☞ Page 1710 [Data] tab

Timing when values are stored in devices

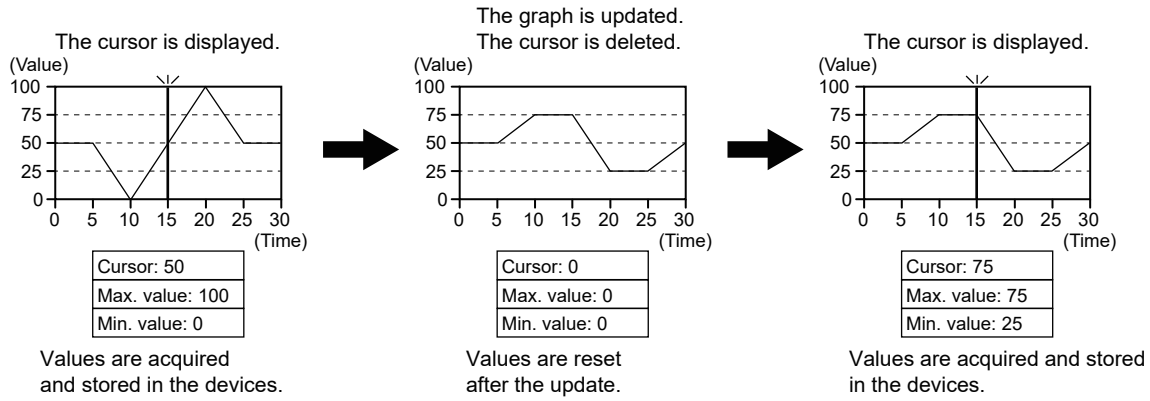
Values are stored in devices at the following timings.

- When a cursor is displayed on a graph
- When a cursor is moved
- When a historical trend graph is operated with a touch switch with a cursor displayed

The maximum, minimum, and average values are constantly acquired and stored in devices.

Ex.

Storing the value under the cursor, maximum value, and minimum value



46.3.5 Storing time data in devices

The time of the cursor display position, display range beginning position, and display range end position of the graph can be stored to the device by using the Time device.

How to store the data to the device

Data is stored in the upper eight bits and lower eight bits of set devices.

Numerical values are stored in BCD.

Ex.

When [Device] is set to [D100]

Item	Device	Description
[yymm]	D100	• b15 to b8: The year is stored. • b7 to b0: The month is stored.
[ddhh]	D101	• b15 to b8: The day is stored. • b7 to b0: The time (hour) is stored.
[mmss]	D102	• b15 to b8: The time (minute) is stored. • b7 to b0: The time (second) is stored.
[Day]	D103	• b15 to b8: None • b7 to b0: The day of the week is stored as a numerical value. The following shows the numerical values corresponding to the days. • 0: Sunday • 1: Monday • 2: Tuesday • 3: Wednesday • 4: Thursday • 5: Friday • 6: Saturday

Storage timing and values stored to devices

■Timing when the value is stored

With the following timings, values are stored to devices.

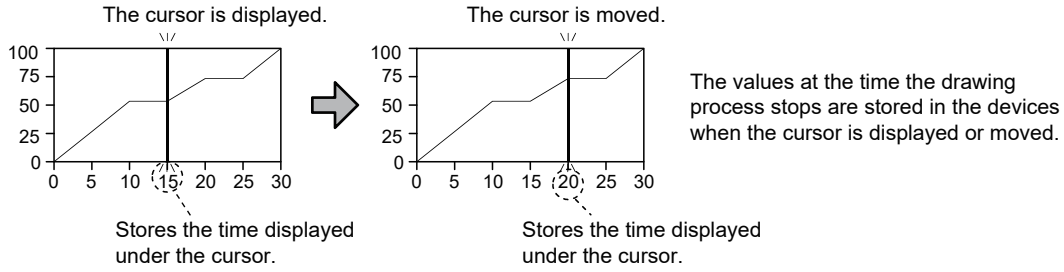
- When a cursor is displayed on a graph
- When a cursor is moved
- When a historical trend graph is operated with a touch switch with a cursor displayed

■Values to be stored

When a cursor is displayed on the graph, the drawing processing of the graph stops.

The values at the stop of the draw processing are stored to devices.

Example) Storing a time in the device



PART 7

Displaying time data in the numerical display

Time data can be displayed in the numerical display.

The following shows the setting procedure.

Operating procedure

1. Display the setting dialog for the placed numerical display ([Numerical Display] dialog).

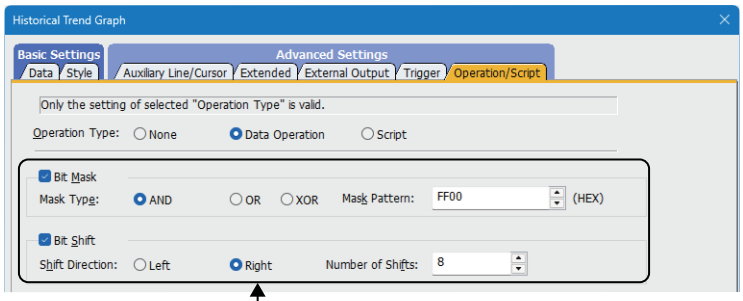
For details on the numerical display, refer to the following.

☞ Page 1305 Placing a numerical display or numerical input object

2. Select [BCD16], [BCD32], or [BCD64] for [Data Type] in the [Device] tab.

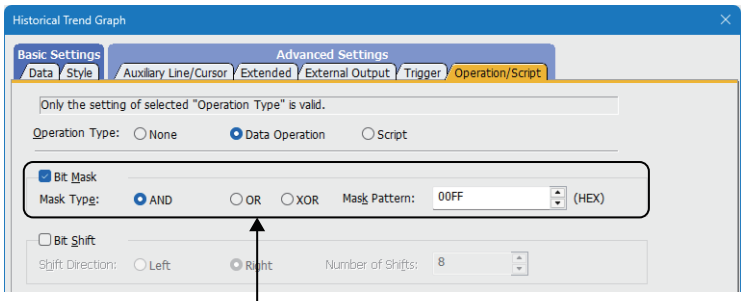
3. Set the mask processing and shift processing in the [Operation/Script] tab.

- When displaying upper 8 bits (year)



For the numerical display, set the lower 8 bits of D100 (b7 to b0) to be masked and the upper 8 bits of D100 (b15 to b8) to be shifted to the right by 8 bits.

- When displaying lower 8 bits (month)



For the numerical display, set the upper 8 bits of D100 (b15 to b8) to be masked.

46.3.6 Displaying the data obtained at specified time in the center (time specification jump function)

By using the display position time device and a touch switch, the data obtained at specified time can be displayed in the center of the historical trend graph.
When no time is obtained at the specified time, the data which has the nearest specified date is displayed.
When the multiple values are obtained at the nearest time, the first detected value is displayed.

How to store the data to the device

Set a device to store the data in the upper eight bits and lower eight bits.
Numerical values are stored in BCD16.

Ex.
When [Device] is set to [D100]

Item	Device	Description
[yymm]	D100	• b15 to b8: The year is stored. • b7 to b0: The month is stored.
[ddhh]	D101	• b15 to b8: The day is stored. • b7 to b0: The time (hour) is stored.
[mmss]	D102	• b15 to b8: The time (minute) is stored. • b7 to b0: The time (second) is stored.

Setting procedure

■Settings of a touch switch

To use time specification jump function, the following touch switches are required.

- Touch switch for displaying the specified time
- Touch switch for restarting the drawing processing of the graph

If the time specification jump function is used, the drawing processing of the graph stops.
A touch switch for restarting the drawing processing of the graph is required.
The following shows the setting procedure.

Operating procedure

1. Display the setting dialog for the placed switch ([Switch] dialog).

For details on the switch, refer to the following.

☞ Page 1191 Placing a touch switch

2. Click the [Key Code] button in the [Action] tab.

3. Set the key cord according to the touch switch to be created.

- When setting a touch switch for displaying the specified time

Set [Code Setting] to [FFD4].

- When setting a touch switch for restarting the drawing processing of the graph

Set [Code Setting] to [FFEF].

Point

Using the library data

Touch switches are registered in the library.

☞ Page 1061 Using the data registered in the library

■Settings of the historical trend graph

Operating procedure

1. Double-click the historical trend graph on the screen editor.

The [Historical Trend Graph] dialog appears.

☞ Page 1710 [Historical Trend Graph] dialog

2. Enable [Display Position Time] in the [Extended] tab, and specify a device.

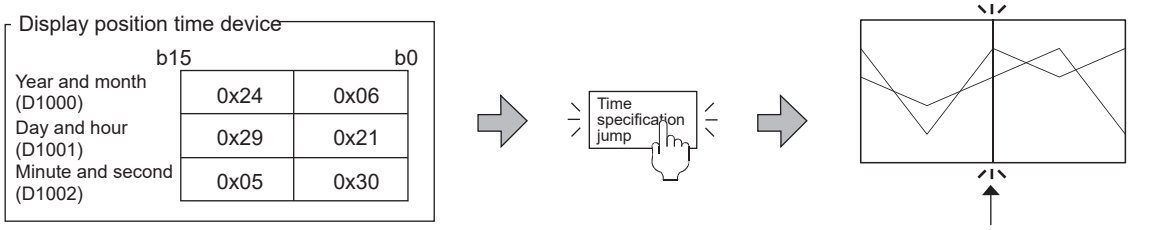
☞ Page 1721 [Extended] tab

Operation example

The following shows the operation examples.

Ex.

Setting [D1000] in [Display Position Time Device] and displaying the data of Jun. 29, 2024 21:05:30



Set the time to be displayed in the display position time device.

Touch the touch switch for which the key code (FFD4h) has been set.

The data obtained at the specified time (Jun. 29, 2024, 21:05:30) can be displayed in the center.

Precautions

■When time data is being searched for

When time data is being searched for, the historical trend graph cannot be operated.

■When no data can be displayed on the historical trend graph

When no data can be displayed on the historical trend graph, the time specification jump function is not executed.

■When displaying the data displayed near the start or end point

If the data obtained at specified time is near the start or end point, it may not be displayed in the center of the graph.

■Using the time specification jump function for an enlarged or reduced graph

Using the time specification jump function may change the graph display magnification as shown below.

- When a graph has been enlarged from the original magnification

The graph display magnification returns to the original magnification after this function is used.

- When a graph has been reduced from the original magnification

The graph display magnification remains unchanged after this function is used.

46.3.7 Operations performed using the object gesture function

The display of objects can be operated using gestures.
For information on operations using gestures, refer to the following.
☞ Page 507 Operating objects with gestures (object gesture function)

46.3.8 When a graph is reduced from the original magnification

Data displayed on the graph

If a graph is reduced from the original magnification, some pieces of data are thinned out and do not appear on the graph.
Thus, the data displayed on the graph before and after the reduction may differ.
To check specific data on a graph, display the graph at the original magnification or greater.

Elapsed time before a graph appears

If a graph is reduced from the original magnification, the graph may take a long time to appear.
In such a case, enlarge the graph close to the original magnification.

Storing the maximum value, minimum value, and average value of a graph to specific devices

If a graph is reduced from the original magnification, some pieces of data are thinned out and do not appear on the graph. The maximum value, minimum value, and average value of the reduced graph are stored to specific devices.
Thus, the actual maximum value, minimum value, and average value of the graph at the original magnification may not be stored.
Before storing the values, enlarge the graph to the original magnification.

46.4 [Historical Trend Graph] dialog

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The historical trend graph is an object that constantly collects data in word devices and display it in a graph.

Operating procedure

1. Select [Object] → [Graph] → [Historical Trend Graph] from the menu.
2. Click the position to place a historical trend graph.
3. Double-click the historical trend graph to display the setting dialog.

☞ Page 1710 [Data] tab
☞ Page 1716 [Style] tab
☞ Page 1719 [Auxiliary Line/Cursor] tab
☞ Page 1721 [Extended] tab
☞ Page 1724 [External Output] tab
☞ Page 1725 [Trigger] tab
☞ Page 1726 [Operation/Script] tab

46.4.1 [Data] tab

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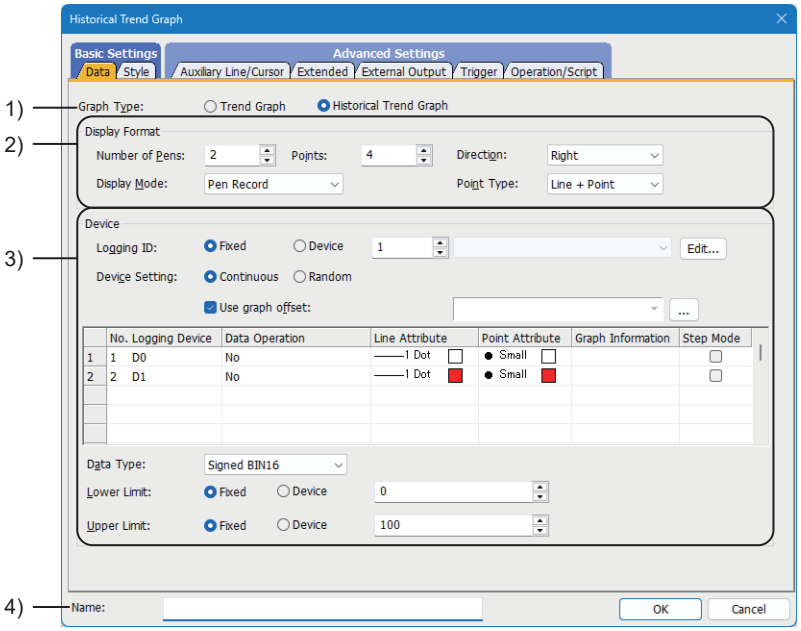
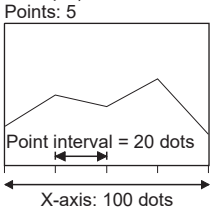
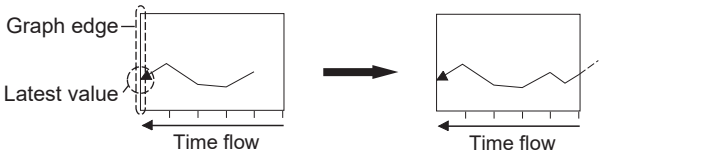
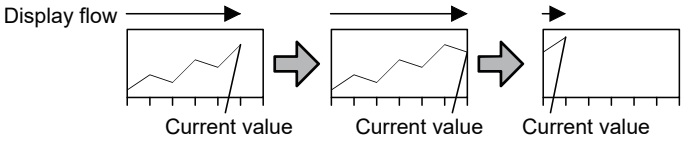
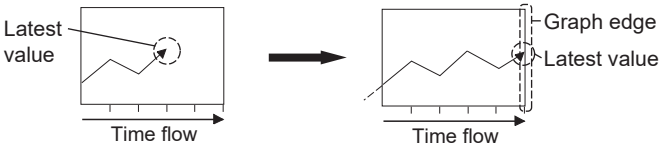
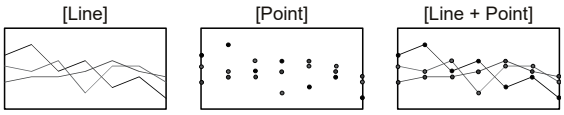
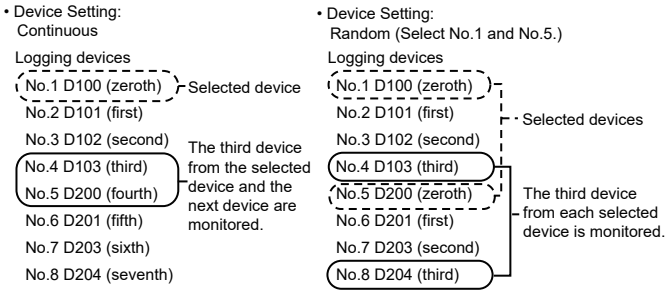
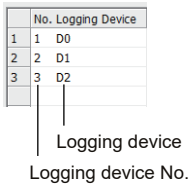
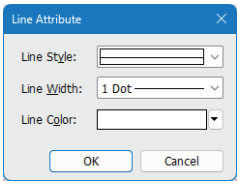
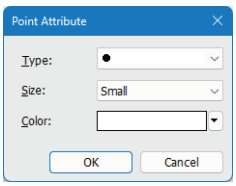
Set the device to be monitored and the historical trend graph status corresponding to the device value.

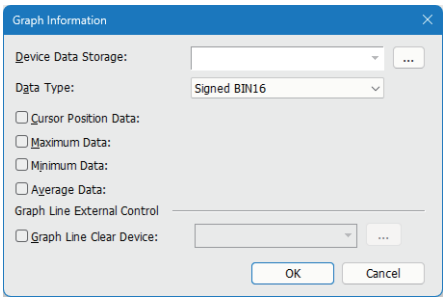
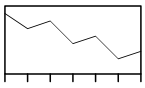
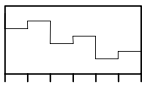


Item			Description
1)	[Graph Type]		Select the graph to be set. The following shows selectable items. • [Trend Graph] • [Historical Trend Graph]
2)	[Display Format]	[Number of Pens]	Set the number of lines to be displayed on the historical trend graph. The setting range is [1] to [32].

Item			Description
2)	[Display Format]	[Points]	Set the number of points to be displayed on a line of the historical trend graph. The setting range is [2] to [1024]. Depending on the number of points and X-axis display range, the interval between points is adjusted automatically. Example) Points: 5 
		[Direction]	Select the display direction of the graph. The following shows selectable items. • [Up] • [Down] • [Left] • [Right]
		[Display Mode]	The following shows how to draw the historical trend graph. The following shows selectable items. • [Pen Record] The line of the graph is drawn by moving the whole graph to [Direction]. The point indicating the latest value is always drawn at the graph edge.  • [One by One] The current value is displayed in the display direction. When the graph is drawn fully in a display range, the graph being displayed is cleared and a new graph is drawn.  • [Next Point Movement] The line of the graph is drawn to [Direction]. The point indicating the latest value moves to the display direction. Once the point indicating the latest value reaches to the graph edge, the point is drawn at the graph edge constantly. 
		[Point Type]	Select the point type. The following shows selectable items. • [Line] • [Point] • [Line + Point] 

Item			Description
3)	[Device]	[Logging ID]	Set the logging ID with which the data to be displayed on the historical trend graph is collected. Select whether to specify the ID using a fixed value or device value. The following shows selectable items. • [Fixed] Specify the ID directly. You can select ID from the logging name as well. • [Device] Specify the value of the word device as a logging ID. ☞ Page 834 How to set devices, labels, and tags
		[Device Setting]	Select how to set the device. The following shows selectable items. • [Continuous] Automatically inputs consecutive devices in the table of [Device] when a start device is set. • [Random] Select this item when setting devices one by one.
		[Use graph offset]	Select this item to monitor the logging device that is set in the logging ID and specified by the value of the offset device. When a graph has multiple lines, the device to be monitored differs depending on the set value in [Device Setting]. After checking the device value, set the offset device. Example) When [Number of Pens] is set to [2] and offset device is set to [3] 
		[No. Logging Device]	In the [Device List] dialog, select a logging device of a selected logging ID number. After the selection in the [Device List] dialog, the logging devices equivalent to the setting of [Number of Pens] are set. Example) When [Number of Pens] is set to [3] 
		[Data Operation]	Set this item to execute the data operation. ☞ Page 1054 [Edit Data Expression] dialog The [Data Type] setting in the [Historical Trend Graph] dialog determines the data type of the device specified in the expression.

Item				Description
3)	[Device]	[Line Attribute]	—	Set the attribute of the line. When [Line] or [Line + Point] is selected for [Point Type], set this item. 
			[Style]	Select the style of the line. The following shows selectable items. • Solid line • Dotted line • Broken line • One-dot chain line • Two-dot chain line
			[Width]	Select the width of the line. The following shows selectable items. • [1 Dot] • [2 Dot] • [3 Dot] • [4 Dot] • [5 Dot] • [6 Dot] • [7 Dot]
			[Color]	Select the color of the line.
		[Point Attribute]	—	Set the attribute of the points. When [Point] or [Line + Point] is selected for [Point Type], set this item. 
			[Type]	Select the style of the point. The following shows selectable items. 0: ●, 1: ■, 2: ▲, 3: +, 4: ○, 5: □ 6: △, 7: ×, 8: ▼, 9: ◀, 10: ▶, 11: ◆ 12: ▽, 13: ◁, 14: ▷, 15: ◇
			[Size]	Select the size of the point. The following shows selectable items. • [Large]: 9 dots • [Medium]: 7 dots • [Small]: 5 dots • [Very small]: 3 dots • [Point]: 1 dot Only when [0] is selected for [Type], [Very small] or [Point] can be selected.
			[Color]	Set the color of the point.

Item				Description
3)	[Device]	[Graph Information]	—	Set the device in which the information displayed on the graph is stored or device that clears the line of the graph. For the timings when values are stored in the devices set for [Maximum Data], [Minimum Data], and [Average Data], refer to the following. 
			[Device Data Storage]	Set the device in which the graph information is stored. The successive devices following the device set in this item are assigned automatically to [Cursor Position Data] or later items. Set each item optionally. Using the GOT internal device is recommended for this setting. Even though data operation is set, the value before the data operation is stored.
			[Data Type]	Select the data type of the word device in which graph information is stored. Select the same data type as that of the logging device. The following shows selectable items. • [Signed BIN8] • [Unsigned BIN8] • [Signed BIN16] • [Unsigned BIN16] • [Signed BIN32] • [Unsigned BIN32] • [Signed BIN64] • [Unsigned BIN64] • [BCD16] • [BCD32] • [BCD64] • [Real(32bit)] • [Real(64bit)]
			[Cursor Position Data]	Select this item to store the value of device positioned by the cursor. The device is assigned automatically.
			[Maximum Data]	Select this item to store the maximum value of the device values displayed on the graph is to be stored. The device is assigned automatically.
			[Minimum Data]	Select this item to store the minimum value of the device values displayed on the graph. The device is assigned automatically.
			[Average Data]	Select this item to store the average value of the device values displayed on the graph. The device is assigned automatically.
			[Graph Line Clear Device]	Select this item to clear the line of the graph using a device. After selecting this item, set the device.
		[Step Mode]		Select this item to display the line of the trend graph by steps.   Display without steps Display with steps

Item			Description
3)	[Device]	[Data Type]	Select the data type of the word device. The following shows selectable items. • [Signed BIN8] • [Unsigned BIN8] • [Signed BIN16] • [Unsigned BIN16] • [Signed BIN32] • [Unsigned BIN32] • [Signed BIN64] • [Unsigned BIN64] • [BCD16] • [BCD32] • [BCD64] • [Real(32bit)] • [Real(64bit)] When the device data type is signed 64-bit binary, unsigned 64-bit binary, 64-bit binary-coded decimal, or real number (64 bits), select one of the following. Selecting a data type other than the following may disable proper data operation. • [Signed BIN8] • [Unsigned BIN8] • [Signed BIN64] • [Unsigned BIN64] • [BCD64] • [Real(64bit)]
		[Lower Limit] and [Upper Limit]	Select whether to specify the display range (lower and upper limit values) of the trend graph with the fixed value or with the device value. The following shows selectable items. • [Fixed] Specify a constant. • [Device] Specify a device value. ☞ Page 834 How to set devices, labels, and tags The setting ranges of [Lower Limit] and [Upper Limit] differ depending on the item selected for [Data Type].
4)	[Name]		Set the object name. The name is displayed in places such as the data browser and property sheet. The setting can also be changed in other tabs. Up to 100 characters can be set.

46.4.2 [Style] tab

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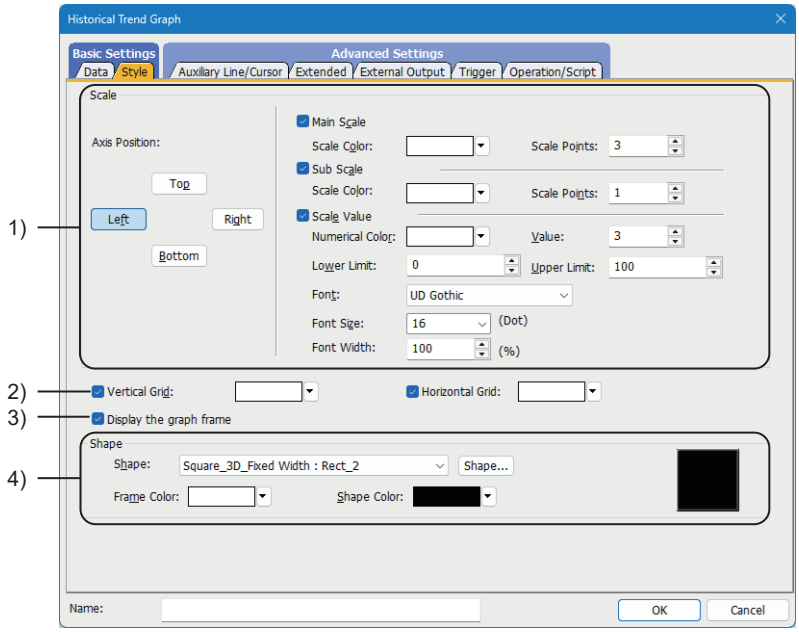
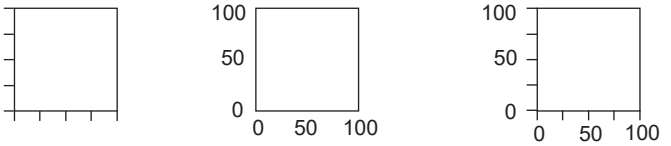
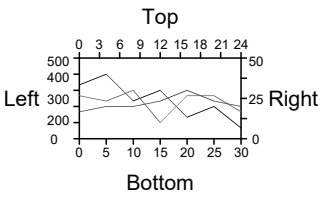
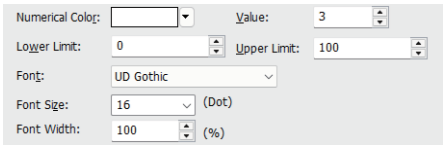
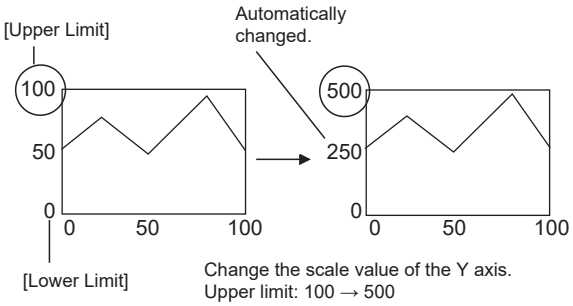
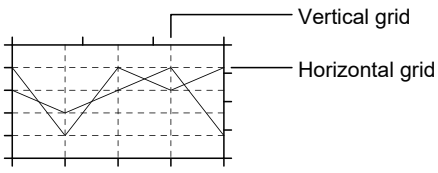
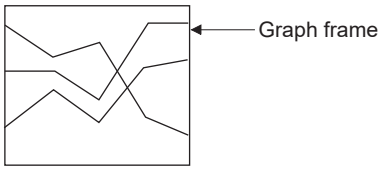
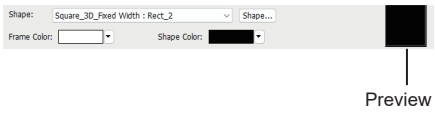
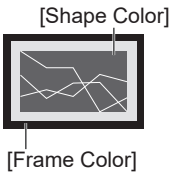
For mobile screens, some setting items are not available.

☞ Page 2742 Usable functions



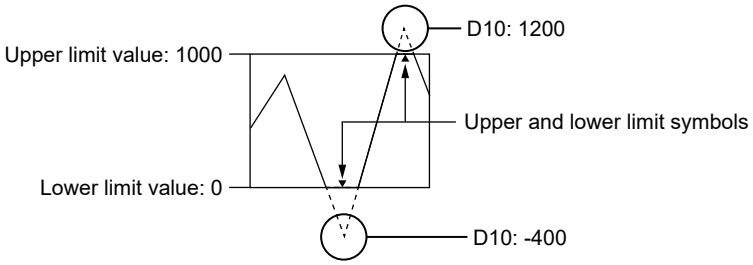
Item			Description
1)	[Scale]	[Axis Position]	Displays scale marks and scale values in the historical trend graph.  Scale marks (X: 5) (Y: 5) — Scale values (X: 3) (Y: 3) — Displays both scale marks and scale values. Select the position where the line or scale value is displayed. The following shows selectable items. • [Left] button • [Right] button • [Top] button • [Bottom] button After selecting the position, set the line or scale value. 
		[Main Scale]	Set this item to display scale marks. • [Scale Color] Set the color of the scale marks. • [Scale Points] Set the number of scale marks. The setting range is [2] to [101].

Item			Description
1)	[Scale]	[Sub Scale]	Set this item to place scale marks between the ones set in [Main Scale]. • [Scale Color] Set the color of the sub-scale marks. • [Scale Points] Set the number of sub-scale marks. The setting range is [1] to [9].
		[Scale Value]	Set this item to display numeric characters as the scale value.  • [Numerical Color] Set the color of numeric characters. • [Value] Set the number of numeric characters. The setting range is [2] to [101]. • [Lower Limit] and [Upper Limit] Set the lower limit and upper limit of the numerical value. Changes in this setting are automatically applied to the display.  Depending on the item selected for [Data Type] in the [Data] tab, the setting range is different. The selectable range of 64-bit devices is the same as that of 32-bit devices. • [Font] Select a font for scale values. The setting range is [UD Gothic] or [UD Mincho]. • [Font Size] Select a font size. The setting range is [8] dots to [540] dots. • [Font Width] Set a horizontal text size. The horizontal size is specified with the magnification relative to [Font Size] (vertical text size). The setting range is [6]% to [1600]%.
2)	[Vertical Grid] or [Horizontal Grid]		Select this item to display the horizontal or vertical grid. The number of grids is the same as the number set in [Scale Points] of [Main Scale] and [Sub Scale]. The bottom and left setting in [Axis Position] is prioritized.  After setting this item, select a grid color.

Item			Description
3)	[Display the graph frame]		Select this item to display the frame of the graph. 
4)	[Shape]	[Shape]	Set the shape of the historical trend graph. When [None] is selected, no figure is displayed. Click the [Shape] button to select shapes other than those in the list box. ☞ Setting object shapes When selecting a figure from [Basic Figure], set a frame color and a figure color.  • [Frame Color] Set the color of the frame. • [Shape Color] Set the color of the shape.  • Preview Displays the preview of the set shape.

Precautions

The trend graph does not display a device value that is above the upper limit or below the lower limit.
In such a case, the upper or lower limit symbol appears at the position where the device value is hidden from view.



To hide the upper and lower limit symbols, turn on GS450.b10.
☞ Page 1729 GOT internal device

46.4.3 [Auxiliary Line/Cursor] tab

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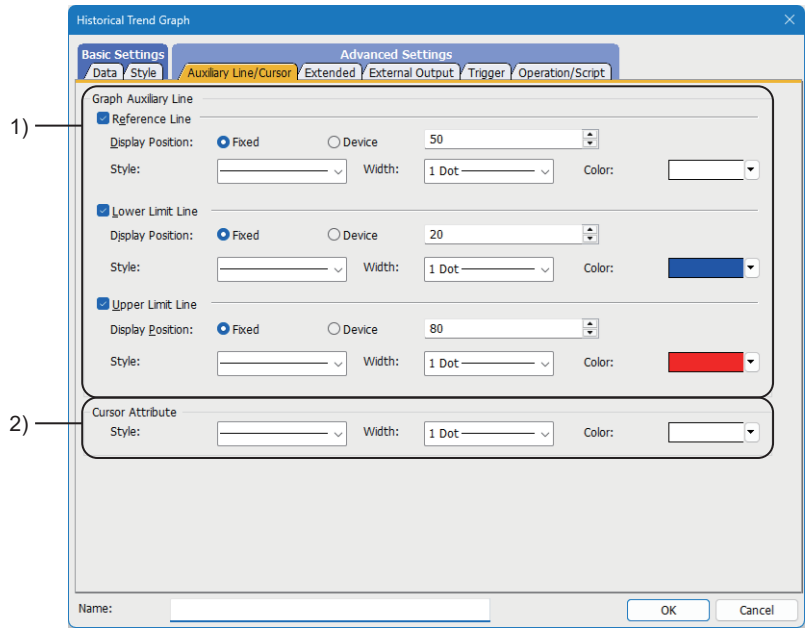
Set the auxiliary line and attribute of the cursor.



Item				Description
1)	[Graph Auxiliary Line]	[Reference Line], [Lower Limit Line], and [Upper Limit Line]	—	Set this item to place a reference line on the graph.
			[Display Position]	Select whether to specify the line position using a fixed value or device value. The following shows selectable items. • [Fixed] Specify a constant. • [Device] Specify a device value. ☞ Page 834 How to set devices, labels, and tags
			[Style]	Select the style of the line. The following shows selectable items. • Solid line • Dotted line • Broken line • One-dot chain line • Two-dot chain line
			[Width]	Select the width of the line. The following shows selectable items. • [1 Dot] • [2 Dot] • [3 Dot] • [4 Dot] • [5 Dot] • [6 Dot] • [7 Dot]
			[Color]	Select the color of the line.

Item			Description
2)	[Cursor Attribute]	—	Set the attribute of the cursor.
		[Style]	Select the style of the line. The following shows selectable items. • Solid line • Dotted line • Broken line • One-dot chain line • Two-dot chain line
		[Width]	Select the width of the line. The following shows selectable items. • [1 Dot] • [2 Dot] • [3 Dot] • [4 Dot] • [5 Dot] • [6 Dot] • [7 Dot]
		[Color]	Select the color of the line.

46.4.4 [Extended] tab

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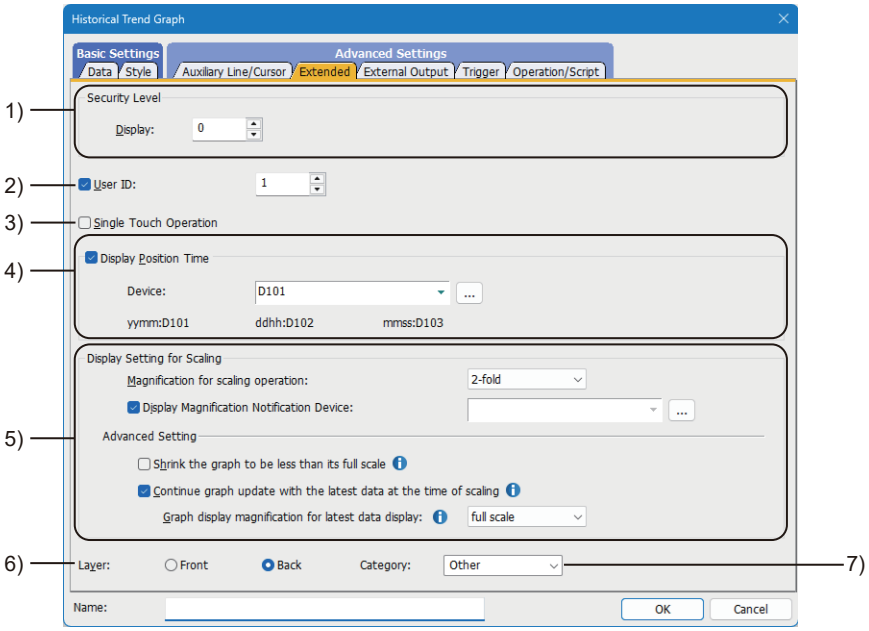
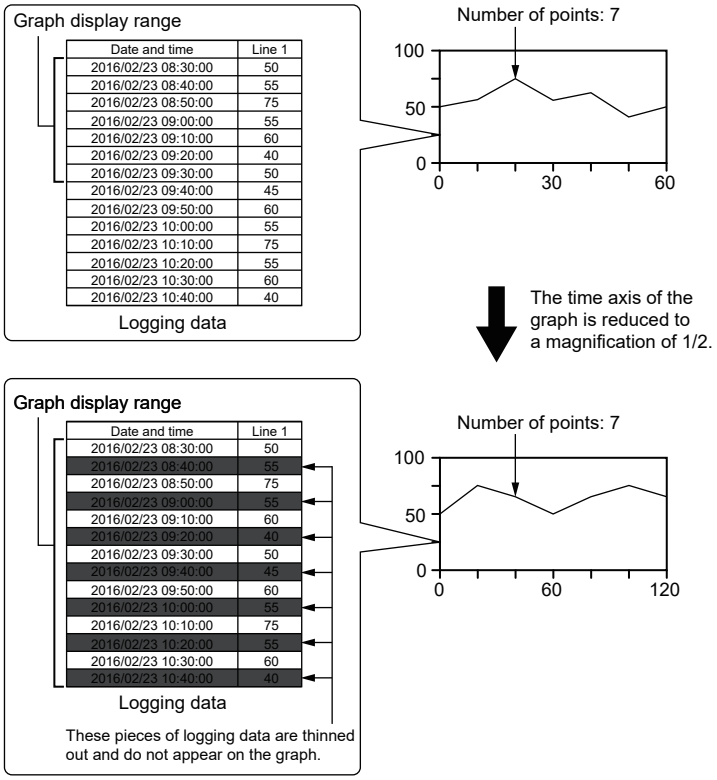
For mobile screens, some setting items are not available.

☞ Page 2742 Usable functions



Item			Description
1)	[Security Level]		Set the security level when using the security function. The setting range is [1] to [15]. Set the level to [0] when the security function is not used. ☞ Page 3038 Restricting display and operation on the GOT (Screen security)
2)	[User ID]		Select this item to set the user ID. The setting range is [1] to [65535]. ☞ Page 1703 Identifying multiple historical trend graphs (setting user IDs)
3)	[Single Touch Operation]		Select this item to display a cursor at the touched place.
4)	[Display Position Time]	—	Set this item to display the data obtained at specified time in the center of the graph when the touch switch is touched.
		[Device]	Set the device in which the time data is stored. The three successive devices following the device set in this item are automatically assigned to [yymm], [ddhh], and [mmss]. The time data is stored in the upper eight bits and lower eight bits of each set device. The data type of the devices is BCD. ☞ Page 1601 Displaying the data obtained at specified time in the center (time specification jump function)

Item			Description
5)	[Display Setting for Scaling]	—	Configure the settings to enlarge or reduce the time axis of a graph.
		[Magnification for scaling operation]	Select a magnification factor to enlarge or reduce the time axis of a graph by touching a touch switch, pinching in, or pinching out one time. The following shows selectable items. • [2-fold] • [4-fold] • [8-fold]
		[Display Magnification Notification Device]	Specify a device to store the magnification factor at which the time axis of a graph is being displayed. You can specify a word device or word-specified bit device. The data type of the device is signed 16-bit binary.
		[Shrink the graph to be less than its full scale]	Enables the setting to reduce the time axis of a graph from the original magnification. When the time axis is reduced, the number of points to be displayed remains unchanged, but some pieces of data are thinned out and do not appear on the graph. Example) When the time axis of a graph is reduced to a magnification of 1/2 The amount of data within the graph display range becomes twice as much as that at the original magnification. Because the number of points to be displayed remains unchanged, every other piece of data is thinned out and does not appear on the graph. 
		[Continue graph update with the latest data at the time of scaling]	Always updates a graph when the time axis of the graph is enlarged or reduced.

Item			Description
5)	[Display Setting for Scaling]	[Graph display magnification for latest data display]	Select a magnification factor for the latest data that is displayed with the touch switch, screen switching, or graph offset function. The magnification factors less than 1 are selectable only when [Shrink the graph to be less than its full scale] is selected. The selectable items vary with the selection for [Magnification for scaling operation]. • When [2-fold] is selected for [Magnification for scaling operation] [8-fold] [4-fold] [2-fold] [full scale] [1/2] [1/4] [1/8] [1/16] [1/32] [1/64] [1/128] • When [4-fold] is selected for [Magnification for scaling operation] [4-fold] [full scale] [1/4] [1/16] [1/64] [1/128] • When [8-fold] is selected for [Magnification for scaling operation] [8-fold] [full scale] [1/8] [1/64] [1/128]
6)	[Layer]		Select the layer to arrange the object on. The following shows selectable items. • [Front] • [Back] ☞ Page 1055 Superimposition of figures and objects
7)	[Category]		Select the category to assign the object. ☞ Page 1121 Managing figures and objects by category

46.4.5 [External Output] tab

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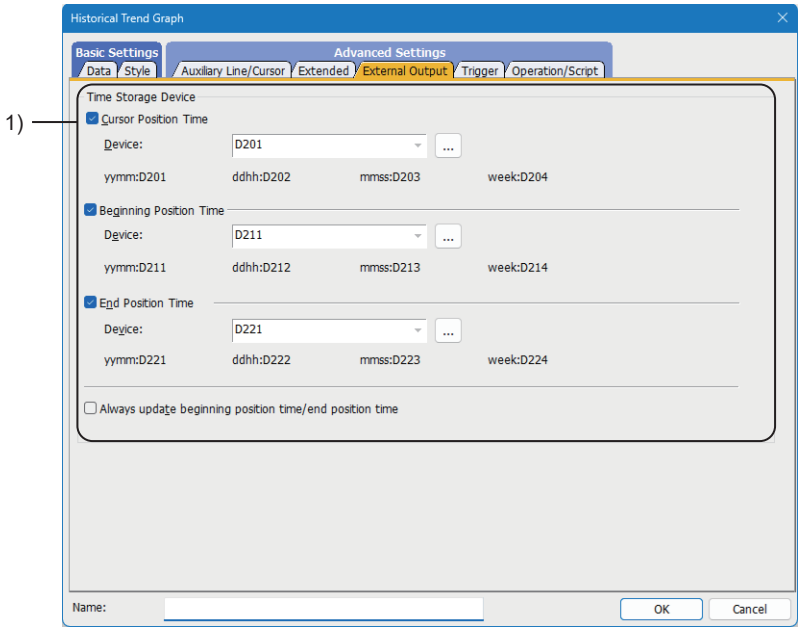

Item			Description
1)	[Time Storage Device]	—	Stores each time data. The four successive devices following the device set in this item are automatically assigned to [yymm], [ddhh], [mmss], and [Day]. The time data is stored in the upper eight bits and lower eight bits of each set device. The data type of the devices is BCD. Using the GOT internal device is recommended for this setting. For information on how to display the time data stored in the device in the numerical display, refer to the following. ☞ Page 1705 Storing time data in devices
		[Cursor Position Time]	Set this item to store the time of the cursor display position. After selecting this item, set the device.
		[Beginning Position Time]	Set this item to store the time at the beginning position of the graph. After selecting this item, set the device.
		[End Position Time]	Set this item to store the time at the end position of the graph. After selecting this item, set the device.
		[Always update beginning position time/end position time]	Select this item to constantly store the latest value in the Time device (beginning position time and end position time). New data obtained at specified time is stored every graph refresh.

46.4.6 [Trigger] tab

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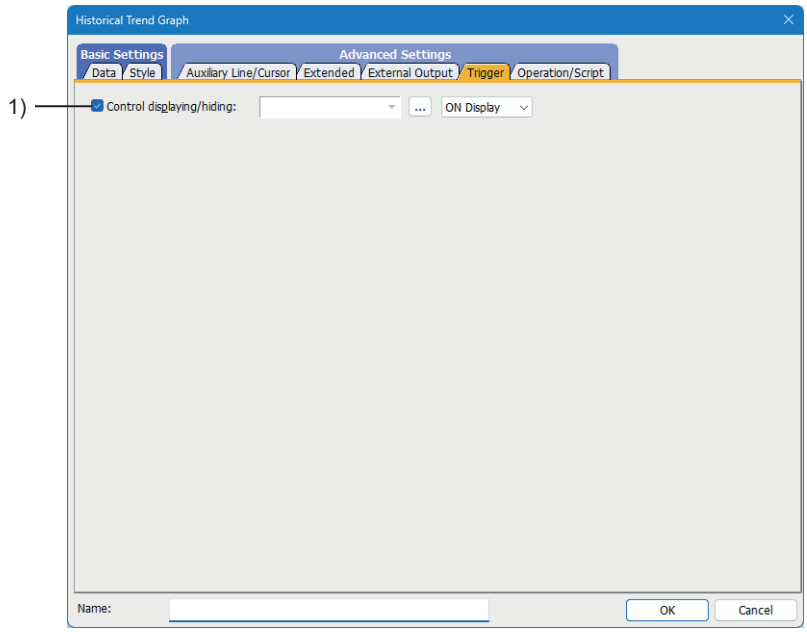
Set the trigger condition to display the object.



Item		Description
1)	[Control displaying/hiding]	Set the control device to display or hide all the objects including the shape frame. When the set device is in either the ON or OFF status, select whether or not to display the object. The following shows selectable items. • [ON Display] • [OFF Display] ☞ Page 834 How to set devices, labels, and tags

PART 7

46.4.7 [Operation/Script] tab

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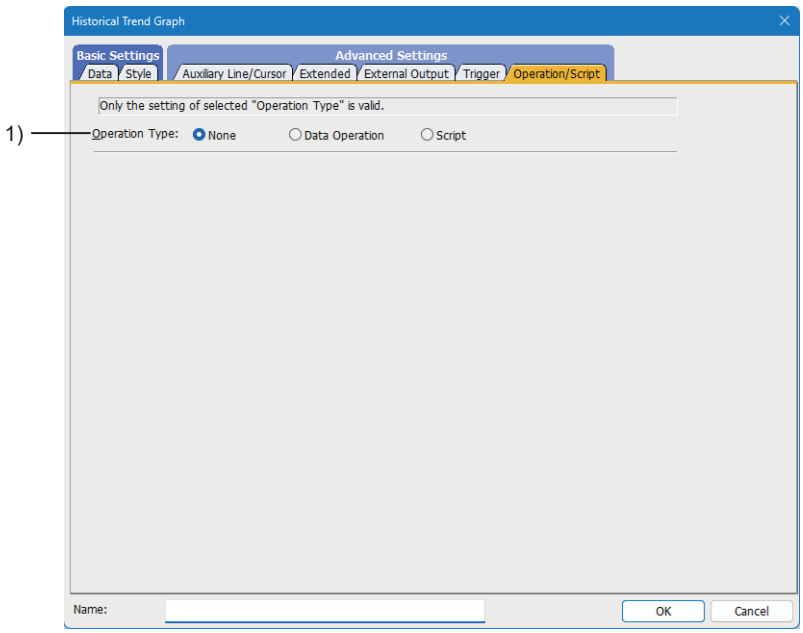
For mobile screens, some setting items are not available.

☞ Page 2742 Usable functions

Set an expression for monitoring using the data operation function or the script function.

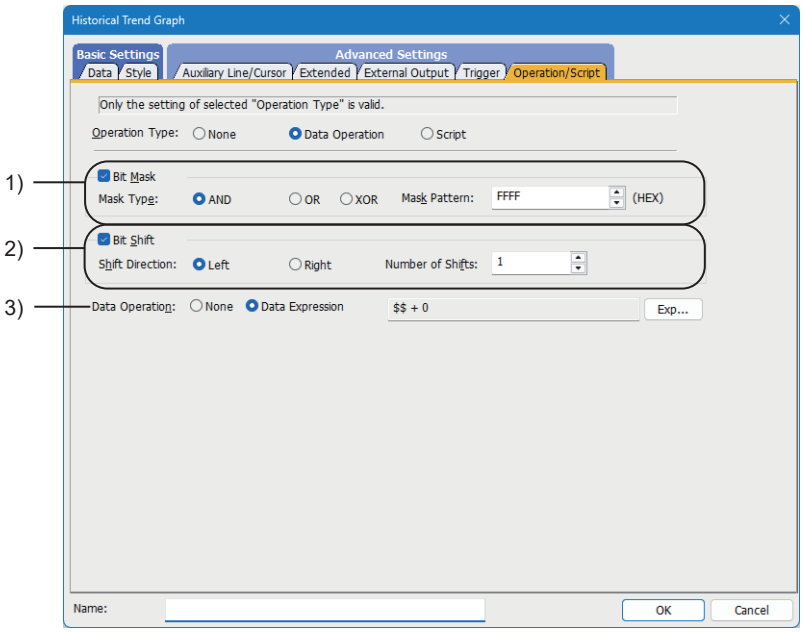


Item		Description
1)	[Operation Type]	To use the data operation or script, select an operation type. The following shows selectable items. • [None] Select this item if the data operation and script are unnecessary. • [Data Operation] Set the expression used for the data operation. ☞ Page 1727 [Data Operation] • [Script] Set the expressions for the script function. ☞ Page 1728 [Script]

[Data Operation]

For details on the data operation settings, refer to the following.

☞ Page 1053 How to set the data operation

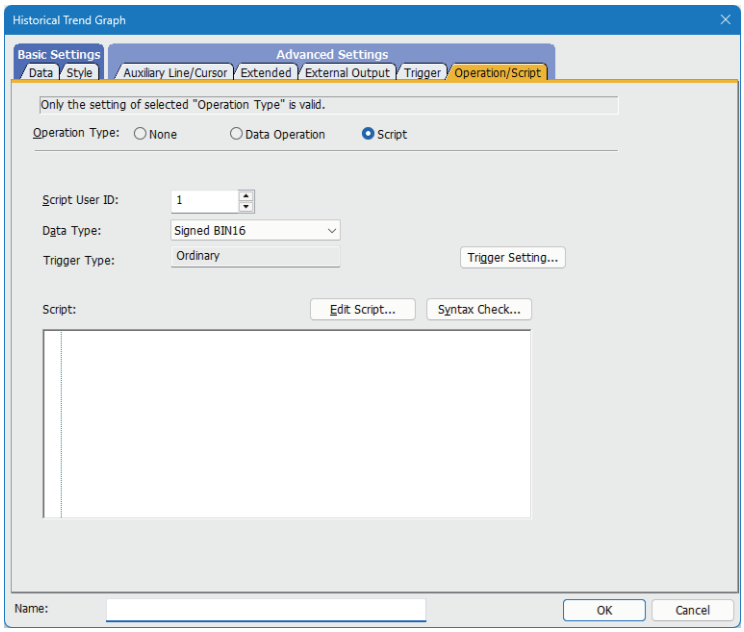


Item			Description
1)	[Bit Mask]	[Mask Type]	Set the operation of mask processing. Select the type of mask processing. • [AND] Logical AND • [OR] Logical OR • [XOR] Exclusive OR
		[Mask Pattern]	Set a pattern value to mask in hexadecimal. The setting range differs depending on the setting of [Data Type] in the [Data] tab.
2)	[Bit Shift]	[Shift Direction]	Set the operation of shift processing. Select a shifting direction. • [Left] Shifts to the left. • [Right] Shifts to the right.
		[Number of Shifts]	Set the number of bits to be shifted. The setting range differs depending on the setting of [Data Type] in the [Data] tab.
3)	[Data Operation]		Set the format of the expression. The following shows selectable items. • [None] Does not perform the data operation by using the expression. • [Data Expression] Performs the data operation by using the expression. The [Data Type] setting in the [Historical Trend Graph] dialog determines the data type of the device specified in the expression.

[Script]

For the script settings, refer to the following.

☞ Page 2447 Object script



■Relationship between the object settings and object properties

Object settings can be read (referenced) or written (changed) using object properties.

The following shows the correspondence between readable/writable object properties and the setting items in the object setting dialog.

○: Available

×: Not available

—: No applicable setting item

Setting dialog		Object property			
Tab name	**Setting item**	**Property name**	**Read**	**Write**	**Timing for reflecting the setting change*1**
—	—	active	○	○	Upon the setting change
		x	○	○	When the screen is updated
		y	○	○	When the screen is updated
		width	○	×	×
		height	○	×	×
[Data]	[Lower Limit] (X (lower side))	scale_min[0]	○	○	When the screen is updated
	[Lower Limit] (Y (left side))	scale_min[1]	○	○	When the screen is updated
	[Lower Limit] (Y (upper side))	scale_min[2]	○	○	When the screen is updated
	[Lower Limit] (Y (right side))	scale_min[3]	○	○	When the screen is updated
	[Upper Limit] (X (lower side))	scale_max[0]	○	○	When the screen is updated
	[Upper Limit] (Y (left side))	scale_max[1]	○	○	When the screen is updated
	[Upper Limit] (Y (upper side))	scale_max[2]	○	○	When the screen is updated
	[Upper Limit] (Y (right side))	scale_max[3]	○	○	When the screen is updated
[Style]	[Frame Color]	frame_color	○	×	×
	[Shape Color]	plate_color	○	○	When the screen is updated
[Extended]	[Security Level]	security	○	○	When the screen is updated

*1 For the timing at which the setting change of an object property is reflected, refer to the following.

☞ Page 2456 Timing at which the setting change of an object property is reflected

46.5 Relevant settings

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Configure the relevant settings in addition to the specific settings for the historical trend graph as required.
The following shows the functions that are available by configuring the relevant settings.

46.5.1 GOT internal device

☞ Page 3581 GOT special register (GS)

Function	Setting item
Hiding the upper and lower limit symbols	GS450.b10
Retaining the state of the historical trend graph displayed before screen switching and displaying the same graph state after switching back to the graph screen (Historical Trend Graph Display Mode signal: read device) ☞ Page 1697 Holding the graph display state displayed before screen switching	GS450.b9

PART 7

47 Placing a graphical meter

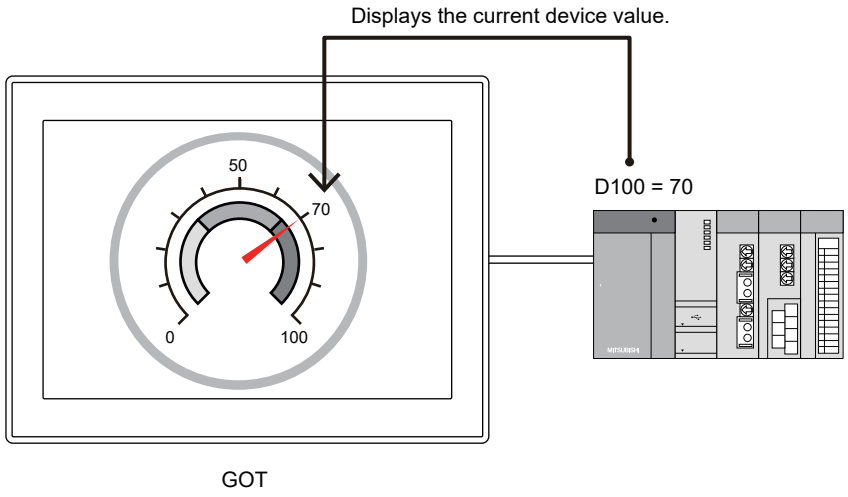
☞ Page 1731 Overview of the graphical meter
☞ Page 1732 How to use the graphical meter
☞ Page 1734 Specifications of the graphical meter
☞ Page 1737 Setting the graphical meter
☞ Page 1739 Editing the areas of the graphical meter
☞ Page 1742 [Graphical Meter] dialog

47.1 Overview of the graphical meter

GT37 SoftGOT3000

The graphical meter is an object used to indicate the current value of the device on the surface simulating a meter.
The current value of the device is visualized as to where it is positioned within the range.
The function is similar to that of the panel meter, but the graphical meter is supplied with many designs (presets) combined with the background shapes.
Selecting one from the preset list can create a visually appealing meter easily without complicated settings.
The design is customizable by editing each setting of the preset.

Ex.
Graphical meter with the device value 0 to 100
When the graphical meter monitors the device [D100]
The graphical meter displays the value [70] of the PLC device [D100].



PART 7

47.2 How to use the graphical meter

☞ Page 1732 Data to be represented by the graphical meter
☞ Page 1733 Warning by color

47.2.1 Data to be represented by the graphical meter

For a graphical meter, you will set the lower and upper limits of the device value and those of the scale value range separately. Doing so enables the following two uses.

☞ Page 1732 Indicating the device value
☞ Page 1732 Indicating the percentage against the total

Indicating the device value

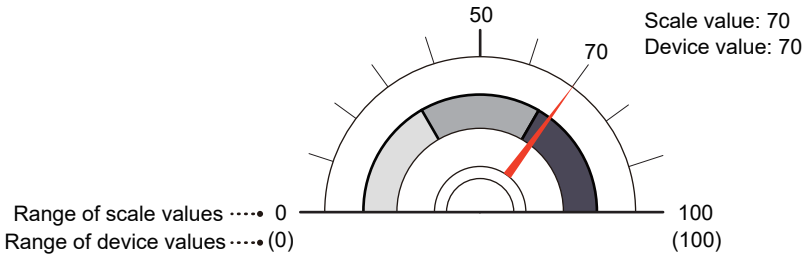
When the lower and upper limits of the device value and those of the scale value range are matched, the graphical meter indicates the device value.

Ex.

Range of the device value: 0 to 100

Range of the scale value: 0 to 100

The value indicated by the graphical meter is the device value.



Indicating the percentage against the total

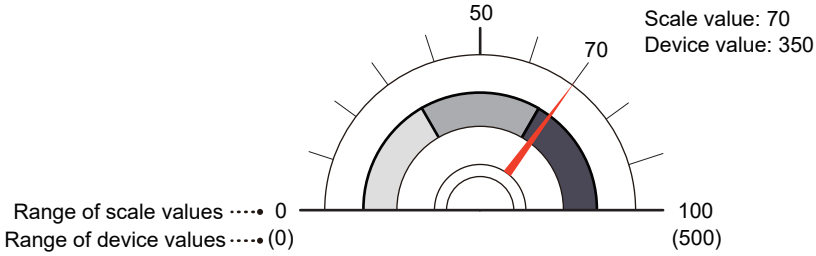
If the device value range and the scale value range are different, the graphical meter indicates the position relative to the lower and upper limits of the device value.

Ex.

Range of the device value: 0 to 500

Range of the scale value: 0 to 100

When the device value is [350], the graphical meter indicates scale value [70].



Point

The following setting items are related to the above.

- [Lower Limit] and [Upper Limit] in the [Device/Style] tab

☞ Page 1742 [Device/Style] tab

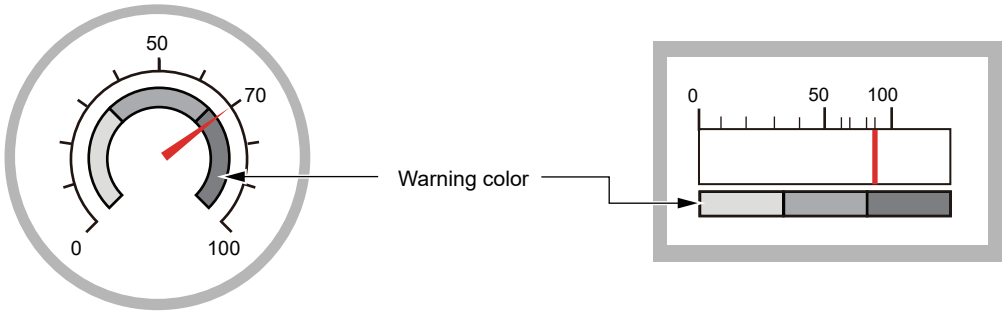
- [Lower Limit] and [Upper Limit] in the [Scale] tab

☞ Page 1749 [Scale] tab

47.2.2 Warning by color

Alert the operator by displaying warning colors on the graphical meter.

Warning colors can be displayed in up to three parts by specification of device values or percentages against the total.



For the warning color settings, refer to the following.

☞ Page 1752 [Extended Style] tab

PART 7

47.3 Specifications of the graphical meter

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☞ Page 1734 Maximum number of objects that can be placed on one screen
☞ Page 1734 Graphical meter shape
☞ Page 1734 Graphical meter size
☞ Page 1734 Display when the lower or upper limit is exceeded
☞ Page 1735 Graphical meter configuration areas
☞ Page 1736 Drawing order of the area
☞ Page 1736 Shape frame width and axis size

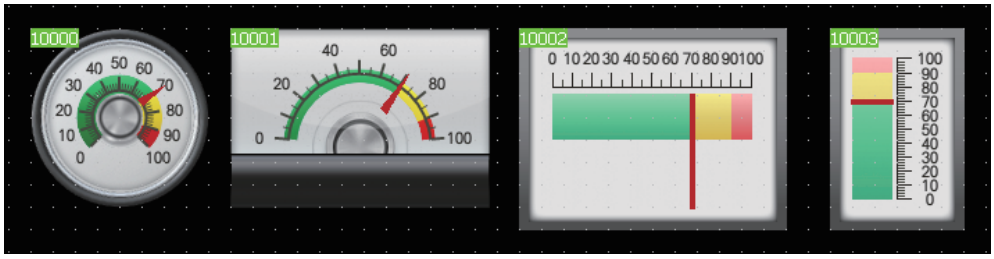
47.3.1 Maximum number of objects that can be placed on one screen

Up to 32 graphical meter objects can be placed on one screen.

47.3.2 Graphical meter shape

The graphical meter is represented by a sector, semicircle, or bar (rectangle) as shown below.

Some shapes are preset, but you can also set a sector with an intended angle by specifying the start and end angles.



47.3.3 Graphical meter size

The following shows the minimum and maximum sizes of the graphical meter.

Size		Size (dot)
Minimum	Sector, circle	7 (width) × 7 (height)
	Bar	4 (width) × 4 (height)
Maximum		3000 × 3000

47.3.4 Display when the lower or upper limit is exceeded

If the monitored device value equals to or below the lower limit, the lower limit is indicated.

If the monitored device value equals to or above the upper limit, the upper limit is indicated.

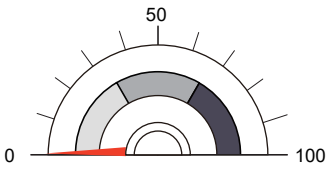
Ex.

Graphical meter with the lower limit [0] and higher limit [100]

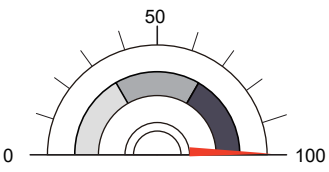
When the device value is [-50], the lower limit [0] is indicated.

When the device value is [180], the upper limit [100] is indicated.

When the value is equal to or below the lower limit

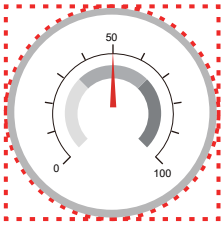
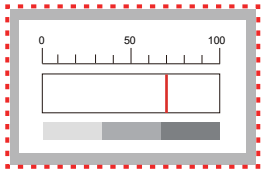
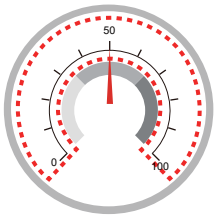
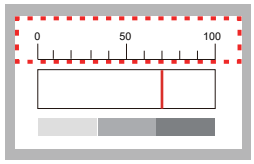
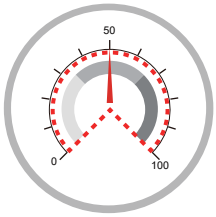
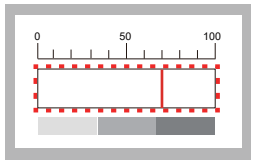
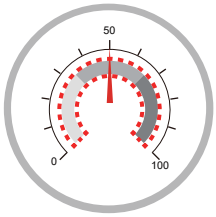
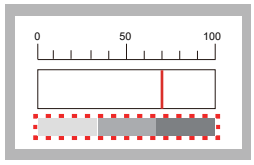


When the value is equal to or above the upper limit



47.3.5 Graphical meter configuration areas

The graphical meter consists of multiple areas as shown below.

Area	Sector, circle	Bar
Shape frame area	An area for displaying the background shape (image) for the graphical meter. The scale area, data area, and warning color area always fit within the shape frame display area.	
		
Scale area	An area where a scale and scale values are displayed. The starting and ending edges of the scale area are determined by the angle, data width, and data height of the data area.	
		
Data area	An area where a meter, needle, and fill are displayed. An upper limit and a lower limit are specified for the meter, and the device value is indicated by the needle and fill.	
	An area where a needle is displayed. The size is determined by the angle of the data area and the length (radius) of the needle. 	An area where a needle and fill are displayed. The data width and data height determine the size. 
Warning color area	An area where warning colors are displayed. The starting and ending edges of the warning color area are determined by the angle, data width, and data height of the data area.	
		

The position and size of the area can be edited by dragging it on the screen editor.

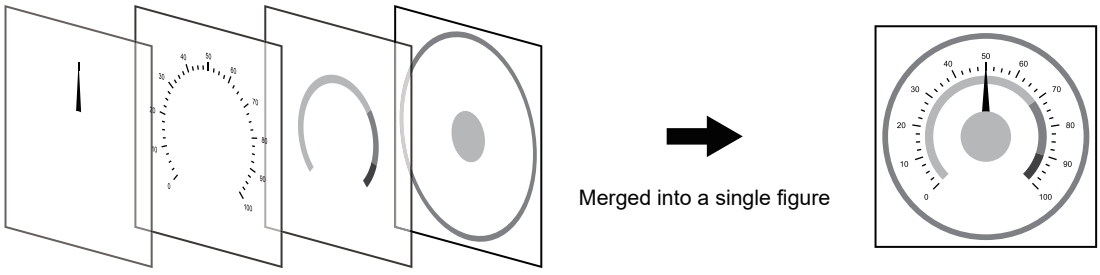
For details, refer to the following.

☞ Page 1739 Editing the areas of the graphical meter

PART 7

47.3.6 Drawing order of the area

The following shows the drawing order of each area on the screen editor.



Data (needle, fill) | Scale marks | Warning color | Shape frame

47.3.7 Shape frame width and axis size

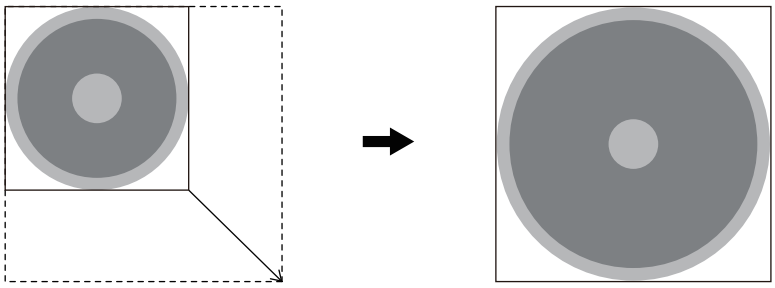
The width of the frame around the shape frame area and the axis size of the circle (for a sector or circle) can be specified.

Frame, axis
Shape frame area

When the frame width and axis size are specified, the shape can be scaled in the specified frame width and axis size when the object is resized.

For details, refer to the following.

☞ Page 1738 Resizing the graphical meter



47.4 Setting the graphical meter

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Use the following procedure to place a graphical meter and configure the operation settings.

Operating procedure

1. Select [Object] → [Graphical Meter] (intended shape) from the menu and click the intended position to place the object.

☞ Page 1001 Placing figures and objects

The shape of the placed meter can be changed.

☞ Page 1742 [Device/Style] tab

2. Double-click the graphical meter to display the [Graphical Meter] dialog.
3. Configure the operation settings in each tab in the [Graphical Meter] dialog.

☞ Page 1742 [Graphical Meter] dialog

For the operations common to all objects or editing operations except operation settings, refer to the following.

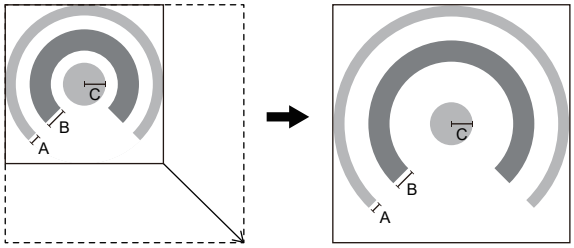
☞ Page 995 Basics of figures and objects

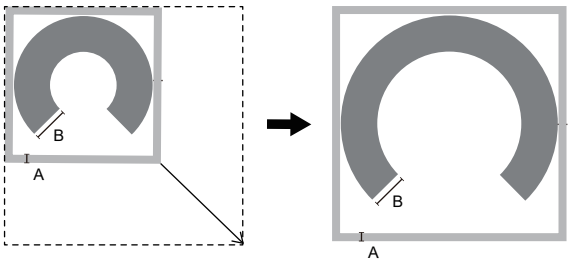
PART 7

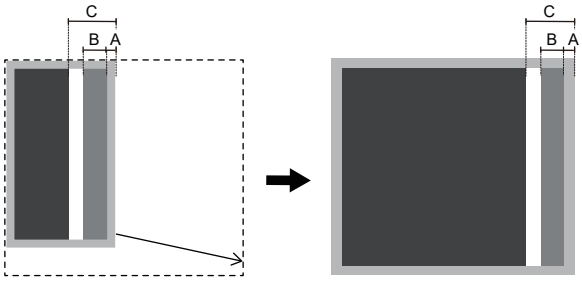
47.5 Resizing the graphical meter

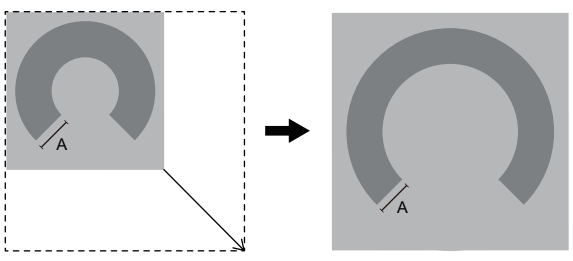
The combination of the meter shape and graphic shape determines the behavior when the graphical meter is resized.
The graphic shape will be set by [Shape] in the [Scaling Setting] dialog.
For details, refer to the following.
☞ Page 1755 [Scaling Setting] dialog

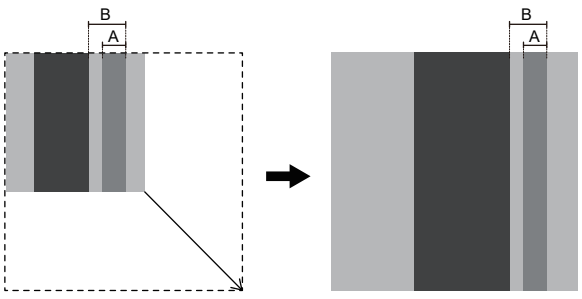
<table>
<tr><th rowspan="2">[Shape]</th><th colspan="2">[Meter Shape]</th></tr>
<tr><th>[Sector], [Semicircle]</th><th>[Bar (Vertical)], [Bar (Horizontal)]</th></tr>
<tr><td>[Circle]</td><td>The graphical meter is resized while maintaining a perfect circle.
The following values are unchanged even when the meter is resized.
• A: Frame width
• B: Widths of the scale area and warning color area
• C: Axis radius

Frame, axis
Scale area, warning color area
  </td><td>—</td></tr>
<tr><td>[Square]</td><td>The graphical meter is resized while maintaining a perfect circle.
The following values are unchanged even when the meter is resized.
• A: Frame width
• B: Widths of the scale area and warning color area

Frame
Scale area, warning color area
  </td><td>The object is resized with its length-to-width ratio changed.
The following values are unchanged even when the meter is resized.
• A: Frame width
• B: Widths of the scale area and warning color area
• C: Positions of the scale area and warning color area

Frame
Scale area, warning color area
Data area
  </td></tr>
<tr><td>[None]</td><td>The object is resized with its length-to-width ratio unchanged.
The following values are unchanged even when the meter is resized.
• A: Widths of the scale area and warning color area

Frame
Scale area, warning color area
  </td><td>The object is resized with its length-to-width ratio unchanged.
The following values are unchanged even when the meter is resized.
• A: Widths of the scale area and warning color area
• B: Positions of the scale area and warning color area

Frame
Scale area, warning color area
Data area
  </td></tr>
</table>

47.6 Editing the areas of the graphical meter

You can move or resize each area of the graphical meter on the screen editor without opening the setting dialog.

Operating procedure

1. Click the graphical meter.

The rectangle handles and auxiliary lines are displayed for the warning color area and scale area, and the rhombus handles and auxiliary lines are displayed for the data area.

2. Drag a handle to edit the area.

The following edits are available.

- Moving the scale area or warning color area
- Changing the angle of the data area (for sectors and semi-circles)
- Resizing the data area (data width, data height) (for bars)

The editing operation depends on the combination of the meter shape and graphic shape.

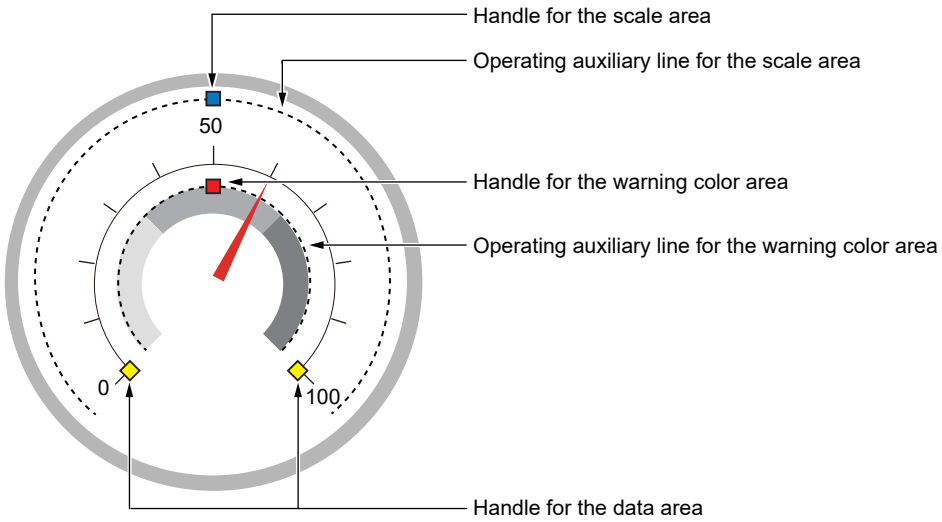
The graphic shape will be set by [Shape] in the [Scaling Setting] dialog.

For details, refer to the following.

☞ Page 1755 [Scaling Setting] dialog

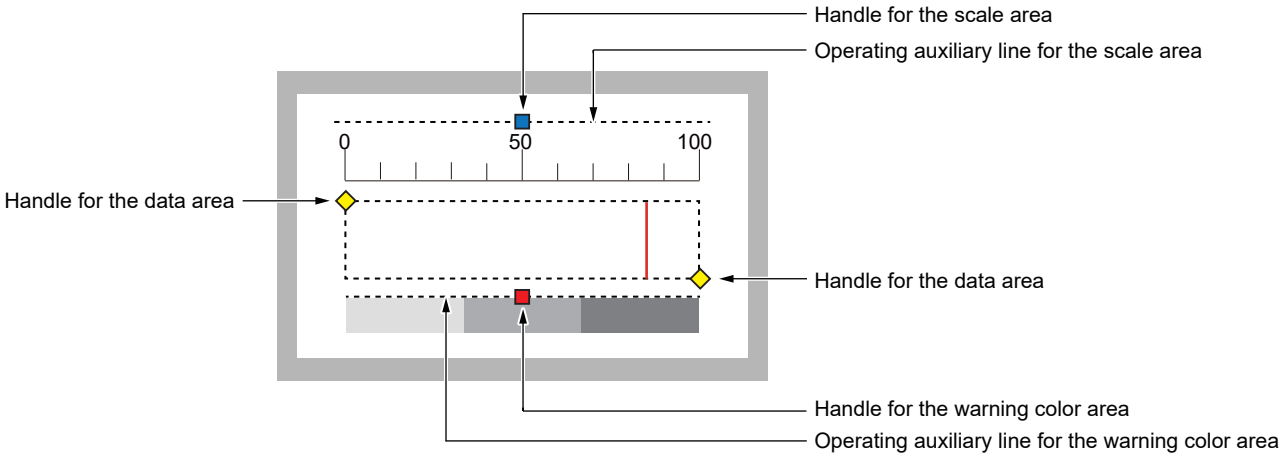
Ex.

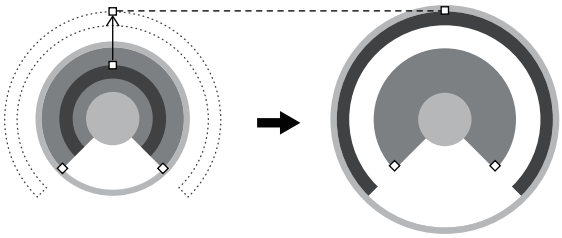
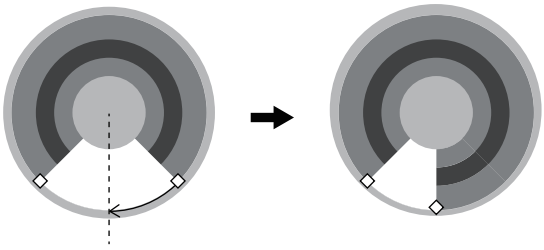
Handles and operating auxiliary lines displayed for the areas of a sector meter

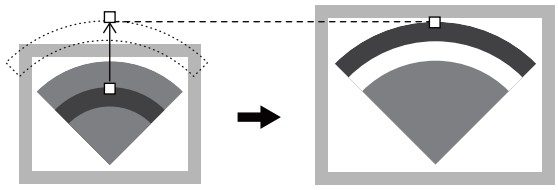
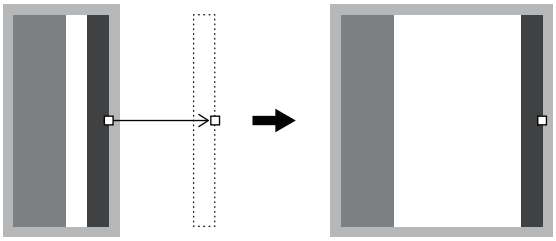
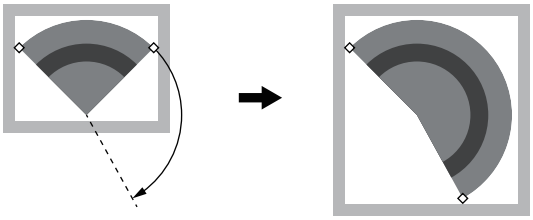
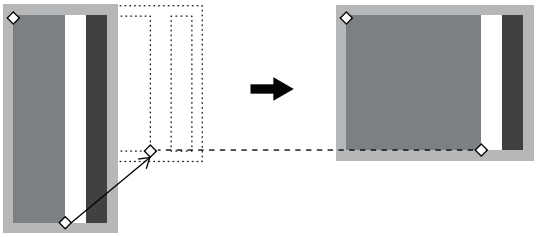
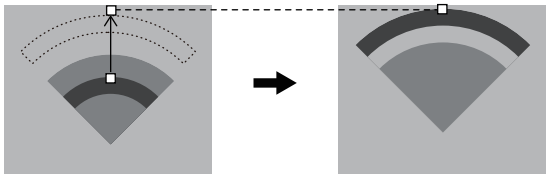
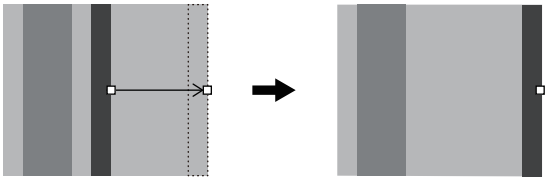
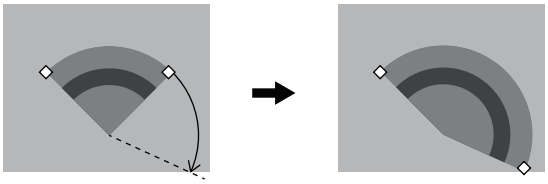
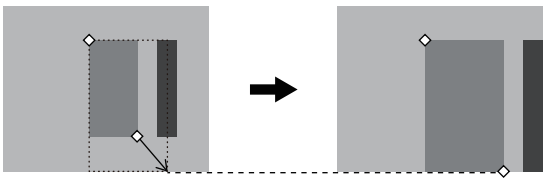


Ex.

Handles and operating auxiliary lines displayed for the areas of a bar meter



[Shape]	[Meter Shape]	
	[Sector], [Semicircle]	[Bar (Vertical)], [Bar (Horizontal)]
[Circle]	• Moving the scale area or warning color area Drag the handle of the scale area or warning color area to move the area. When you do so, the area is resized with its width unchanged. Shape frame Data area Warning color area 	—
	• Changing the angle of the data area Drag the handle of the data area to change the sector angle. 	—

[Shape]	[Meter Shape]	
	[Sector], [Semicircle]	[Bar (Vertical)], [Bar (Horizontal)]
[Square]	• Moving the scale area or warning color area Drag the handle of the scale area or warning color area to move the area. When you do so, the area is resized with its width unchanged. Shape frame Data area Warning color area 	• Moving the scale area or warning color area Drag the handle of the scale area or warning color area to move the area with its width unchanged. Shape frame Data area Warning color area 
	• Changing the angle of the data area Drag the handle of the data area to change the sector angle. 	• Resizing the data area (data width, data height) Drag the handle of the data area to change the data width or data height. 
[None]	• Moving the scale area or warning color area Drag the handle of the scale area or warning color area to move the area. The area is resized with its width unchanged. Moving outside the shape frame is not possible. Shape frame Data area Warning color area 	• Moving the scale area or warning color area Drag the handle of the scale area or warning color area to move the area with its width unchanged. Moving outside the shape frame is not possible. Shape frame Data area Warning color area 
	• Changing the angle of the data area Drag the handle of the data area to change the sector angle. Extending outside the shape frame is not possible. 	• Resizing the data area (data width, data height) Drag the handle of the data area to change the data width or data height. Extending outside the shape frame is not possible. 

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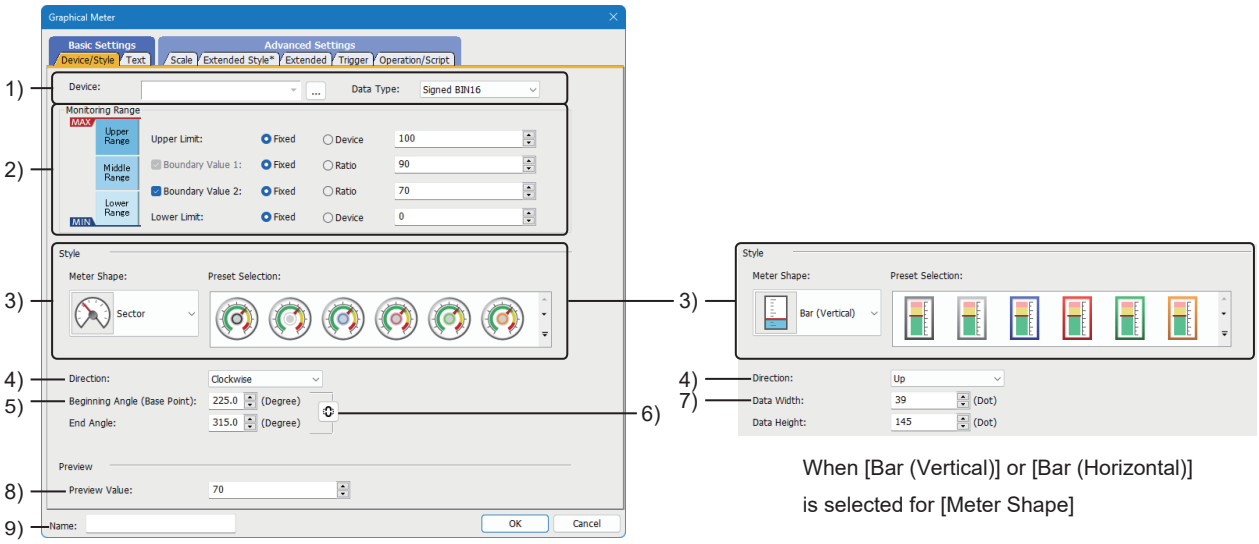
47.7 [Graphical Meter] dialog

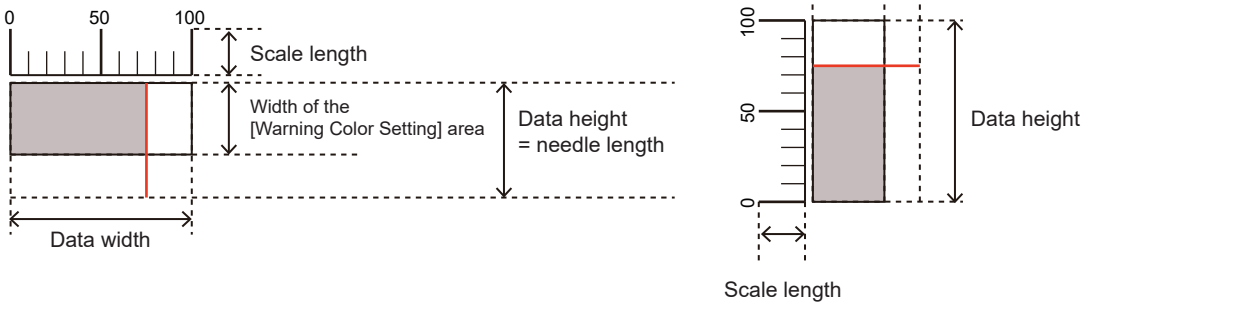
☞ Page 1742 [Device/Style] tab
☞ Page 1744 [Text] tab
☞ Page 1749 [Scale] tab
☞ Page 1752 [Extended Style] tab
☞ Page 1756 [Extended] tab
☞ Page 1757 [Trigger] tab
☞ Page 1758 [Operation/Script] tab

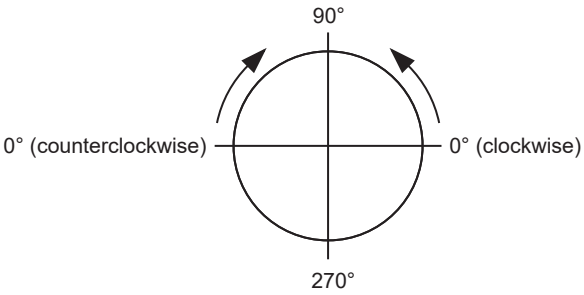
47.7.1 [Device/Style] tab

Configure the display settings including the monitored device and its data type, upper and lower limits of the device, shape and size of the graphical meter.



When [Bar (Vertical)] or [Bar (Horizontal)] is selected for [Meter Shape]



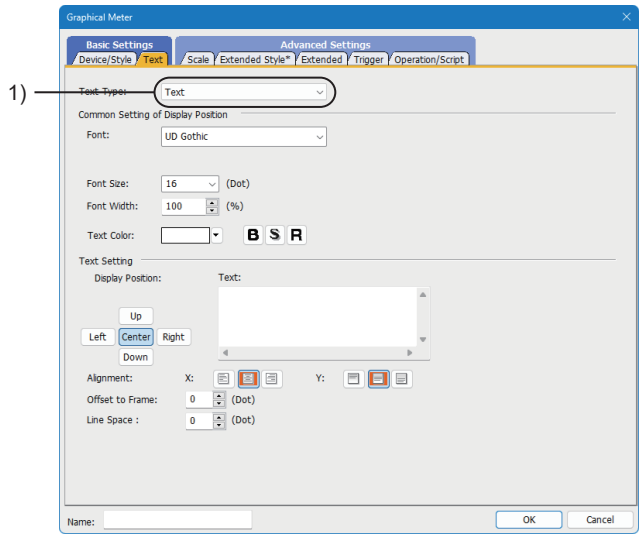
Item			Description
1)	[Device]		Set a word device to be monitored. ☞ Page 834 How to set devices, labels, and tags
	[Data Type]		Select the data type of the device.
2)	[Monitoring Range]	[Upper Limit] [Lower Limit]	Specify the range of the device value (lower and upper limits). Specify fixed values or devices. Devices can be used to change the values dynamically. ☞ Page 834 How to set devices, labels, and tags The setting ranges for [Lower Limit] and [Upper Limit] differ depending on the item selected for [Data Type].
		[Boundary Value 1] [Boundary Value 2]	Select these items to divide and color-code the data area of the graphical meter or display the warning color area. When selecting them, specify the boundary line display position with a fixed value or a percentage (%). When [Boundary Value 1] is selected, the area is divided into two; if [Boundary Value 2] is selected, the area is divided into three, and color-coded. For color-coding of the data area and display setting of the warning color area, refer to the following. ☞ Page 1752 [Extended Style] tab
3)	[Meter Shape]		Select a graphical meter shape.
	[Preset Selection]		Select a graphical meter design. Click the pull-down menu button to display all designs. Pull-down menu button
4)	[Direction]		Select the direction in which the value increases.
5)	[Beginning Angle (Base Point)] [End Angle]		When [Sector] or [Semicircle] is selected for [Meter Shape], selecting a design from [Preset Selection] automatically sets [Beginning Angle] and [End Angle]. To change the angle, enter a value for [Beginning Angle] or [End Angle]. With the [Direction] setting determining 0 degrees at the 3 o'clock position for clockwise and at the 9 o'clock position for counterclockwise, set the start and end angles in 0.1-degree increments. The setting range is [0.0] degrees to [359.9] degrees. 
6)	[Fix central angle] button		Set this item when selecting [Sector] or [Semicircle] for [Meter Shape]. Link [Beginning Angle (Base Point)] and [End Angle] to maintain the center angle when this setting is enabled.
7)	[Data Width] [Data Height]		When [Sector] is selected for [Meter Shape], selecting a design from [Preset Selection] automatically sets the [Data Width] and [Data Height] according to the current object size. To change the size, enter numeric values in the [Data Width] and [Data Height] fields. When [Bar (Vertical)] is selected for [Meter Shape], the value set for [Data Width] is also set for [Needle Length] in the [Extended Style] tab. When [Bar (Horizontal)] is selected for [Meter Shape], the value set for [Data Height] is also set for [Needle Length] in the [Extended Style] tab.
8)	[Preview Value]		Set the value to be displayed on the screen editor. When selecting [Device] for [Upper Limit] or [Lower Limit], specify the value with a percentage (%).
9)	[Name]		Set the object name. The name is displayed in places such as the data browser and property sheet. The setting can also be changed in other tabs. Up to 100 characters can be entered.

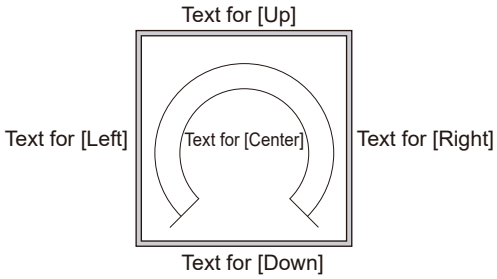
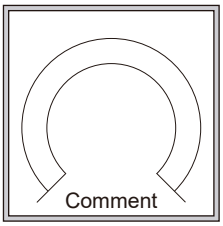
47.7.2 [Text] tab

For mobile screens, some setting items are not available.

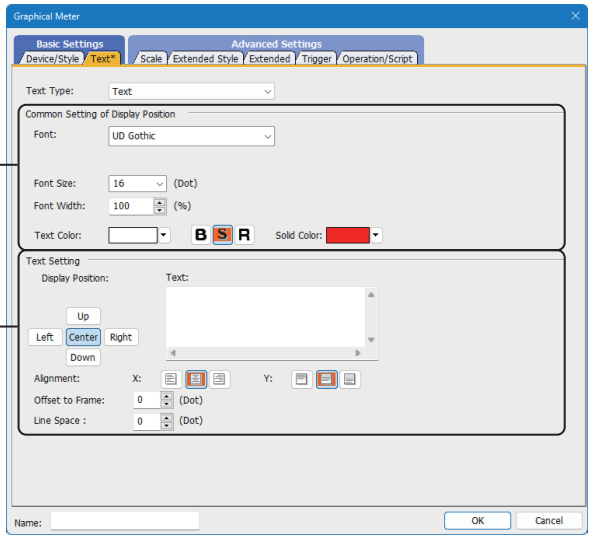
Set the text to be displayed on the graphical meter.

The displayed text can be set by direct input or by specification from the registered comments.



Item			Description
1)	[Text Type]	[Text]	Directly enter the text to be displayed. The text can be displayed in five positions (top, bottom, left, right, and center) on the graphical meter.  For the setting method, refer to the following. ☞ Page 1745 [Text] If characters have already been entered in the [Text] field, switching the text type from [Text] to [Comment] enables you to register the entered characters in a comment group. For instruction on registering a comment group, refer to the following. ☞ Page 811 Registering the characters in the [Text] field to a comment group
		[Comment]	Set the text to be displayed using a comment set in a comment group. Only one text can be displayed within the display area.  For the setting method, refer to the following. ☞ Page 1747 [Comment] For the comment group settings, refer to the following. ☞ Page 776 Comment setting ([Comment])

[Text]



Item			Description
1)	[Common Settings of Display Position]	—	To display a text in the top, bottom, left, right, and center of the graphic meter, configure the settings common to each display position.
		[Font]	Select the text font. When a Windows font is selected, italicizing and underlining text are available.
		[Character Set]	When a Windows font is selected for [Font], select a language to be used.
		[Font Size]	Select a text size. The setting range is [8] dots to [540] dots.
		[Font Width]	The horizontal size is specified with the magnification relative to [Font Size] (vertical text size). The setting range is [6]% to [1600]%. Note that the size per character is always within the range of [8] dots to [540] dots.
		[Text Color]	Set the color and style of the text. Only one style ([Bold], [Solid], or [Raised]) is settable. When selecting [Solid] or [Raised], set the color of the shadow.

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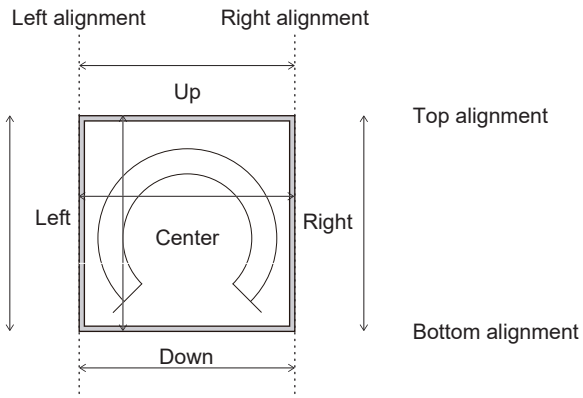
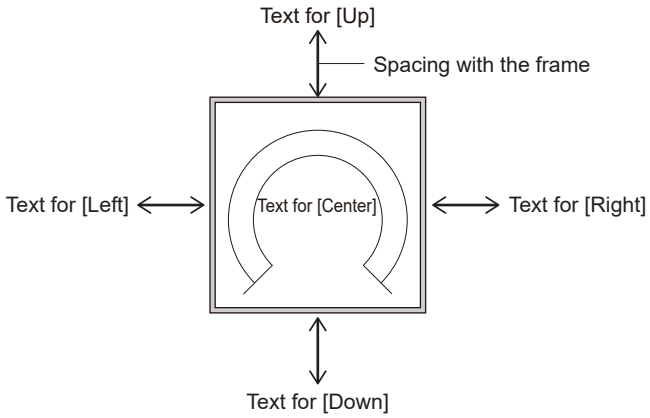
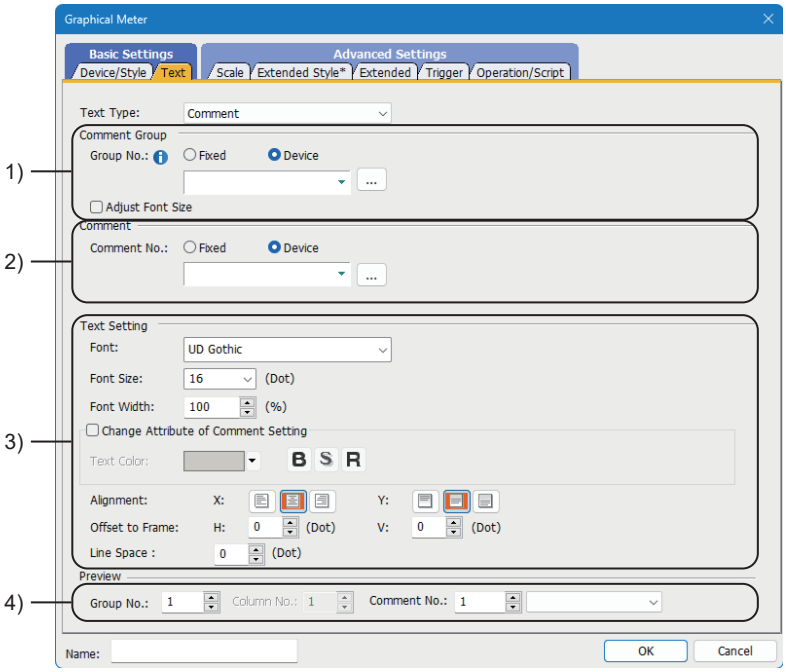
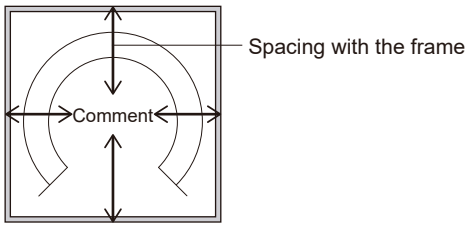
Item			Description
2)	[Display Position]	—	Set [Text], [Alignment], [Offset to Frame], and [Line Space] for each display position. After selecting a display position of the text for [Display Position], set the following items.
		[Text]	Enter the text to be displayed. Up to 1024 characters can be set. Use the Enter key to insert a line feed. A line feed is counted as two characters.
		[Alignment]	Set the alignment position of the text. 
		[Offset to Frame]	This setting is invalid when [Center] is selected for [Display Position]. Set the space between the object frame and the text. The setting range is [0] dots to [100] dots. 
		[Line Space]	Set the space between lines. The setting range is [0] dots to [128] dots.

[Comment]

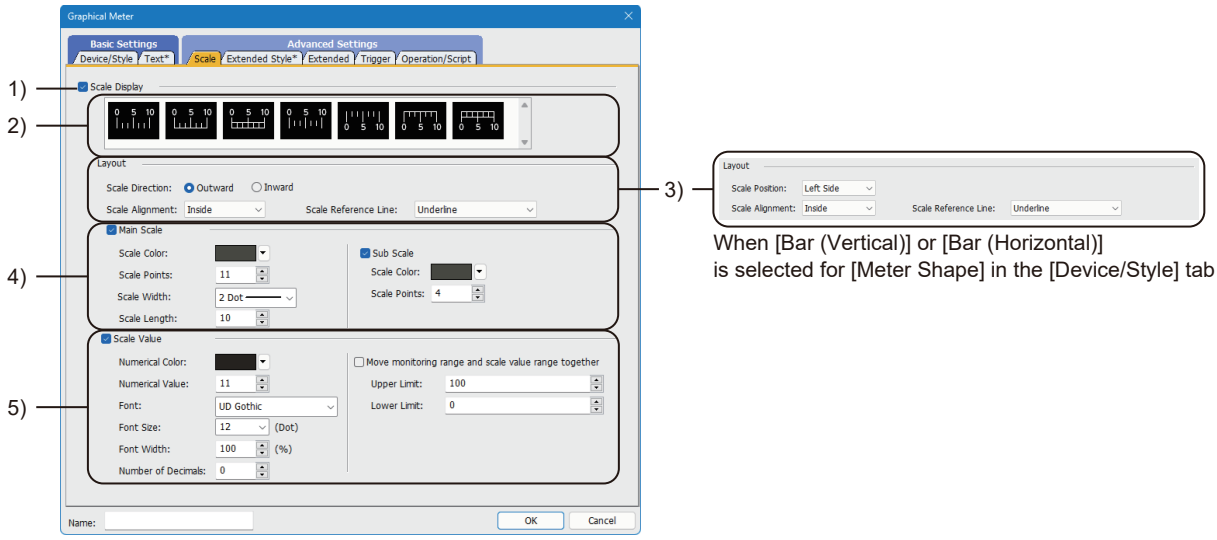


Item			Description
1)	[Group No.]	—	Set the group number of the comment group to be used.
		[Fixed]	Select this item to use the specified comment group. After selecting this item, directly enter the comment group No. to be used.
		[Device]	Select this item to display the comment group number corresponding to the value of the device to be set. Select this item and set the device. ☞ Page 834 How to set devices, labels, and tags
	[Adjust Font Size]		Adjusts the font size automatically according to the object size. When this item is deselected, a line feed is automatically inserted.
	[Minimum Font Size]		Set the minimum font size applied when the font size is automatically adjusted. The setting range is [8] dots to [540] dots.
2)	[Comment No.]	—	Set the comment number of the comment to be used.
		[Fixed]	Select this item to use the specified comment. After selecting this item, directly enter the comment No. to be used. If [0] is specified, no comment is displayed. To edit the comment to be displayed, click the [Edit] button to display the [Edit Comment] dialog. ☞ Page 153 [Edit Comment] dialog
		[Device]	Select this item to display the comment No. corresponding to the value of the device to be set. Select this item and set the device.

Item			Description
3)	[Font]		Select the font for the text to be displayed. ☞ Page 74 Specifications of displayable characters [Windows Font] is selectable when [Group No.] is set to [Fixed]. Displays text in the font specified with [Windows Font] in the [Comment Group Property] dialog.
	[Windows Font Setting] button		This item appears when [Windows Font] is selected for [Font]. The [Comment Group Property] dialog for the group number specified by [Group No.] is displayed. Set [Windows Font] and [Character Set] for the target column of the comment group. ☞ Page 797 [Comment Group Property] dialog
	[Font Size]		Set a vertical text size. The setting range is [8] dots to [540] dots.
	[Font Width]		Set a horizontal text size. The horizontal size is specified with the magnification relative to [Font Size] (vertical text size). The setting range is [6]% to [1600]%. Note that the size per character is always within the range of [8] dots to [540] dots.
	[Change Attribute of Comment Setting]	—	Select this item to set the color and style of the text to be displayed on the object without using the attribute set in the [Comment List] window. When selecting this item, configure the following settings.
		[Text Color]	Set the color and style of the text. Only one style ([Bold], [Solid], or [Raised]) is settable. When selecting [Solid] or [Raised], set the color of the shadow.
	[Alignment]		Select the horizontal position (left-aligned, centered, or right-aligned) and vertical position (top-aligned, centered, or bottom-aligned) of the text.
	[Offset to Frame]		This setting is invalid when the center alignment is selected for [Alignment]. Set the space between the object frame and the text. The setting range is [0] dots to [100] dots. 
	[Line Space]		Set the space between lines. The setting range is [0] dots to [128] dots.
4)	[Preview]	—	Set the text to be previewed as a sample on the screen editor.
		[Group No.]	Set this item when selecting [Device] for [Group No.]. Set the group number of the comment. When [Fixed] is selected for [Group No.] of [Comment Group], the group number is fixed to the value set in [Comment Group].
		[Column No.]	Set the comment column number.
		[Comment No.]	Set this item when selecting [Device] for [Comment No.]. Set the comment number. When [Fixed] is selected for [Comment No.] in [Comment], the comment number is fixed to the value set in [Comment].

47.7.3 [Scale] tab

Configure the display settings for scale marks and scale values.



The scale marks are either main scale marks or subscale marks.

The main scale marks are placed at the start and end points, and between these points according to the number you set.

The subscale marks are displayed between main scale marks.

The number of displayed subscale marks is also settable.

A scale reference line can be drawn to help reading of the main and subscale marks.

Ex.

Number of main scale marks: 6

Number of subscale marks: 3

Main scale mark

Subscale mark

Item		Description
1)	[Scale Display]	Select this item to display the scale marks.
2)	Scale design	Select a scale design. According to the selected design, [Scale Direction]/[Scale Position], [Scale Alignment] and [Scale Reference Line] are automatically set.

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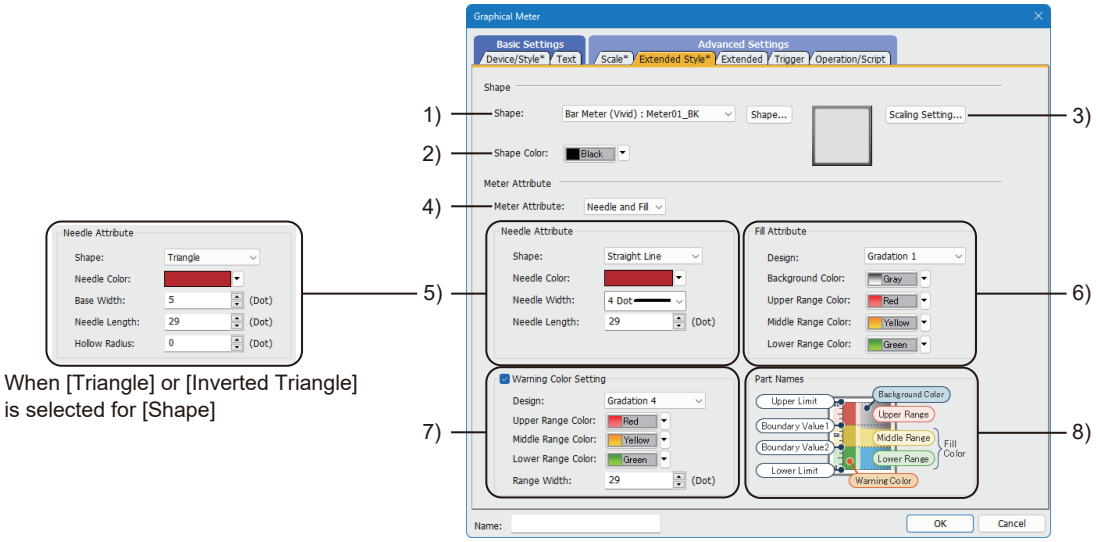
Item			Description
3)	[Scale Direction]		Set this item when selecting [Sector] or [Semicircle] for [Meter Shape] in the [Device/Style] tab. The setting of the scale direction will not change the position and size of the scale area. Scale area [Outward] [Inward]
	[Scale Position]		When selecting [Bar (Vertical)] or [Bar (Horizontal)] for [Meter Shape] in the [Device/Style] tab, set the position of the scale marks. The selectable items vary with the selection for [Meter Shape] in the [Device/Style] tab. • When [Bar (Vertical)] is selected for [Meter Shape] [Left Side] [Right Side] • When [Bar (Horizontal)] is selected for [Meter Shape] [Upside] [Downside]
	[Scale Alignment]		Set the alignment of the main and subscale marks. [Inside] [Outside] [Center]
	[Scale Reference Line]		Set the reference line for the scale marks. When [Main Scale] is deselected, the reference line is not displayed. The selectable items vary with the selection for [Scale Alignment]. • When [Inside] or [Outside] is selected for [Scale Alignment] [None] [Underline] [Underline + Center Line] • When [Center] is selected for [Scale Alignment] [Center Line]
4)	[Main Scale]	—	Select this item to display the scale marks. When selecting this item, configure the following settings.
		[Scale Color]	Set the color of main scale marks. ☞ Page 988 Color settings
		[Scale Points]	Set the number of main scale marks. The setting range is [2] to [101].
		[Scale Width]	Select the width of main scale marks.
		[Scale Length]	Set the length of main scale marks. When [Circle] or [Square] is selected for [Shape] in the [Scaling Setting] dialog, the object is resized according to the specified length of the scale marks.
	[Sub Scale]	—	Select this item to display the subscale marks. The width and length of the subscale marks are halves of the values set for [Scale Width] and [Scale Length].
		[Scale Color]	Select the color of subscale marks. ☞ Page 988 Color settings
		[Scale Points]	Specify the number of subscale marks. The setting range is [1] to [9].

Item			Description
5)	[Scale Value]	—	Select this item to display numerical values on the scale. When selecting this item, configure the following settings.
		[Numerical Color]	Set the color of the scale values. ☞ Page 988 Color settings
		[Numerical Value]	Set the number of scale values to be displayed. The setting range is [2] to [101].
		[Font]	Select a font for the scale values.
		[Font Size]	Set the vertical size of the scale values. The setting range is [8] dots to [540] dots.
		[Font Width]	Set the horizontal size of the scale values. The horizontal size is specified with the magnification relative to [Font Size] (vertical text size). The setting range is [6]% to [1600]%. Note that the size per character is always within the range of [8] dots to [540] dots.
		[Number of Decimals]	Set the number of decimal places of a scale value. The setting range is [0] to [6].
	[Move monitoring range and scale value range together]	—	This item is settable when [Fixed] is selected for [Upper Limit] and [Lower Limit] in the [Device/Style] tab. The upper and lower limits of the scale value range are identical to the values of [Upper Limit] and [Lower Limit] set in the [Device/Style] tab. When you change the set values of [Upper Limit] and [Lower Limit] in the [Device/Style] tab, the upper and lower limits of the scale value range are changed accordingly.
		[Lower Limit] [Upper Limit]	Set the upper and lower limits of the scale value range. These items are not settable when [Move monitoring range and scale value range together] is selected. The setting range depends on the selection for [Data Type] in the [Device/Style] tab.

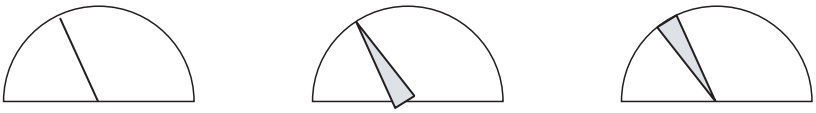
47.7.4 [Extended Style] tab

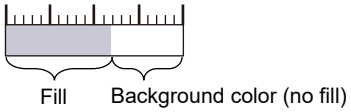
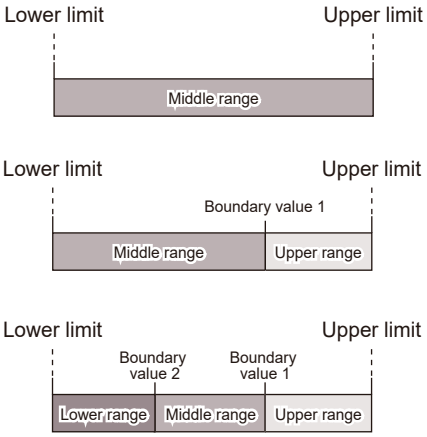
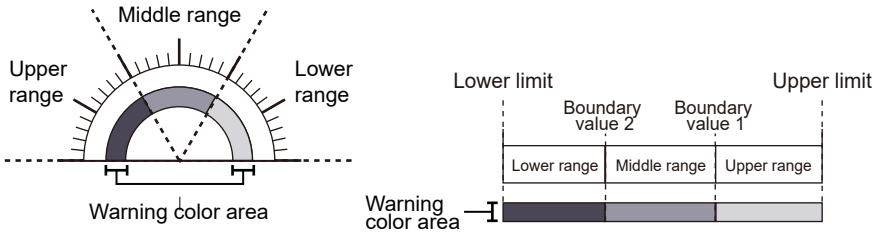
Set the background shape, behaviors when resized, sizes, display colors for the data area and warning color area, and other items.



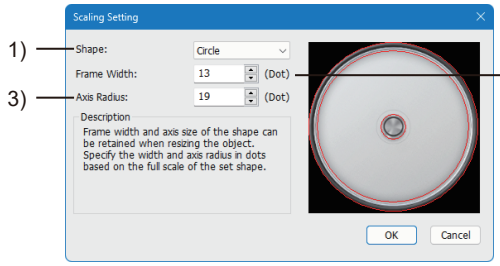
When [Triangle] or [Inverted Triangle] is selected for [Shape]

Item		Description
1)	[Shape]	Set the shape placed behind the graphical meter. Only the shapes in the library are selectable. Click the [Shape] button to select shapes other than those in the list box. ☞ Page 1044 Object shape
2)	[Shape Color]	Select the shape color.
3)	[Scaling Setting] button	Specify the frame line and axis sizes in the [Scaling Setting] dialog that appears when this item is clicked. ☞ Page 1755 [Scaling Setting] dialog
4)	[Meter Attribute]	Select the method of indicating the device value. The setting is fixed to [Needle] when [Sector] or [Semicircle] is selected for [Meter Shape] in the [Device/Style] tab. [Needle] [Fill] [Needle and Fill]

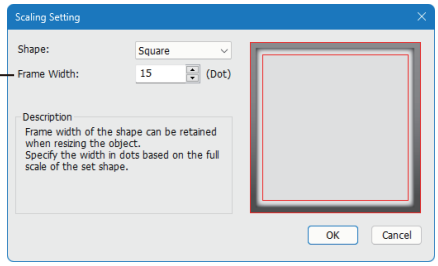
Item			Description
5)	[Needle Attribute]	[Shape]	When selecting [Needle] or [Needle and Fill] for [Meter Attribute], set the needle shape. [Straight Line] [Triangle] [Inverted Triangle] 
		[Needle Color]	When selecting [Needle] or [Needle and Fill] for [Meter Attribute], set the needle color. ☞ Page 988 Color settings
		[Needle Width]	When selecting [Straight Line] for [Shape], set the needle width.
		[Base Width]	When selecting [Triangle] or [Inverted Triangle] for [Shape], set the base width of the triangle. The setting range is [3] (dots) to the set value of [Needle Length] (dots). Specify an odd number value. When [Base Width] is set to [3] dots When [Base Width] is set to [15] dots
		[Needle Length]	When selecting [Needle] or [Needle and Fill] for [Meter Attribute], set the needle length. When [Bar (Vertical)] is selected for [Meter Shape], the value of this item is applied to [Data Width] in the [Device/Style] tab. When [Bar (Horizontal)] is selected for [Meter Shape], the value of this item is applied to [Data Height] in the [Device/Style] tab. When [Circle] or [Square] is selected for [Shape] in the [Scaling Setting] dialog, the object is resized according to the specified length of the needle. The setting range differs depending on [Meter Shape]. • [Circle]: [3] dots to [1499] dots • Other than [Circle]: [3] dots to [2999] dots
		[Hollow Radius]	When selecting [Sector] or [Semicircle] for [Meter Shape] in the [Device/Style] tab, set the drawing start position of the needle from the meter center. The setting range is [0] (dots) to "[Needle Length] - 2" (dots). When [Hollow Radius] is set to [0] dots When [Hollow Radius] is set to [10] dots

Item			Description
6)	[Fill Attribute]	—	When selecting [Fill] or [Needle and Fill] for [Meter Attribute], set colors for the data area. The area from the lower limit to the device value is filled, and the other area is displayed with the background color. 
		[Design]	Select a design for the display color.
		[Background Color]	Select a background color.
		[Upper Range Color] [Middle Range Color] [Lower Range Color]	Set a color that displays the area from the lower limit to the device value. The setting items vary by the setting for [Monitoring Range] in the [Device/Style] tab. • When not setting a boundary value: Set [Middle Range Color]. • When setting [Boundary Value 1]: Set [Upper Range Color] and [Middle Range Color]. • When setting [Boundary Value 2]: Set [Upper Range Color], [Middle Range Color], and [Lower Range Color]. 
7)	[Warning Color Setting]	—	Select this item to display the warning color area, and set the following items.
		[Design]	Select a warning color design.
		[Upper Range Color] [Middle Range Color] [Lower Range Color]	Set a color for the warning color area. The setting items vary by the setting for [Monitoring Range] in the [Device/Style] tab. • When not setting a boundary value: Set [Middle Range Color]. • When setting [Boundary Value 1]: Set [Upper Range Color] and [Middle Range Color]. • When setting [Boundary Value 2]: Set [Upper Range Color], [Middle Range Color], and [Lower Range Color]. 
		[Range Width]	Set the width of the warning color area. When [Circle] or [Square] is selected for [Shape] in the [Scaling Setting] dialog, the object is resized according to the specified width of the warning color area.
8)	[Part Names]		Displays the names of each part of the configured meter shape.

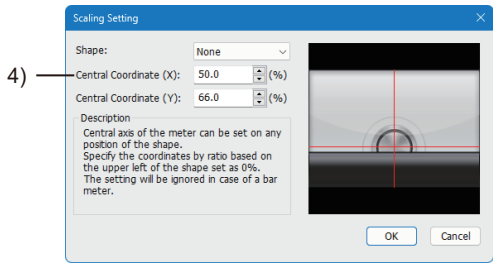
[Scaling Setting] dialog



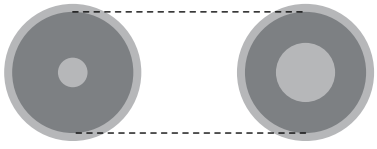
When [Circle] is selected for [Shape]



When [Square] is selected for [Shape]



When [None] is selected for [Shape]

Item		Description
1)	[Shape]	Select the shape outline. When [Bar (Vertical)] or [Bar (Horizontal)] is selected for [Meter Shape], [Circle] cannot be selected. The shape of the graphical meter may not appear properly if you make different selections in the following settings: [Shape] in the [Graphical Meter] dialog ([Extended Style] tab), and [Shape] in the [Scaling Setting] dialog. Check the display of the shape, and change the selection for [Shape] in the [Scaling Setting] dialog if necessary. • [Circle] When the object is resized, the frame width and the axis part size of the shape can be fixed. • [Square] When the object is resized, the frame width of the shape can be fixed. • [None] The center axis of the meter can be specified at anywhere of the shape.
2)	[Frame Width]	When selecting [Circle] or [Square] for [Shape], set the width of the frame around the frame area. The settable minimum value is [0], and the settable maximum value varies with the shape size. When [0] is set, the frame width is changed while the graphical meter is resized. When a value other than [0] is set, the value of the frame width is unchanged even if the graphical meter is resized. The upper-left coordinates of the object on the screen editor are unchanged. Frame, axis Shape frame area
3)	[Axis Radius]	When selecting [Circle] for [Shape], set the axis radius. The settable minimum value is [0], and the settable maximum value varies with the size of the shape or object. When [0] is set, the axis radius is changed while the graphical meter is resized. When a value other than [0] is set, the value of the axis radius is unchanged even if the graphical meter is resized. Frame, axis Maximum object area 
4)	[Central Coordinate (X)] [Central Coordinate (Y)]	When selecting [None] for [Shape], set the center coordinates of the meter. Specify the vertical and horizontal coordinates by ratio with the upper left corner of the shape set as 0%. The setting range is [0.0]% to [100.0]%.

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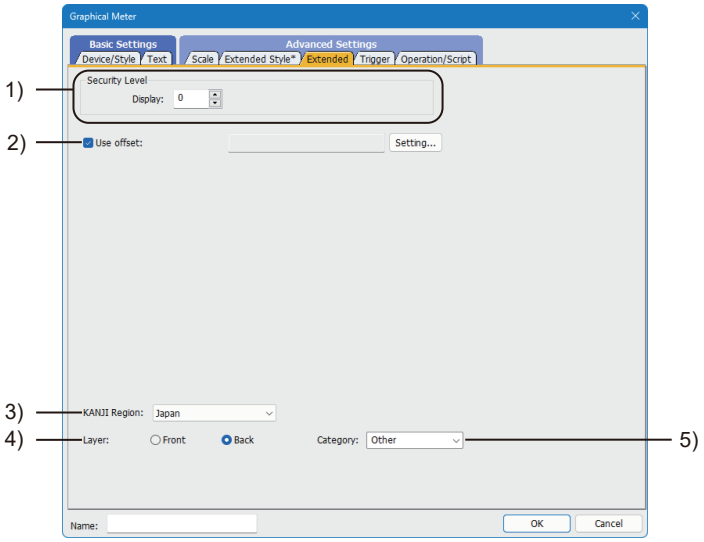
47.7.5 [Extended] tab

For mobile screens, some setting items are not available.

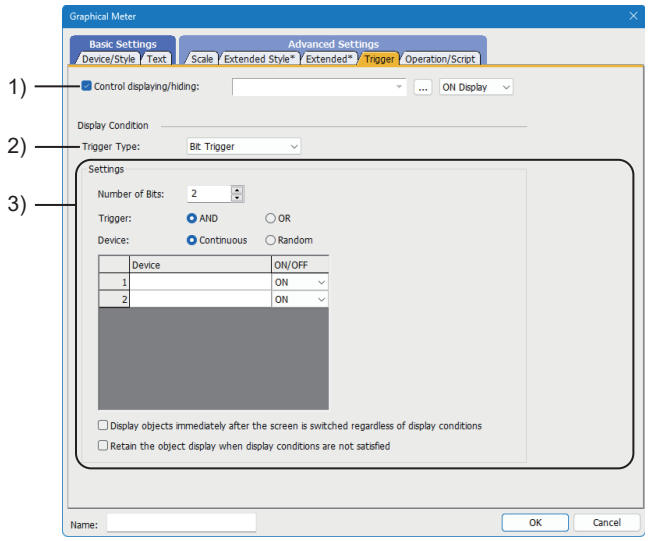
Set the security level of the object, use/nonuse of the offset function, KANJI region, layer for placing the object, and others.



Item		Description
1)	[Security Level]	Set the security level. The setting range is [0] to [15]. If you do not use the security function of the GOT, select [0]. ☞ Page 3038 Restricting display and operation on the GOT (Screen security)
2)	[Use offset]	Configure the settings to monitor the statuses of multiple devices by switching between them with a single device. After selecting this item, set the offset device. The monitored device is the one with the offset device value added to the device set in [Device] in the [Device/Style] tab. ☞ Page 963 Offset
3)	[KANJI Region]	Set the KANJI region. This item is enabled when one of the following items is selected for [Font] in the [Text] tab. • [UD Gothic] • [UD Mincho] • [UDP Gothic] • [UDP Mincho] ☞ Page 76 KANJI region
4)	[Layer]	Select the layer to place the object. ☞ Page 65 Layer
5)	[Category]	Select the category to assign the object. ☞ Page 1121 Managing figures and objects by category

47.7.6 [Trigger] tab

Set the trigger condition to display the object.



Item		Description
1)	[Control displaying/hiding]	Enables the setting to display the object only when requirements are met. Set the following as requirements. • Control device (bit device or bit-specified word device) • When to display: When the control device is on or off
2)	[Trigger Type]	Select a trigger condition to display the object. For details on the trigger types, refer to the following. ☞ Page 969 Trigger types settable for the object display condition
3)	[Settings]	For the settings of each item, refer to the following. ☞ Page 972 Settings by trigger type

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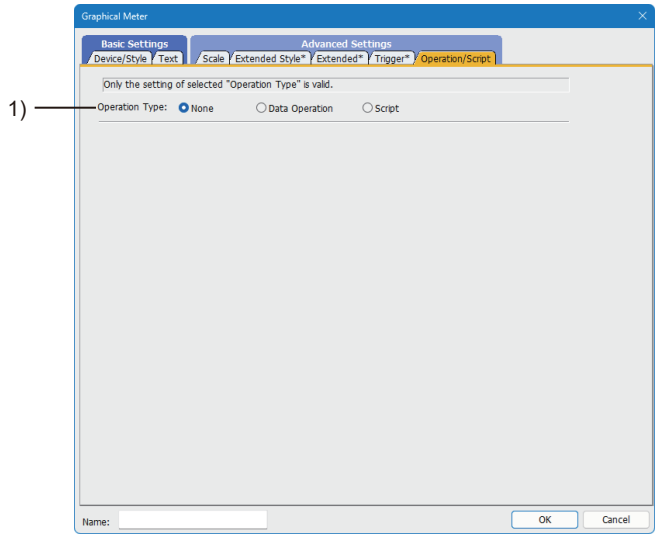
47.7.7 [Operation/Script] tab

For mobile screens, some setting items are not available.

Set whether to perform an operation or a script with the device value handled by the object.

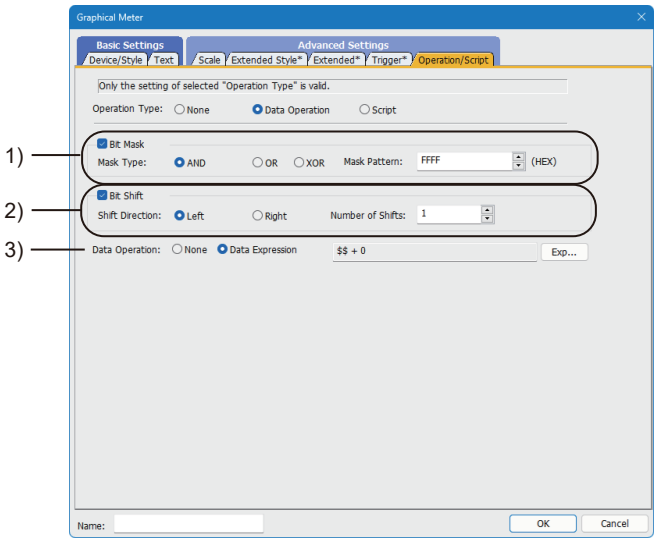


Item			Description
1)	[Operation Type]	[None]	The data operation function and the script function are not used.
		[Data Operation]	Set the expression used for the data operation function. For the setting method, refer to the following. ☞ Page 1759 [Data Operation]
		[Script]	Set the expressions for the script function. For the setting method, refer to the following. ☞ Page 1760 [Script]

[Data Operation]

For details on the data operation settings, refer to the following.

☞ Page 1053 How to set the data operation

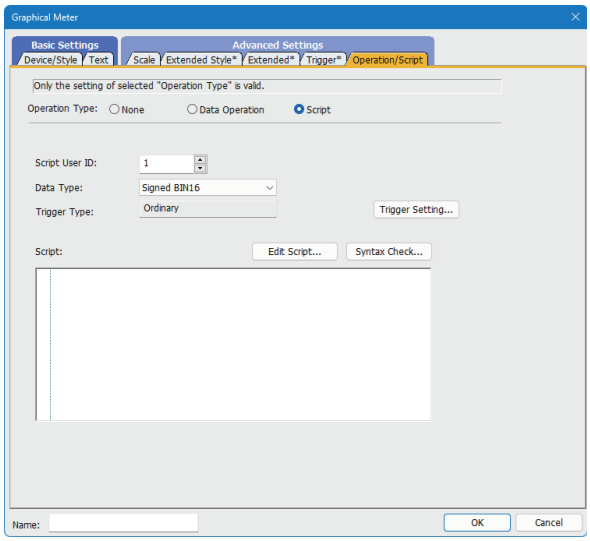


Item			Description
1)	[Bit Mask]	—	Set the operation of mask processing.
		[Mask Type]	Select the type of mask processing. The following shows selectable items. • [AND]: Logical AND • [OR]: Logical OR • [XOR]: Exclusive OR
		[Mask Pattern]	Set a pattern value to mask in hexadecimal. The setting range differs depending on the setting of [Data Type] in the [Device/Style] tab.
2)	[Bit Shift]	—	Set the operation of shift processing.
		[Shift Direction]	Select a shifting direction.
		[Number of Shifts]	Set the number of bits to be shifted. The setting range differs depending on the setting of [Data Type] in the [Device/Style] tab.
3)	[Data Operation]	—	Performs the data operation using the value stored in the monitored device. The graphical meter displays the value after the operation.
		[None]	Does not perform the data operation.
		[Data Expression]	Performs the data operation. Click the [Exp] button to set an expression in the [Edit Data Expression] dialog. ☞ Page 1054 [Edit Data Expression] dialog

[Script]

For the script settings, refer to the following.

☞ Page 2447 Object script



■Relationship between the object settings and object properties

Object settings can be read (referenced) or written (changed) using object properties.

The following shows the correspondence between readable/writable object properties and the setting items in the object setting dialog.

○: Available

×: Not available

—: No applicable setting item

Setting dialog		Object property			
Tab name	**Setting item**	**Property name**	**Read**	**Write**	**Timing for reflecting the setting change*1**
—	—	active	○	○	Upon the setting change
		x	○	○	When the screen is updated
		y	○	○	When the screen is updated
		width	○	×	×
		height	○	×	×
[Extended Style]	[Needle Color]	graph_color	○	○	When the object is updated
[Extended]	[Security Level]	security	○	○	When the screen is updated

*1 For the timing at which the setting change of an object property is reflected, refer to the following.

☞ Page 2456 Timing at which the setting change of an object property is reflected

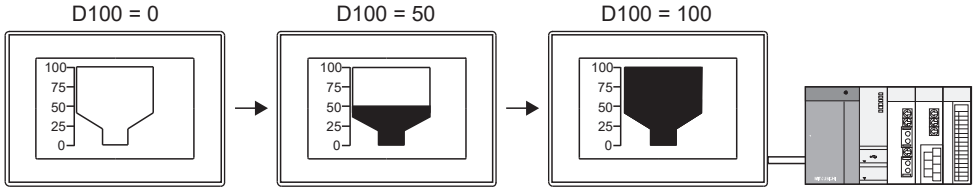
48 Placing a level object

☞ Page 1761 Overview of the level object
☞ Page 1762 Specifications of the level object
☞ Page 1763 How to use the level object
☞ Page 1771 [Level] dialog

48.1 Overview of the level object

GT37 SoftGOT3000

The level object is an object that monitors the word device value and fills the specified area with the user-selected color, based on the ratio of the device value compared to the set upper and lower limit values.
With this function, the device value can be displayed as a level in any closed figure.

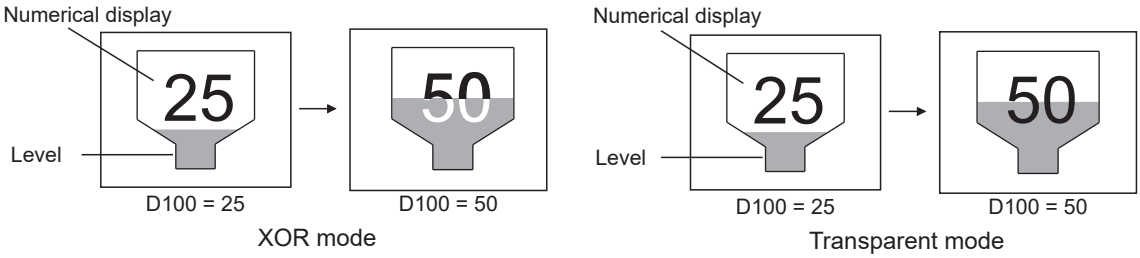


A value or comment is displayable on a level object by placing one of the following objects on the level object.

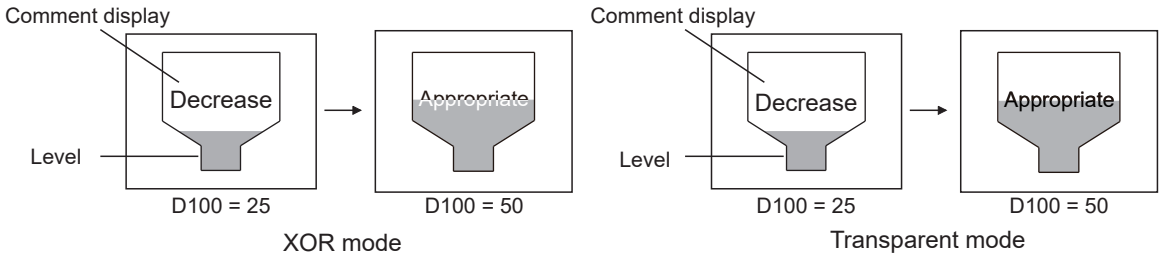
- Numerical display
- Numerical input
- Comment display

If any object mentioned above is placed under the level object on the same layer, this object still appears in front of the level object on the GOT screen.
When any object mentioned above is superimposed on a level object, the XOR mode or the transparent mode is selectable.
The XOR mode inverts the text color in the overlapping portion of the objects.
The transparent mode displays the text in the overlapping portion of the objects in the specified color.

- Example of superimposing a numerical display on a level object



- Example of superimposing a comment display on a level object



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48.2 Specifications of the level object

GT37 SoftGOT3000

The following shows the specifications of the level object.

☞ Page 1762 Maximum number of objects that can be placed on one screen
☞ Page 1762 Objects that can be superimposed on a level object

48.2.1 Maximum number of objects that can be placed on one screen

Up to 1024 objects can be placed on one screen.

Maximum number of level objects is calculated by subtracting the number of objects other than level objects from 1024.

48.2.2 Objects that can be superimposed on a level object

The following shows the objects that can be superimposed on a level object.

- Numerical display
- Numerical input
- Comment display (bit comment or word comment)

Multiple objects can be superimposed on one level object.

Regardless of the placement order, the overlapping object (numerical display, numerical input, or comment display) appears in front of the level object on the GOT screen.

48.3 How to use the level object

GT37 SoftGOT3000

The following shows how to use the level object.

☞ Page 1763 Drawing a figure in which a level is displayed
☞ Page 1764 Placing a level object
☞ Page 1765 Setting the level object
☞ Page 1767 Displaying a value or text on a level object
☞ Page 1769 Different displays depending on the display mode of the object to be superimposed

48.3.1 Drawing a figure in which a level is displayed

To display a level in a figure, draw the figure in advance.

☞ Page 1131 Figures

When drawing a figure, note the following.

☞ Page 1763 Drawing a figure on the back layer
☞ Page 1763 Setting the same color for [Line Color] of a figure and [Boundary Color] of a level
☞ Page 1764 Drawing a figure without any clearance between lines

Drawing a figure on the back layer

To display a level in a figure, use the following layer combination.

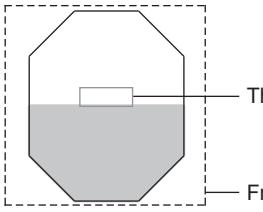
- Figure: Backmost layer
- Level: Back layer

If a layer combination other than the above is used, a level is not displayed in a figure.

Setting the same color for [Line Color] of a figure and [Boundary Color] of a level

The figure drawn in the same color as [Boundary Color] of the level is the target of the level display.

After placing the level object, set the same color as [Line Color] of the figure for [Boundary Color].



Precautions

When [Background Color] is enabled for the window screen, the boundary color is disabled if the level display with [Boundary Color] set overlaps with the following screens.

- Superimpose window
- Called screen (a screen displayed by the set overlay screen function on the basic screen (base screen or window screen where the set overlay screen is placed))

Set [Background Color] of the window screen in the [Screen Design] dialog or the [Window Screen Property] dialog ([Basic] tab).

☞ Page 310 [Screen Design] dialog
☞ Page 323 [Basic] tab

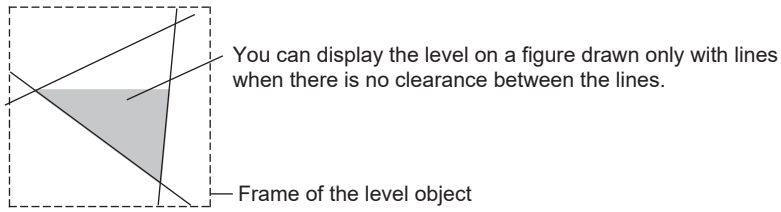
PART 7

Drawing a figure without any clearance between lines

A level can be displayed only with a completely-closed figure.

A figure drawn with multiple lines can also be used for the level display.

Draw a figure in which a level is displayed without any clearance between lines.



48.3.2 Placing a level object

The following shows how to place the level object.

This switch cannot be placed on mobile screens.

Operating procedure

1. Select [Object] → [Meter] → [Level] from the menu.
2. Click the position to place a level object on a screen editor.
3. Adjust the frame size of the level object.

To display a level in a figure, surround the figure with the frame of the level object and adjust the frame according to the figure size.

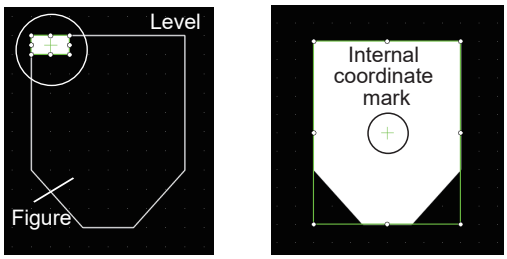
In this case, use the following combination to superimpose the figure and the level object.

- Figure: Backmost layer
- Level: Back layer

If the internal coordinate mark of the level overlaps the figure, the level is displayed within the figure.

The display status cannot be checked on the screen editor of GT Designer3 because the figure is placed behind the level.

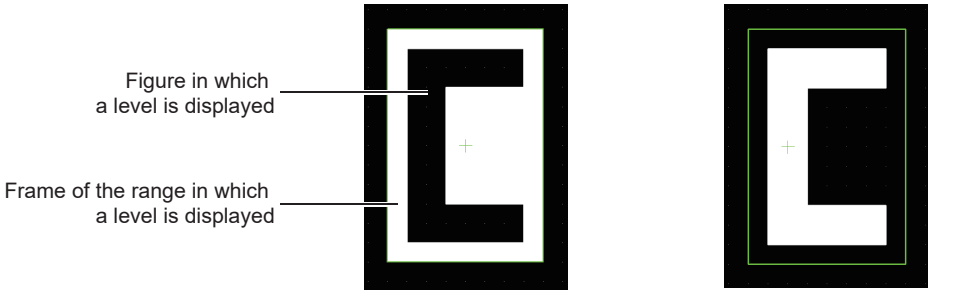
Check the display status by writing the project data to GT Simulator3 or the GOT.



If the level is not displayed within the figure, the internal coordinate mark of the level does not overlap the figure.

Move the internal coordinate mark manually.

Right-click the frame of the level object and select [Touch Area Edit] → [Manual Edit] from the menu to drag the internal coordinate mark.



The figure is not set as the target of the level display.

The figure is set as the target of the level display.

48.3.3 Setting the level object

The following shows how to set the level object.

Operating procedure

1. Double-click the level object which has been placed to display the setting dialog.

☞ Page 1771 [Level] dialog

2. Display the [Device/Style] tab.

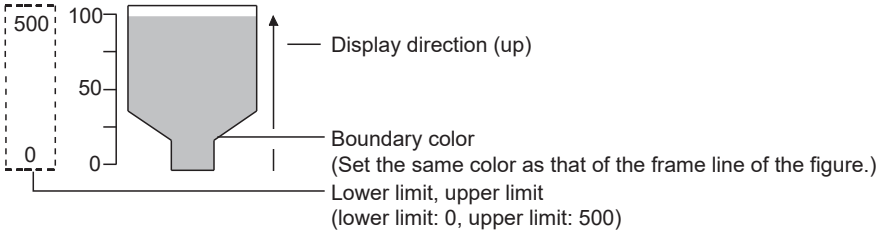
☞ Page 1771 [Device/Style] tab

3. Set a device to be monitored for [Device].

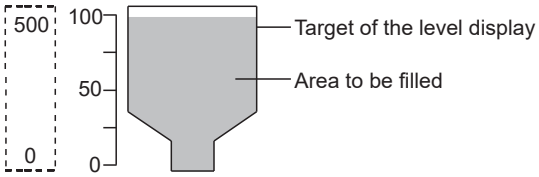
☞ Page 834 How to set devices, labels, and tags

4. Set [Direction], [Boundary Color], [Lower Limit], and [Upper Limit].

Set the same color as [Line Color] (frame line color) of the target figure of the level display for [Boundary Color].



5. Set the fill color with [Level Color], [Background Color], and [Pattern].



6. To change the fill color according to the device value, add conditions.

After adding conditions, set the following.

- Ranges corresponding to each condition
- [Level Color], [Background Color], and [Pattern] that are displayed when the conditions are satisfied

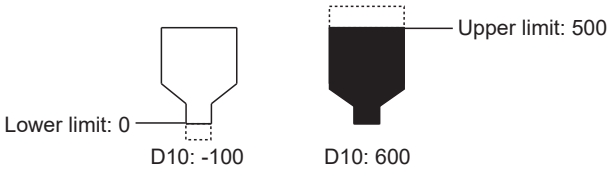
7. Click the [OK] button to complete the level object settings.

PART 7

Precautions

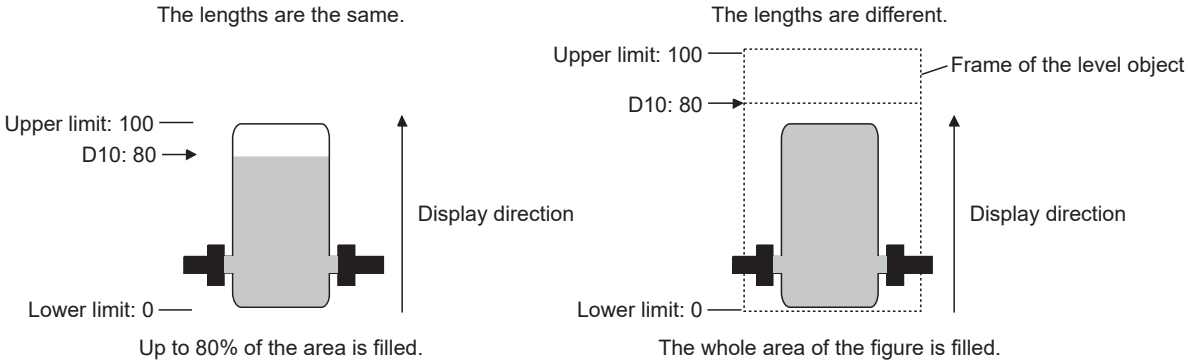
■Operations of when the monitored device value exceeds the upper or lower limit value

If the monitored device value falls below the lower limit, the lower limit value is displayed instead of the device value.
When the monitored device value exceeds the upper limit value, the display of the upper limit value is applied.



■Operations of when the lengths of the frame of a level object and a figure are different

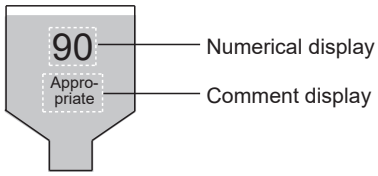
When the lengths of the frame of a level object and a figure are different in the direction of the level display, the figure is not filled corresponding to the ratio compared to the upper and lower limit values.
Adjust the frame length of the level object to the length of the figure.



48.3.4 Displaying a value or text on a level object

To display a value or text on a level object, place one of the following objects within the frame of the level object.

- Numerical display
- Numerical input
- Comment display (bit comment or word comment)



Regardless of the placement order, the overlapping object (numerical display, numerical input, or comment display) appears in front of the level object on the GOT screen.

Operating procedure

1. Place one of the above objects within the frame of a level object.

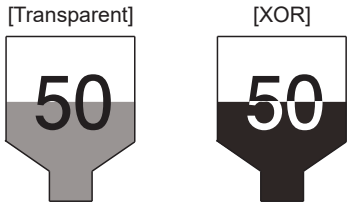
2. Display the object setting dialog.

For the setting dialog, refer to the following.

☞ Page 1317 [Numerical Display] dialog
☞ Page 1328 [Numerical Input] dialog
☞ Page 1390 [Bit Comment Display] dialog
☞ Page 1400 [Word Comment Display] dialog

3. Select the display color, which is used when the level area to be filled and the object are overlapped, in [Display Mode].

- [Transparent]: The color of a numerical value or characters is not changed.
- [XOR]: The color of a numerical value or characters and the level color are integrated into an XOR synthesis.



4. Click the [OK] button to complete the object settings.

5. When [Blink] or [Reverse] is set for the object, select [Common] → [GOT Type Setting] from the menu, and set [Adjust object display order in GOT to the one in GT Designer3].

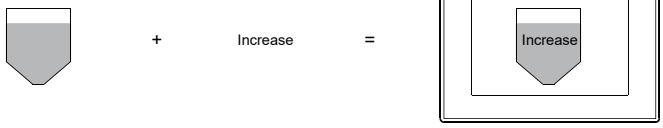
With this setting, the blinking display and reversing display of the object to be superimposed with the level are enabled.

The following shows examples of settings.

Example) Displaying the level with the comment display

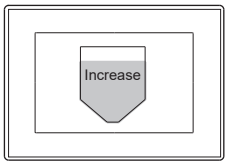
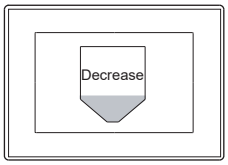
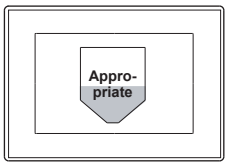
Set the same condition (display range) for the level and comment display, and switch the level color and comment simultaneously.

Level setting　　Comment setting　　Display



Level
Device to be monitored : D100
Display direction : Up
Upper limit : 100
Lower limit : 0

Comment
Device to be monitored: D100
Display mode : Transparent
Registered comments : Comment No. 1...Increase
: Comment No. 2...Decrease
: Comment No. 3...Appropriate

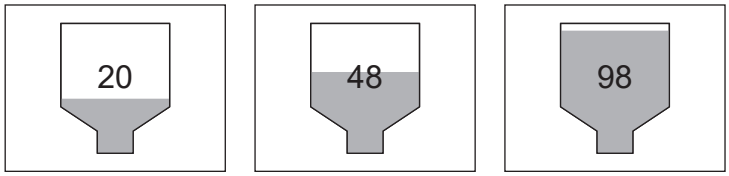
Condition	Display range	Level color	Comment	Font image
1	71≤$V	Red	Increase	
2	$V≤30	Yellow	Decrease	
0 (normal)	-	Light blue	Appropriate	

48.3.5 Different displays depending on the display mode of the object to be superimposed

The display of a level object varies depending on the display mode of the object superimposed on the level object.
The following shows application examples.

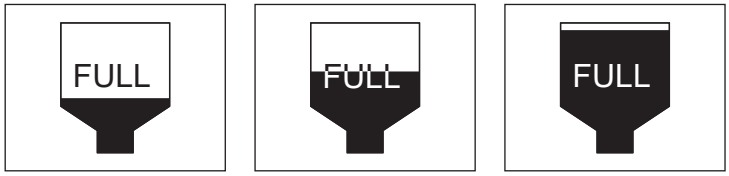
Ex.

When [Display Mode] is set to [Transparent] for a numerical display, numerical input, or comment display
The numerical display color and text color are displayed as is.



Ex.

When [Display Mode] is set to [XOR] for a numerical display, numerical input, or comment display
When the target object is superimposed on the fill color portion of the level object, the color of the overlapping portion is inverted in the target object.
However, inputting a value on the numerical input does not apply the fill color of the level object to the overlapping portion of the numerical input.
The new value is not reflected to the display until you touch the numerical input again.



PART 7

Precautions

■When part of the object is out of the level object frame

When part of the object (numerical display, numerical input, or comment display) is out of the level object frame, the level or the object is displayed incorrectly.

• When part of the object placed behind the level object is out of the level object frame

The area of the object within the frame of the level object is not displayed.

Only the area out of the level object frame is displayed.

• When part of the object placed over the level object is out of the level object frame

The level is not displayed only for the area superimposed with the object.

To solve the above problems, execute one of the following operations.

• Move the whole object outside the frame of the level object.

• Move the whole object within the frame of the level object.

• Set [Adjust object display order in GOT to the one in GT Designer3]

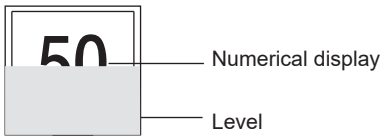
(This setting is available in the [GOT Type Setting] dialog displayed by selecting [Common] → [GOT Type Setting] from the menu.)

■When a level object and an object are placed in different layers

When a level object and an object (numerical display, numerical input, or comment display) are placed in different layers, the level and the object are not integrated into an XOR synthesis.

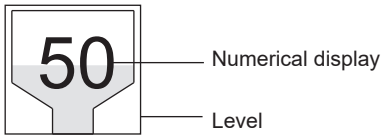
• When a level object is placed in the front layer and an object is placed in the back layer

If the level area to be filled is superimposed with the object, the object is hidden.



• When an object is placed in the front layer and a level object is placed in the back layer

The object is displayed over the level. However, the object and level are not integrated into an XOR synthesis because they are in different layers.



■Update timing of the displayed contents

The displayed comments of an object (numerical display, numerical input, or comment display) and a level are updated simultaneously.

The update timing set for the object (display condition) is invalid.

■Display at inputting a numerical value

While a cursor is displayed at the numerical input, the area superimposed with the level object is displayed incorrectly.

After the numerical input is completed and the level is updated, the area is displayed correctly.

■Text style of the comment display

When the text style (bold, solid, raised) is set for the comment display, the text or the text color may be displayed incorrectly.

48.4 [Level] dialog

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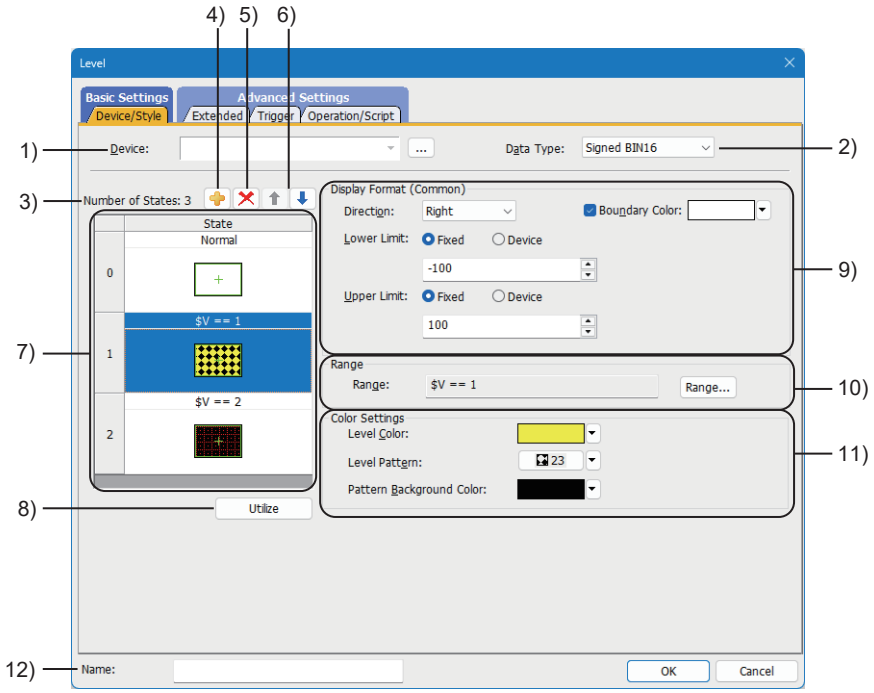
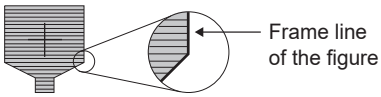
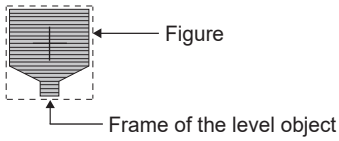
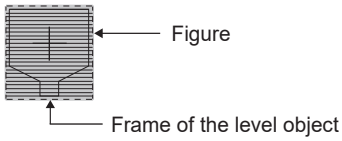
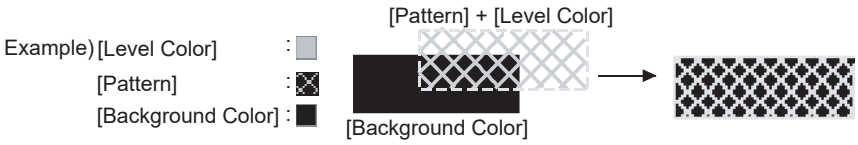
☞ Page 1771 [Device/Style] tab
☞ Page 1773 [Extended] tab
☞ Page 1774 [Trigger] tab
☞ Page 1775 [Operation/Script] tab

48.4.1 [Device/Style] tab

Set the target device to be monitored and the level status corresponding to the device value.
For the conditions, refer to the following.
☞ Page 1038 Control with conditions

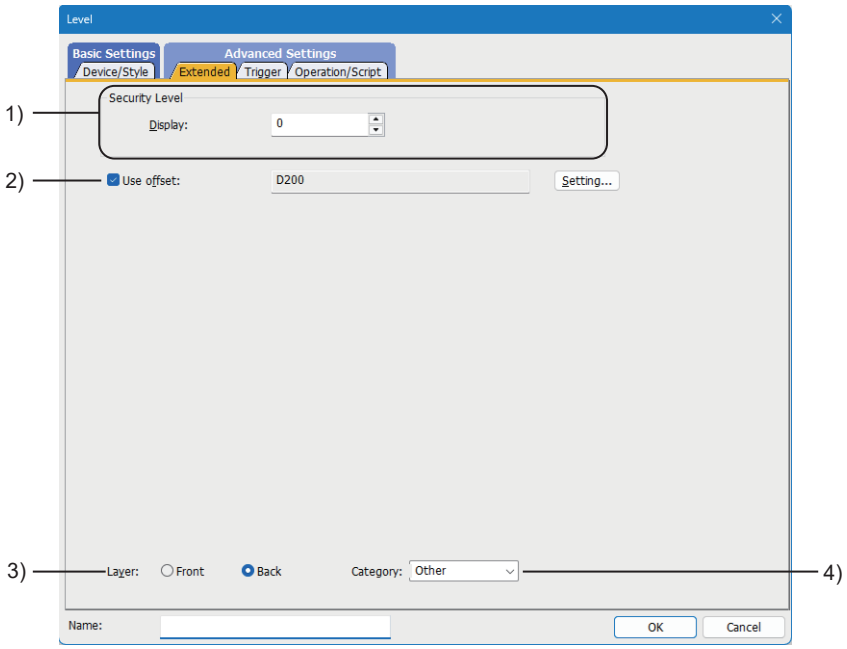


Item		Description
1)	[Device]	Set the device to be monitored. ☞ Page 834 How to set devices, labels, and tags
2)	[Data Type]	Select the data type of the word device.
3)	[Number of States]	The number of the set conditions
4)	Add button	Adds a new condition.
5)	Delete button	Deletes the selected condition.
6)	Up button, down button	Changes the priority order of the conditions in the preview list.
7)	Preview list	Displays set conditions.
8)	[Utilize] button	Creates a new condition utilizing the selected condition.

Item			Description
9)	[Display Format (Common)]	—	Set the level display that is common to all conditions.
		[Direction]	Select the direction in which the level area to be filled extends.
		[Boundary Color]	Set the same color as [Line Color] (frame line color) of the target figure of the level display. Set this item to display a level in a figure. Select this item, and set [Boundary Color].  If a color other than [Line Color] of the figure is set, the level is not displayed in the frame of the figure. Example 1) When [Boundary Color] of the figure and [Line Color] are the same  The figure is set as the target of the level display. Example 2) When [Boundary Color] of the figure and [Line Color] are different  The figure is not set as the target of the level display.
		[Lower Limit] [Upper Limit]	Select whether to specify the display range (lower and upper limit values) of the level with the fixed value or with the device value. The value can be changed dynamically by specifying it with a device. ☞ Page 834 How to set devices, labels, and tags The setting ranges of [Lower Limit] and [Upper Limit] differ depending on the item selected for [Data Type].
10)	[Range]	[Range]	Set the display range of the conditions selected in the preview list. When setting the value of the word device as the condition, click the [Range] button to display the [Edit Range] dialog, and then set the conditional expression. ☞ Page 1038 Control with conditions
11)	[Color Settings]	[Level Color]	Set the fill color.
		[Level Pattern] [Pattern Background Color]	Set the pattern and the background color to be used for filling. 
12)	[Name]		Set the object name. The name is displayed in places such as the data browser and property sheet. The setting can also be changed in other tabs. Up to 100 characters can be set.

48.4.2 [Extended] tab

Set the security level of the object and use/nonuse of the offset function.



Item		Description
1)	[Security Level]	Set the security level. The setting range is [0] to [15]. If you do not use the security function of the GOT, set [0]. ☞ Page 3038 Restricting display and operation on the GOT (Screen security)
2)	[Use offset]	Configure the settings to monitor the statuses of multiple devices by switching between them with a single device. After selecting this item, set the offset device. ☞ Page 963 Offset
3)	[Layer]	Select the layer to place the object. ☞ Page 65 Layer
4)	[Category]	Select the category to assign the object. ☞ Page 1121 Managing figures and objects by category

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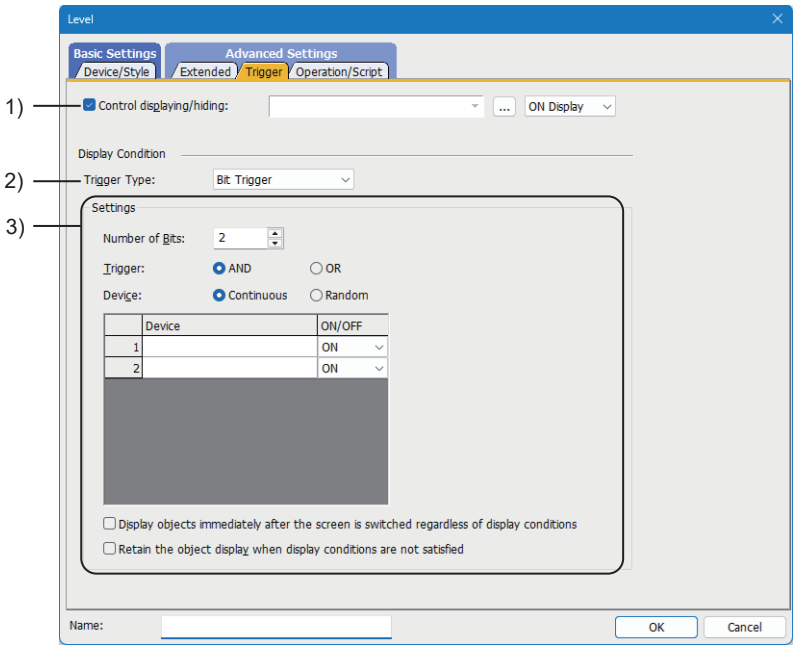
48.4.3 [Trigger] tab

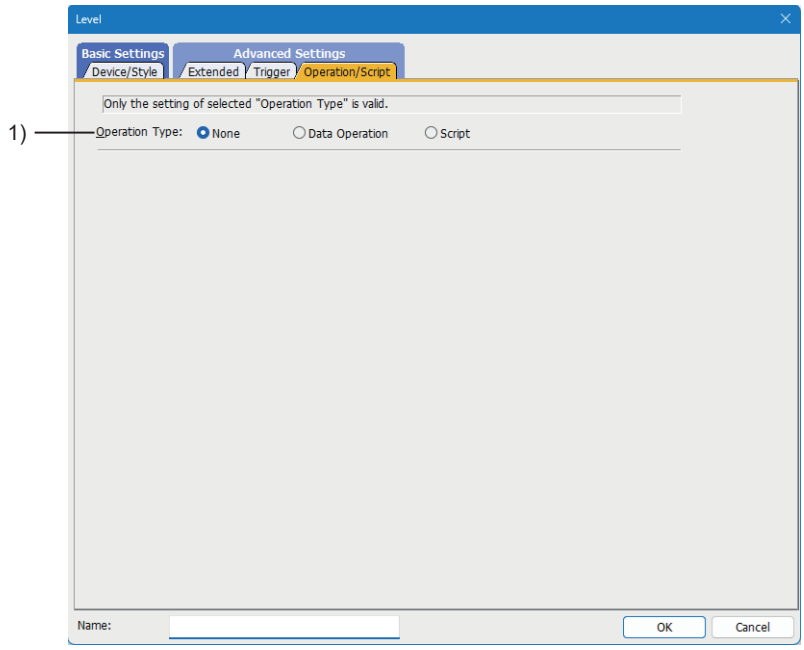
Set the trigger condition to display the object.



Item		Description
1)	[Control displaying/hiding]	Enables the setting to display the object only when requirements are met. Set the following as requirements. • Control device (bit device or bit-specified word device) • When to display: When the control device is on or off
2)	[Trigger Type]	Select a trigger condition to display the object. For details on the trigger types, refer to the following. ☞ Page 969 Trigger types settable for the object display condition
3)	[Settings]	For details on each setting, refer to the following. ☞ Page 972 Settings by trigger type

48.4.4 [Operation/Script] tab

Set whether to perform an operation or a script with the device value handled by the object.



Item			Description
1)	[Operation Type]	[None]	The data operation function and the script function are not used.
		[Data Operation]	Set the expression used for the data operation function. For the setting method, refer to the following. ☞ Page 1776 [Data Operation]
		[Script]	Set the expressions for the script function. For the setting method, refer to the following. ☞ Page 1777 [Script]

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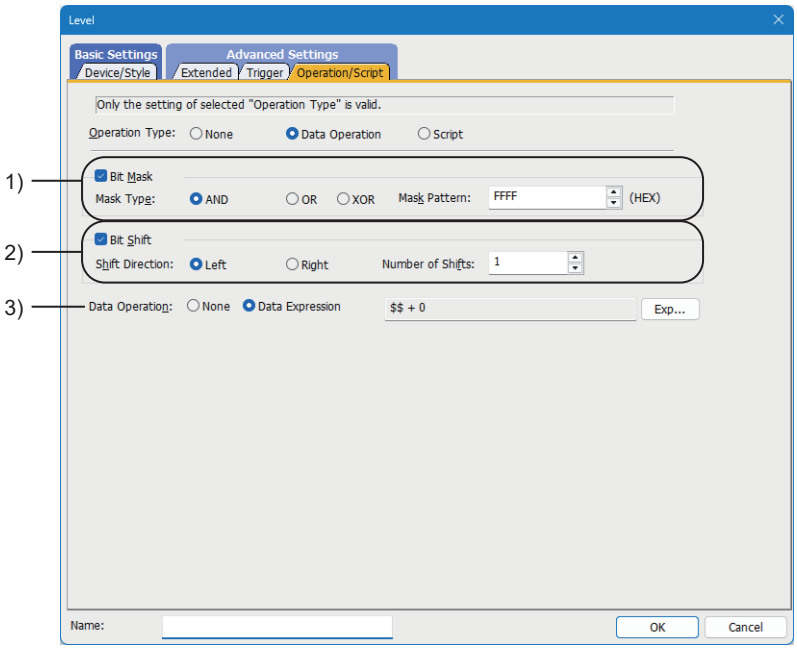
[Data Operation]

For details on the data operation settings, refer to the following.

☞ Page 1053 How to set the data operation

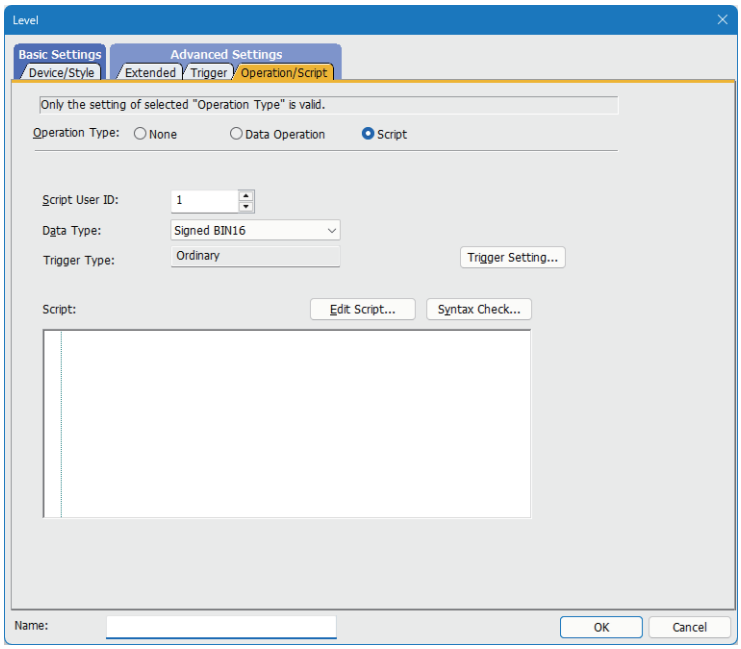


Item			Description
1)	[Bit Mask]	—	Set the operation of mask processing.
		[Mask Type]	Select the type of mask processing. The following shows selectable items. • [AND]: Logical AND • [OR]: Logical OR • [XOR]: Exclusive OR
		[Mask Pattern]	Set a pattern value to mask in hexadecimal. The setting range differs depending on the setting of [Data Type] in the [Device/Style] tab.
2)	[Bit Shift]	—	Set the operation of shift processing.
		[Shift Direction]	Select a shifting direction.
		[Number of Shifts]	Set the number of bits to be shifted. The setting range differs depending on the setting of [Data Type] in the [Device/Style] tab.
3)	[Data Operation]	—	Performs the data operation using the value stored in the monitored device.
		[None]	Does not perform the data operation.
		[Data Expression]	Performs the data operation. Click the [Exp] button to set an expression in the [Edit Data Expression] dialog. ☞ Page 1054 [Edit Data Expression] dialog

[Script]

For the script settings, refer to the following.

☞ Page 2447 Object script



■Relationship between the object settings and object properties

Object settings can be read (referenced) or written (changed) using object properties.

The following shows the correspondence between readable/writable object properties and the setting items in the object setting dialog.

○: Available

×: Not available

—: No applicable setting item

Setting dialog		Object property			
Tab name	**Setting item**	**Property name**	**Read**	**Write**	**Timing for reflecting the setting change*1**
—	—	active	○	○	Upon the setting change
		x	○	○	When the screen is updated
		y	○	○	When the screen is updated
		width	○	×	×
		height	○	×	×
[Device/Style]	[Level Color]	graph_color	○	○	When the object is updated
	[Mask Pattern]	pattern	○	○	When the object is updated
	[Background Color]	back_color	○	○	When the object is updated
[Extended]	[Security Level]	security	○	○	When the screen is updated

*1 For the timing at which the setting change of an object property is reflected, refer to the following.

☞ Page 2456 Timing at which the setting change of an object property is reflected

49 Placing a panel meter

☞ Page 1778 Overview of the panel meter
☞ Page 1779 How to use the panel meter
☞ Page 1780 Specifications of the panel meter
☞ Page 1782 Setting a panel meter
☞ Page 1783 [Panelmeter] dialog

49.1 Overview of the panel meter

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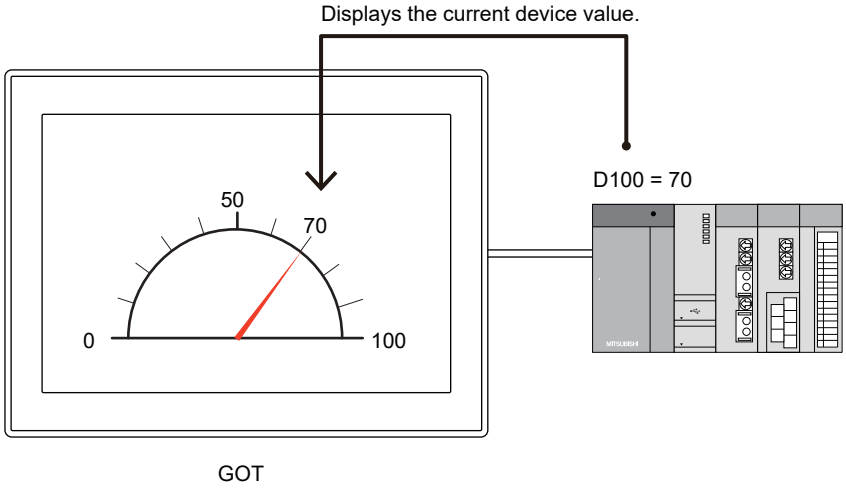
The panel meter is an object used to indicate the current value of the device on the surface that simulates a meter.
The current value of the device is visualized as to where it is positioned within the range.

Ex.
A panel meter with the device value ranging from 0 to 100
When the panel meter monitors the device [D100], it displays the value [70] of the PLC device [D100].



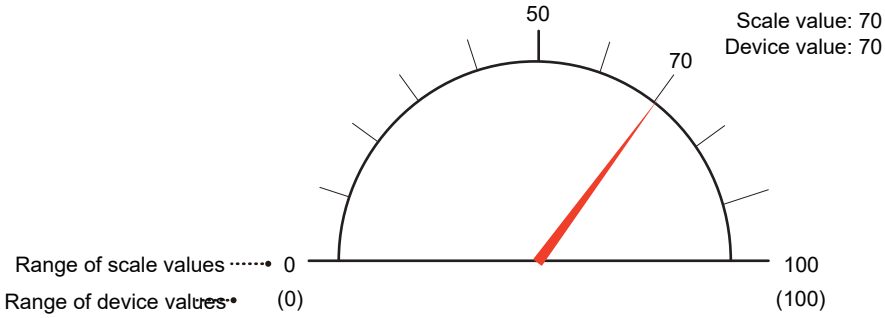
49.2 How to use the panel meter

Set the lower and upper limits of the device value and those of the scale value separately for the panel meter.
Doing so enables the following two uses.
☞ Page 1779 Indicating the device value
☞ Page 1779 Indicating the percentage against the total

Indicating the device value

When the lower and upper limits of the device value are matched with those of the scale value, the panel meter indicates the device value.

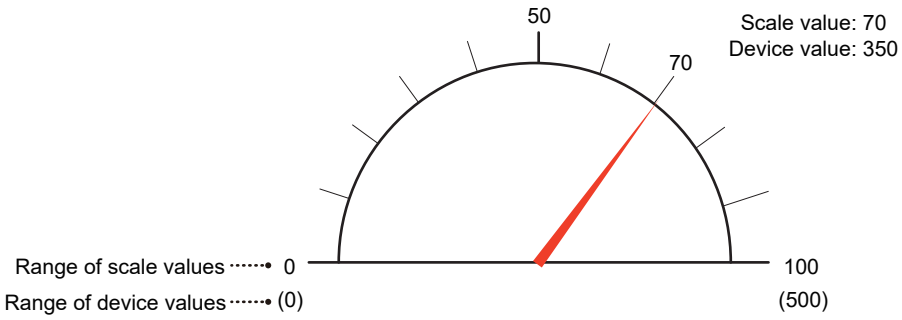
Ex.
Range of the device value: 0 to 100
Range of the scale value: 0 to 100
The value indicated by the panel meter is the device value.



Indicating the percentage against the total

If the range of the device value and that of the scale value are different, the panel meter indicates the position relative to the lower and upper limits of the device value.

Ex.
Range of the device value: 0 to 500
Range of the scale value: 0 to 100
When the device value is [350], the panel meter indicates the scale value [70].



Point

The following setting items are related to the above.
• [Lower Limit] and [Upper Limit] in the [Device/Style] tab
☞ Page 1783 [Device/Style] tab
• [Lower Limit] and [Upper Limit] in the [Scale] tab
☞ Page 1788 [Scale/Text] tab

49.3 Specifications of the panel meter

GT37 SoftGOT3000

☞ Page 1780 Maximum number of objects that can be placed on one screen
☞ Page 1780 Size of the panel meter
☞ Page 1780 Shape of the panel meter
☞ Page 1781 Display when the lower or upper limit is exceeded

49.3.1 Maximum number of objects that can be placed on one screen

A total of 1024 panel meters and other objects can be placed on one base screen, while 512 can be placed on one window screen.

49.3.2 Size of the panel meter

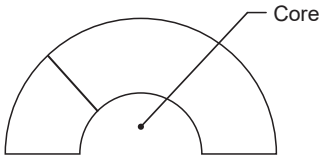
The following shows the minimum and maximum sizes of the panel meter.

Size	Size (dot)
Minimum	3 × 3
Maximum	6000 × 6000

49.3.3 Shape of the panel meter

The panel meter is expressed with a sector, semicircle, or full circle as shown below.
Some shapes are preset, but you can also set a sector with an intended angle by specifying the start and end angles.

Setting a core can create a doughnut-shaped panel meter.
The core is useful if you desire to enter the title, unit, or other information of the meter.



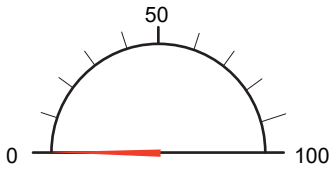
49.3.4 Display when the lower or upper limit is exceeded

If the monitored device value equals to or below the lower limit, the lower limit is indicated.
If the monitored device value equals to or above the upper limit, the upper limit is indicated.

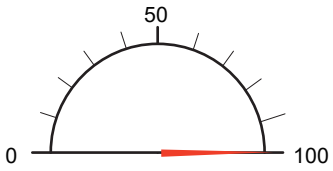
Ex.

A panel meter for which the lower limit [0] and the upper limit [100] are set for the device value
When the device value is [-50], the lower limit [0] is indicated.
When the device value is [180], the upper limit [100] is indicated.

When the value is equal to or below the lower limit



When the value is equal to or above the upper limit



PART 7

49.4 Setting a panel meter

GT37 SoftGOT3000

Use the following procedure to place a panel meter and configure the operation settings.

Operating procedure

1. Select [Object] → [Meter] → [Panelmeter] from the menu and click the intended position to place it.

☞ Page 1001 Placing figures and objects

2. Double-click the panel meter to display the [Panelmeter] dialog.
3. Configure the operation settings in each tab in the [Panelmeter] dialog.

☞ Page 1783 [Panelmeter] dialog

For the operations common to all objects or editing operations except operation settings, refer to the following.

☞ Page 995 Basics of figures and objects

49.5 [Panelmeter] dialog

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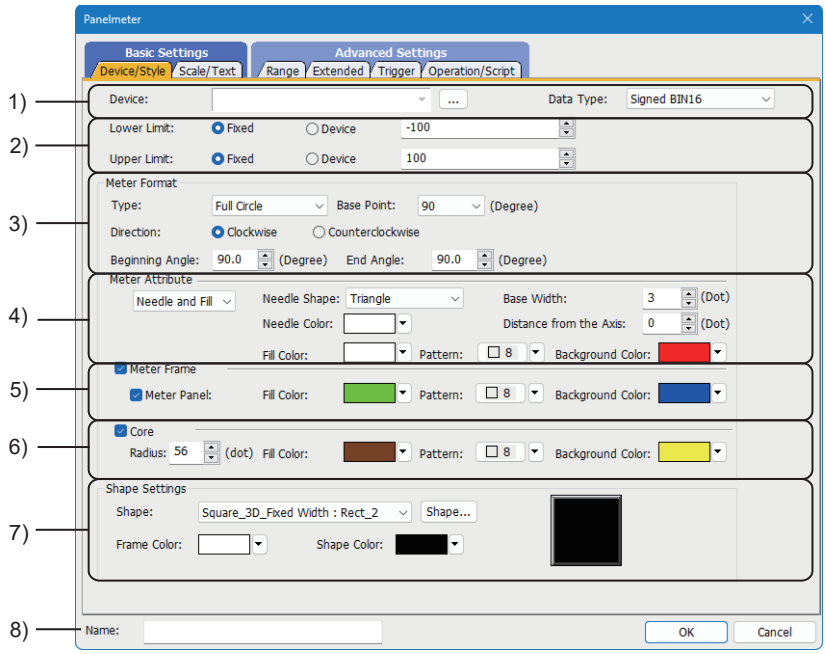
☞ Page 1783 [Device/Style] tab
☞ Page 1788 [Scale/Text] tab
☞ Page 1790 [Range] tab
☞ Page 1791 [Extended] tab
☞ Page 1792 [Trigger] tab
☞ Page 1793 [Operation/Script] tab

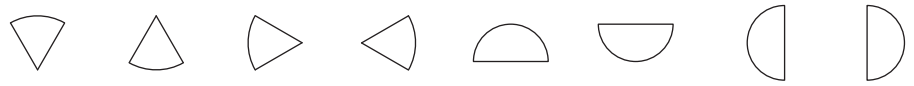
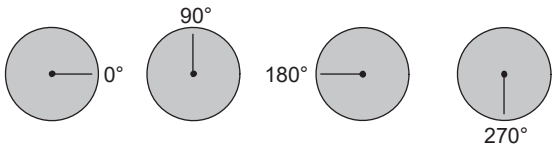
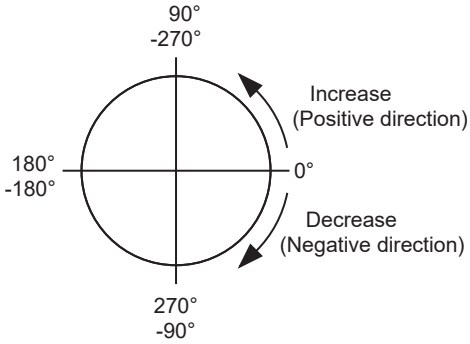
49.5.1 [Device/Style] tab

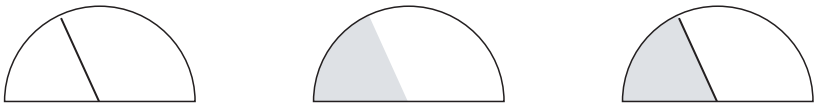
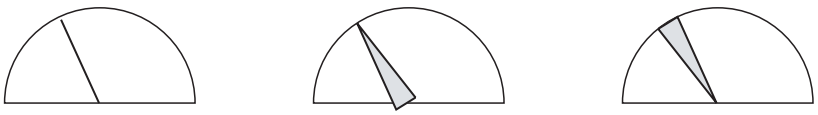
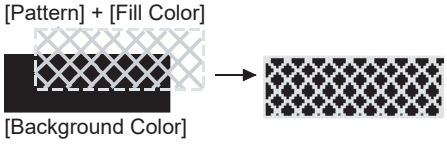
GT37 SoftGOT3000

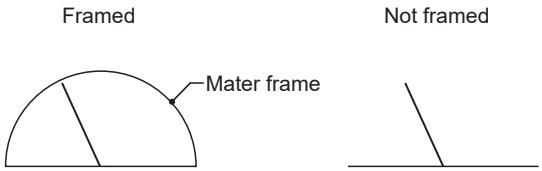
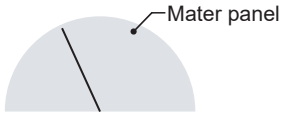
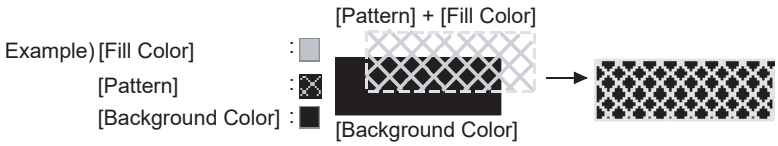
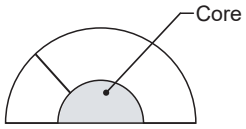
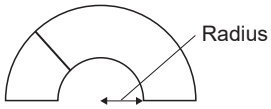
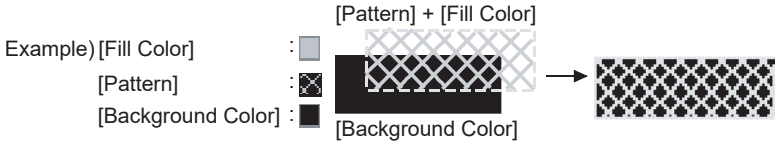
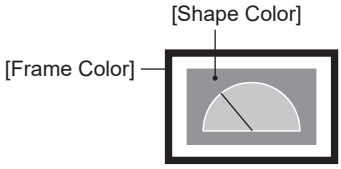
Set the device to be monitored, data type, upper and lower limits of the device value, shape and size of the panel meter, and other display setting items.



Item		Description
1)	[Device]	Set a word device to be monitored. ☞ Page 834 How to set devices, labels, and tags
	[Data Type]	Select the data type of the device.
2)	[Lower Limit] [Upper Limit]	Specify the range of the device value (lower and upper limits). Specify fixed values or devices. Devices can be used to change the values dynamically. ☞ Page 834 How to set devices, labels, and tags The setting ranges for [Lower Limit] and [Upper Limit] differ depending on the item selected for [Data Type].

Item			Description
3)	[Type]	-	Select a shape for the panel meter. When a shape is selected, the [Beginning Angle] and [End Angle] are automatically set. To set an irregular shape, select [Custom] and set angles to [Beginning Angle] and [End Angle]. [Top 1/6] [Bottom 1/6] [Left 1/6] [Right 1/6] [Top 1/2] [Bottom 1/2] [Left 1/2] [Right 1/2]  [Top-Left 1/4] [Top-Right 1/4] [Bottom-Left 1/4] [Bottom-Right 1/4] [3/4] [Full Circle]
		[Base Point]	This item is available only when [Full Circle] is selected for [Type]. The base point is the position where the lower limit (upper limit) is indicated. Specify the base point angle of the meter with the 3 o'clock position as the 0-degree position. 
		[Direction]	Select the direction in which the value increases.
		[Beginning Angle] [End Angle]	Set the beginning and end angles of the panel meter in units of 0.1 degrees, with the 3 o'clock position as the 0-degree position. The setting range is [-360.0] degrees to [360.0] degrees. The value decreases clockwise and increases counterclockwise. You can specify a clockwise or counterclockwise angle. 

Item			Description
4)	[Meter Attribute]	-	Select the method of indicating the device value. [Needle] [Fill] [Needle and Fill] 
		[Needle Shape]	When selecting [Needle] or [Needle and Fill] for [Meter Attribute], set the needle shape. [Straight Line] [Triangle] [Inverted Triangle] 
		[Base Width]	When [Triangle] or [Inverted Triangle] is selected for [Needle Shape], set the base width of the triangle. The setting range is [3] dots to "the meter radius" (dots). Specify an odd number value. When [Base Width] is set to [3] dots When [Base Width] is set to [15] dots
		[Needle Color]	When selecting [Needle] or [Needle and Fill] for [Meter Attribute], set the needle color.
		[Distance from the Axis]	When [Needle] or [Needle and Fill] is selected for [Meter Attribute], set the distance from the meter center to the drawing start position of the needle. The setting range is [0] (dots) to "the meter radius -2" (dots). When [Distance from the Axis] is set to [0] dots When [Distance from the Axis] is set to [15] dots
		[Fill Color] [Pattern] [Background Color]	When [Fill] or [Needle and Fill] is selected for [Meter Attribute], select a fill color, pattern, and background color. The pattern is displayed in the fill color on the colored background. When [None] is selected for [Patten], [Background Color] is not available. [Pattern] + [Fill Color] Example) [Fill Color] : [Pattern] : [Background Color] : [Background Color] 

Item			Description
5)	[Meter Frame]	-	Select this item to frame the meter. The meter frame is displayed as a white line with a width of 1 dot. This cannot be changed. 
		[Meter Panel]	This item is available when [Meter Frame] is selected. Select this item to color the panel meter surface.  When selecting this item, configure the following settings.
		[Fill Color] [Pattern] [Background Color]	Set a fill color, pattern, and background color. The pattern is displayed in the fill color on the colored background. When [None] is selected for [Patten], [Background Color] is not available. 
6)	[Core]	-	Select this item to color the core of the panel meter.  When selecting this item, configure the following settings.
		[Radius]	Set the radius of the core. The setting range is [1] (dot) to "the meter radius -1" (dots). 
		[Fill Color] [Pattern] [Background Color]	Set a fill color, pattern, and background color. The pattern is displayed in the fill color on the colored background. When [None] is selected for [Patten], [Background Color] is not available. 
7)	[Shape]	-	Set a shape to be placed on the background of the panel meter. Use this item to frame the panel meter or for other purposes. Then, a separate shape for the frame is unnecessary and the frame is automatically resized according to the size of the object. To use a readily available design set, select one from the list box. When not selecting one from the list box, click the [Shape] button and set one on the displayed [Image List] screen. ☞ Page 1044 Object shape 
		[Frame Color]	Select a frame color.
		[Shape Color]	Select a fill color of the shape.

Item		Description
8)	[Name]	Set the object name. The name is displayed in places such as the data browser and property sheet. The setting can also be changed in other tabs. Up to 100 characters can be entered.

49.5.2 [Scale/Text] tab

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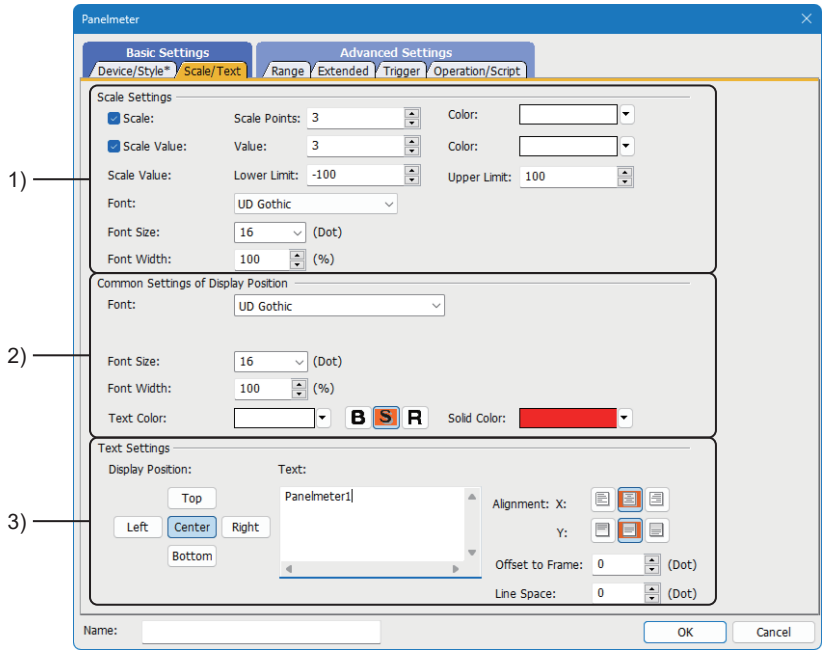
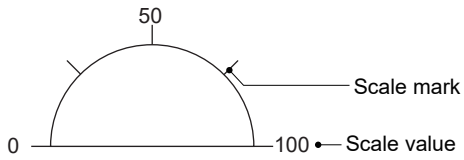
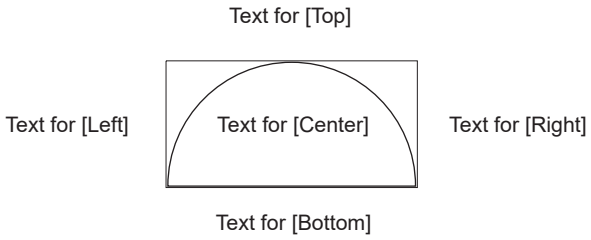
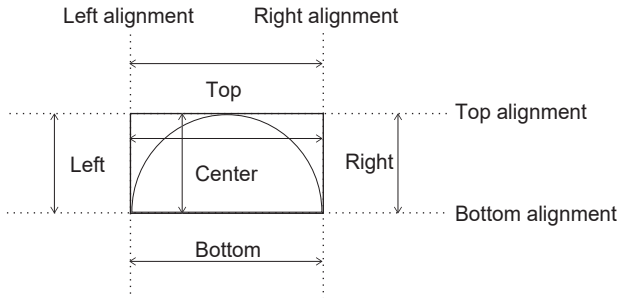
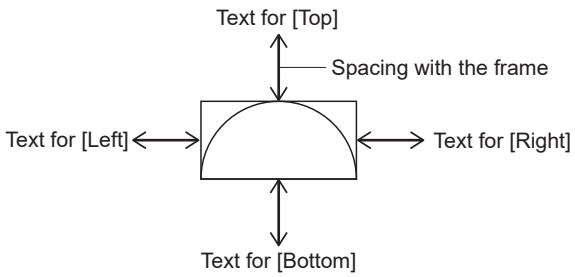
Configure the scale mark display settings, scale value display settings, and other settings of items displayed on the panel meter such as text.





Item				Description
1)	[Scale Settings]	[Scale]	-	Select this item to display the scale marks. When selecting this item, configure the following settings.
			[Scale Points]	Set the number of scale marks. The setting range is [2] to [101].
			[Color]	Set the color of the scale marks. ☞ Page 988 Color settings
		[Scale Value]	-	Select this item to display numerical values on the scale. When selecting this item, configure the following settings.
			[Value]	Set the number of scale values to be displayed. The setting range is [2] to [101].
			[Color]	Set the color of the scale values. ☞ Page 988 Color settings
			[Lower Limit] [Upper Limit]	Set the upper and lower limits of the scale value. The setting range depends on the setting of [Data Type] in the [Device/Style] tab. The setting range of 64-bit devices is the same as that of 32-bit devices. When [Upper Limit], [Lower Limit], and [Value] are set, the scale values are automatically calculated and displayed.
			[Font]	Select a font for the scale values.
			[Font Size]	Set the vertical size of the scale values. The setting range is [8] dots to [540] dots.
			[Font Width]	Set the horizontal size of the scale values. The horizontal size is specified with the magnification relative to [Font Size] (vertical text size). The setting range is [6]% to [1600]%. Note that the size per character is always within the range of [8] dots to [540] dots.

Item				Description
2)	[Common Settings of Display Position]	—		To display a text string at the top and bottom, on the left and right, and in the center of the panel meter, configure the settings common to all the positions. 
		[Font]		Select the text font. When a Windows font is selected, italicizing and underlining text are available.
		[Character Set]		When a Windows font is selected for [Font], select a language to be used.
		[Font Size]		Select a text size. The setting range is [8] dots to [540] dots.
		[Font Width]		The horizontal size is specified with the magnification relative to [Font Size] (vertical text size). The setting range is [6]% to [1600]%. Note that the size per character is always within the range of [8] dots to [540] dots.
		[Text Color]		Set the color and style of the text. Only one style ([Bold], [Solid], or [Raised]) is settable. When selecting [Solid] or [Raised], set the color of the shadow.
3)	[Text Settings]	[Display Position]	—	Set [Text], [Alignment], [Offset to Frame], and [Line Space] for each display position. After selecting a display position of the text for [Display Position], set the following items.
			[Text]	Enter the text to be displayed. Up to 1024 characters can be set. Use the Enter key to insert a line feed. A line feed is counted as two characters.
			[Alignment]	Set the text position relative to the panel meter display area. 
			[Offset to Frame]	This setting is invalid when [Center] is selected for [Display Position]. Set the space between the object frame and the text. The setting range is [0] dots to [100] dots. 
			[Line Space]	Set the space between lines. The setting range is [0] dots to [128] dots.

49.5.3 [Range] tab

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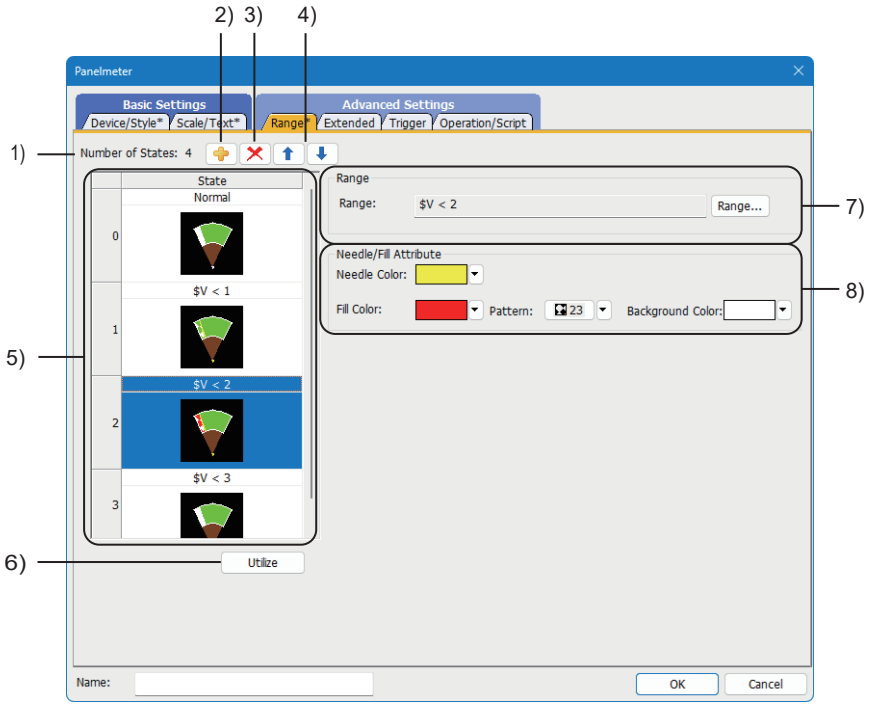
You can set conditions so that the needle color and the fill color will change according to the device value.
For example, set a condition so that the fill color will change to red when the device value is equal to or greater than [100] to alert the operator.
For the conditions, refer to the following.
☞ Page 1038 Control with conditions



Item			Description
1)	[Number of States]		The number of the set conditions
2)	Add button		Adds a new condition.
3)	Delete button		Deletes the selected condition.
4)	Up button, down button		Changes the priority order of the conditions in the preview list.
5)	Preview list		Displays the set conditions.
6)	[Utilize] button		Utilizes the selected condition to create a new condition.
7)	[Range]	[Range]	Set the applicable range of the condition selected in the preview list. Click the [Range] button, and set the conditional expression in the [Edit Range] dialog. ☞ Page 1038 Control with conditions
8)	[Needle/Fill Attribute]	[Needle Color]	This item is available when [Needle] or [Needle and Fill] is selected for [Meter Attribute] in the [Device/Style] tab. Set the color of the needle.
		[Fill Color] [Pattern] [Background Color]	This item is available when [Needle] or [Needle and Fill] is selected for [Meter Attribute] in the [Device/Style] tab. Set a fill color, pattern, and background color of the panel meter surface. The pattern is displayed in the fill color on the colored background. When [None] is selected for [Patten], [Background Color] is not available. Example) [Fill Color] : [Pattern] : [Background Color] : [Pattern] + [Fill Color] [Background Color]

49.5.4 [Extended] tab

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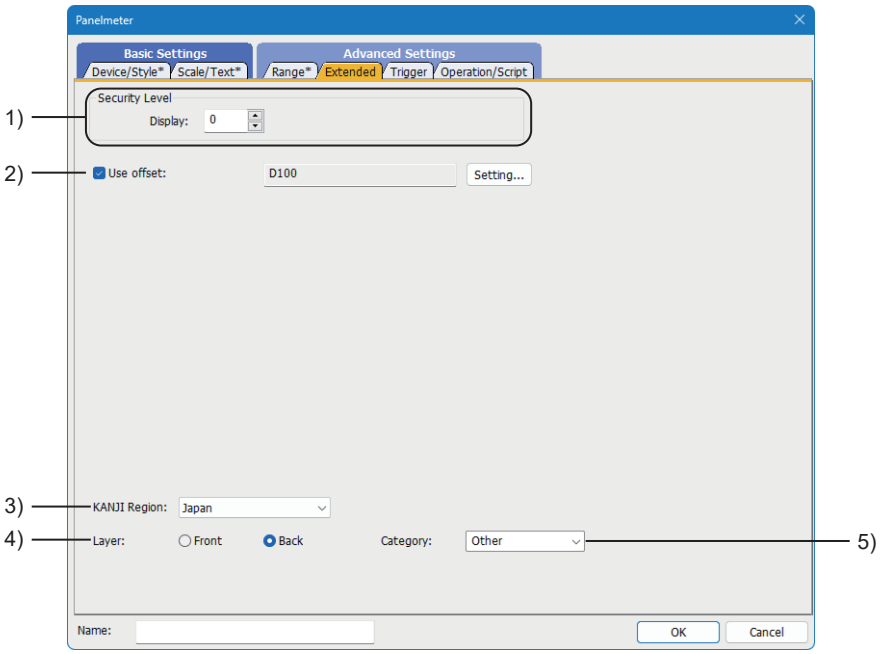
Set the security level of the object, use/nonuse of the offset function, KANJI region, layer for placing the object, and others.



Item		Description
1)	[Security Level]	Set the security level. The setting range is [0] to [15]. If you do not use the security function of the GOT, select [0]. ☞ Page 3038 Restricting display and operation on the GOT (Screen security)
2)	[Use offset]	Configure the settings to monitor the statuses of multiple devices by switching between them with a single device. After selecting this item, set the offset device. The monitored device is the one with the offset device value added to the device set in [Device] in the [Device/Style] tab. ☞ Page 963 Offset
3)	[KANJI Region]	Set the KANJI region. This item is enabled when one of the following items is selected for [Font] in the [Scale/Text] tab. • [UD Gothic] • [UD Mincho] • [UDP Gothic] • [UDP Mincho] ☞ Page 76 KANJI region
4)	[Layer]	Select the layer to place the object. ☞ Page 65 Layer
5)	[Category]	Select the category to assign the object. ☞ Page 1121 Managing figures and objects by category

49.5.5 [Trigger] tab

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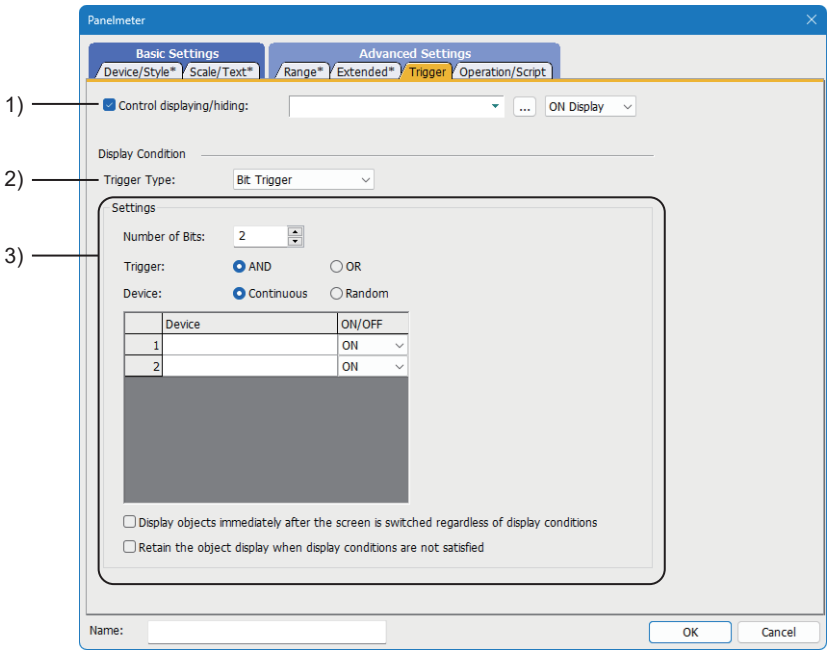
Set the trigger condition to display the object.



Item		Description
1)	[Control displaying/hiding]	Enables the setting to display the object only when requirements are met. Set the following as requirements. • Control device (bit device or bit-specified word device) • When to display: When the control device is on or off
2)	[Trigger Type]	Select a trigger condition to display the object. For details on the trigger types, refer to the following. ☞ Page 969 Trigger types settable for the object display condition
3)	[Settings]	For the settings of each item, refer to the following. ☞ Page 972 Settings by trigger type

49.5.6 [Operation/Script] tab

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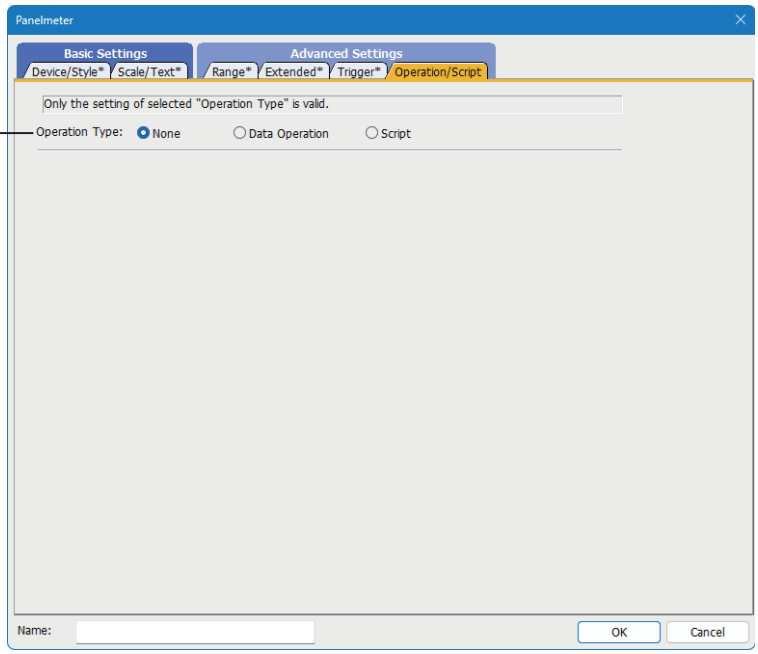
Set whether to perform an operation or a script with the device value handled by the object.



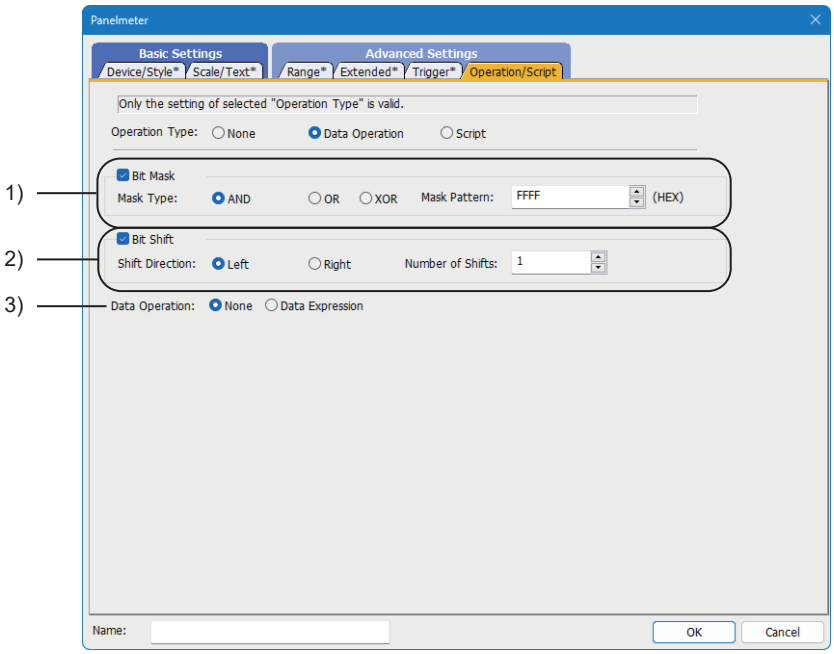
Item			Description
1)	[Operation Type]	[None]	The data operation function and the script function are not used.
		[Data Operation]	Set the expression used for the data operation function. For the setting method, refer to the following. ☞ Page 1794 [Data Operation]
		[Script]	Set the expressions for the script function. For the setting method, refer to the following. ☞ Page 1795 [Script]

PART 7

[Data Operation]

For details on the data operation settings, refer to the following.

☞ Page 1053 How to set the data operation

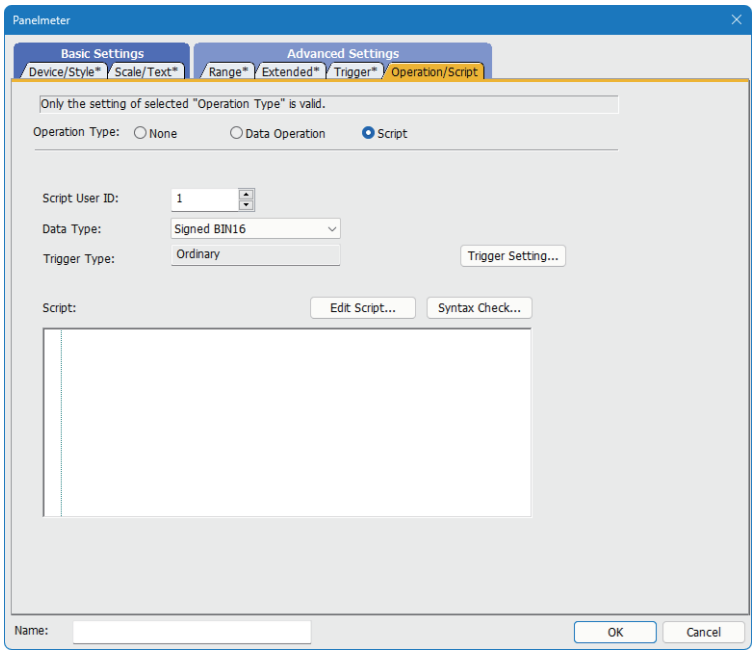


Item			Description
1)	[Bit Mask]	—	Set the operation of mask processing.
		[Mask Type]	Select the type of mask processing. The following shows selectable items. • [AND]: Logical AND • [OR]: Logical OR • [XOR]: Exclusive OR
		[Mask Pattern]	Set a pattern value to mask in hexadecimal. The setting range depends on the setting of [Data Type] in the [Device] tab.
2)	[Bit Shift]	—	Set the operation of shift processing.
		[Shift Direction]	Select a shifting direction.
		[Number of Shifts]	Set the number of bits to be shifted. The setting range depends on the setting of [Data Type] in the [Device] tab.
3)	[Data Operation]	—	Performs the data operation using the value stored in the monitored device. The panel meter indicates the value after the operation.
		[None]	Does not perform the data operation.
		[Data Expression]	Performs the data operation. Click the [Exp] button to set an expression in the [Edit Data Expression] dialog. ☞ Page 1054 [Edit Data Expression] dialog

[Script]

For details on the script settings, refer to the following.

☞ Page 2447 Object script



■Relationship between the object settings and object properties

Object settings can be read (referenced) or written (changed) using object properties.

The following shows the correspondence between readable/writable object properties and the setting items in the object setting dialog.

○: Available

×: Not available

—: No applicable setting item

Setting dialog		Object property			
Tab name	**Setting item**	**Property name**	**Read**	**Write**	**Timing for reflecting the setting change*1**
—	—	active	○	○	Upon the setting change
		x	○	○	When the screen is updated
		y	○	○	When the screen is updated
		width	○	×	×
		height	○	×	×
[Device/Style]	[Needle Color]	graph_color	○	○	When the object is updated
	[Frame Color]	frame_color	○	×	×
	[Plate Color]	plate_color	○	○	When the object is updated
	[Fill Color]	fill_color	○	○	When the object is updated
	[Pattern]	fill_pattern	○	○	When the object is updated
	[Background Color]	fill_bg_color	○	○	When the object is updated
	Meter Panel [Fill Color]	back_color	○	○	When the object is updated
	Meter Panel [Pattern]	pattern	○	○	When the object is updated
	Meter Panel [Background Color]	pattern_bg_color	○	○	When the object is updated
	Core [Fill Color]	core_color	○	○	When the object is updated
	Core [Pattern]	core_pattern	○	○	When the object is updated
	Core [Background Color]	core_bg_color	○	○	When the object is updated
[Scale/Text]	[Lower Limit]	scale_min[0]	○	○	When the screen is updated
	[Upper Limit]	scale_max[0]	○	○	When the screen is updated
[Extended]	[Security Level]	security	○	○	When the object is updated

*1 For information on how long it takes for object property settings to be reflected on the screen, refer to the following page.

☞ Page 2456 Timing at which the setting change of an object property is reflected

50 Placing a slider

☞ Page 1797 Overview of the slider
☞ Page 1799 How to use the slider
☞ Page 1800 Specifications of the slider
☞ Page 1801 Setting the slider
☞ Page 1802 [Slider] dialog

50.1 Overview of the slider

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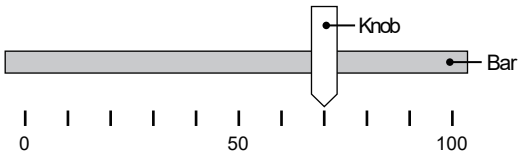
The slider is an object used to display the range of the device value with a bar. The current value of the device is indicated with the knob on the bar.
The slider has the following two functions.
☞ Page 1797 Indicating the current value of the device
☞ Page 1798 Writing the value to the device

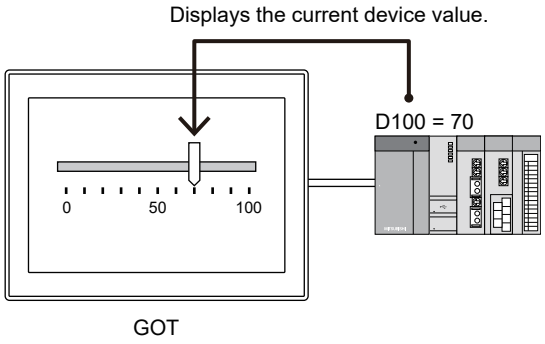
Ex.
A slider with the device value ranging from 0 to 100



50.1.1 Indicating the current value of the device

The current value of the monitored device is indicated by the position of the knob on the bar.
The current value of the device is visualized as to where it is positioned within the range.

Ex.
When the slider is used to monitor device [D100]
The slider indicates the value [70] of the PLC device [D100].



PART 7

50.1.2 Writing the value to the device

Write the value indicated by the knob to the monitored device.

The value can be entered by simply moving the knob on the bar without using a key window or other methods.

The following two methods are available to move the knob.

- Touch and hold the knob, and slide the knob left or right (up or down).
- Touch the position to which the knob moves within the slider arrangement area.

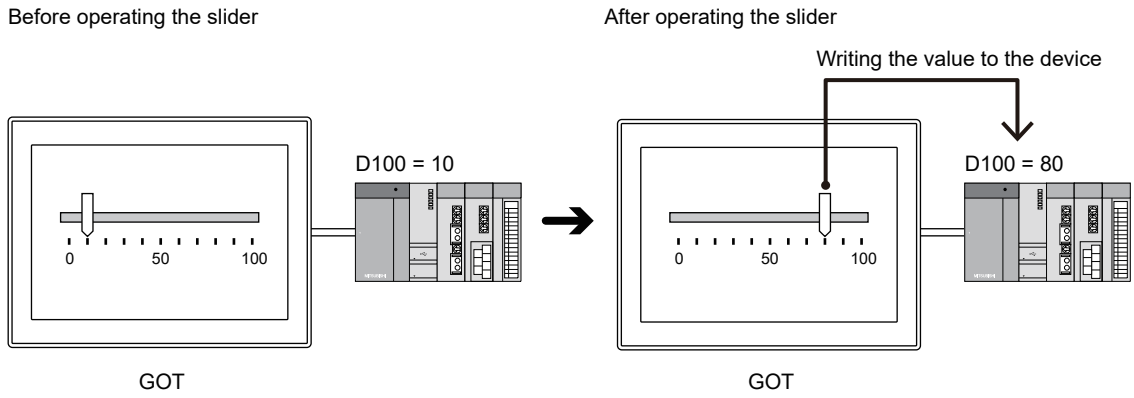
Note that this is not appropriate to specify an exact value.

When setting a slider, you can limit the range of the value to be entered by setting the upper and lower limits on the bar.

Ex.

When the slider is used to monitor device [D100]

When the slider knob is aligned with [80], [80] is written to the PLC device [D100].



50.2 How to use the slider

Set the lower and upper limits of the device value that can be entered and those of the scale value of the slider separately. Doing so enables the following two uses.

☞ Page 1799 Indicating the device value
☞ Page 1799 Indicating the proportion of the total

Indicating the device value

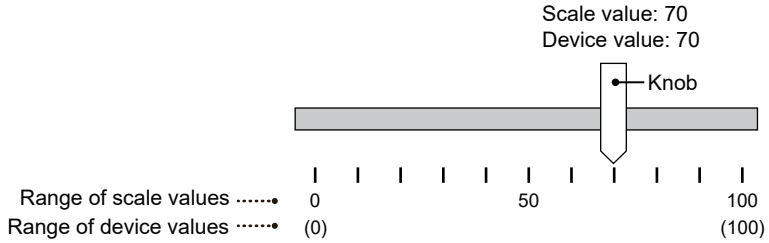
When the lower and upper limits of the device value that can be entered from the slider are matched with those of the scale value, the knob indicates the device value.

Ex.

Range of the device value: 0 to 100

Range of the scale value: 0 to 100

The value pointed to by the knob is the device value.



Indicating the proportion of the total

If the range of the device value and that of the scale value are different, the knob indicates the position relative to the lower and upper limits of the device value.

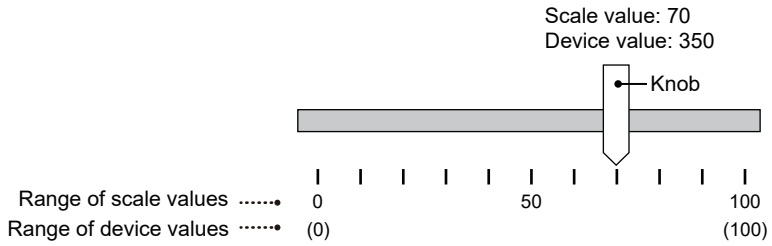
When the knob is moved, the device value is automatically calculated from the position relative to the knob and the value is written to the PLC.

Ex.

Range of the device value: 0 to 500

Range of the scale value: 0 to 100

When the device value is [350], the knob indicates the scale value [70].



Point

The following shows the related setting items.

- [Lower Limit] and [Upper Limit] in the [Device/Style] tab

☞ Page 1802 [Device/Style] tab

- [Lower Limit] and [Upper Limit] in the [Scale] tab

☞ Page 1805 [Scale] tab

50.3 Specifications of the slider

GT37 SoftGOT3000

☞ Page 1800 Maximum number of objects on one screen
☞ Page 1800 Orientation of the slider
☞ Page 1800 Size of the slider

50.3.1 Maximum number of objects on one screen

Up to 1024 sliders can be placed on one screen.

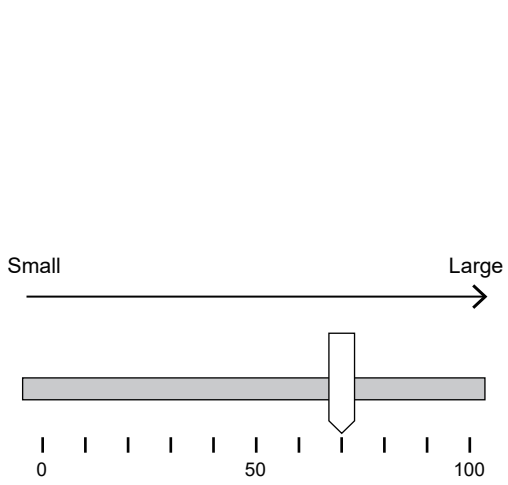
The maximum number of sliders is calculated by subtracting the number of objects other than sliders from 1024.

50.3.2 Orientation of the slider

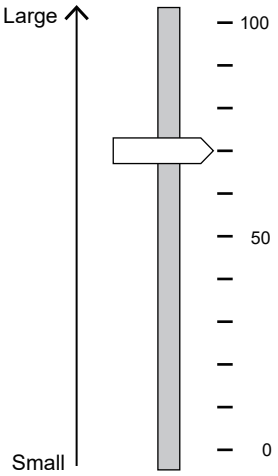
Horizontal sliders and vertical sliders are available.

Scale marks are displayed at the bottom for horizontal sliders and on the right for vertical sliders.

The value is incremented from left to right (bottom to top) by default, which can be reversed.



Horizontal slider



Vertical slider

50.3.3 Size of the slider

The following shows the minimum and maximum slider sizes.

Size		Size (dot)
Minimum	Horizontal orientation	18 (width) × 16 (height)
	Vertical orientation	16 (width) × 18 (height)
Maximum		6000 × 6000

50.4 Setting the slider

GT37 SoftGOT3000

Use the following procedure to place a slider and configure the operation settings.

Operating procedure

1. Select [Object] → [Slider] from the menu and click the intended position to place the slider.

☞ Page 1001 Placing figures and objects

2. Double-click the slider to display the [Slider] dialog.
3. Configure the operation settings in each tab in the [Slider] dialog.

☞ Page 1802 [Slider] dialog

For the operations common to all objects or editing operations except operation settings, refer to the following.

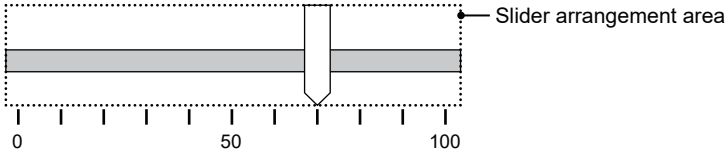
☞ Page 995 Basics of figures and objects

Precautions

■Positions of a slider and an input object

If an input object, such as a touch switch, is near the slider arrangement area, a malfunction may occur when you touch the input object during slider operation.

It is recommended not to arrange any input object in or near the slider arrangement area.



50.5 [Slider] dialog

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☞ Page 1802 [Device/Style] tab
☞ Page 1805 [Scale] tab
☞ Page 1806 [Extended] tab
☞ Page 1807 [Trigger] tab
☞ Page 1808 [Operation] tab

50.5.1 [Device/Style] tab

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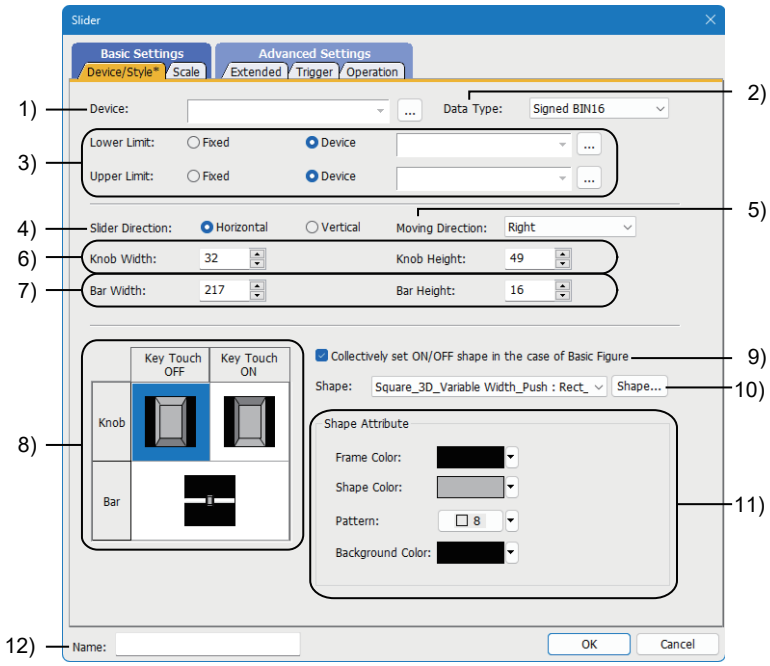
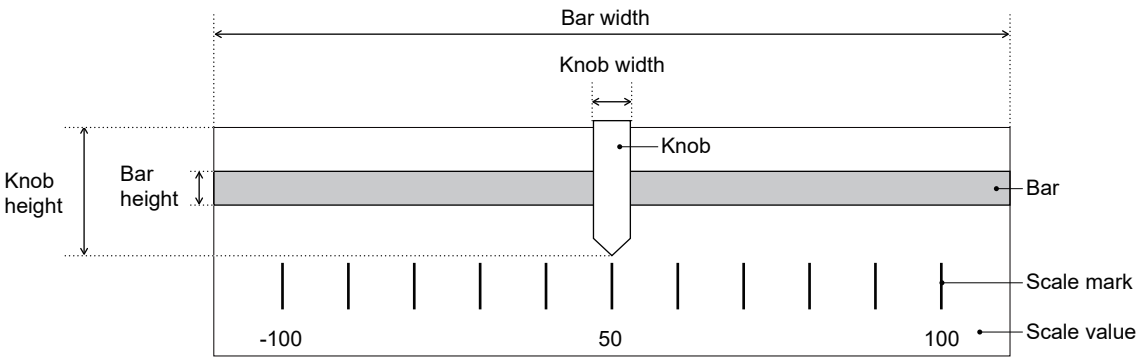
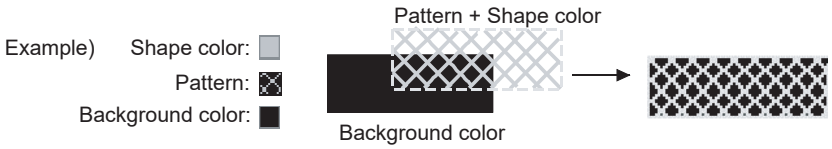
Set the device to be monitored, data type, upper and lower limits of the device value, size and shape of the slider, and other display setting items.





Item		Description
1)	[Device]	Set a word device to be monitored. ☞ Page 834 How to set devices, labels, and tags
2)	[Data Type]	Select the data type of the device.

Item			Description
3)	[Lower Limit] [Upper Limit]		Specify the range of the device value (lower and upper limits). Specify fixed values or use devices to specify the values. Use of devices enables dynamic change of the values. ☞ Page 834 How to set devices, labels, and tags The setting ranges for [Lower Limit] and [Upper Limit] differ depending on the item selected for [Data Type].
4)	[Slider Direction]		Specify the direction in which the slider is operated.
5)	[Moving Direction]		Select the direction in which the value increases. The selectable items depend on the setting for [Slider Direction].
6)	[Knob Width] [Knob Height]		Specify the width and height of the slider knob. For the setting values, refer to the following. ☞ Page 1804 Setting range for [Knob Width] and [Knob Height] When the object is resized on the screen editor, the following settings will be changed accordingly. • [Knob Height] when [Horizontal] is selected for [Slider Direction] • [Knob Width] when [Vertical] is selected for [Slider Direction] When the setting for [Slider Direction] is changed, the values of [Knob Width] and [Knob Hight] are swapped.
7)	[Bar Width] [Bar Height]		Set the width and height of the slider bar. For the setting values, refer to the following. ☞ Page 1804 Setting range for [Bar Width] and [Bar Height] When the object is resized on the screen editor, the following settings will be changed accordingly. • [Bar Width] when [Horizontal] is selected for [Slider Direction] • [Bar Height] when [Vertical] is selected for [Slider Direction] When the setting for [Slider Direction] is changed, the values of [Bar Width] and [Bar Hight] are swapped.
8)	Preview list		The display of the knob and bar can be checked with the preview.
9)	[Collectively set ON/OFF shape in the case of Basic Figure]		This item is displayed when [Basic Figure] is selected on the [Image List] screen that appears when the [Shape] button is clicked. Select this item to use the same knob shape for when the key touch is ON and OFF.
10)	[Shape]		Set the design of the knob and bar. To use the readily available design set, select a design from the list box. To set the shape for the knob and for the bar individually, do so on the [Image List] screen that appears when the [Shape] button is clicked. ☞ Page 1044 Object shape
11)	[Shape Attribute]	—	Set the shape color.
		[Frame Color]	Select a frame color.
		[Shape Color] [Pattern] [Background Color]	Select a shape color, pattern, and background color. The pattern is displayed in the shape color on the colored background. When [None] is selected for [Patten], [Background Color] is not available. 
12)	[Name]		Set the object name. The name is displayed in places such as the data browser and property sheet. The name is changeable on the other tabs as well. Up to 100 characters can be entered.

Setting range for [Knob Width] and [Knob Height]

The following shows the settable values for [Knob Width] and [Knob Height].

Item	[Slider Direction]	Setting range (dot)
[Knob Width]	[Horizontal]	[16] to [5998]
	[Vertical]	[16] to [6000]
[Knob Height]	[Horizontal]	[16] to [6000]
	[Vertical]	[16] to [5998]

Setting range for [Bar Width] and [Bar Height]

The following shows the settable values for [Bar Width] and [Bar Height].

Item	[Slider Direction]	Setting range (dot)
[Bar Width]	[Horizontal]	[18] to [6000]
	[Vertical]	[4] to [6000]
[Bar Height]	[Horizontal]	[4] to [6000]
	[Vertical]	[18] to [6000]

50.5.2 [Scale] tab

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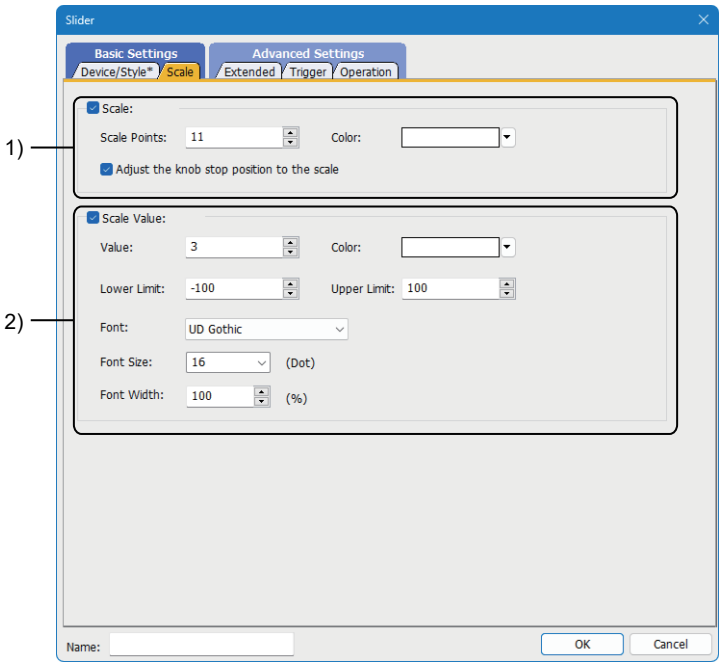
Configure the scale mark display settings, knob stop position settings, and scale value display settings for the slider.

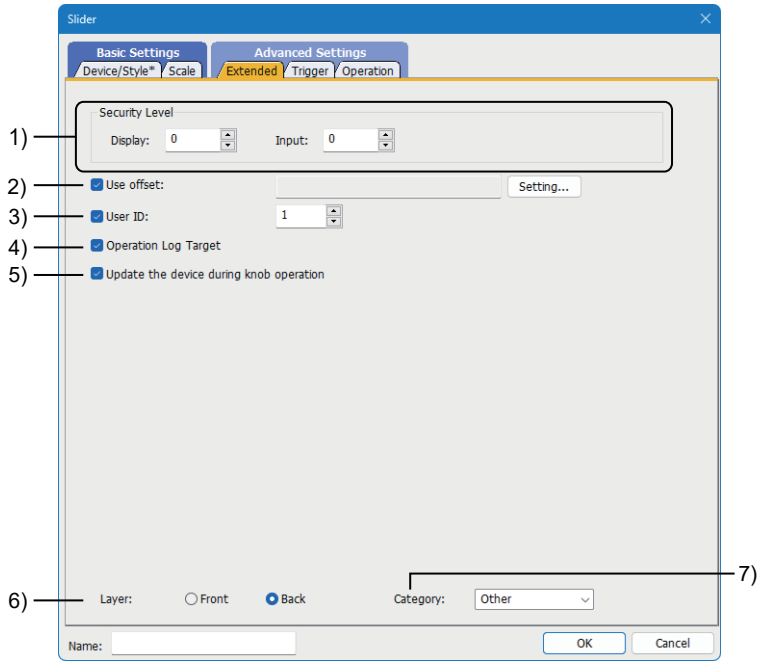


Item			Description
1)	[Scale]	—	Select this item to display the scale marks. When this item is selected, the following items are available.
		[Scale Points]	Set the number of scale marks. The setting range is [2] to [101].
		[Color]	Set the color of the scale marks. ☞ Page 988 Color settings
		[Adjust the knob stop position to the scale]	Select this item to stop the knob at a scale mark when sliding the knob. If this item is deselected, the knob can be slid in units of minimum movement. Even if this item is selected, the knob stop position cannot be aligned with a scale mark when both of the following conditions apply. • The data type is not a real number. • (Upper limit of monitor device - Lower limit of monitor device + 1) < Number of scale points
2)	[Scale Value]	—	Select this item to display numerical values on the scale. When this item is selected, the following items are available.
		[Value]	Set the number of scale values to be displayed. The setting range is [2] to [101].
		[Color]	Set the color of the scale values. ☞ Page 988 Color settings
		[Lower Limit] [Upper Limit]	Specify the lower limit and upper limit of scale values. The setting range depends on the setting of [Data Type] in the [Device/Style] tab. The setting range of 64-bit devices is the same as that of 32-bit devices.
		[Font]	Select a font for the scale values.
		[Font Size]	Set the vertical size of the scale values. The setting range is [8] dots to [540] dots.
		[Font Width]	Set the horizontal size of the scale values. The horizontal size is specified with the magnification relative to [Font Size] (vertical text size). The setting range is [6]% to [1600]%. Note that the size per character does not exceed [8] dots to [540] dots.

50.5.3 [Extended] tab

GT37 SoftGOT3000

Set the security level of the object, use/nonuse of the offset function, the user ID, the layer on which the object is placed, and other items. Also, set the target operations for the operation log.

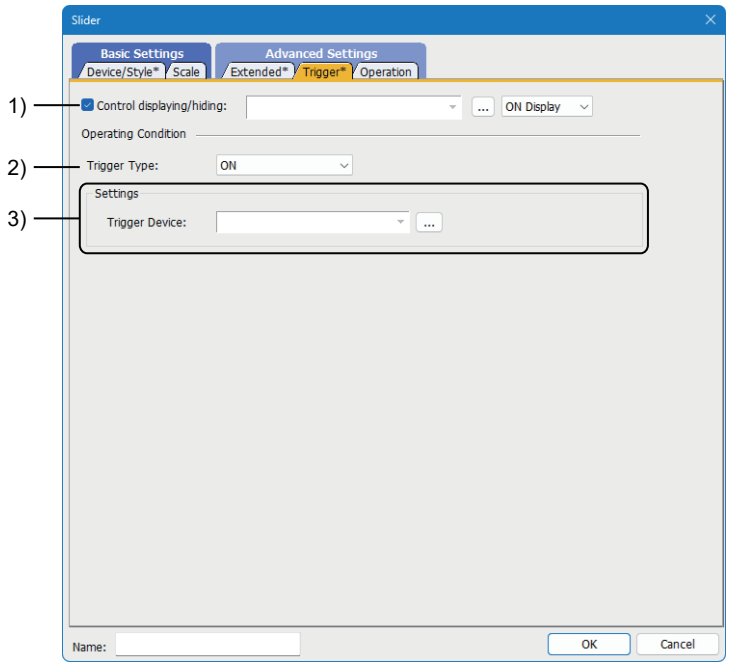


Item		Description
1)	[Security Level]	Set the security level. The setting range is [0] to [15]. If you do not use the security function of the GOT, select [0]. ☞ Page 3038 Restricting display and operation on the GOT (Screen security)
2)	[Use offset]	Configure the settings to monitor the statuses of multiple devices by switching them with a single device. Select this item, and set an offset device. The monitored device is the one with the offset device value added to the device set in [Device] in the [Device/Style] tab. ☞ Page 96 Offset
3)	[User ID]	Select this item to set the user ID. The setting range is [1] to [65535]. Setting the user ID enables you to identify the objects used in the operation logs. ☞ Page 1909 Configuring the settings for collecting the GOT operation history ([Operation Log])
4)	[Operation Log Target]	Targets the object for the operation log. ☞ Page 1909 Configuring the settings for collecting the GOT operation history ([Operation Log])
5)	[Update the device during knob operation]	When this item is selected, the value of the slider is immediately reflected in the device data even while the knob is being moved. If this item is deselected, the value at the time the knob is released is reflected in the device data.
6)	[Layer]	Select the layer to arrange the object on. ☞ Page 65 Layer
7)	[Category]	Select a category to assign the object. ☞ Page 1121 Managing figures and objects by category

50.5.4 [Trigger] tab

GT37 SoftGOT3000

Set the condition to display the object and to operate the object.



Item		Description
1)	[Control displaying/hiding]	Enables the setting to display the object only when requirements are met. Set the following as requirements. • Control device (bit device or bit-specified word device) • When to display: When the control device is on or off
2)	[Trigger Type]	Set the condition to operate the object. For details of the trigger type, refer to the following. ☞ Page 969 Trigger types settable for the object display condition
3)	[Settings]	For details of each item, refer to the following. ☞ Page 972 Settings by trigger type

Precautions

When either of the following conditions is not satisfied, the slider operation stops and writing a value to the device is not performed.

- Condition to display the object (applies to 1) mentioned above)
- Condition to operate the object (applies to 2) mentioned above)

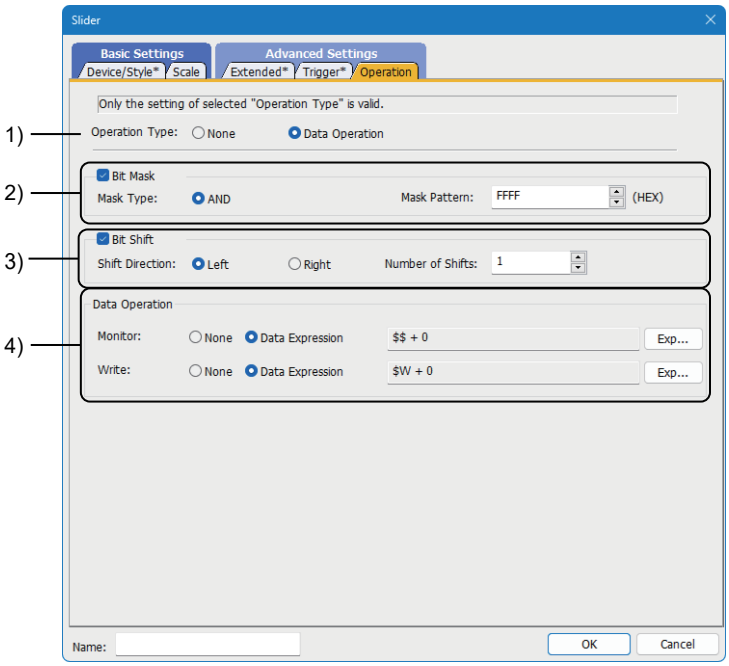
Therefore, the value written to the device may differ from the value of the knob stop position during slider operation.

PART 7

50.5.5 [Operation] tab

GT37 SoftGOT3000

Set whether to perform an operation with the device value handled by the object.



Item			Description
1)	[Operation Type]	[None]	Does not use the data operation function.
		[Data Operation]	Set the expression for the data operation function. ☞ Page 1049 Data operation
2)	[Bit Mask]	—	Set the operation of mask processing. This setting is invalid when the setting of [Data Type] is a real number.
		[Mask Type]	Fixed to [AND] (logical AND).
		[Mask Pattern]	Set a pattern value to mask in hexadecimal. The setting range depends on the setting of [Data Type] in the [Device/Style] tab.
3)	[Bit Shift]	—	Set the operation of shift processing. This setting is invalid when the setting of [Data Type] is a real number.
		[Shift Direction]	Select a shifting direction.
		[Number of Shifts]	Set the number of bits to be shifted. The setting range depends on the setting of [Data Type] in the [Device/Style] tab.
4)	[Data Operation]	—	Set the format of the expression.
		[Monitor]	The data operation is performed with the value stored in the monitored device. The slider knob indicates the value after the operation. • [None] The data operation is not performed. • [Data Expression] The data operation is performed. Click the [Exp] button to set an expression in the [Edit Data Expression] dialog. ☞ Page 1054 [Edit Data Expression] dialog
		[Write]	The data operation is performed with the value indicated by the slider knob. The value after the operation is written to the monitored device. • [None] Dose not perform the data operation by using the expression. • [Data Expression] Performs the data operation by using the expression. Click the [Exp] button to set an expression in the [Edit Data Expression] dialog. ☞ Page 1054 [Edit Data Expression] dialog

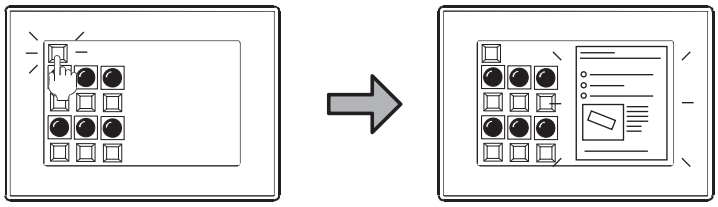
51 Placing a document display

☞ Page 1810 Overview of the document display
☞ Page 1811 Specifications of the document display
☞ Page 1814 Preparation for using Document Converter
☞ Page 1819 How to use the document display (for PDF files)
☞ Page 1821 How to use the document display (for Document Converter output files)
☞ Page 1825 Placing a document display
☞ Page 1827 Operating the document display
☞ Page 1837 [Document Display] dialog
☞ Page 1843 Relevant settings

51.1 Overview of the document display

GT37 SoftGOT3000

The document display object displays documents on the GOT, such as Microsoft Word files converted with Document Converter and PDF files.
With this function, the GOT can display specifications and manuals. Thus, you can utilize the documents for the screen of troubleshooting, or display the documents for the operation during monitoring.



Display the document for the operation of objects such as touch switches on the GOT.

51.2 Specifications of the document display

GT37 SoftGOT3000

The following shows the specifications of the document display.

☞ Page 1811 Usable document type
☞ Page 1811 Usable drive
☞ Page 1811 Document ID
☞ Page 1812 Displaying a cached document
☞ Page 1812 Maximum number of objects on one screen
☞ Page 1812 Number of objects that can be displayed at one time
☞ Page 1812 Displaying the [Search] or [Bookmark] window for a PDF file
☞ Page 1812 Precautions

51.2.1 Usable document type

The documents that can be used for the document display are JPEG files converted with Document Converter (hereafter, Document Converter output files) and PDF files.

PDF file

The PDF file under the following conditions is displayed without conversion to JPEG format.

- Any TTF font is embedded in the file.
- No password is required to open the file.

Document Converter output file

JPEG file that is converted from a document in another file format with Document Converter.

The following shows the documents that can be converted to JPEG format with Document Converter.

- Microsoft Word
- Microsoft Excel
- Microsoft PowerPoint
- PDF file
- Image file (JPEG, BMP)

51.2.2 Usable drive

The following shows the drives usable to store the files to be displayed on the document display object.

- Drive A
- Drive B
- Drive E
- Drive F
- Drive G
- Drive X (current drive)

For the available drives by GOT model, refer to the following.

☞ Page 81 Drive configuration and capacity of the GOT

51.2.3 Document ID

ID number that is set for a document to appear on the document display.

The setting range is 1 to 32767.

51.2.4 Displaying a cached document

PDF files are cached to speed up the display of the files on the document display.
A PDF file is cached or a cached PDF file is updated when the file is displayed.
The cached PDF file is stored in the CACHE folder on the drive where the source PDF file is stored.

Precautions

A document cannot be cached to display in the following cases.

- The data storage or file server is write-protected.
- The data storage or file server has insufficient free space.
- The data storage or file server is faulty.
- The Invalidate Cache signal (GS523.b0) is on.

The Cache Invalidated signal (GS276.b1) turns on when the cache is unavailable.

51.2.5 Maximum number of objects on one screen

One document display can be placed on one screen.

51.2.6 Number of objects that can be displayed at one time

One document display can be displayed for each document type at one time.
If the same document type is set for multiple document displays, these document displays cannot be displayed simultaneously.
Regardless of using the overlap window, superimpose window, or set overlay screen, the multiple document displays are unavailable.

51.2.7 Displaying the [Search] or [Bookmark] window for a PDF file

One system window is used for the [Bookmark] or [Search] window operation.
For system windows, refer to the following.
☞ Page 536 Using an overlap window as the system window

51.2.8 Precautions

In the following cases, a document is not displayable on the document display object.
The Document Error signal (GS276.b0) turns on when a document is not displayable.

- The specified file is nonexistent.
- The type of the specified file differs from the set document type.
- The specified file is corrupt.
- No data storage is installed.
- The data storage is unformatted.
- The SD card cover of the GOT is open.
- The SD card access switch of the GOT is turned off.
- A nonexistent document ID number or page number is specified.
- The size of a JPEG file exceeds the size of 1240 dots × 840 dots or 840 dots × 1240 dots.
- The size of a JPEG file converted with Document Converter exceeds 960 KB.
- The specified PDF file is not supported.
- The specified PDF file is password-protected.
- A page in the specified PDF file contains a large image file.

A document that contains a large image file may not be displayed.
Create a PDF file that does not contain a large image file.

- The page size (paper size) of the specified PDF file is large.

Create a PDF file with a reduced page size.

- A page in the specified PDF file contains many figures and objects.

Create a PDF file with reduced number of figures and objects in a page.

51.3 Preparation for using Document Converter

Before using Document Converter, install the following software in the personal computer.

☞ Page 1814 Installing Document Converter
☞ Page 1815 Installing Ghostscript (Free software)
☞ Page 1816 Installing the PostScript printer driver

51.3.1 Installing Document Converter

For information on how to install Document Converter, consult your local sales office.

For information on how to install Document Converter, refer to the following.

📖iQ Works Version 2 Installation Instructions

The following shows the operating environment for Document Converter.

Item	Description
Model	Windows-compatible personal computer
OS (English version)*1*2*3*4*5	• Microsoft Windows 11 Education (64-bit) • Microsoft Windows 11 Enterprise (64-bit) • Microsoft Windows 11 Pro (64-bit) • Microsoft Windows 11 Home (64-bit) • Microsoft Windows 10 Enterprise (32-bit, 64-bit) • Microsoft Windows 10 Pro (32-bit, 64-bit) • Microsoft Windows 10 Home (32-bit, 64-bit)
CPU	• Windows 11: 64-bit compatible processor with dual-core or more or System on a Chip (SoC)*8 • Other than Windows 11: Intel Core 2 Duo Processor 2.0 GHz or more recommended*8
Memory	• For Windows 11: 4 GB or more recommended • For 64-bit OS other than Windows 11: 2 GB or more recommended • For 32-bit OS other than Windows 11: 1 GB or more recommended
Display	Resolution: SVGA (800 × 600 dots) or higher
Hard disk space	• For installation: 10 MB or more • For execution: 100 MB or more recommended*6
Display color	High Color (16 bits) or higher
Other software	To display Help, the following software application must be installed. • Internet Explorer 7 or later recommended
	The following software must be installed. • Ghostscript GPL 9.55 or later (Free software) • PostScript printer driver supplied with Windows*7 • Microsoft Office 2003, Microsoft Office XP, Microsoft Office 2000*7

*1 For installation, the standard user or administrator account is required.
To interact with other MELSOFT applications which are used under the administrator authority, use GT Designer3 under the administrator authority.

*2 The following functions are not supported.
Application start in Windows compatibility mode
Fast user switching
Change your desktop themes (fonts)
Remote desktop
Setting the size of text and illustrations on the screen to any size other than [Small-100%]

*3 Operation is not supported when the text cursor indicator is turned on.

*4 The touch feature is not supported.

*5 Operation in not supported in a virtual environment such as Hyper-V.

*6 For execution, the hard disk space for storing the temporary data in conversion is required.
The required hard disk space is different depending on the document to be converted.
When the conversion fails, increase the hard disk space and convert the document again.

*7 Required to convert a file created with Microsoft Word, Microsoft Excel, or Microsoft PowerPoint.

*8 ARM64 and ARM32 are not supported.

51.3.2 Installing Ghostscript (Free software)

Install Ghostscript GPL9.55 or later.
Download Ghostscript from the following website.
https://www.ghostscript.com/releases/gsdnld.html
Note that the above website may be changed without notification.

Installation procedure

The following shows how to install Ghostscript GPL 9.55 as an example.

Operating procedure

1. Execute the downloaded file.
2. In the setup wizard, click the [Next] button.
3. In the license agreement window, click the [I Agree] button.
4. Select the installation destination, and click the [Install] button to start the installation.

to start the installation.

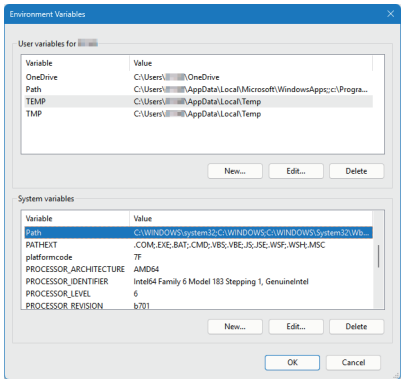
5. In the window notifying the completion of the installation, select options as necessary and click the [Finish] button.

Adding environment variables

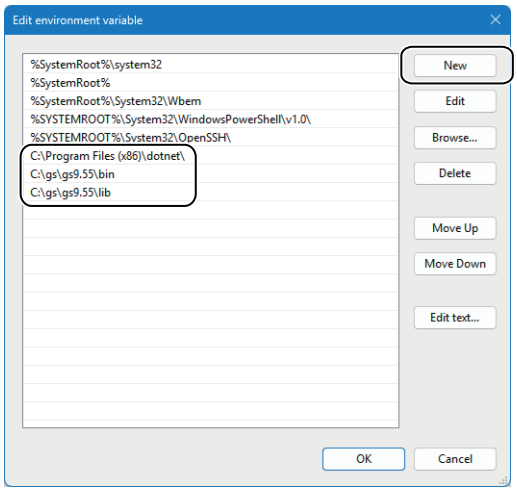
When setting [C:\gs] as the installation destination, add [C:\gs******\bin] and [C:\gs******\lib] to the path of environment variables after the installation is completed.
Input six characters consisting of upper five digits of the installation execution file name and a decimal number to ******.
(For gs9550w64.exe, input gs9.55.)
The following shows the procedure for setting environment variables.

Operating procedure

1. From the Windows start menu, select [All] → [Windows Tools], and double-click [Control Panel] in the displayed [Windows Tools].
2. In the displayed [Control Panel], select [System and Security] → [System].
3. Click [Advanced system settings] beside [Related links].
4. The [Advanced] tab in [System Properties] is displayed. Click the [Environment Variables] button.
5. Select [Path] in [System variables], and then click the [Edit] button.



6. Click the [New] button in the [Edit environment variable] dialog and add the path.
There is no need to add a semicolon (;).



7. Restart the personal computer.

51.3.3 Installing the PostScript printer driver

The following shows how to install the PostScript printer driver supplied with Windows.
For details on the operation of Windows, refer to the manual or help of Windows.

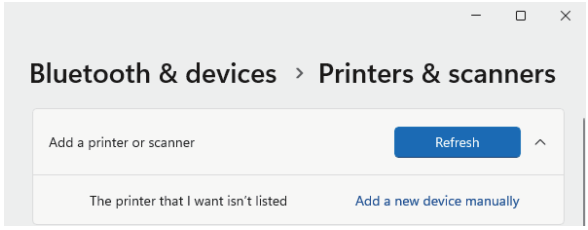
Operating procedure

1. From the Windows start menu, select [All] → [Windows Tools], and double-click [Control Panel] in the displayed [Windows Tools].

2. In the displayed [Control Panel], select [Hardware and Sound] → [Add a printer].

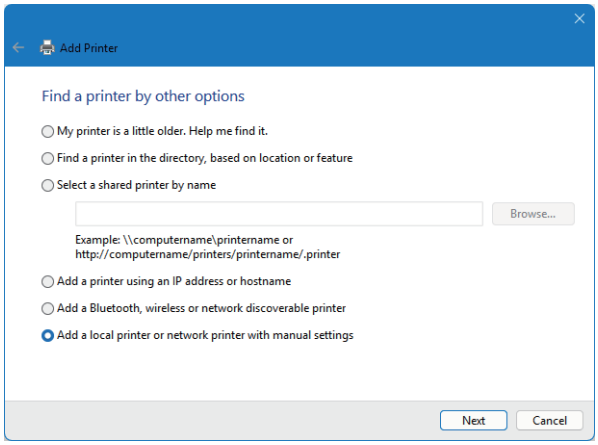
3. Click the [Add a device] button in the upper right of the displayed screen.

4. [Add a new device manually] button appears. Click the button.

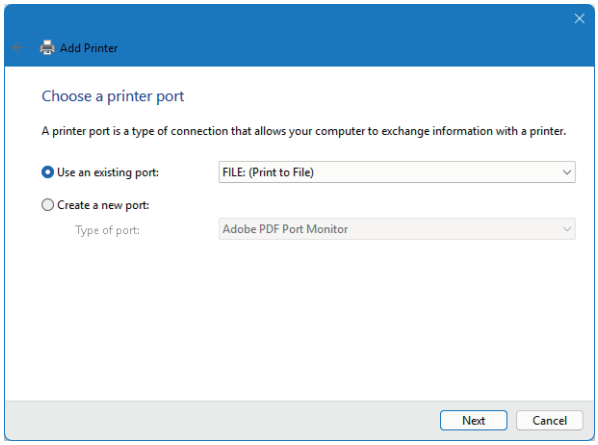


The [Add a printer] dialog appears.

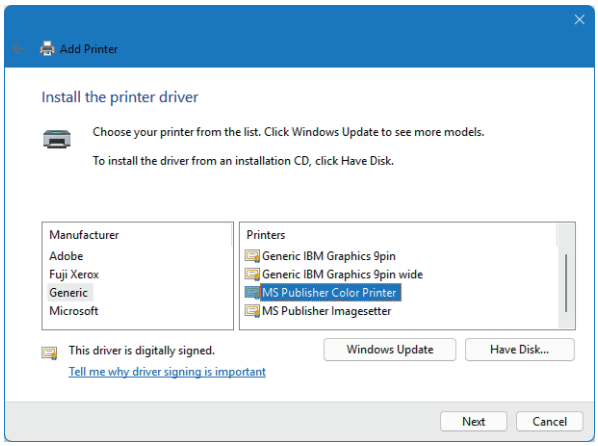
5. Select [Add a local printer or network printer with manual settings], and click [Next].



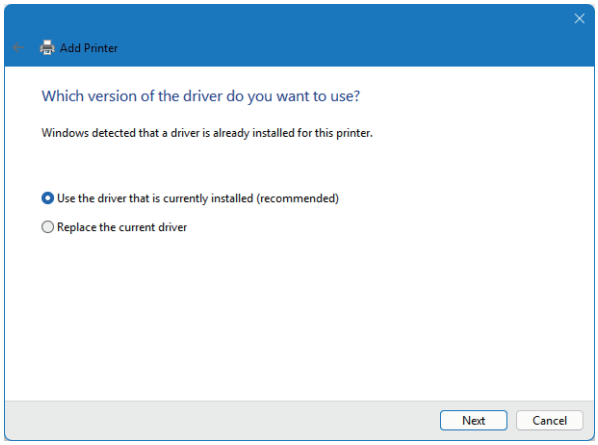
6. Select [FILE: (Print to File)] for [Use an existing port], then click [Next].



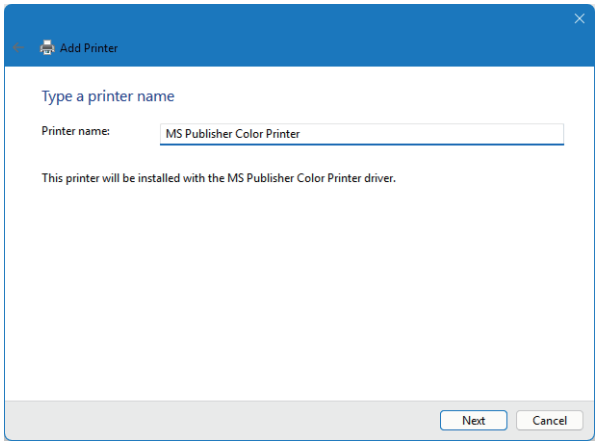
7. Select the PostScript printer driver (manufacturer: Generic, printer: MS Publisher Color Printer) supplied with Windows, then click [Next].



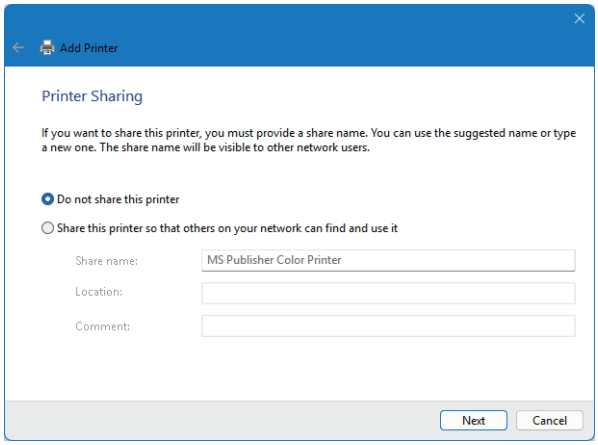
8. Select [Use the driver that is currently installed], then click [Next].



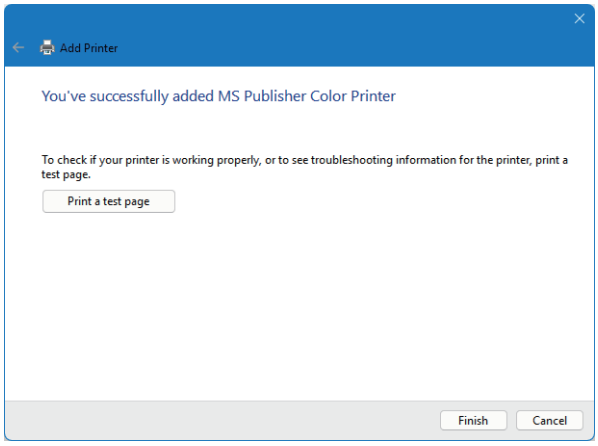
9. Confirm [Printer name], then click [Next].



10. Select [Do not share this printer], then click [Next].



11. Click the [Finish] button.



51.4 How to use the document display (for PDF files)

GT37 SoftGOT3000

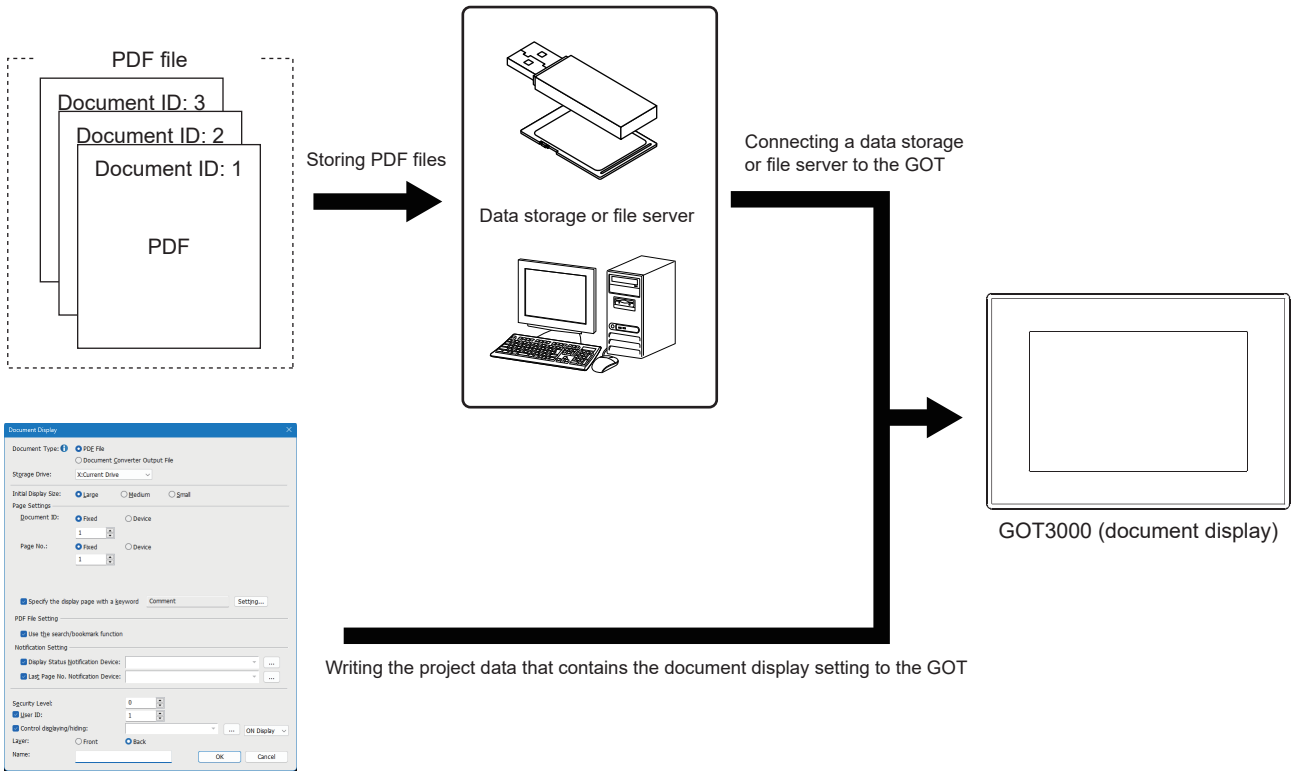
The following shows how to display PDF files on the document display.

☞ Page 1819 Outline of how to display PDF files

☞ Page 1820 Storing files on a data storage or file server

51.4.1 Outline of how to display PDF files

The following outlines how to display PDF files.



GT Designer3 (Object setting)

For details on the operations below, refer to the following.

- Storing PDF files on a data storage or file server

☞ Page 1820 Storing files on a data storage or file server

- Configuring the settings for a document display object with GT Designer3

☞ Page 1837 [Document Display] dialog

51.4.2 Storing files on a data storage or file server

In the root directory of a drive, create a folder named "PDFDAT", and store PDF files in the folder.

Create folders and files in the PDFDAT folder as shown below.

• Document ID setting

According to the hierarchical structure of the folders and files, set a document ID number in each folder name or file name.

A five-digit document ID number is settable.

The setting range is 00001 to 32767.

• Hierarchical structure of the folders and files

To store PFD files, use one of the following hierarchical structures.

If multiple hierarchical structures are used, an unintended PDF file may appear on the document display.

☞ Page 1820 Storing PDF files by document ID number

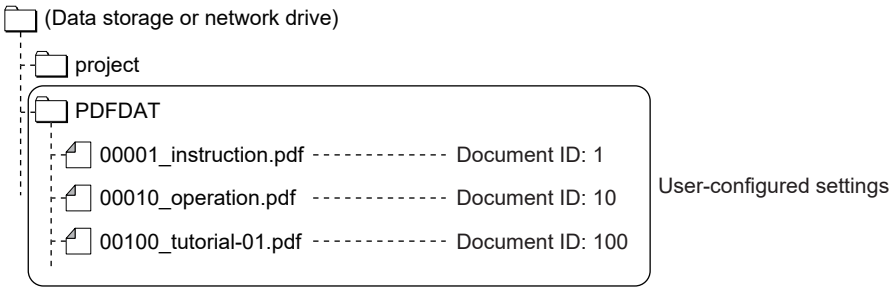
☞ Page 1820 Storing a PDF file to each folder named with a document ID number

Storing PDF files by document ID number

Store the PDF file whose file name includes a document ID number.

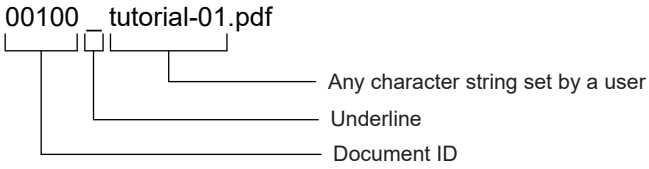
To store multiple PDF files, set a different document ID number for each file name.

• Hierarchical structure of the folders and files



• PDF file name

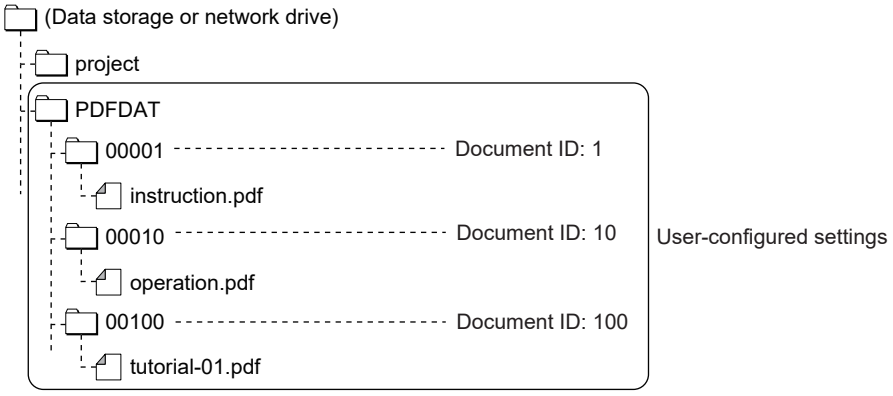
Set a PDF file name that includes a document ID number, an underscore, and user-specified characters as shown below.



Storing a PDF file to each folder named with a document ID number

Create folders named with a different document ID number, and store one PDF file to each folder.

Name the PDF file using user-specified characters.



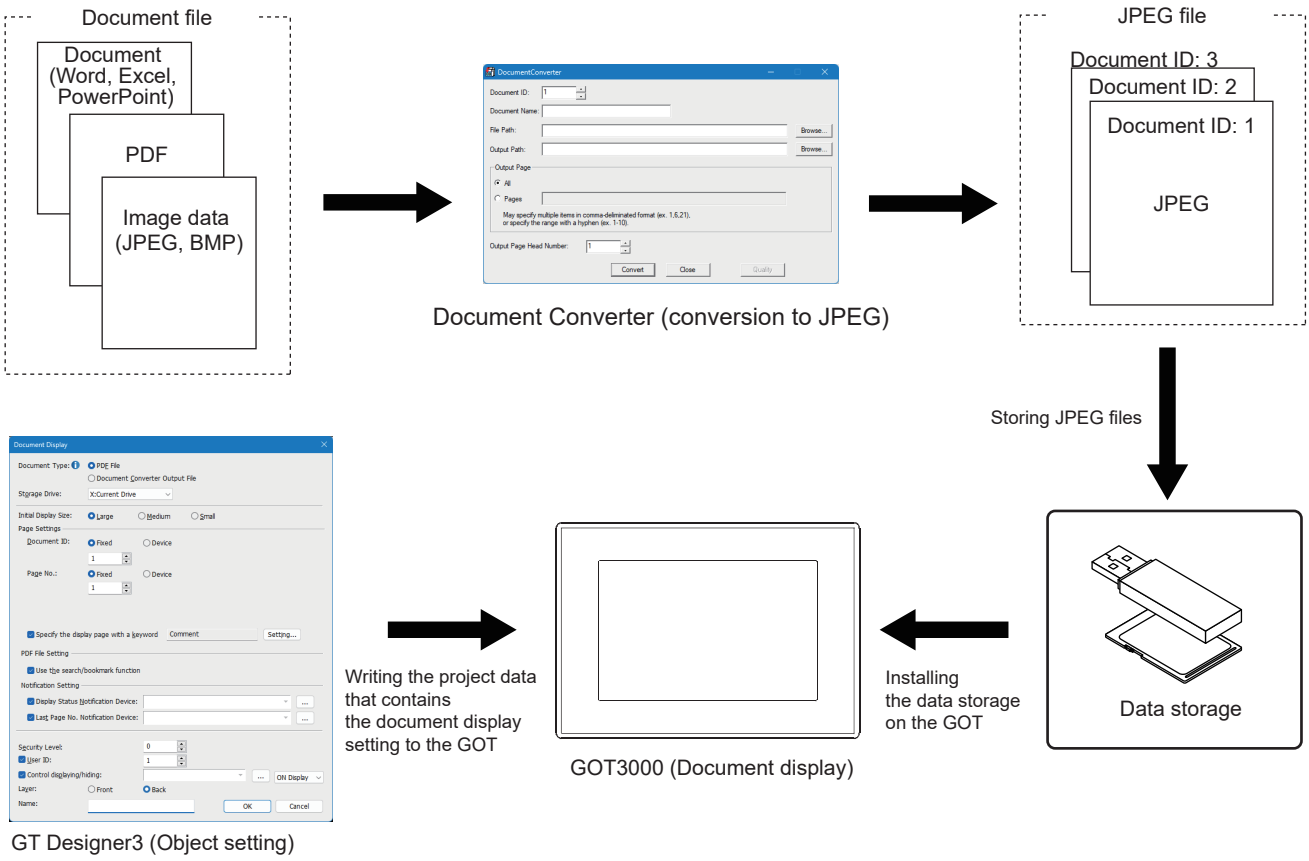
51.5 How to use the document display (for Document Converter output files)

GT37 SoftGOT3000

The following shows how to display Document Converter output files on the document display.

51.5.1 Outline of how to display Document Converter output files

The following outlines how to display Document Converter output files.



For details on the operations below, refer to the following.

- Converting files with Document Converter

☞ Page 1822 Converting documents to JPEG format with Document Converter

- Storing JPEG files to a data storage

☞ Page 1824 Storing JPEG files to a data storage

- Configuring the settings for a document display object with GT Designer3

☞ Page 1825 Placing a document display

☞ Page 1837 [Document Display] dialog

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51.5.2 Converting documents to JPEG format with Document Converter

The following shows how to convert a document to JPEG format with Document Converter.

Conversion procedure

The following shows the conversion procedure.

1. Start Document Converter.

When Ghostscript runs with administrator privileges, use Document Converter with administrator privileges as well.

For information on how to run the software with administrator privileges, refer to the following.

📖Manual and Help for Windows used

The [Document Converter] dialog appears.

2. Configure each setting.

☞ Page 1822 [Document Converter] dialog

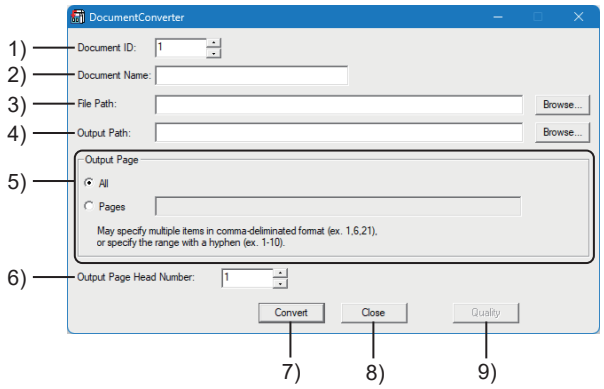
3. After the setting, click the [Convert] button.

The conversion starts.

After the conversion, the JPEG file is created in three sizes (large, medium, small) for each page.

Only the large size (816 dots × 1168 dots) is used for document display.

■[Document Converter] dialog



Item		Description
1)	[Document ID]	Set the document ID for the converted document. The setting range is [1] to [32767].
2)	[Document Name]	Se the name for the converted document. The name is displayed in GT Designer3 (such as the data view or property sheet) and in the operation log. Up to 32 characters can be set.
3)	[File Path]	Clicking the [Browse] button to specify the path name of the file to be converted.
4)	[Output Path]	Set the output destination (path) of the converted file. The following shows the folders and files after the path which can be set. (Output path)\DOCIMG\(Document ID)\(Output size: L, M, or S)\IMG*****.JPG As the output size, L means large, M means medium, and S means small. The string "******" represents a page number. Example) When [Document ID] is set to [1] and the output size is [L] (Output path)\DOCIMG\001\L\IMG00001.JPG
5)	[Output Page]	Set the page to be converted. Set this item when the file to be converted is Word, Excel, PowerPoint, or PDF file.
6)	[Output Page Head Number]	Set the start page number of the pages to be converted. The setting range is [1] to [65535] page(s).
7)	[Convert] button	Starts conversion.
8)	[Close] button	Closes the [Document Converter] dialog.
9)	[Quality] button	Set the image quality of the document. The setting is applied to the converted document. ☞ Page 1823 Quality adjustment procedure

Quality adjustment procedure

The following shows the quality adjustment procedure.

Operating procedure

1. Start Document Converter.

The [Document Converter] dialog appears.

2. Click the [Quality] button.

The [Quality] dialog appears.

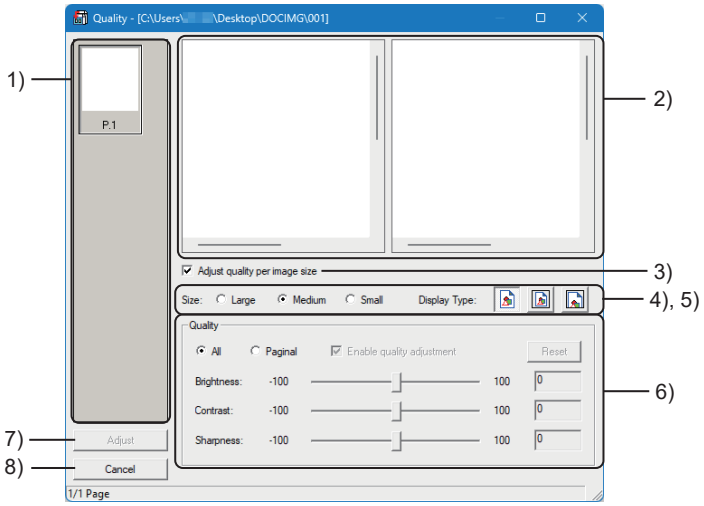
3. Configure each setting.

☞ Page 1823 [Quality] dialog

4. After the setting, click the [Adjust] button.

The [Quality] dialog is closed and the setting of the quality adjustment is completed.

■[Quality] dialog



Item			Description
1)	Page list		Displays the thumbnails for each page. Select the page whose image quality is to be adjusted from this list. When [Paginal] is set for [Quality], select the page.
2)	Preview window		Displays the preview of the image. The preview before the quality adjustment is shown in the left window. The preview after the quality adjustment is shown in the right window.
3)	[Adjust quality per image size]		To adjust the image quality, select this item, then select the intended image size using [Size].
4)	[Size]		Select the image size to be adjusted. For the document display, specify [Large] because only large-size images are used.
5)	[Display Type]		Select a display type at the preview window.
6)	[Quality]	[Reset] button	Set this item to adjust the image quality. Select the method of adjustment. The following shows selectable items. • [All]: Select this item to apply the same adjustment to all pages. • [Paginal]: Select this item to adjust the image quality per page. Select the page to be adjusted from the page list and set [Enable quality adjustment] to adjust the selected page. Clears the setting of [Quality].
		[Brightness]	Set the value of brightness. The setting range is [-100] to [100].
		[Contrast]	Set the value of contrast. The setting range is [-100] to [100].
		[Sharpness]	Set the value of sharpness. The setting range is [-100] to [100].

Item		Description
7)	[Adjust] button	Executes the set quality adjustment. Note that the setting cannot be restored after the execution.
8)	[Cancel] button	Cancels the set quality adjustment and closes the dialog.

51.5.3 Storing JPEG files to a data storage

When a document is converted with Document Converter, the DOCIMG folder is automatically created.

Subfolders for each document ID are created under the DOCIMG folder, where the converted documents are stored.

Copy the entire DOCIMG folder to the root directory of the drive.

Do not change the hierarchical structure of the folders and files in the DOCIMG folder.

Doing so cause the GOT not to recognize the files.

However, since only large-size images are used for the document display, deleting the [M] and [S] folders under each document ID folder does not cause any problems.

51.6 Placing a document display

The following shows how to place the document display (object).

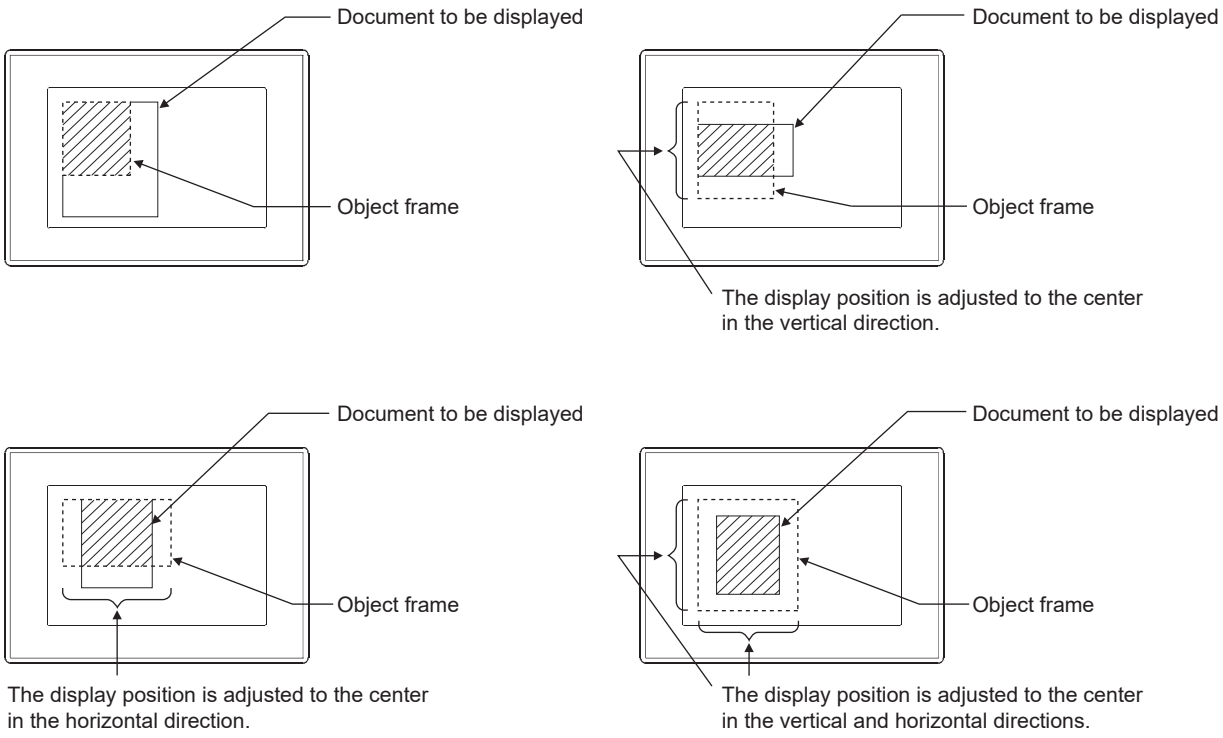
Operating procedure

1. Select [Object] → [Document Display] from the menu.
2. Click the position to place a document display.
3. Double-click the document display which has been placed to display the setting dialog.

☞ Page 1837 [Document Display] dialog

4. Depending on the frame size of the placed document display object and the size of a target file, the display is changed as shown below.

The shaded area is displayed on the GOT.



Point

More useful setting method

You can configure the object settings with the property sheet.

☞ Page 126 Checking and editing settings of screens and objects

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Image displayed on the document display object in GT Designer3

A sample image is previewed on the document display object in GT Designer3.

When the sample image is replaced with another image with the same file name, the replaced image is displayed.

The following shows the storage folders and file names of the sample images.

Item	Description
Storage folder	The following folder contains folders for each display language of GT Designer3. [(Path to the installation location of GT Designer3)\GTD3_3000\App] • Japanese: ja-JP • English: en-US • Simplified Chinese: zh-CN When the display language of GT Designer3 is switched, the reference folder is also switched.
File name	Sample images are stored in the folder of each language. • IMG00000L.JPG: Large size (816 dots × 1168 dots) • IMG00000M.JPG: Medium size (656 dots × 928 dots) • IMG00000S.JPG: Small size (400 dots × 584 dots)

51.7 Operating the document display

GT37 SoftGOT3000

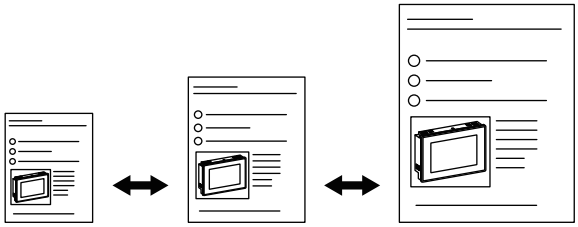
The following shows how to operate the document display.

51.7.1 Enlarging or reducing the display of a document

On the GOT, you can enlarge or reduce the display of a document on the document display object.
The frame size of the document display object remains unchanged even though the display of the document is enlarged or reduced.

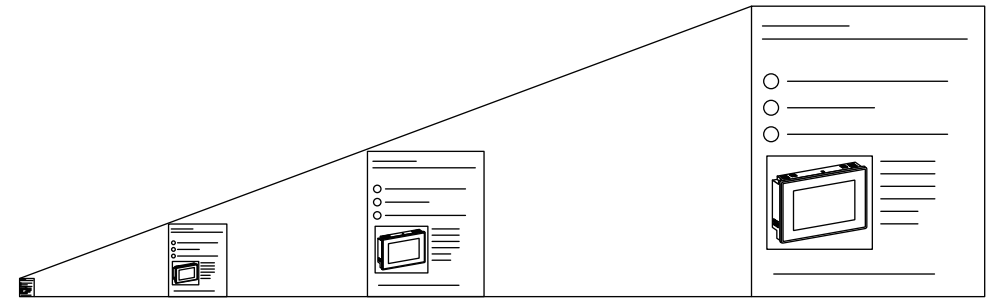
Enlarging or reducing the document using the [Initial Display Size] setting in the [Document Display] dialog

The initial display size of the document can be specified as large (100%), medium (75%), or small (50%).
☞ Page 1837 [Document Display] dialog



Enlarging or reducing the document using the object gesture function

The object gesture function enlarges or reduces the document to any size (25% to 400%) with the full size of the document being 100%.



Enlarging or reducing the document with a key code switch

When the document size is enlarged or reduced with a key code switch, one of the following magnifications is used.

Magnification (%)										
25	37.5	50	62.5	75	87.5	100	125	150	200	400

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51.7.2 Operating method of the document display

The following shows how to operate the document display.

☞ Page 1828 Operations by using touch switches
☞ Page 1829 Operations by using the object gesture function
☞ Page 1830 Page switching by using a device

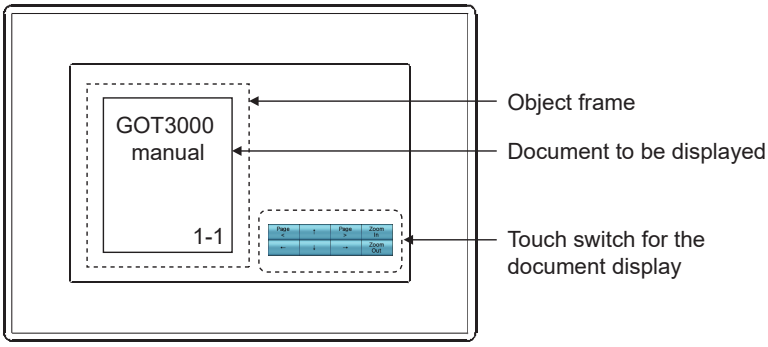
Operations by using touch switches

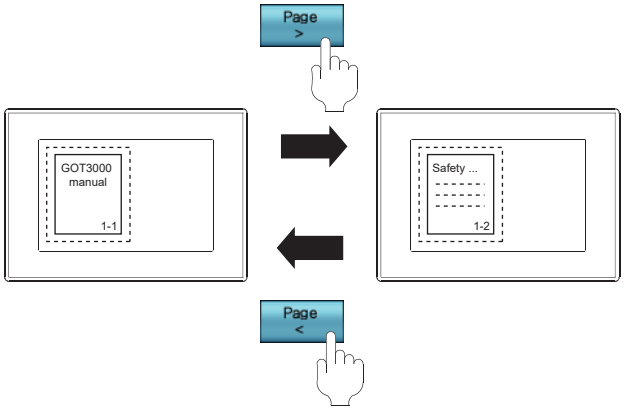
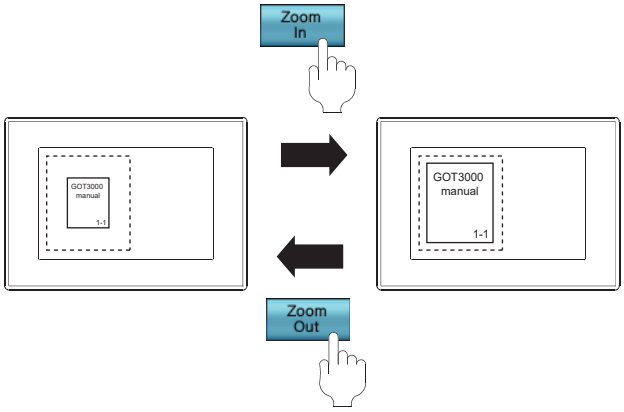
Using touch switches where the key codes for the document display are set, operate the document display.

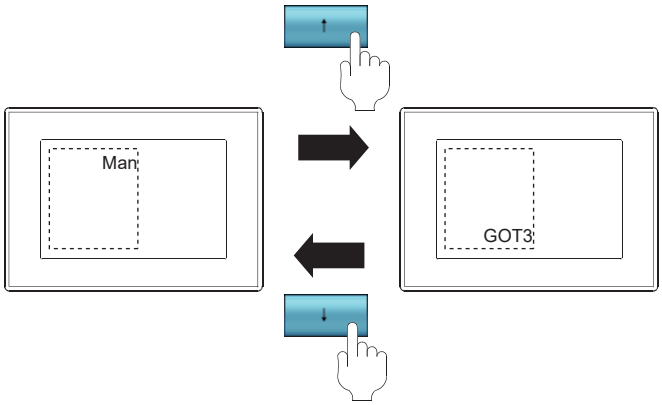
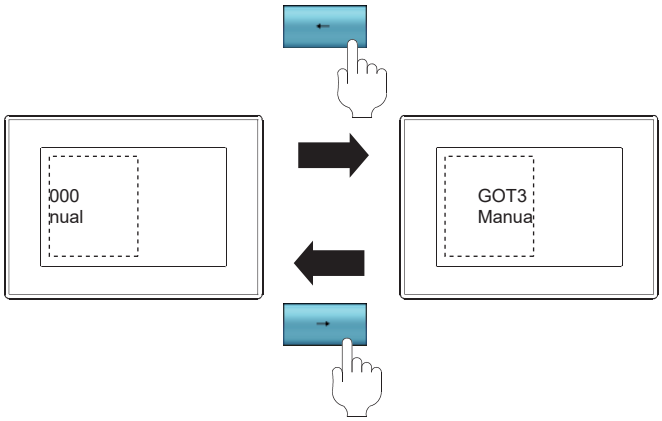
Touch switches for the document display are available by reading from the library of GT Designer3.

The text and shape of each touch switch are user-changeable.

When key codes are set for touch switches, touch switches for the document display can be created by a user.



Touch switch	Key code (HEX)	Description
Next page	FFE0	Moves to the next page or previous page.  When the page No. is specified using a device, the device value is changed according to the key operation.
Previous page	FFE1	
Expansion	FFE2	Enlarges or reduces the display of a page. For details on enlarging or reducing, refer to the following. ☞ Page 1827 Enlarging or reducing the display of a document 
Reduction	FFE3	

Touch switch	Key code (HEX)	Description
Up Scroll	FFE4	Scrolls the page either upward or downward.  When the top or bottom of the page is displayed, or the vertical size of the document is smaller than the object frame size (at vertical centering display), the keys do not work.
Down Scroll	FFE5	
Left Scroll	FFE6	Scrolls the page either left or right.  When the left end or right end of the page is displayed, or the vertical size of the document is smaller than the object frame size (at horizontal centering display), the keys does not work.
Right Scroll	FFE7	

Operations by using the object gesture function

The display of objects can be operated using gestures.

For information on operations using gestures, refer to the following.

☞ Page 507 Operating objects with gestures (object gesture function)

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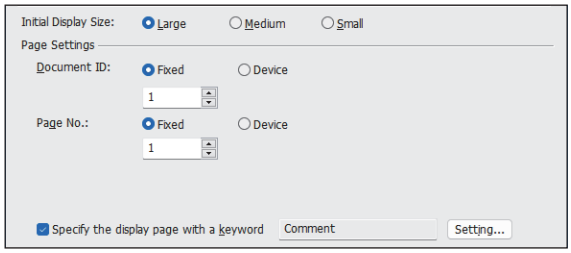
Page switching by using a device

You can control the page displayed on the document display by using a device.

In the [Document Display] dialog, select [Device] for [Page No.] and set [Device].

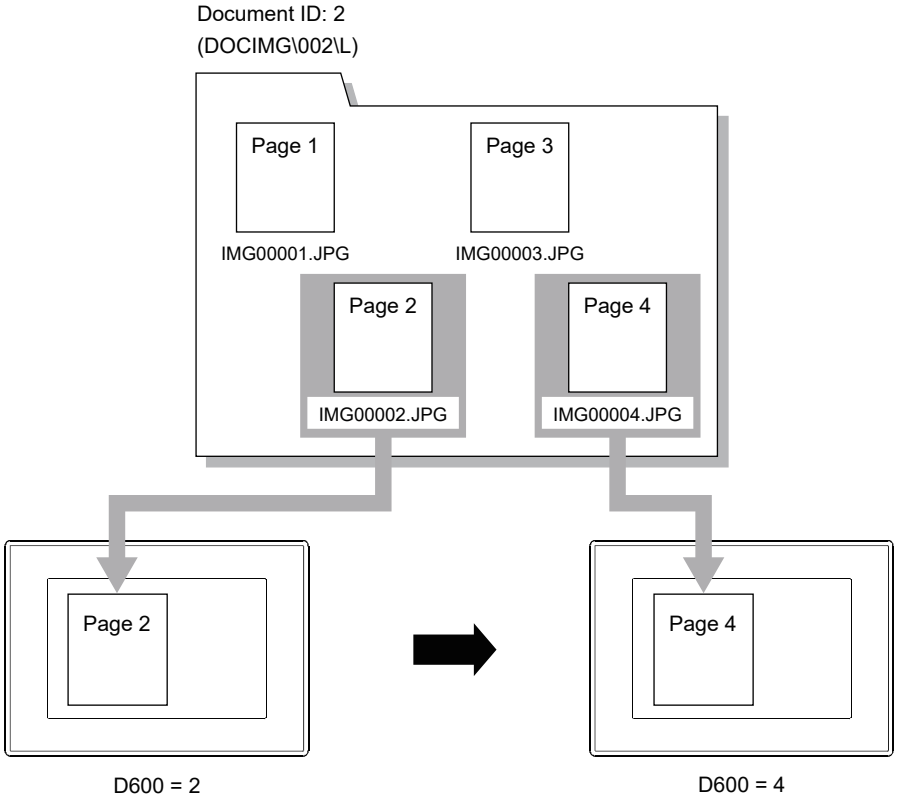
☞ Page 1837 [Document Display] dialog



Changing the set device value switches the page displayed on the document display.

Ex.

When [Document Type] is [Document Converter Output File], [Initial Display Size] is [Large], [Document ID] is [2], and [Device] is [D600]



Precautions

When a nonexistent page is specified during page switching, no document is displayed.

The Document Display Status Notification signal (GS276.b0) turns on.

Using bookmarks

This function is available only when the document type is the PDF file.

Touching a bookmark displays the linked page.

Up to 1000 bookmarks in 10 levels are displayable.

For a PDF file without bookmarks, nothing is displayed in the [Bookmark] window.

For the setting to use the [Bookmark] window, refer to the following.

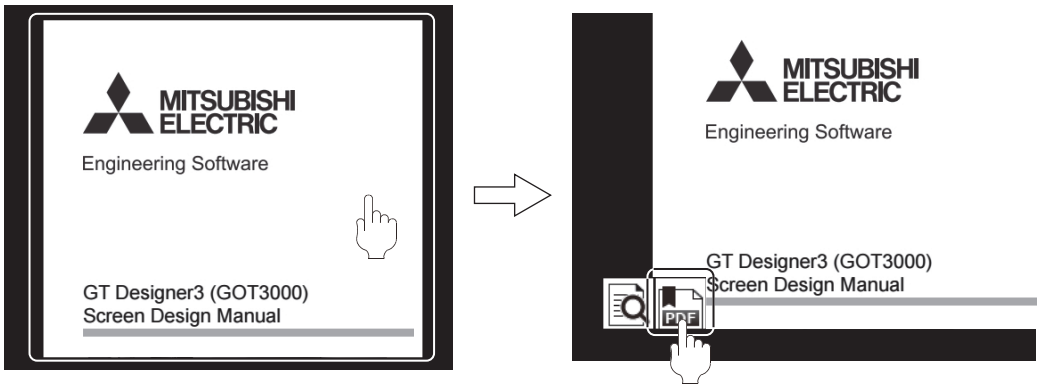
☞ Page 1837 [Document Display] dialog

The following shows how to operate the [Bookmark] window on the GOT.

Operating procedure

1. Touch a document display object to display the Bookmark button.

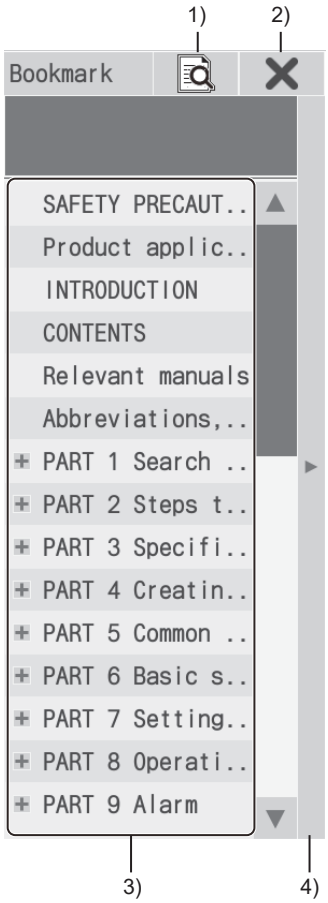
If no operation is performed within a certain time period, the Bookmark button is hidden.



Touch the document display object.

Touch the Bookmark button.

2. Touch the Bookmark button to display the [Bookmark] window.



Item		Description
1)	Search button	Switches to the [Search] window.
2)	[×] button	Closes the [Bookmark] window.
3)	Bookmarks	Touch a bookmark to display the linked page. To expand a bookmark, touch [+] beside the bookmark. In this case, only the bookmark and its child bookmarks are listed. To return to the parent level, touch [-] beside the bookmark.
4)	Change Window Width button	Changes the width of the [Bookmark] window.

Keyword search in the [Search] window

This function is available only when the document type is the PDF file.

In the [Search] window, enter a keyword to search for in a PDF file.

The following strings cannot be searched for.

- String split across a page boundary
- One-byte string split over two lines
- Bookmark or annotation

For the setting to use the [Search] window, refer to the following.

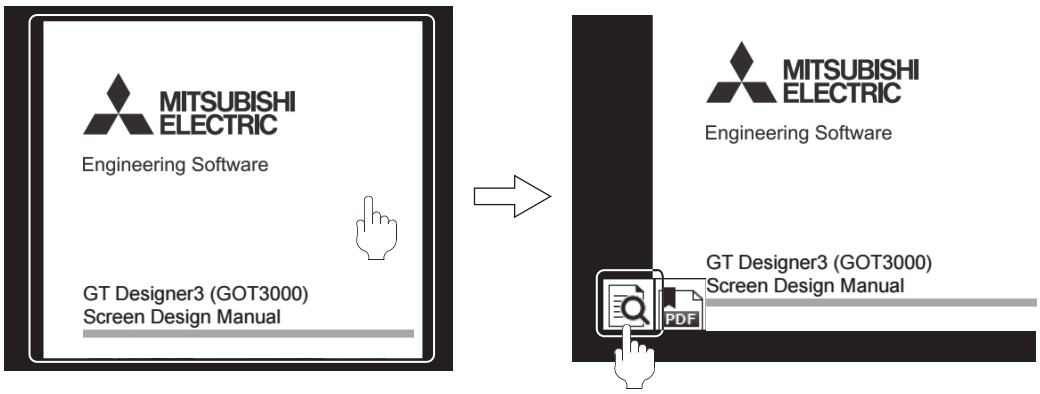
☞ Page 1837 [Document Display] dialog

The following shows how to operate the [Search] window on the GOT.

Operating procedure

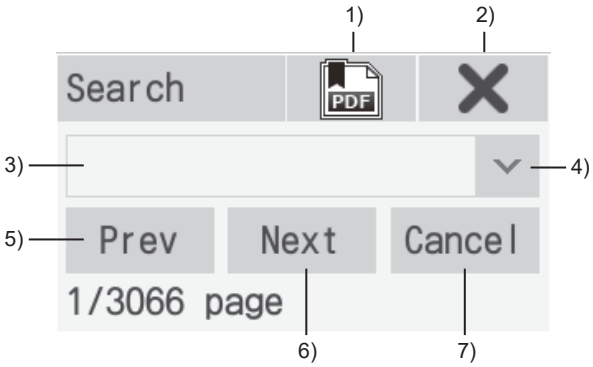
1. Touch a document display object to display the Search button.

If no operation is performed within a certain time period, the Search button is hidden.



Touch the document display object. Touch the Search button.

2. Touch the Search button to display the [Search] window.



Item		Description
1)	Bookmark button	Switches to the [Bookmark] window.
2)	[×] button	Closes the [Search] window.
3)	Search string entry field	Touch the entry field to display the key window for entering a search string. For the key window, refer to the following. ☞ Page 558 Setting key windows of the GOT ([Key Window]) Enter a string and touch the [ENTER] key in the key window to perform a search. The search is case-sensitive and only returns exact matches. Up to 47 Unicode characters can be entered. The 48th and subsequent characters are deleted when the [Enter] key is touched.
4)	Search History button	Lists up to 10 strings which are recently searched for. Select a string from the search history to perform a search. In this case, the selected string becomes the last-used one and moves to the top of the search history. When the Disable Search History Update signal (GS523.b1) is on, the search history does not updates. However, you can still perform searches using the strings in the search history.
5)	[Prev] button	Searches for the previous instance of a string from the current page.
6)	[Next] button	Searches for the next instance of a string from the current page.
7)	[Cancel] button	Cancels the search.

Specifying the first page to appear by keyword searching

This function is available only when the document type is the PDF file.
If screens are switched or the display conditions are satisfied, the document display object appears, and then the specified keyword is searched for in the document.
The document display object displays the page on which the first occurrence of the keyword is found.
To enable this function, select [Specify the display page with a keyword] in the [Document Display] dialog.
☞ Page 1837 [Document Display] dialog

A search is performed to find only the first hit when the document display object is displayed.
The hit will be highlighted.
No notification will be provided if an error occurs.
To go to another hit or to receive error notifications, enable the search control with devices.
☞ Page 1835 Controlling the search with devices
The following strings cannot be searched for.

- String split across a page boundary
- One-byte string split over two lines
- Bookmark or annotation

To specify a search keyword, select one of the following methods.

- Specifying a registered comment as the keyword

Specify a comment to search for with a comment group number, comment number, and comment column number.
Specify each number directly or with a device.
☞ Page 776 Comment setting ([Comment])

- Storing a string to be the keyword in devices

Use the string stored in devices as the keyword.
Up to 47 characters are usable in the string.
Set how to specify the keyword in the [Setting] dialog.
☞ Page 1839 [Setting] dialog (Search settings for the document display object)

The following shows an example of specifying a comment as the keyword.

Ex.

Using a switch to display a window screen on which a document display object is placed

Place a document display object on window screen 1, select [Specify the display page with a keyword], and configure the following settings in the [Setting] dialog.

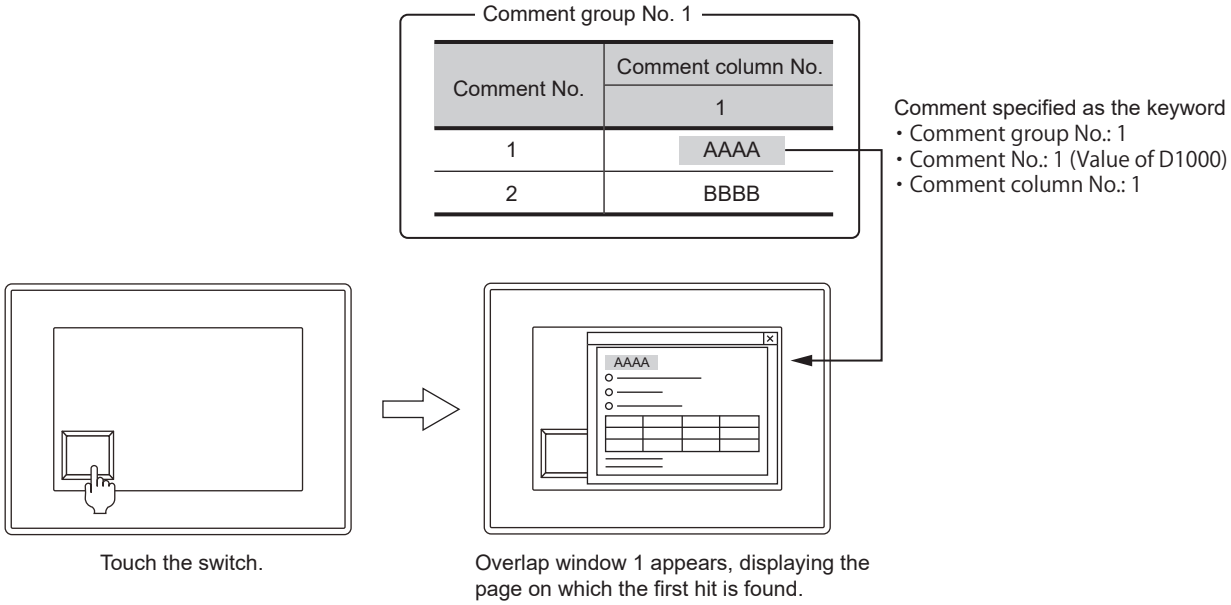
- [Keyword]: [Comment]
- [Comment Group No.]: 1
- [Comment No.]: Value of D1000
- [Comment Column No.]: 1

Place a switch on base screen 1, and configure the settings on the [Action] tab so that the following operations are performed.

- Word set: Storing comment No. 1 in D1000
- Screen switching: Displaying window screen 1 as overlap window 1

Touching the switch displays overlap window 1.

The document display object displays the page on which the first hit is found.



■Controlling the search with devices

To control the search and receive search-related notifications, use the search control device and the search status notification device.

- To start or abort a search, use the search control device.
- To receive notification of a search state or an error, use the search status notification device.

To set the devices, select [Control the search] in the [Setting] dialog.

For the function of each bit of the devices, refer to the following.

☞ Page 1839 [Setting] dialog (Search settings for the document display object)

If this search control is enabled, a search will not be performed automatically when a document display object is displayed.

To start a search, turn on the search trigger device (b0 of the search control device).

The following shows an example of controlling the search with the devices.

Ex.

Finding a hit after the document display object displays the page on which the first hit is found

Configure the following settings.

Item	Object or function	Setting

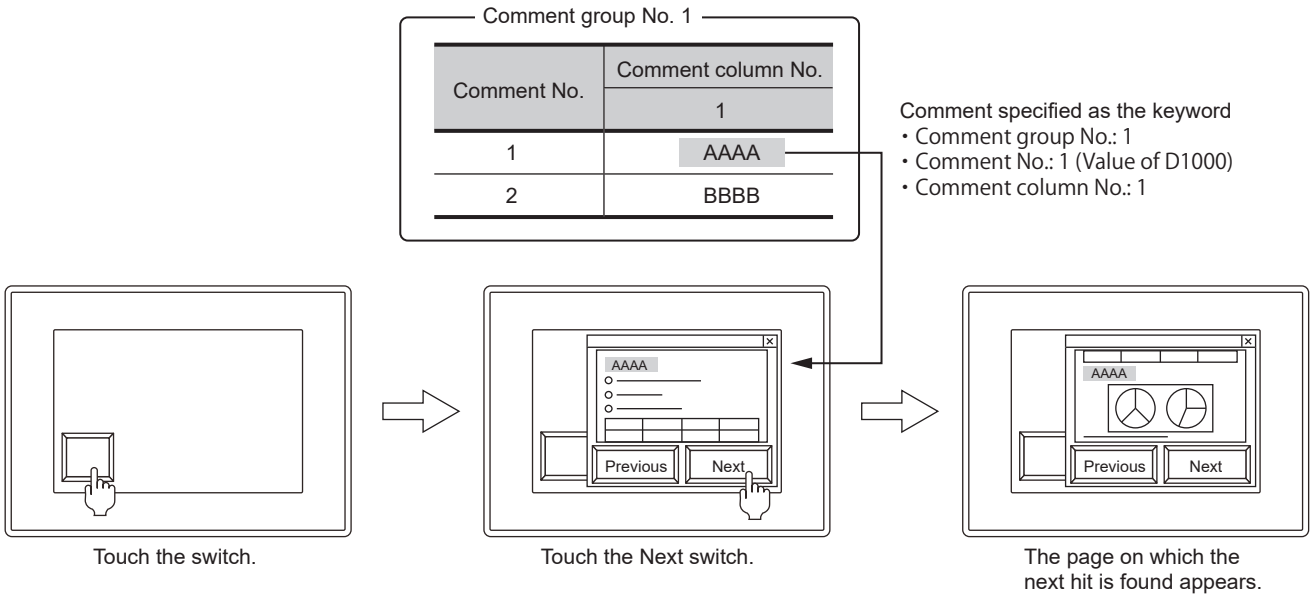
Common setting	Screen script	For window screen 1, set a screen script so that turning on the device notifying that a search is in progress (D3000.b0) turns off the search trigger device (D2000.b0).
		• [Trigger Type]: [Ordinary]
		`if([b:D3000.b0] == 1){`
		`  [b:D2000.b0] = 0;`
		`}`

Base screen 1	Switch	Switch to display the screen on which a document display object is placed. On the [Action] tab, configure the settings so that the following operations are performed. • Word set: Storing comment No. 1 in D1000 • Bit set: Turning on the search trigger device (D2000.b0) • Screen switching: Displaying window screen 1 as overlap window 1
Window screen 1	Document display object	Select [Specify the display page with a keyword], and configure the following settings in the [Setting] dialog. • [Keyword]: [Comment] • [Comment Group No.]: 1 • [Comment No.]: Value of D1000 • [Comment Column No.]: 1 • [Control the search]: Selected • [Search Control Device]: D2000 • [Search Status Notification Device]: D3000
	Switch (Previous)	Switch to go to the previous hit. On the [Action] tab, configure the settings so that the following operations are performed. • Bit set: Turning on the device that reverses the search direction (D2000.b1) • Bit set: Turning on the search trigger device (D2000.b0)
	Switch (Next)	Switch to go to the next hit. On the [Action] tab, configure the settings so that the following operations are performed. • Bit reset: Turning off the device that reverses the search direction (D2000.b1) • Bit set: Turning on the search trigger device (D2000.b0)

Touching the switch displays overlap window 1.

The document display object displays the page on which the first hit is found.

Touching the Previous or Next switch goes to the previous or next hit, starting from the first hit.



Even while the [Search] window is being displayed, you can perform a search using the search control device.

In this case, the entered keyword and buttons in the [Search] window are unusable.

If you perform a search using the search control device while a search in the [Search] window is in progress, the search will start upon completion of the search in progress.

51.8 [Document Display] dialog

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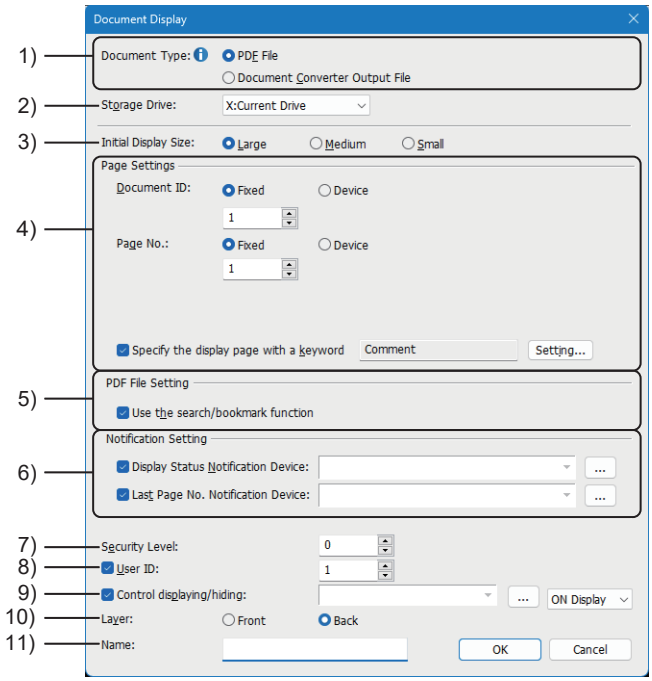
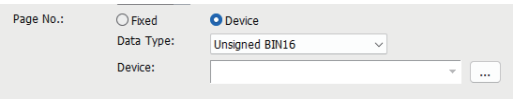
You can specify the document to be displayed using the document display, set the security level, and configure the device settings to control the display.



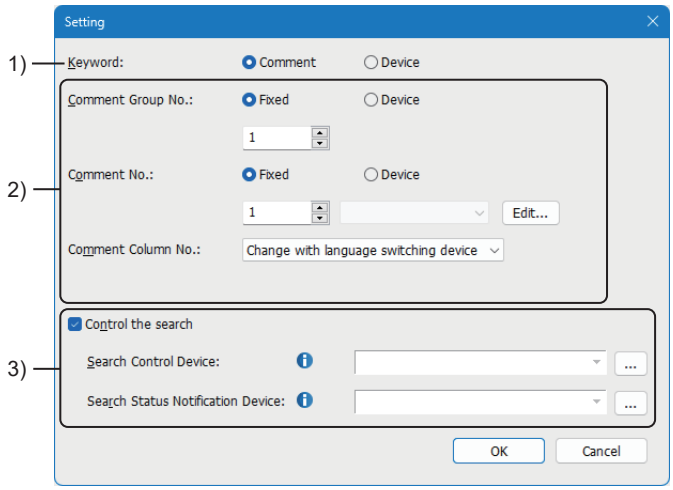
Item		Description
1)	[Document Type]	Select the type of a document to be displayed on the document display object. • [PDF File] Displays a PDF file as it is. For the storage location of the PDF files, refer to the following. ☞ Page 1820 Storing files on a data storage or file server • [Document Converter Output File] Displays a JPEG file that is converted from a document in another format with Document Converter. For the storage location of the JPEG files, refer to the following. ☞ Page 1824 Storing JPEG files to a data storage
2)	[Storage Drive]	Select a location to store files to be displayed on the document display object. For the available drives by GOT model, refer to the following. ☞ Page 81 Drive configuration and capacity of the GOT
3)	[Initial Display Size]	Select the initial size of the document display to be displayed at screen switching. • [Large]: Displays a PDF file or a large JPEG file at full size. • [Medium]: Displays a PDF file or a large JPEG file at 75%. • [Small]: Displays a PDF file or a large JPEG file at 50%.

Item			Description
4)	[Page Settings]	[Document ID]	Select how to set a document ID. If an nonexistent document ID is set, no document is displayed. The following shows selectable items. • [Fixed] Sets the document ID by entering a number directly. Set the document ID of the document to be displayed first at screen switching. The setting range is [1] to [32767]. • [Device] Sets the document ID by specifying a device value. Set a device that specifies the document ID. ☞ Page 834 How to set devices, labels, and tags
		[Page No.]	Select how to set the page to be displayed. The following shows selectable items. • [Fixed] Sets the page number by entering a number directly. Set the number of a page to be displayed first upon screen switching. The setting range is [0] to [65535]. • [Device] Select this item to specify a page No. with the device value.  • [Data Type] Select the data type of the word device. Set a device that specifies the page number. ☞ Page 834 How to set devices, labels, and tags
		[Specify the display page with a keyword]	This item is selectable when [Document Type] is set to [PDF File]. Displays the page on which the first occurrence of the specified keyword is found. ☞ Page 1834 Specifying the first page to appear by keyword searching Click the [Setting] button to display the [Setting] dialog. ☞ Page 1839 [Setting] dialog (Search settings for the document display object)
5)	[PDF File Setting]	[Use the search/bookmark function]	This item is selectable when [Document Type] is set to [PDF File]. Select this item to use the search in the [Search] window or the bookmark function. ☞ Page 1831 Using bookmarks ☞ Page 1832 Keyword search in the [Search] window In the [Environmental Setting] window ([Screen Switching/Window]), select [Use also as a system window] for the overlap window to be used as a system window. ☞ Page 542 [Screen Switching/Window]
6)	[Notification Setting]	[Display Status Notification Device]	Set a device that notifies the display status of a document. The device stores any of the following values according to the display status of the document. • 0: Normal • 1: The specified file is nonexistent or exceeds 3 MB. The data storage is inaccessible. • 2: The specified file is not an image file or is corrupt. • 3: The specified document ID is outside the range of 1 to 32767, or the specified document is nonexistent. • 4: A nonexistent page number is specified. • 101: The specified PDF file is nonexistent. The data storage or file server is inaccessible. • 102: The specified PDF file is not supported or is corrupt. • 103: The document ID of the specified PDF file is outside the range of 1 to 32767, or no PDF file corresponds to the document ID. • 104: The specified page number is nonexistent in the target PDF file. • 105: The specified PDF file is password-protected. • 107: The data size of a page in the specified PDF file exceeds 30 MB.
		[Last Page No. Notification Device]	Set a device that notifies the last page number of the document corresponding to a specified document ID.
7)	[Security Level]		Set the security level. The setting range is [0] to [15]. If you do not use the security function of the GOT, select [0]. ☞ Page 3038 Restricting display and operation on the GOT (Screen security)
8)	[User ID]		Select this item to set the user ID. The setting range is [1] to [65535].
9)	[Control displaying/hiding]		Enables the setting to display the object only when requirements are met. Set the following as requirements. • Control device (bit device or bit-specified word device) • When to display: When the control device is on or off

Item		Description
10)	[Layer]	Select the layer to arrange the object on.
11)	[Name]	Set the object name. The name is displayed in places such as the data browser and property sheet. Up to 100 characters can be set.

[Setting] dialog (Search settings for the document display object)

Set how to specify a keyword to search for in the document, and set devices to control the search.

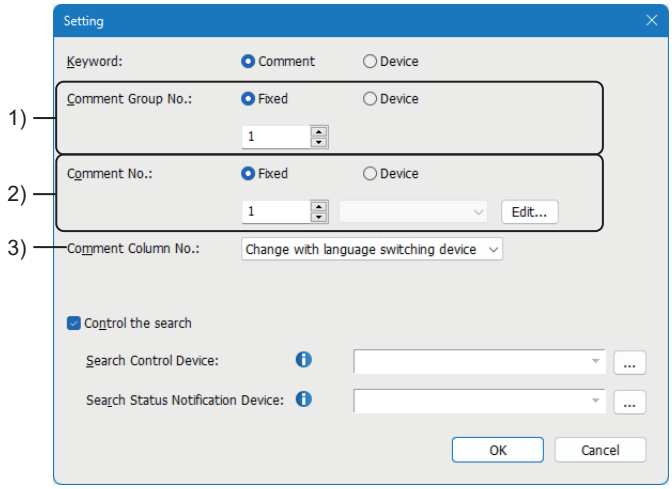


Item		Description
1)	[Keyword]	Select how to specify a search keyword. • [Comment] Uses a comment registered in a comment group as the keyword. If the specified comment has 48 or more characters, the first 47 characters are used as the keyword. ☞ Page 776 Comment setting ([Comment]) • [Device] Use the string stored in devices as the keyword.
2)	Keyword settings	The setting items vary according to the selection for [Keyword]. ☞ Page 1841 Specifying a comment as the keyword ☞ Page 1842 Specifying the string stored in devices as the keyword

Item			Description
3)	[Control the search]	—	Controls the search and receives search-related notifications with devices.
		[Search Control Device]	Set a device to control the search. • b0: Turn on this bit to start searching for the specified keyword. If a document display object is displayed while this bit is on, a search will start. Make sure to turn off this bit if b0 of the search status notification device is turned on. • b1: Switches between the search directions. While this bit is on, turning on b0 of the search control device goes to the previous hit. • b2: Turn on this bit to abort the search in progress. Make sure to turn off this bit. • b3 to b15: Use prohibited
		[Search Status Notification Device]	Set a device that notifies a search state. • b0: This bit is turned on when b0 of the search control device is turned on to start a search. This bit is turned off when the search in progress is completed and b0 of the search control device is turned off. This bit is turned off when the document display object is hidden because of screens being switched or other events. • b1: This bit is turned on when the search returns to the first hit. This bit is turned off when b0 of the search control device is turned on to start a search. This bit is turned off when the document display object is hidden because of screens being switched or other events. • b2: This bit is turned on when the search finds no hits. This bit is turned off when b0 of the search control device is turned on to start a search. This bit is turned off when the document display object is hidden because of screens being switched or other events. • b3 to b13: Use prohibited • b14: This bit is turned on when no keyword is specified, such as in the following cases. The comment to search for is nonexistent. The specified devices store no string to search for. This bit is turned off when b0 of the search control device is turned on to start a search. This bit is turned off when the document display object is hidden because of screens being switched or other events. • b15: This bit is turned on if the search fails. This bit is turned off when b0 of the search control device is turned on to start a search. This bit is turned off when the document display object is hidden because of screens being switched or other events.

■Specifying a comment as the keyword

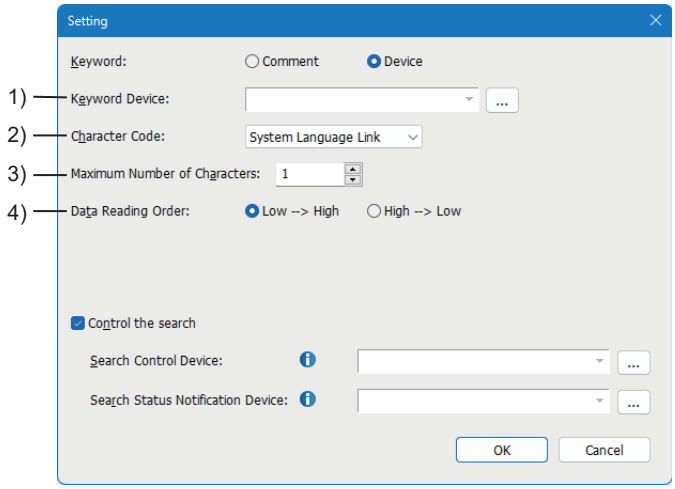
Set how to specify a comment group number, comment number, and comment column number.



Item		Description
1)	[Comment Group No.]	Select how to specify a comment group number. • [Fixed] Specify a comment group number directly. The setting range is [1] to [500]. • [Device] Specify a comment group number with a device. Select this item and set the device. If the specified comment group number is nonexistent, a search will not be performed. If a value outside the range of 1 to 500 is specified, it is assumed to be 1.
2)	[Comment No.]	Select how to specify a comment number. • [Fixed] Specify a comment number directly. The setting range is [1] to [32767]. If the specified comment number is nonexistent, a search will not be performed. Click the [Edit] button to display the [Edit Comment] dialog. For details on the [Edit Comment] dialog, refer to the following. ☞ Page 3685 [Edit Comment] dialog • [Device] Specify a comment number with a device. Select this item and set the device. If the specified comment number is nonexistent or a value outside the range of 1 to 32767 is specified, a search will not be performed.
3)	[Comment Column No.]	Select how to specify a comment column number. • [Change with language switching device] Specifies the value of the language switching device as the comment column number. If the specified comment column number is nonexistent or a value outside the range of 1 to 30 is specified, a search will not be performed. If [Display] is selected for [Alternative Display (when the language switching device value is out of the range (1-30) or comment column No. does not exist)], a comment in the specified comment column is used as the keyword. For details on the settings, refer to the following. ☞ Page 551 [Language Switching] ☞ Page 797 Creating a new comment group • [Fixed] Specify a comment column number directly. The setting range is [1] to [30]. If the specified comment column number is nonexistent, a search will not be performed. • [Device] Specify a comment column number with a device. Select this item and set the device. If the specified comment column number is nonexistent, a search will not be performed. If a value outside the range of 1 to 30 is specified, it is assumed to be 1.

■Specifying the string stored in devices as the keyword

Set consecutive devices that store a string to search for.



Item		Description
1)	[Keyword Device]	Specify the first device of consecutive devices that store a string to search for. As many devices as the set value of [Character Count] are used.
2)	[Character Code]	Set the character code of a string.
3)	[Character Count]	Specify the maximum number of characters in a string. The setting range is [1] to [47].
4)	[Data Reading Order]	Select the order in which data is read from the specified devices.

51.9 Relevant settings

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Configure the relevant settings in addition to the specific settings for the document display as required.
The following shows the functions that are available by configuring the relevant settings.

51.9.1 GOT internal device

☞ Page 3581 GOT special register (GS)

Function	Setting item
Checking if the document is displayed.	GS276.b0
Notifying that a PDF file cannot be cached to display.	GS276.b1
Notifying the display quality when a PDF document is displayed.	GS276.b2
Notifying that the display size of the document has been changed by GS523.b3.	GS276.b3
Displaying a PDF file without caching the file.	GS523.b0
Using the PDF search function without creating or updating the search history file.	GS523.b1
Displaying a PDF document in high quality.	GS523.b2
Fitting the displayed PDF document to the object width.	GS523.b3

52 Placing a digital image display object

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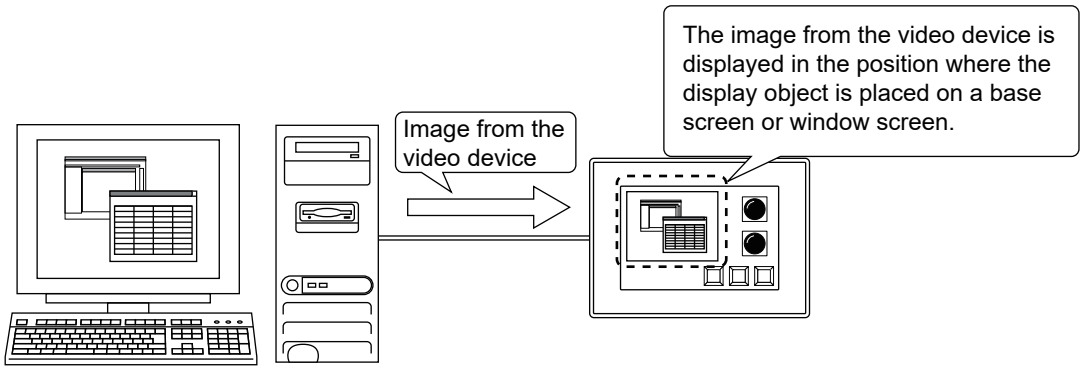
☞ Page 1845 Overview of the digital image display object
☞ Page 1847 Specifications of the digital image display object
☞ Page 1855 How to use the digital image display object
☞ Page 1859 [Digital Image Display] dialog
☞ Page 1863 Relevant settings

52.1 Overview of the digital image display object

GT37 SoftGOT3000

The digital image display object displays the image of the personal computer screen and the image taken with a web camera and network camera on the GOT screen.
A similar function is the digital image input/recording function. However, unlike the digital image input function, which displays the full image from the video device in a separate window, the digital image display object is placed on the GOT screen like other objects.
This allows you to check the image from the video device and monitor or operate external devices on a single screen.
The digital image display object can also be used to customize the display of the image and play the image with touch switches.



The digital image display object has two operation modes: [Camera/PC Image Display] and [File Playback].
☞ Page 1846 Camera/PC image display
☞ Page 1846 File play

Precautions

The following functions cannot be used when the digital image display object is used.
- Digital image input/recording
- Video output function

PART 7

52.1.1 Camera/PC image display

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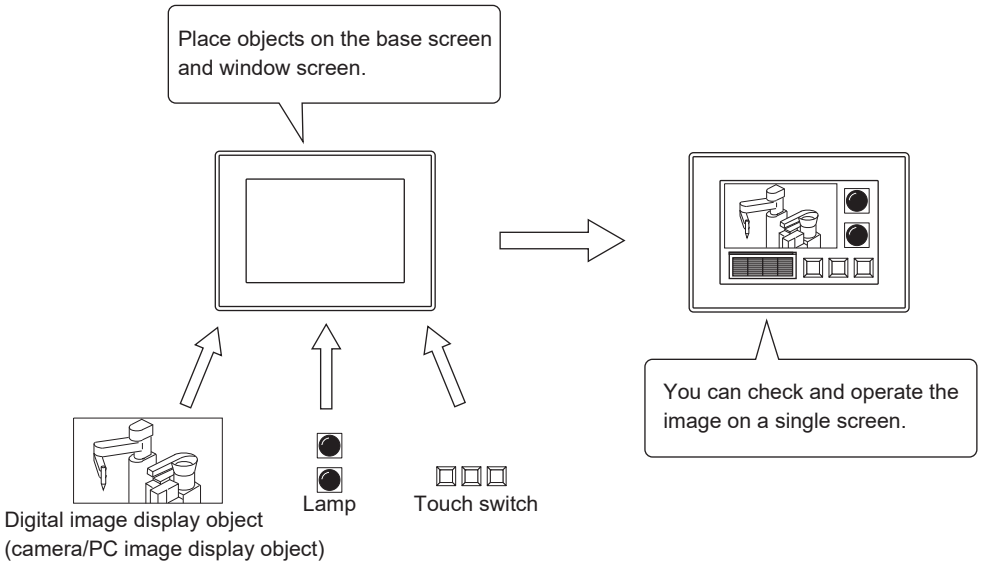
Camera/PC image display is placed by selecting [Object] → [Digital Image Display] → [Camera/PC Image Display].
Placing it on the base screen or window screen allows you to monitor or operate external devices while checking the image.



52.1.2 File play

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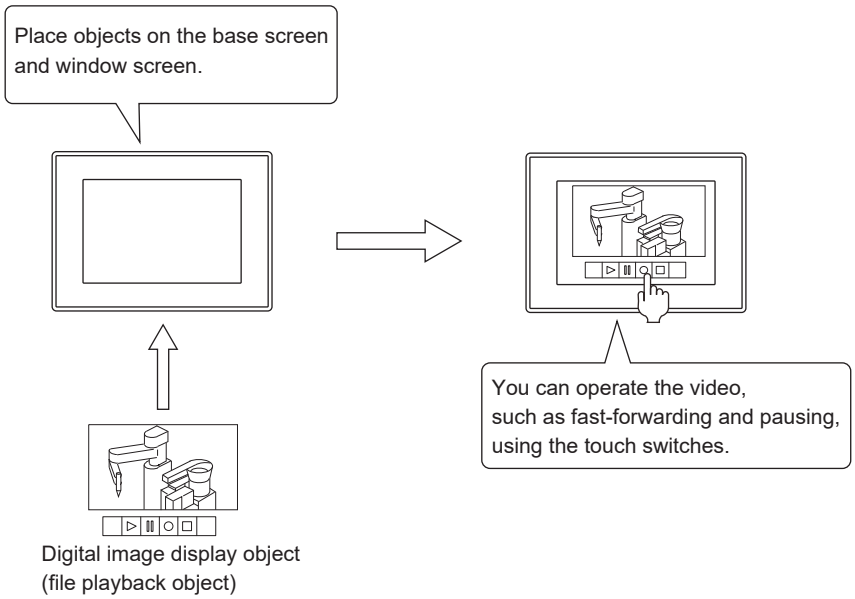
File play is placed by selecting [Object] → [Digital Image Display] → [File Playback].
When the file play object is placed, touch switches for operation are placed at the same time.



Precautions

After placing a digital image display object with the operation mode set to [Camera/PC Image Display], changing the mode to [File Playback] in the [Digital Image Display] dialog will not place any touch switches.

52.2 Specifications of the digital image display object

GT37 SoftGOT3000

☞ Page 1847 System application (extended function)
☞ Page 1847 Playable video files
☞ Page 1847 Resolution and frame rate
☞ Page 1848 Applicable channel
☞ Page 1848 Maximum number of objects that can be placed on one screen
☞ Page 1848 Applicable screen
☞ Page 1848 Size of the digital image display object
☞ Page 1849 Displaying an input image
☞ Page 1853 Display mode

52.2.1 System application (extended function)

To use the digital image display object, the following system applications (extended functions) are required.

System application (extended function)		Conditions automatically incorporated into the package data
[Digital Image Input/ Recording]	[Digital Image Input]	[Use the Digital Image Function] is selected in the [Digital Image Input/Recording] dialog.
	[Digital Image Input (Extended)]	[Use the Digital Image Function] is selected in the [Digital Image Input/Recording] dialog.
	[Digital Image Input(For USB Input)]	When all the following conditions are satisfied: • [Use the Digital Image Function] is selected in the [Digital Image Input/Recording] dialog. • [PC Image] is selected for [Input Device] in the [Digital Image Input/Recording] dialog.
	[Digital Image Recording/ Playback]	[Use the Digital Image Function] is selected in the [Digital Image Input/Recording] dialog.

52.2.2 Playable video files

Video files that meet the following conditions can be played using the digital image display object.

Condition	Value
Resolution	Up to Full-HD
File format	MP4
Video format	H.264 (Baseline profile)
Frame rate	Up to 30 fps
Bit rate	Up to 5 Mbps
Number of reference frames	1

52.2.3 Resolution and frame rate

The digital image display object supports the following resolutions and frame rate.

Resolution	Frame rate (fps)
Full HD (1920 × 1080 dots)	30
HD (1280 × 1080 dots)	
XGA (1024 × 768 dots)	
SVGA (800 × 600 dots)	
VGA (640 × 480 dots)	

52.2.4 Applicable channel

The number of channels that can be used in the digital image display object depends on the device to be used.

- Digital image input using a web camera and USB converter: 1 channel
- Network camera (Ethernet connection): 4 channels

52.2.5 Maximum number of objects that can be placed on one screen

Up to four digital image display objects can be placed on one screen.
The GOT can simultaneously display up to four digital image display objects placed on base screens and window screens.
The fifth and subsequent objects are not displayed.
Configure the setting to display a maximum of four digital image display objects on base screens and window screens simultaneously.

52.2.6 Applicable screen

Digital image display objects can be placed on the following screens.

- Base screen
- Overlap window
- Superimpose window
- User-created key window
- Dialog window

Precautions

Make sure that a window screen with digital image display objects does not extend beyond the GOT screen.
The input image may not be displayed properly if the screen extends off the GOT screen.

52.2.7 Size of the digital image display object

The position and size (width and height) of the digital image display object are settable in units of 4 dots.
The settable size range is 64 by 64 dots to 1920 by 1920 dots.

Precautions

■Placing a digital image display object on a window screen

The GOT can only display the digital image display object with the X and Y coordinates in units of 4 dots.
Make sure to place a digital image display object at least four dots away from the edges of a window screen.
If the digital image display object is too close to the edges of the window screen, the displayed input image may overlap the window frame depending on the position of the window screen.

■Moving or switching a window screen with digital image display objects

When digital image display objects are placed on a window screen, moving or switching the window screen may prevent the objects from being displayed at the X and Y coordinates in units of 4 dots.
In such cases, the X and Y coordinates of the objects are automatically corrected toward the input image origin.

52.2.8 Displaying an input image

Input images can be displayed in various ways by using the digital image display object.

The following shows the available functions.

☞ Page 1849 Display magnification
☞ Page 1850 Rotation angle
☞ Page 1851 Inversion
☞ Page 1851 Filling blank space
☞ Page 1851 Clip display

For the setting method, refer to the following.

☞ Page 1859 [Digital Image Display] dialog

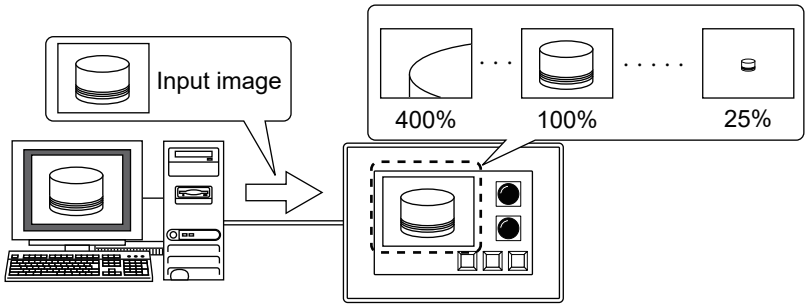
Display magnification

You can change the display magnification of an input image.

[Fixed], [Device], and [Auto-resizing] are selectable to specify the display magnification.

For [Fixed], the following magnification factors are selectable: [400], [200], [100], [87.5], [75], [62.5], [50], [37.5], or [25] (%).

Ex.



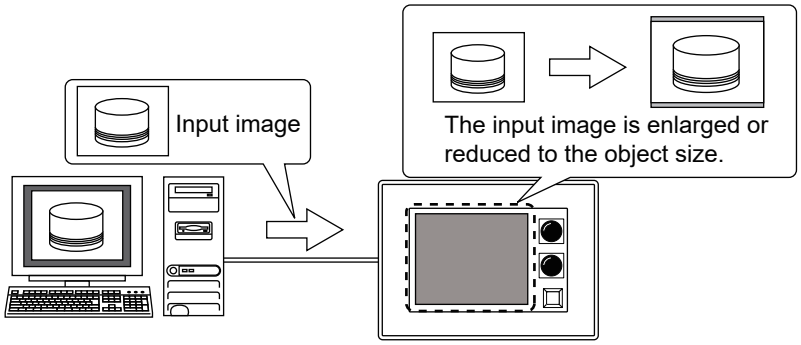
For [Device], the display magnification depends on the device value as shown below.

Device value	Display magnification
0	100%
1	87.5%
2	75%
3	62.5%
4	50%
5	37.5%
6	25%
7	400%
8	200%
9 to 24	100%
25 to 400*1	25% to 400%, or 100%
401 or more	100%

*1 When the object gesture function is enabled, the input device value is the display magnification.
When the object gesture function is disabled, the magnification of 100% is applied.

For [Auto-resizing], an input image is displayed according to the size of a digital image display object.
When the aspect (length-to-width) ratios differ between an input image and a digital image display object, the image is enlarged or reduced to the object size with the image aspect ratio unchanged.

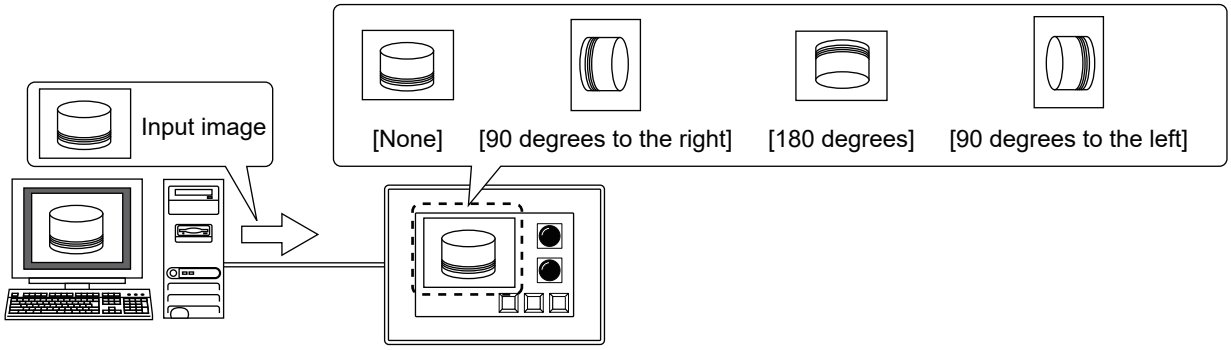
Ex.



Rotation angle

You can rotate an input image in units of 90 degrees.
[Fixed] and [Device] are selectable to specify the rotation angle.
For [Fixed], the following rotation angles are selectable: [None], [90 degrees to the right], [180 degrees], and [90 degrees to the left].

Ex.



For [Device], the display magnification depends on the device value as shown below.

Device value	Rotation angle
0	[None]
1	[90 degrees to the right]
2	[180 degrees]
3	[90 degrees to the left]
4 or more	[None]

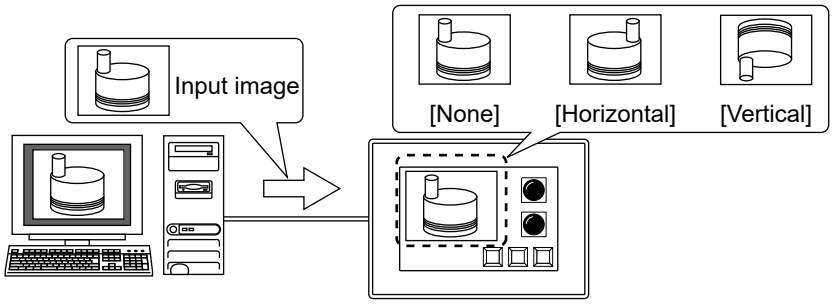
Inversion

You can invert an input image horizontally or vertically.

[Fixed] or [Device] are selectable to set the inversion method.

For [Fixed], the following inversion methods are selectable: [None], [Horizontal], and [Vertical].

Ex.



For [Device], the display magnification depends on the device value as shown below.

Device value	Inversion
0	[None]
1	[Horizontal]
2	[Vertical]
3 or more	[None]

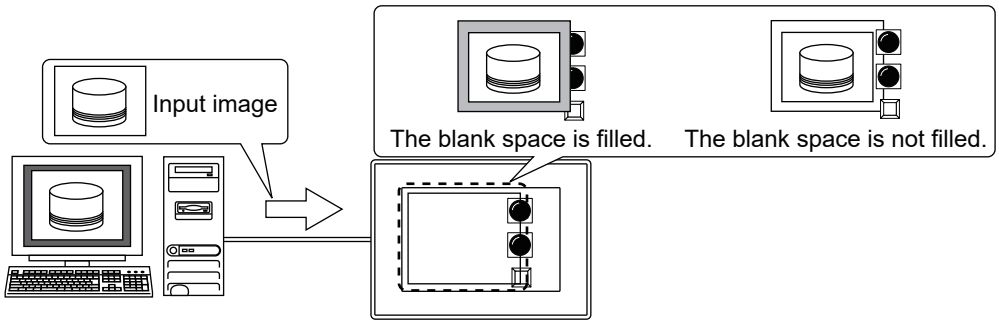
Filling blank space

You can select whether to fill blank space with a specified color when an input image is smaller than a digital image display object.

For filling blank space, 16.77 million colors are selectable.

When the blank space is not filled, other figures and objects under the blank space are displayed.

Ex.



Clip display

You can specify the clip origin to cut out a part of an input image to be displayed.

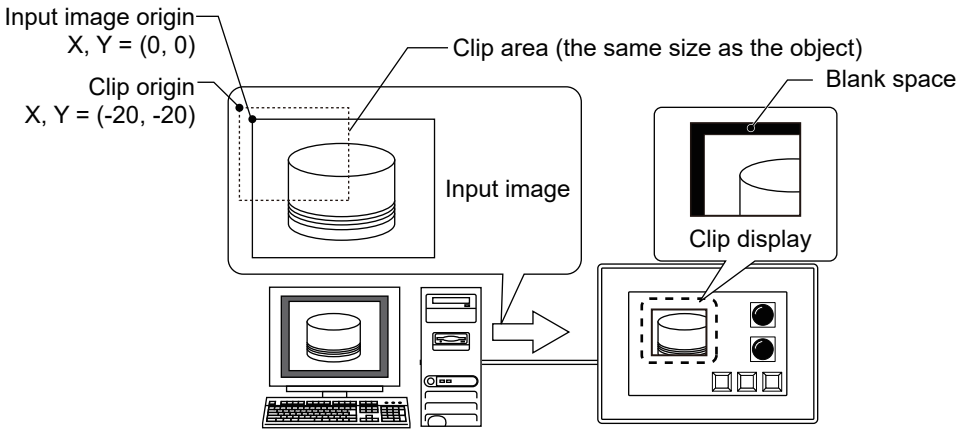
Specify the clip origin in units of 4 dots by using the X and Y coordinates of the input image as the reference.

The following shows the setting ranges for the X and Y coordinates of the clip origin.

- X coordinate: -1920 dots to 1920 dots
- Y coordinate: -1920 dots to 1920 dots

The clip origin is in the upper left corner of the clip area. The GOT displays the clip area in the same size as the digital image display object.

Portions of the clip area that extend off the input image are displayed as blank space.



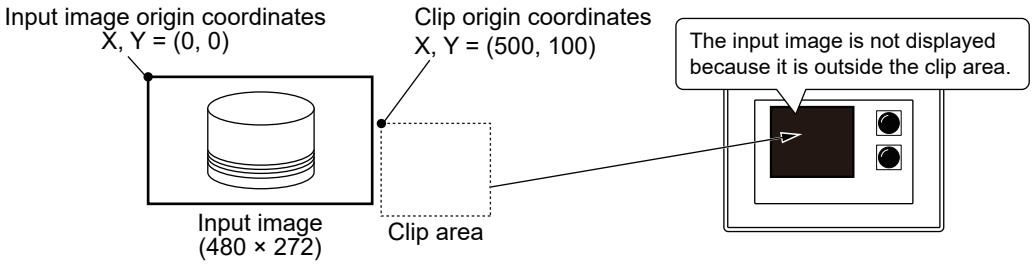
[Fixed] and [Device] are selectable to specify the clip origin.

When selecting [Device], set the first device. Two consecutive devices (signed 16-bit binary), the first device and the subsequent device, are automatically assigned to the X and Y coordinates of the clip origin.

- First device: X coordinate
- Second device: Y coordinate

Precautions

If an input image is outside the clip area according to the specified clip origin, the image is not displayed within the object. Set the clip origin while making sure that the image is within the clip area.



52.2.9 Display mode

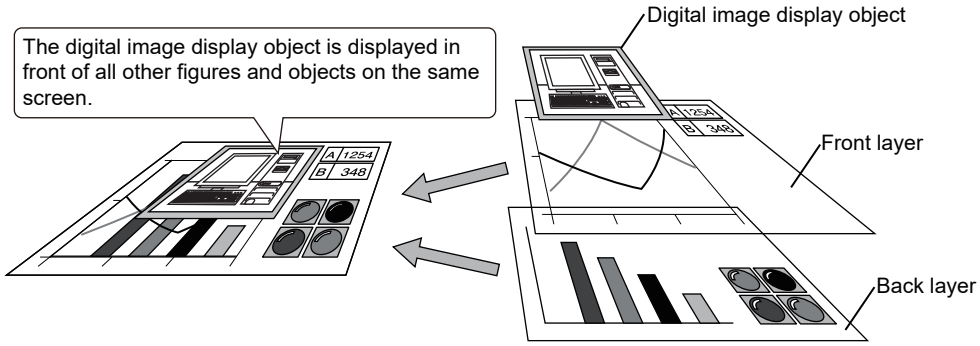
The digital image display object is displayed in front of or behind all other figures and objects on the same screen, regardless of the layers and display order of the objects.
When the digital image display object is displayed behind all other figures and objects, the transparent method and color can be specified.
Configure these settings using [Display Mode] in the [Digital Image Input] dialog.
For the setting method, refer to the following.
☞ Page 2688 [Digital Image Input/Recording] dialog
☞ Page 1859 [Digital Image Display] dialog

Precautions

The GOT displays the digital image display object either in front of or behind all other figures and objects on the same screen.

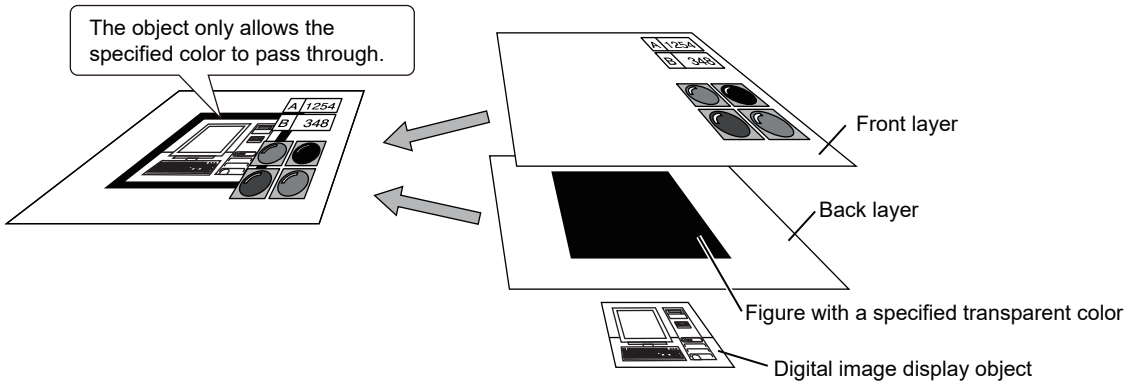
Display in the foreground

The digital image display object is displayed in front of all other figures and objects on the same screen.
Overlapped figures and objects are hidden under the digital image display object.



Display on the specified color area (behind all other figures and objects)

The digital image display object is displayed behind all other figures and objects on the same screen.
When a figure or object overlaps the digital image display object, the specified color becomes transparent through the object.



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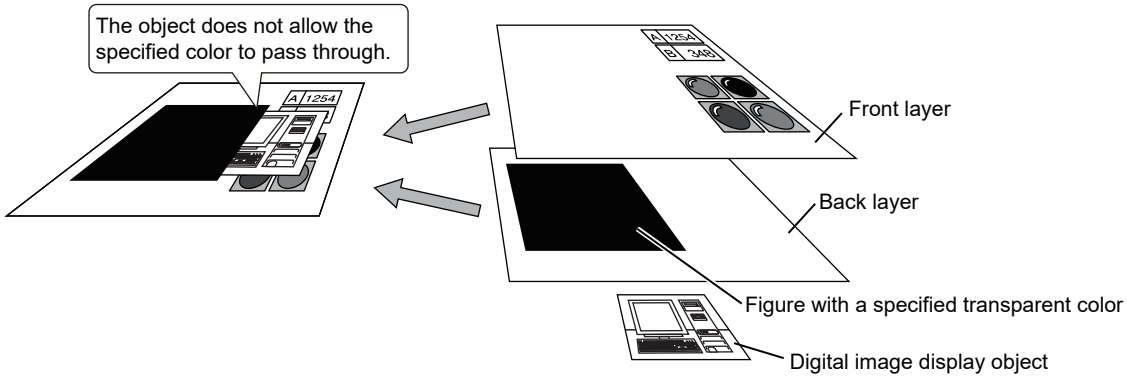
Display on the area of other colors (behind all other figures and objects)

The digital image display object is displayed behind all other figures and objects on the same screen.
When a figure or object overlaps the digital image display object, the specified color does not become transparent through the object.
(However, the digital image display object displays all colors except those specified as transparent.)



52.3 How to use the digital image display object

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☞ Page 1855 System configuration
☞ Page 1855 Setting procedure
☞ Page 1856 Operation on the GOT

52.3.1 System configuration

For the system configuration required to use the digital image display object, refer to the following.

☞ Page 2664 System configuration
☞ Page 2681 System configuration

52.3.2 Setting procedure

Use the following procedure to place a digital image display object and configure the operation settings.

Operating procedure

1. Select [Object] → [Digital Image Display] → [Camera/PC Image Display] or [File Playback].
2. Click the position to place the digital image display object.
3. Double-click the digital image display object to display the [Digital Image Display] dialog.
4. Configure the operation settings in each tab of the [Digital Image Display] dialog.

☞ Page 1859 [Digital Image Display] dialog

For the operations common to all objects or editing operations except operation settings, refer to the following.

☞ Page 995 Basics of figures and objects

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52.3.3 Operation on the GOT

To perform operation by touching the digital image display object on the GOT, set [Touch Mode] in the [Digital Image Setting] tab of the [Digital Image Display] dialog.

☞ Page 1856 Magnification switching (Loop)
☞ Page 1856 Magnification switching (Reciprocation)
☞ Page 1857 Gesture operation

When the operation mode of the digital image display object is file play, the image can be played with touch switches.

☞ Page 1857 File play

For the setting method, refer to the following.

☞ Page 1859 [Digital Image Display] dialog

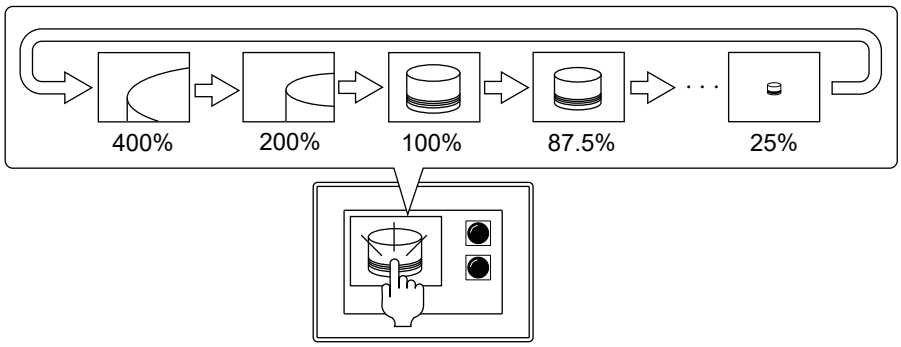
Magnification switching (Loop)

Enlarge or reduce an input image by one magnification factor according to the setting of [Change Direction] with a touch of the digital image display object.

The display magnification is wrapped around at its maximum or minimum factor.

Ex.

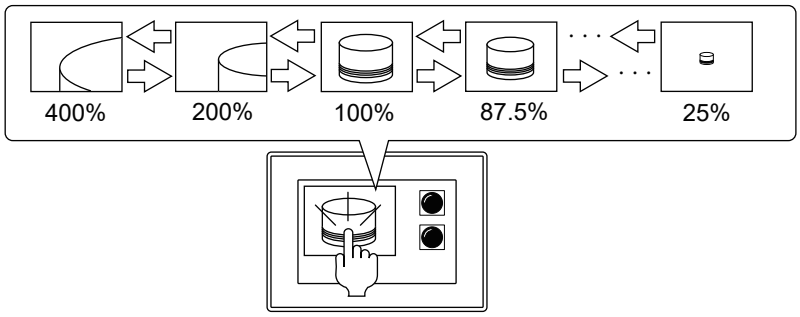
When selecting [Smaller ratio] for [Change Direction]



Magnification switching (Reciprocation)

Enlarge or reduce an input image by one magnification factor with a touch of the digital image display object.

The display magnification is switched in the opposite direction at its maximum or minimum factor.

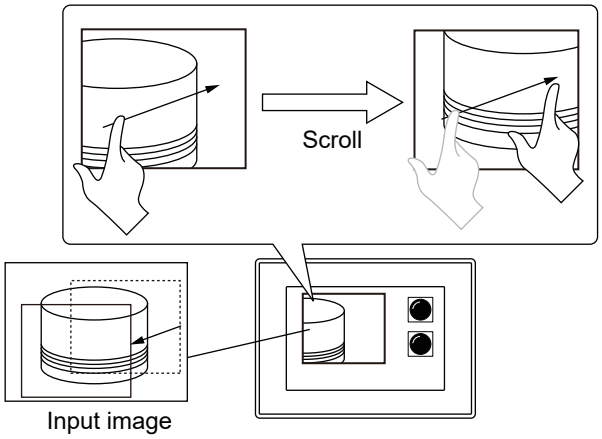


Gesture operation

Reposition the clip origin using the object gesture function.

To reposition the clip origin, slide the origin.

The clip area is scrolled by the slide operation.



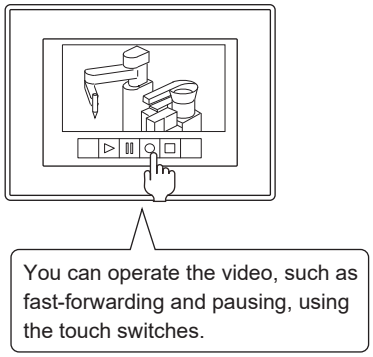
For details on the object gesture, refer to the following.

☞ Page 507 Operating objects with gestures (object gesture function)

File play

■Operating the image with touch switches

When the operation mode is file play, the image can be operated with touch switches.



If you select file play when placing an object, touch switches will be placed at the same time.

The following shows the touch switches to be placed.

Operation	Description
Jump to the beginning	Moves to the beginning of the image.
Play/file play mode	Plays the image normally.
Pause	Pauses the image playback.
Recording start	Starts recording.
Playback stop/recording stop	Stops the image playback or recording.
Video file manager	Starts the video file manager. For details on the setting, refer to the following. ☞ Page 1247 Settings for [Video File Manager]

The touch switches can also be set and placed by users.

For details, refer to the following.

☞ Page 1198 Setting touch switches

■Specifying the video file to be played

You can specify a video file in the data storage to play it.

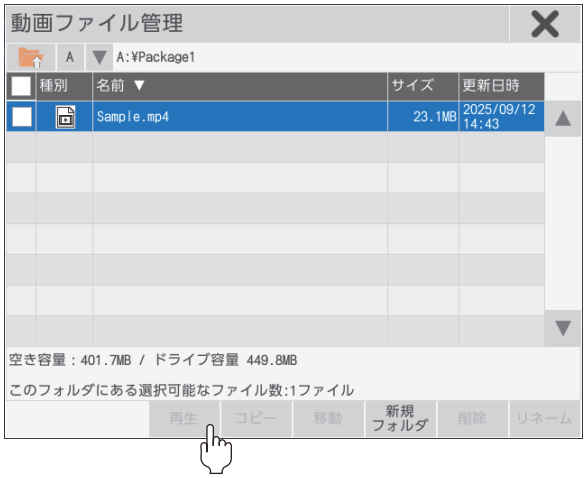
Operating procedure

1. Write a project data with the special function switch (video file manager) placed on the screen to the GOT.

For details on the special function switch (video file manager), refer to the following.

☞ Page 1247 Settings for [Video File Manager]

2. Touch the special function switch (video file manager) to open the video file manager screen.



3. Select the video file you want to play and touch [Play] to play the selected video.

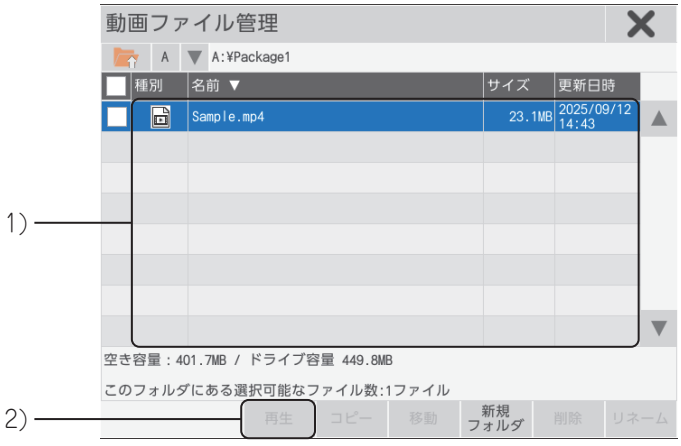
■Video file management screen

Touch the special function switch to launch the video file management screen.

The configuration of the video file management screen is almost the same as the file manager screen.

For the basic usage of the file manager screen, refer to the following.

GOT3000 Series User's Manual (Utility & Maintenance Functions)



Item		Description
1)	File list	Displays video files and folders.
2)	Playback button	Plays a selected video file.

52.4 [Digital Image Display] dialog

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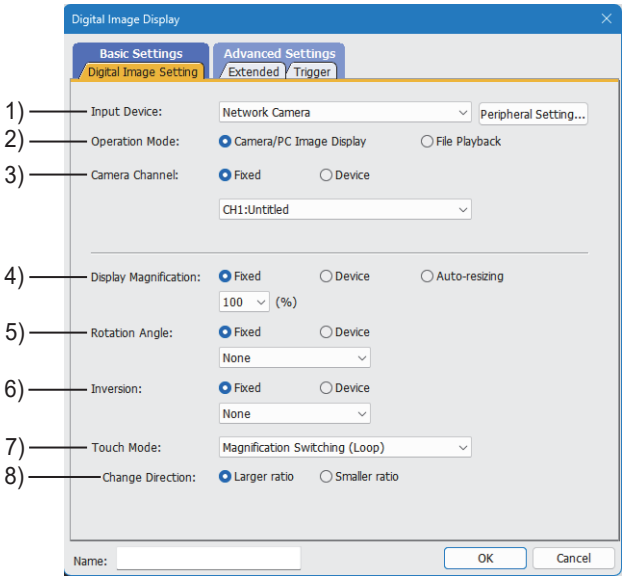
☞ Page 1859 [Digital Image Setting] tab
☞ Page 1861 [Extended] tab
☞ Page 1862 [Trigger] tab

52.4.1 [Digital Image Setting] tab

Specify the image to be displayed on the digital image display object, and configure the display settings such as display magnification, rotation, and inversion, as well as the actions when touched.



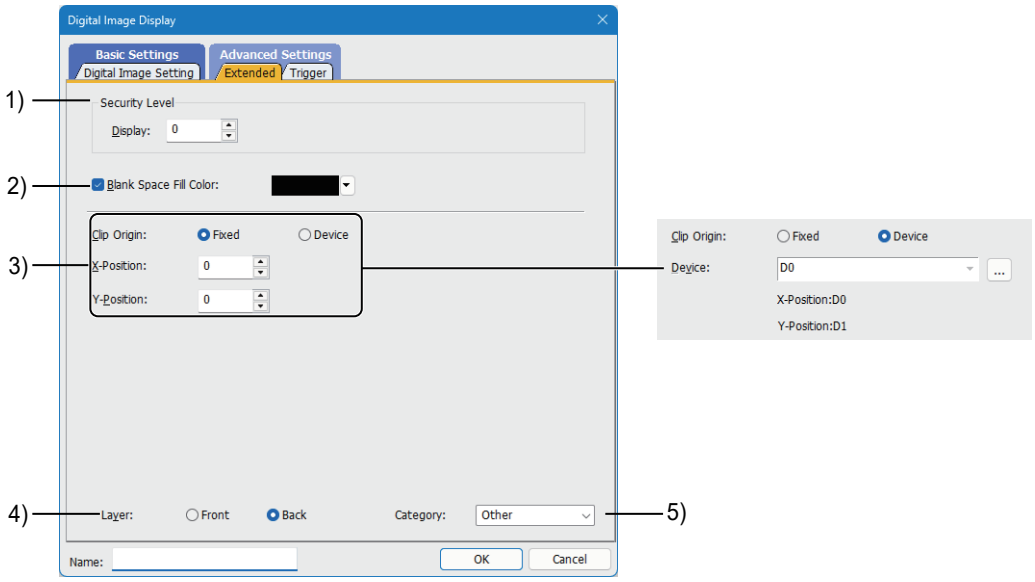
Item		Description
1)	[Input Device]	Specify the device that displays the image on the digital image display object. Configure the setting in the [Digital Image Input/Recording] dialog displayed when the [Peripheral Setting] button is clicked. ☞ Page 2688 [Digital Image Input/Recording] dialog
2)	[Operation Mode]	Specify the operation mode of the digital image display object. • [Camera/PC Image Display] Displays images sent from a camera or a personal computer screen. • [File Playback] Displays an image from the video file.
3)	[Camera Channel]	This item is displayed when [Network Camera] is selected for [Input Device] and [Camera/PC Image Display] is selected for [Operation Mode]. • [Fixed] Select this item to set a specific channel number. • [Device] Select this item to set the channel number to match the value of the device to be set. Select this item and set the device.
4)	[Display Magnification]	Select the display magnification of an input image. For details on the display magnification, refer to the following. ☞ Page 1849 Display magnification To specify the display magnification using a device value, select [Device] and set the device to be used.
5)	[Rotation Angle]	Select the rotation angle of an input image. For details on the rotation angle, refer to the following. ☞ Page 1850 Rotation angle To specify the rotation angle using a device value, select [Device] and set the device to be used.
6)	[Inversion]	Select the inversion method of an input image. For details on the inversion method, refer to the following. ☞ Page 1851 Inversion To specify the inversion angle using a device value, select [Device] and set the device to be used.

Item		Description
7)	[Touch Mode]	Select an operation to be performed when the digital image display object is touched. For details on the touch mode, refer to the following. ☞ Page 1856 Operation on the GOT The following shows selectable items. • [Disabled] Disables the touch operation. • [Gesture Operation] Enlarges or reduces an input image or repositions the clip origin by using the gesture operation. • [Magnification Switching (Loop)] Enlarges or reduces an input image according to the setting of [Change Direction]. The display magnification is wrapped around at its maximum or minimum factor. • [Magnification Switching (Reciprocation)] Enlarges or reduces an input image. The display magnification is switched in the opposite direction at its maximum or minimum factor.
8)	[Change Direction]	This item appears when [Touch Mode] is set to [Magnification Switching (Loop)]. Select the direction of the display magnification switching.

Precautions

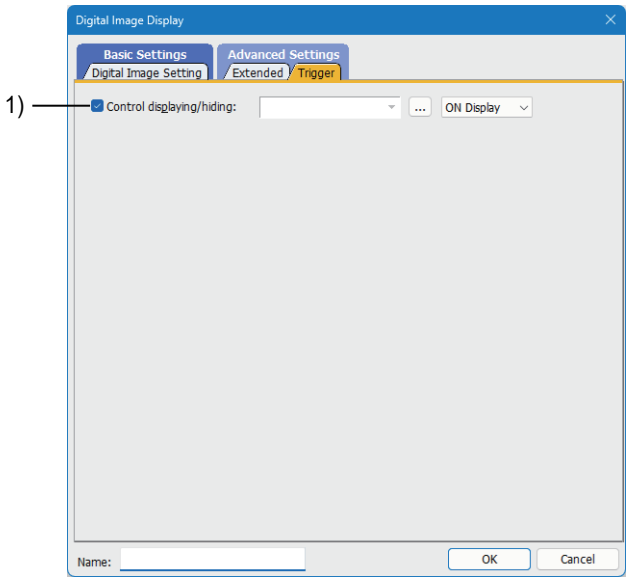
When placing an object requiring touch operation, such as a touch switch or numerical input, on the digital image display object, select [Disabled] for [Touch Mode] of the digital image display object.
Otherwise, the touch operation of the overlapping object is not performed properly.

52.4.2 [Extended] tab



Item		Description
1)	[Security Level]	Set the security level. The setting range is [0] to [15]. If you do not use the security function of the GOT, select [0]. ☞ Page 3038 Restricting display and operation on the GOT (Screen security)
2)	[Blank Space Fill Color]	Fills the blank space of the digital image display object. Select this item, and then select a color to fill the space. For details on filling blank space, refer to the following. ☞ Page 1851 Filling blank space
3)	[Clip Origin]	Appears when [Fixed] or [Device] is selected for [Display Magnification] in the [Digital Image Setting] tab. Set the clip origin for the clip display. For details on the clip display, refer to the following. ☞ Page 1851 Clip display The following shows selectable items. • [Fixed] Specify the clip origin within given ranges. Select this item, and then set [X Position] and [Y Position]. The following shows the setting ranges. [X Position]: [-1920] dots to [1920] dots [Y Position]: [-1920] dots to [1920] dots • [Device] Specify the clip origin with a device value. Select this item, and then specify the first device. Two consecutive devices (signed 16-bit binary), the first device and the subsequent device, are automatically assigned to the X and Y coordinates of the clip origin. First device: X coordinate Second device: Y coordinate
4)	[Layer]	Switches layers to be placed. This setting is valid only for filling blank space. For details on filling blank space, refer to the following. ☞ Page 1851 Filling blank space
5)	[Category]	Set the category to assign the object. ☞ Page 1121 Managing figures and objects by category

52.4.3 [Trigger] tab



Item		Description
1)	[Control displaying/hiding]	Enables the setting to display the object only when requirements are met. Set the following as requirements. • Control device (bit device or bit-specified word device) • When to display: When the control device is on or off

52.5 Relevant settings

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Configure the relevant settings in addition to the specific settings for the digital image display object as required.
The following shows the functions that are available by configuring the relevant settings.

52.5.1 GOT internal device

For details on the devices, refer to the following.
☞ Page 3581 GOT special register (GS)

Function	Setting item
Checking if the digital image input signal for CH1 is recognized	GS252.b15
Checking the status of the digital image input object for CH1	GS1030
Checking the horizontal resolution specified from CH1 of the GOT to the connected device	GS1031
Checking the vertical resolution specified from CH1 of the GOT to the connected device	GS1032
Checking the frequency of the signal input through the digital image input object for CH1	GS1033
Notifying that the required memory size reaches the upper limit when a USB converter is connected	GS2070.b0
Notifying the information related to video signal input	GS2071.b0 GS2071.b2 to b.5

PART 7

53 Placing a script parts object

GT37 SoftGOT3000

A script parts object is placed to create a script.
When the GOT displays the screen on which a script parts object is placed, if the trigger condition for the created script is satisfied, the script runs.
The following object manipulations are supported.

- Copying to another screen
- Grouping
- Registering to the library
- Adding to a template

A script parts object is visible only on the screen editor of GT Designer3.
The object is invisible on the GOT screen.
For information on how to place a script parts object and configure its settings, refer to the following.
☞ Page 2424 [Script Parts] dialog
For the types of scripts, refer to the following.
☞ Page 2325 Controlling operations with scripts ([Script])

54 Placing a screen on another screen

☞ Page 1866 Overview of the set overlay screen object
☞ Page 1868 Specifications of the set overlay screen object
☞ Page 1873 How to use the set overlay screen object
☞ Page 1876 [Set Overlay Screen] dialog
☞ Page 1877 Relevant settings

54.1 Overview of the set overlay screen object

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The set overlay screen is an object that calls other base screens and window screens (called screen) on a basic screen and display them as a single screen.

When the same objects are used on multiple screens, memory space can be saved.

• When using no set overlay screen object

Four touch switches need to be set.

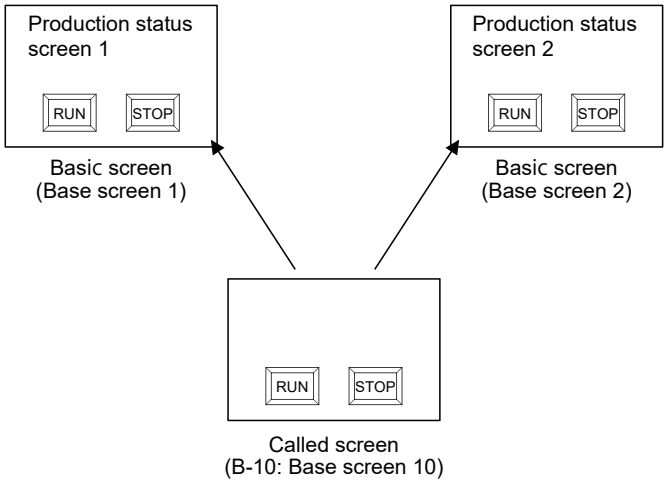
(Two on base screen 1 and two on base screen 2)

• When using a set overlay screen object

Only two touch switches need to be set.

(two on a called screen)

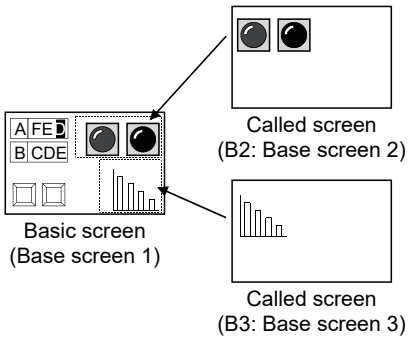
Because production status screen 1 and 2 display the touch switches on the called screen, touch switch settings are not required.



Create a dedicated screen for touch switches and call it from each screen.

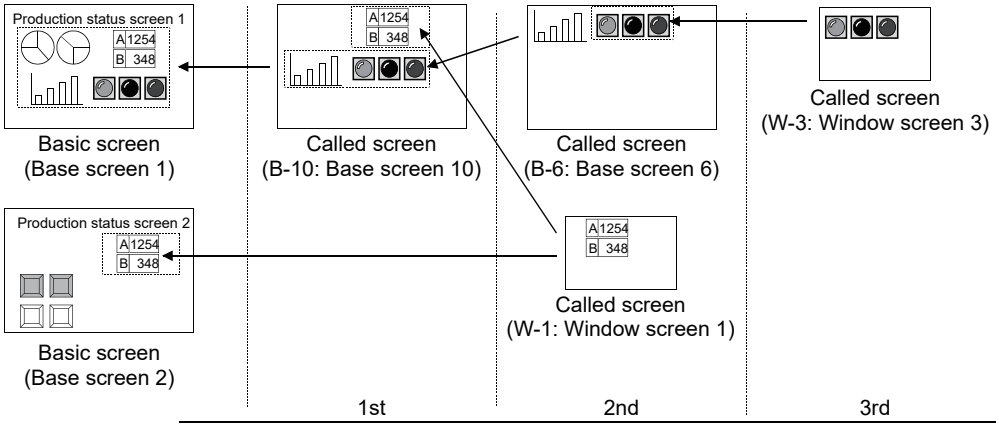
Ex.

Displaying multiple called screens on one basic screen



Ex.

Placing hierarchically and displaying



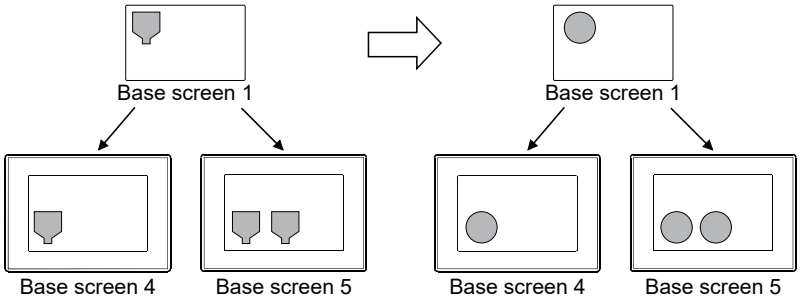
Precautions

■Editing a called screen

Called screens cannot be edited with the set overlay screens (object).

Open the called screens and edit them.

When called screens are edited, the edits are reflected to all the set overlay screens.



■Editing figures overlapping with set overlay screens

When figures are placed on a basic screen on the back of set overlay screens (object), the figures cannot be edited.

When selecting and editing figures on a basic screen, click the [Edit] → [Object of Selection] from the menu to deselect [Display Overlay Screen].

54.2 Specifications of the set overlay screen object

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The following shows the specifications of the set overly screen.

☞ Page 1868 Type of a screen that can be used as the basic screen
☞ Page 1868 Types of screens that can be used as called screens
☞ Page 1868 Number of set overlay screens that can be placed
☞ Page 1869 Hierarchy of called screens
☞ Page 1871 Display of called screens viewed when figures and objects are overlapping

54.2.1 Type of a screen that can be used as the basic screen

The following screens can be used as the basic screen.

- Base screen
- Window screen
- Mobile screen

For calling a mobile screen, refer to the following.

☞ Page 2742 Usable functions

54.2.2 Types of screens that can be used as called screens

The following screens can be used as called screens.

- Base screen
- Window screen
- Mobile screen

For calling a mobile screen, refer to the following.

☞ Page 2742 Usable functions

The trigger actions and screen scripts set for the called screens are executed.

54.2.3 Number of set overlay screens that can be placed

Up to 2047 set overlay screen objects can be placed.

54.2.4 Hierarchy of called screens

Number of layers in the hierarchy

Set overlay screens can be also placed on screens used as called screens.

The type of the basic screen determines the maximum number of layers of displayable called screens.

Screen type	Maximum number of layers
Base screen Window screen	16
Mobile screen	1

Relation between security levels of called screens and the display of the layers in the hierarchy

The security set for each called screen is valid.

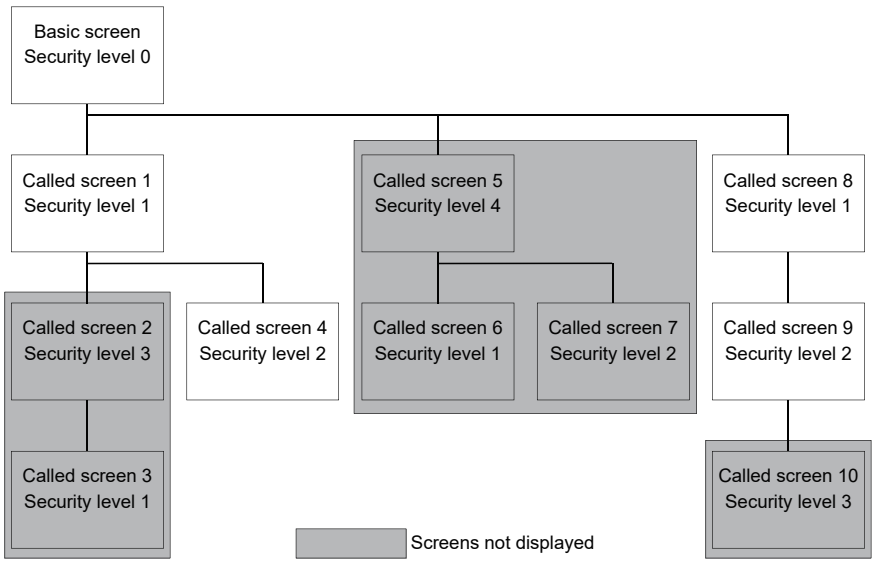
When a password entered on a basic screen is at a security level lower than that of called screens, the called screens are not displayed.

Screens called in nested structures from the screens that cannot be displayed are not displayed.

If a called screen is not displayed, the trigger action and screen script set for the called screen are not executed.

Ex.

Called screens that can be displayed with security level 2 password



Display order applied when multiple screens are called

When multiple set overlay screens are placed on one screen, the display order of the called screens is determined according to the order of setting with GT Designer3 and the layer in the hierarchy at which the called screens are set.

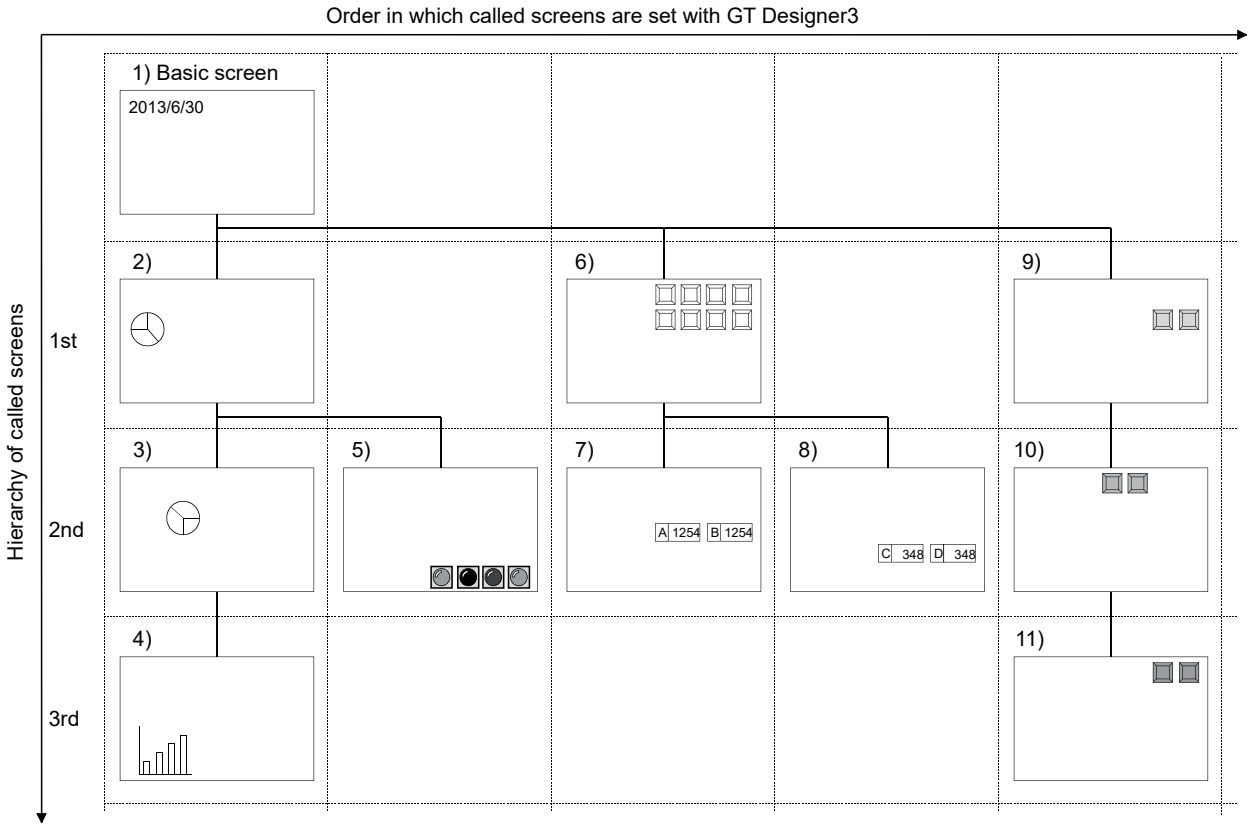
Called screens are displayed on previously displayed screens. Hence screens placed later in the display order are displayed in front.

The following shows the specifications of the display order.

- When multiple called screens are set on a basic screen, the screens are displayed in order of setting with GT Designer3.
- When called screens are placed hierarchically, the screens are displayed in order of layer in the hierarchy from the shallowest depth.
- When the above two settings are both configured, the order of layer takes precedence.

Ex.

When multiple called screens are set on one screen, and some of those screens are hierarchically placed, they are displayed in the order from 1) to 11).



Point

- Security function, trigger action function, and script function set for each called screen

The security function, trigger action function, and script function set for each called screen are executed in the display order of the called screens.

- How to check the hierarchy and order in which called screens are set

The hierarchy can be checked in the [Screen] window.

☞ Page 122 [Screen] window

You can check the order in which called screens are set in the data browser.

For information on how to use the data browser, refer to the following.

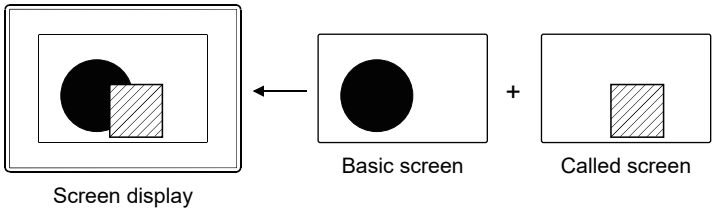
☞ Page 167 Searching for and editing a specific setting (Data Browser)

54.2.5 Display of called screens viewed when figures and objects are overlapping

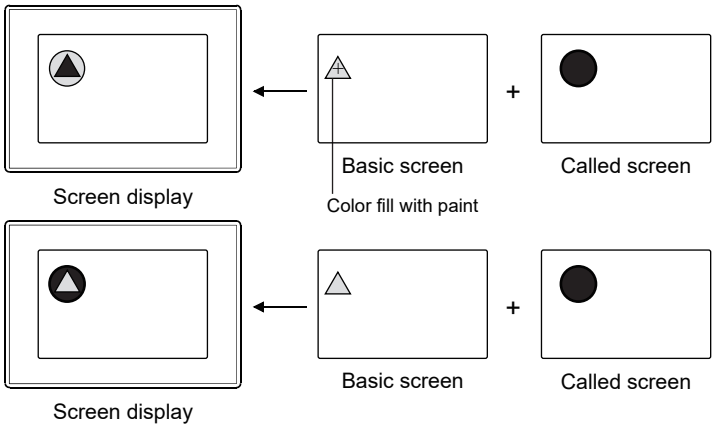
When called screens and figures/objects overlap in the same layer, they are displayed with the GOT as follows.
For details on superimposition, refer to the following.
☞ Page 1055 Superimposition of figures and objects

Figure

The shape of the called screen is displayed in front.

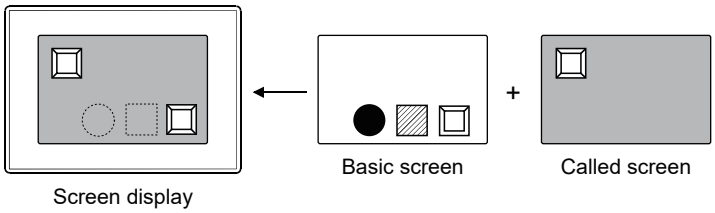


When paints are set for figures on the basic screen and the figures overlap with the shapes of called screens, the colors of the figures may not be displayed correctly.
When the color of a figure is not displayed correctly, set the color fill of the figure with the setting dialog for the figure.

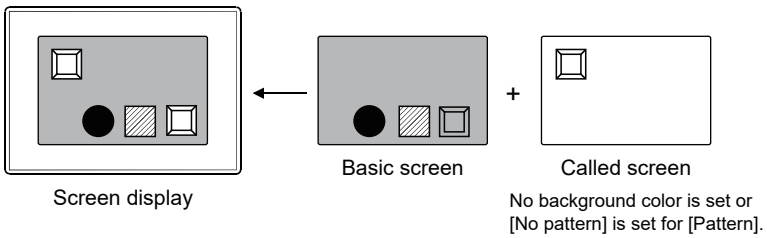


Screen Background

The background color of the called screen is displayed in front.
When the area of the background color overlaps with figures, the figures are not displayed.

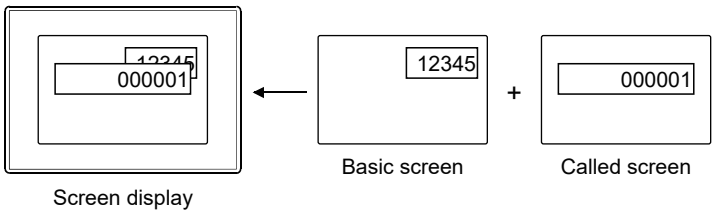


When no background color is set or [No pattern] is set for [Pattern] of the background color, the called screen displays the background color of the basic screen.



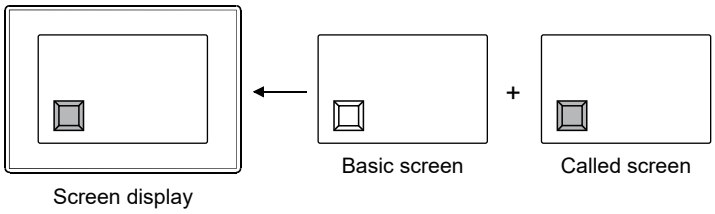
Object

Among the objects on basic screens and called screens, ones on which values change are displayed in front.



Touch switch

Initially, touch switches placed later in the display order are displayed in front.
Subsequently, those with display conditions changed are displayed in front.



Precautions

■Figures and objects placed in the temporary area

When figures and objects are placed in the temporary area for called screens, the figures are displayed but the objects are not displayed with the GOT.

■Displaying the objects of the types for which only one object can be set on one screen

Do not place on both a basic screen and called screen the objects of the types for which only one object can be set on one screen.
When they are placed, they are displayed but the functionality is limited and they do not work correctly.

54.3 How to use the set overlay screen object

GT37 SoftGOT3000

The following shows how to use a set overly screen object.

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54.3.1 Placing a set overlay screen object

The following shows how to place the set overlay screen.

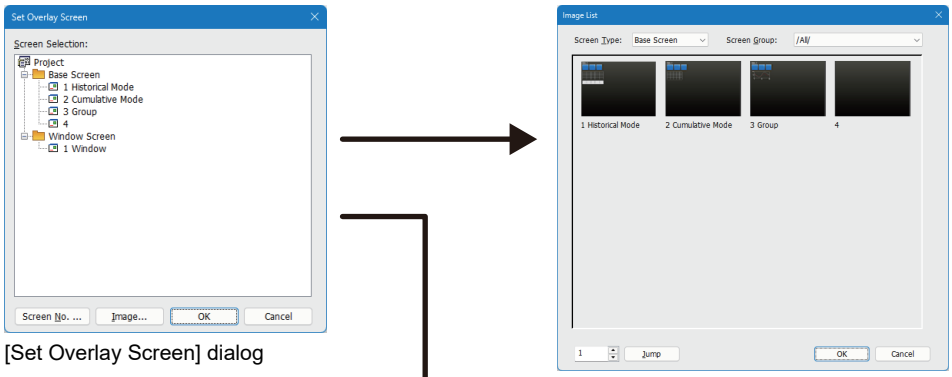
Operating procedure

1. Select [Object] → [Overlay Screen] from the menu.

The [Set Overlay Screen] dialog appears.

2. Select a called screen with any one of the following methods and click the [OK] button.

- Select a called screen from the window selection tree.
- Click the [Screen No.] button to display the [Number Specification] dialog, and specify the screen number that has assigned to the called screen.
- Click the [Image] button to display the [Image List] dialog, and select the screen to be called from among the screen images.



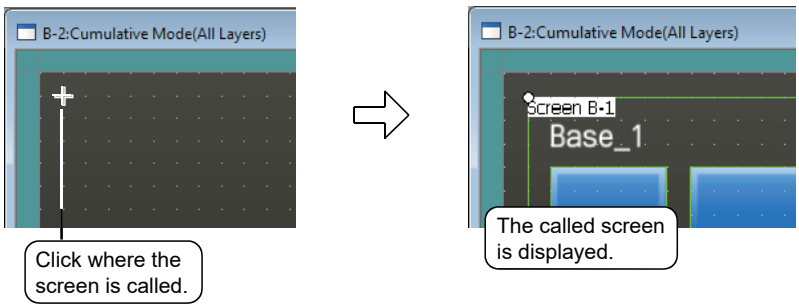
[Set Overlay Screen] dialog

[Image List] dialog

[Number Specification] dialog

3. On the screen editor, place the set over lay screen.

Click the position where you place the called screen.



Point

- Editing a called screen

Double-click the set overlay screen that has been placed on the screen editor to open and edit the called screen.

- Simpler setting method

Called screens can be placed by dragging them from the screen view tree.

54.3.2 Checking set overlay screen settings

You can check the set overlay screen settings in the [Screen] window.

For details on the [Screen] window, refer to the following.

☞ Page 122 [Screen] window

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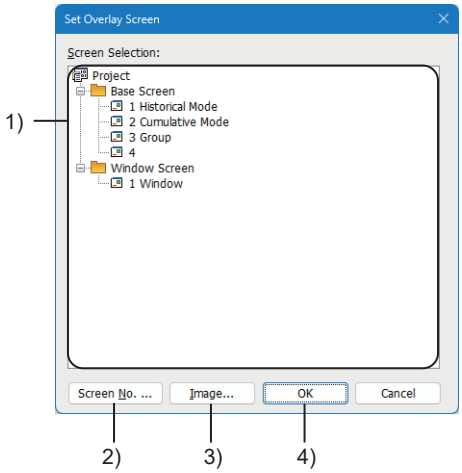
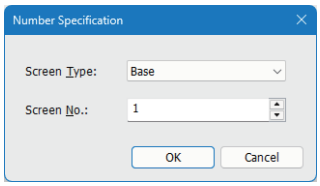
54.4 [Set Overlay Screen] dialog

GT37 SoftGOT3000



Item			Description
1)	[Screen Selection]		Select the screen used as a called screen from the tree. Screens being edited cannot be selected.
2)	[Screen No.] button	—	When specifying a called screen with a screen number, click this button. Displays the [Number Specification] dialog. 
		[Screen Type]	Select the type of the screen used as a called screen. When the basic screen is a mobile screen, the selection is fixed to [Mobile].
		[Screen No.]	Set the number that has been assigned to the screen used as a called screen. The setting range is [0] to [32767]. Screen numbers cannot be set if the corresponding screens are non-existent.
3)	[Image] button		When selecting a called screen from the screen preview list, click this button. The [Image List] dialog appears. For details on the [Image List] dialog, refer to the following. ☞ Page 3683 [Image List] dialog (screen)
4)	[OK] button		After selecting the screen used as a called screen, click this button. Close the [Set Overlay Screen] dialog. After clicking this button, click where the called screen should be displayed.

54.5 Relevant settings

GT37 SoftGOT3000

Configure the relevant settings in addition to the specific settings for the set overlay screen as required.
The following shows the functions that are available by configuring the relevant settings.

54.5.1 GOT environmental settings (Screen switching/ window setting)

Select [Common] → [GOT Environmental Setting] → [Screen Switching/Windows] from the menu to display the [Environmental Setting] dialog.

☞ Page 530 Setting for switching screens to be displayed on the GOT ([Screen Switching/Window])

Function	Setting item
Setting the position of a called screen in front of or behind the basic screen Regardless of this setting, if the basic screen is a mobile screen, a called screen is always positioned in front of the basic screen.	[Overlay Screen Positioning]
Setting whether to disable the background color of a called screen Regardless of this setting, if the basic screen is a mobile screen, the background color of a called screen is always enabled.	[Disable background colors of overlay screen when setting an overlay screen]

PART 7

55 Configuring an animation route

☞ Page 1879 Overview of the animation route
☞ Page 1880 Animation route specifications
☞ Page 1881 Configuring an animation route
☞ Page 1882 [Animation Route] dialog

55.1 Overview of the animation route

GT37 SoftGOT3000

An animation route defines a series of display points of a part as a route.
Setting display points on an animation route automatically specifies the values of the position devices associated with the points.
Select [Route Specification] in the parts setting dialog and specify the animation route to be used in [Route No.]. This will display the part at the points associated with the values of the part's position devices.
☞ Page 1472 [Route Specification]
Multiple animation routes can be configured.
One animation route can be used for multiple parts.

55.2 Animation route specifications

GT37 SoftGOT3000

☞ Page 1880 Maximum number of routes per screen
☞ Page 1880 Animation route size
☞ Page 1880 Configuration of an animation route

55.2.1 Maximum number of routes per screen

Up to 30 animation routes can be set on one screen.

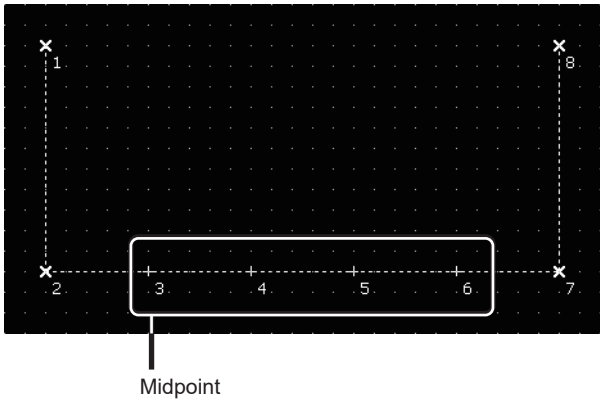
55.2.2 Animation route size

The minimum and maximum sizes of an animation route are shown below.

Size	Size (dot)
Minimum size	1×1
Maximum size	6000 × 6000

55.2.3 Configuration of an animation route

An animation route consists of multiple points and an auxiliary line that connects the points.
The range of an animation route is treated in the same manner as an object area, and handles are displayed.
These handles allow you to perform the same operations (such as size adjustment) as handles on an object frame.
Each point is assigned a serial number with the start point set as 1.
The serial number is automatically set in [Device Value] for each point in the [Animation Route] dialog.
The part will be displayed at the points associated with values of the part's position devices.



Display	Description
Point	Points are displayed as ×. On the above screen, 1, 2, 7, and 8 are points. The positions of points can be changed on the screen editor or in the [Animation Route] dialog.
Intermediate point	Intermediate points are set by dividing a distance between two points evenly into multiple sections. They are displayed as small crosses. On the above screen, 3 to 6 are intermediate points. Their positions cannot be adjusted.

55.3 Configuring an animation route

GT37 SoftGOT3000

Place an animation route by the following procedure.

Operating procedure

1. Select [Object] → [Animation Route] from the menu, and click the intended position to place an animation route.

☞ Page 1001 Placing figures and objects

2. Double-click the animation route that has been placed to display the [Animation Route] dialog.
3. Configure each setting in the [Animation Route] dialog.

☞ Page 1882 [Animation Route] dialog

For the operations common to all objects or editing operations except operation settings, refer to the following.

☞ Page 995 Basics of figures and objects

Point

After placing an animation route, you can move, add, or delete vertices.
Select [Edit] → [Edit Vertices] from the menu to edit vertices.
For information on how to edit vertices, refer to the following.

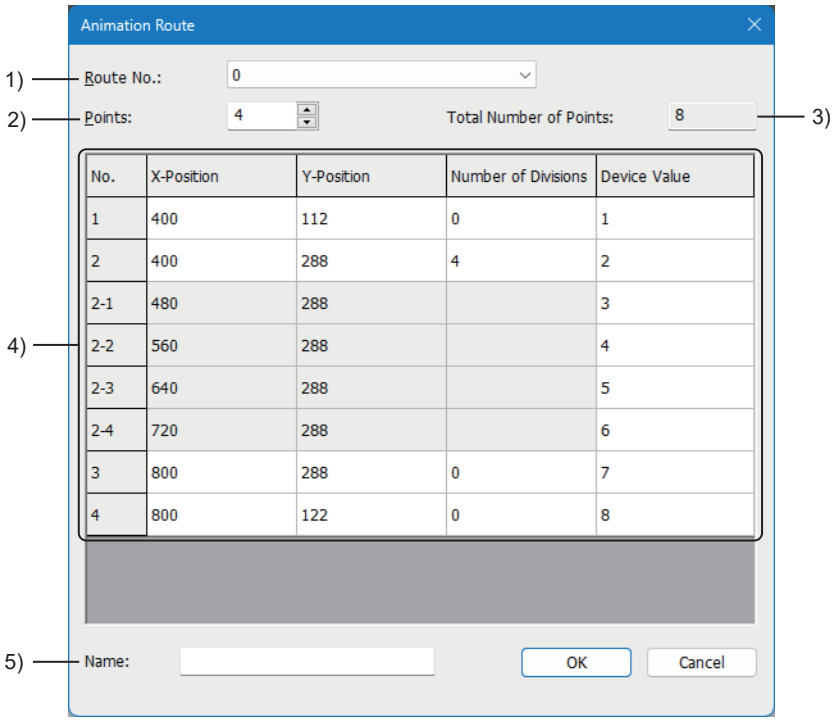
☞ Page 1026 Editing vertices to change the shape of a figure

PART 7

55.4 [Animation Route] dialog

GT37 SoftGOT3000

Specify the number of points and set the display position of each point.



Item		Description
1)	[Route No.]	Specify the identification number of the animation route. The setting range is [0] to [29].
2)	[Points]	Set the number of points on the animation route at which the part is displayed. The setting range is [1] to [100].
3)	[Total Number of Points]	The total number of points set on the route is displayed.
4)	[No.]	The point management number is displayed. For the intermediate points created by division, numbers using [-] (hyphen) are displayed.
	[X-Position] [Y-Position]	Set the X coordinates and Y coordinates of the points. The setting range is [-1000] to [4999]. If the animation route is moved or the position of any points is changed on the screen editor, the move/change is reflected in these settings.
	[Number of Divisions]	The distance between the current point and the next point is divided evenly, and intermediate points are inserted. Positions of the points displayed by this division cannot be specified using coordinates. The setting range is [0] to [98].
	[Device Value]	The values of the position devices to be associated with the points are automatically set. The values of the position devices are displayed as the serial number of each point on the screen editor.
5)	[Name]	Set the name. The name is displayed in places such as the data browser and property sheet. Up to 100 characters can be set.

56 Specifying the display position of a window screen

☞ Page 1884 Overview of the window position object
☞ Page 1885 Specifications of the window position
☞ Page 1886 How to use the window position

PART 7

56.1 Overview of the window position object

GT37 SoftGOT3000

This function sets the position of a window screen to be displayed on a base screen or mobile screen.

Point

• Operation on the GOT

An overlap window can be moved on the screen of the GOT.

A superimpose window cannot be moved on the screen of the GOT.

• Controlling the display position of the overlap window with devices

The display position of the overlap window can be controlled with the device value.

56.2 Specifications of the window position

GT37 SoftGOT3000

The following shows the specifications of the window position.

56.2.1 The type of the screen for which the window position can be set

The window position can be set for a base screen or mobile screen.

56.2.2 The type of the screen for which the display position can be set

The following shows the type of windows for which the display position can be set.

- Overlap window
- Superimpose window
- Key window (Not applicable to mobile screens)

Precautions

The window position setting is not applied to a screen with the window position setting if the screen is displayed as a set overlay screen.

For details on the set overlay screen function, refer to the following.

☞ Page 1864 Placing a script parts object

56.3 How to use the window position

GT37 SoftGOT3000

The following shows how to use the window position.

56.3.1 Setting the window position

The following shows the procedure for setting a window position.

Operating procedure

1. Select [Object] → [Window Position] from the menu, and select a window screen to set its display position.

Overlap windows 3 to 5 and key windows are not applicable to mobile screens.

2. Click the position where you display the window.

A mark indicating the window position is placed.

To display a key window at the position where a window position object is placed, configure one of the following settings.

- In the [Environmental Setting] window, select [Not move] for [Key Window Position Correction] on the [Advanced Setting] tab.

☞ Page 572 [Advanced Setting] tab

- In the [Key Window Advanced Setting] tab of the [Base Screen Property] dialog, select [Not move] for [Key Window Position Correction].

☞ Page 319 [Key Window Advanced Setting] tab

A key window appears near an input object by default.

Precautions

At setting of the window position, the size of the window screen is not considered.

When a window screen extends off the screen it is placed on, the display of the window screen may vary depending on the screen type.

■Overlap window

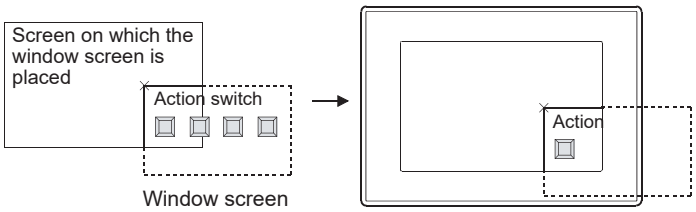
The display depends on the setting of [Display windows beyond the screen area] in the [Environmental Setting] window ([Screen Switching/Window].

For details, refer to the following.

☞ Page 542 [Screen Switching/Window]

■Superimpose window

The window screen does not move, and the part extending off the underlying screen is not displayed.



56.3.2 Displaying the preview on the screen editor

The preview of the window screen placed as the window position can be displayed on the screen editor.

For details, refer to the following.

☞ Page 340 Displaying the preview of a window screen on the screen editor

57 Placing an object to display the input information

☞ Page 1888 Overview of the object to display the input information
☞ Page 1889 Specifications of key window objects
☞ Page 1890 Placing the key window object
☞ Page 1891 [Input Value Area Setting] dialog
☞ Page 1892 [Input Range Area Setting] dialog
☞ Page 1893 [Input Maximum Value Area Setting] dialog
☞ Page 1894 [Input Minimum Value Area Setting] dialog
☞ Page 1895 [Previous Value Area Setting] dialog

57.1 Overview of the object to display the input information

GT37 SoftGOT3000

The key window object displays the relevant information when a numerical value or text is input to an object by using a key window.

For details on the key window, refer to the following.

☞ Page 558 Setting key windows of the GOT ([Key Window])

57.2 Specifications of key window objects

GT37 SoftGOT3000

The following shows the specifications of key window objects.

57.2.1 Key window object types

The following show the information that can be displayed on the key window objects.

- Input value area: Displays the numerical value or text which is being input to the object.
- Input range area: Displays the maximum and minimum values which can be input to the object.
- Input maximum range area: Displays the maximum value which can be input to the object.
- Input minimum range area: Displays the minimum value which can be input to the object.
- Previous value area: Displays a numerical value or text previously input to the object.

57.2.2 Types of the screen where the key window object can be placed

The following shows the types of the screen where the key window object can be placed.

- Base screen
- Window screen

57.2.3 Number of placeable key window objects

You cannot place each key window object more than once on a screen.
You cannot also place two or more objects in the same type on a screen.

57.2.4 Operations for displaying the key window object

The following shows operations that display the key window object except inputting numerical values or texts to the object.

- The security level is changed.
- The language is switched.
- The system language is switched.
- The station number is switched.
- The character code is changed by the Character Code Control (GS456).

57.3 Placing the key window object

GT37 SoftGOT3000

The following shows how to place the key window object.

Operating procedure

1. Select [Object] → [Key Window Object] from the menu, and select a key window object to be placed.

The following shows selectable items.

- [Input Value Area Setting]
- [Input Range Area Setting]
- [Input Maximum Value Area Setting]
- [Input Minimum Value Area Setting]
- [Previous Value Area Setting]

2. Click the position to place the object.

3. Adjust the frame size of the object.

4. Double-click the object to display the setting dialog to configure the relevant settings.

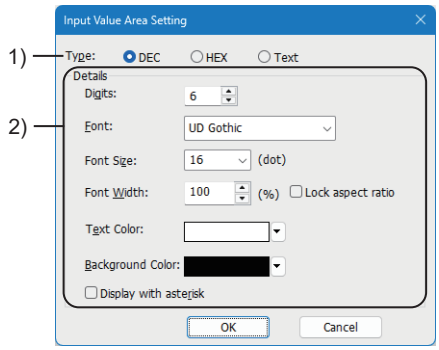
☞ Page 1891 [Input Value Area Setting] dialog
☞ Page 1892 [Input Range Area Setting] dialog
☞ Page 1893 [Input Maximum Value Area Setting] dialog
☞ Page 1894 [Input Minimum Value Area Setting] dialog
☞ Page 1895 [Previous Value Area Setting] dialog

5. Click the [OK] button to complete the object settings.

57.4 [Input Value Area Setting] dialog

GT37 SoftGOT3000

Set the input value area to display the numerical value or text which is being input.

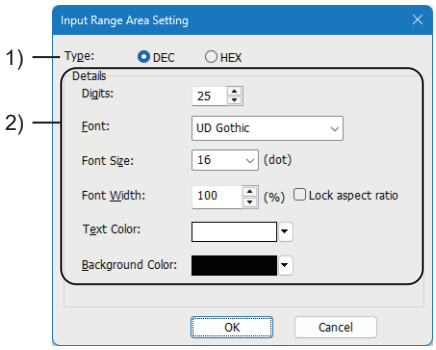


Item			Description
1)	[Type]		Select the display format. This setting only determines the setting range of [Digits]. The key window operates on the GOT according to the format of the input object. To create a key window for inputting decimal or binary values, select [DEC]. To create a key window for inputting hexadecimal values, select [HEX]. To create a key window for inputting octal values, select [DEC] or [HEX]. To create a key window for inputting characters, select [Text].
2)	[Details]	[Digits]	Set the number of digits to be displayed. The setting range varies depending on the selection for [Type]. • [DEC] is selected for [Type]: [1] to [33] digit(s) • [HEX] is selected for [Type]: [1] to [16] digit(s) • [Text] is selected for [Type]: [1] to [100] digit(s)
		[Font]	Select the font of the text.
		[Font Size]	Select a text size. The setting range is [8] dots to [540] dots.
		[Font Width]	Set a horizontal text size. The horizontal size is specified with the magnification relative to [Font Size] (vertical text size). The setting range is [6]% to [1600]%.
		[Lock aspect ratio]	Select this item to fix the aspect ratio of the font. When this item is selected, the setting of [Font Width] is disabled.
		[Text Color]	Set the text color.
		[Background Color]	Set the color for the object.
		[Display with asterisk]	Represents the displayed contents with asterisks.

57.5 [Input Range Area Setting] dialog

GT37 SoftGOT3000

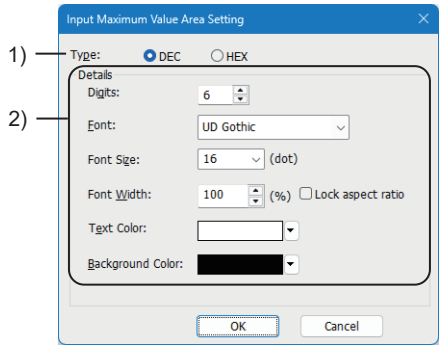
Set the input range area to display the maximum and minimum values which can be input.



Item			Description
1)	[Type]		Select the display format. This setting only determines the setting range of [Digits]. The key window operates on the GOT according to the format of the input object. To create a key window for inputting decimal or binary values, select [DEC]. To create a key window for inputting hexadecimal values, select [HEX]. To create a key window for inputting octal values, select [DEC] or [HEX].
2)	[Details]	[Digits]	Set the number of digits to be displayed. The setting range is [15] digit to [79] digits. When the device is set with a range expression and the device value exceeds the set number of digits, ? may be displayed. Set the number of digits in consideration of the device value referring to the following. Example 1) D100 <= INPUT <= D200 Required number of digits: D100 (Device value (-32767 to 32767)*) _ <= (1 2 1) _ INPUT (5) _ <= (1 2 1) _ D200 (Device value (-32767 to 32767)*) 6 digits + 13 digits + 6 digits Input range: Requires 25 digits. * For 16-bit signed decimal numbers Example 2) D100 < INPUT Required number of digits: D100 (Device value (-32767 to 32767)*) _ < (1 1 1) _ INPUT (5) 6 digits + 8 digits Input range: Requires 14 digits. * For 16-bit signed decimal numbers
		[Font]	Select the font of the text.
		[Font Size]	Select a text size. The setting range is [8] dots to [540] dots.
		[Font Width]	Set a horizontal text size. The horizontal size is specified with the magnification relative to [Font Size] (vertical text size). The setting range is [6]% to [1600]%.
		[Lock aspect ratio]	Select this item to fix the aspect ratio of the font. When this item is selected, the setting of [Font Width] is disabled.
		[Text Color]	Set the text color.
		[Background Color]	Set the color for the object.

57.6 [Input Maximum Value Area Setting] dialog

GT37 SoftGOT3000



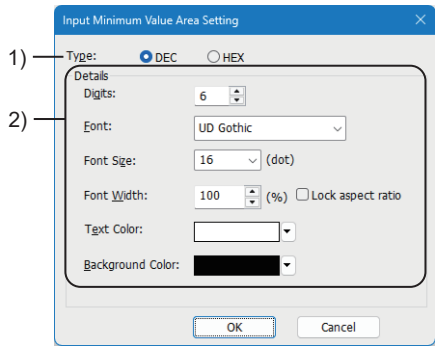
Item			Description
1)	[Type]		Select the display format. This setting only determines the setting range of [Digits]. The key window operates on the GOT according to the format of the input object. To create a key window for inputting decimal or binary values, select [DEC]. To create a key window for inputting hexadecimal values, select [HEX]. To create a key window for inputting octal values, select [DEC] or [HEX].
2)	[Details]	[Digits]	Set the number of digits to be displayed. The setting range varies depending on the selection for [Type]. • [DEC] is selected for [Type]: [1] to [33] digit(s) • [HEX] is selected for [Type]: [1] to [16] digit(s) When the number of digits exceeds the set value, ? is displayed.
		[Font]	Select the font of the text.
		[Font Size]	Select a text size. The setting range is [8] dots to [540] dots.
		[Font Width]	Set a horizontal text size. The horizontal size is specified with the magnification relative to [Font Size] (vertical text size). The setting range is [6]% to [1600]%.
		[Lock aspect ratio]	Select this item to fix the aspect ratio of the font. When this item is selected, the setting of [Font Width] is disabled.
		[Text Color]	Set the text color.
		[Background Color]	Set the color for the object.

PART 7

57.7 [Input Minimum Value Area Setting] dialog

GT37 SoftGOT3000

Set the input range area (minimum value) to display the minimum value which can be input.

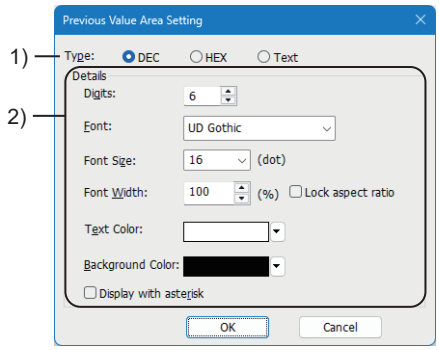


Item			Description
1)	[Type]		Select the display format. This setting only determines the setting range of [Digits]. The key window operates on the GOT according to the format of the input object. To create a key window for inputting decimal or binary values, select [DEC]. To create a key window for inputting hexadecimal values, select [HEX]. To create a key window for inputting octal values, select [DEC] or [HEX].
2)	[Details]	[Digits]	Set the number of digits to be displayed. The setting range varies depending on the selection for [Type]. • [DEC] is selected for [Type]: [1] to [33] digit(s) • [HEX] is selected for [Type]: [1] to [16] digit(s) When the number of digits exceeds the set value, ? is displayed.
		[Font]	Select the font of the text.
		[Font Size]	Select a text size. The setting range is [8] dots to [540] dots.
		[Font Width]	Set a horizontal text size. The horizontal size is specified with the magnification relative to [Font Size] (vertical text size). The setting range is [6]% to [1600]%.
		[Lock aspect ratio]	Select this item to fix the aspect ratio of the font. When this item is selected, the setting of [Font Width] is disabled.
		[Text Color]	Set the text color.
		[Background Color]	Set the color for the object.

57.8 [Previous Value Area Setting] dialog

GT37 SoftGOT3000

Set the previous value area to display the numerical value or text which is previously input.



Item			Description
1)	[Type]		Select the display format. This setting only determines the setting range of [Digits]. The key window operates on the GOT according to the format of the input object. To create a key window for inputting decimal or binary values, select [DEC]. To create a key window for inputting hexadecimal values, select [HEX]. To create a key window for inputting octal values, select [DEC] or [HEX]. To create a key window for inputting characters, select [Text].
2)	[Details]	[Digits]	Set the number of digits to be displayed. The setting range varies depending on the selection for [Type]. • [DEC] is selected for [Type]: [1] to [33] digit(s) • [HEX] is selected for [Type]: [1] to [16] digit(s) • [Text] is selected for [Type]: [1] to [100] digit(s) When the number of digits exceeds the set value, ? is displayed.
		[Font]	Select the font of the text.
		[Font Size]	Select a text size. The setting range is [8] dots to [540] dots.
		[Font Width]	Set a horizontal text size. The horizontal size is specified with the magnification relative to [Font Size] (vertical text size). The setting range is [6]% to [1600]%.
		[Lock aspect ratio]	Select this item to fix the aspect ratio of the font. When this item is selected, the setting of [Font Width] is disabled.
		[Text Color]	Set the text color.
		[Background Color]	Set the color for the object.
		[Display with asterisk]	Represents the displayed contents with asterisks.

58 Placing a hyperlink on a mobile screen

☞ Page 1897 Overview of the hyperlink
☞ Page 1899 Specifications of the hyperlink object
☞ Page 1900 How to use the hyperlink object
☞ Page 1901 [Hyperlink] dialog

58.1 Overview of the hyperlink

GT37 SoftGOT3000

The hyperlink object is placed on a mobile screen to access a website or a file in the GOT public folder, or to make a phone call from a GOT Mobile function client.

For details on the GOT Mobile function, refer to the following.

☞ Page 2736 Monitoring a controller from tablets or other devices (GOT Mobile function)

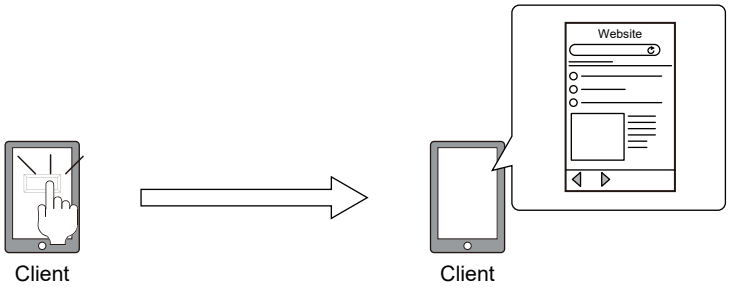
58.1.1 Application example

The following shows an example of using a hyperlink.

☞ Page 1897 Opening a website
☞ Page 1897 Opening a file in the public folder
☞ Page 1898 Making a phone call

Opening a website

You can access a website by specifying its URL.



Opening a file in the public folder

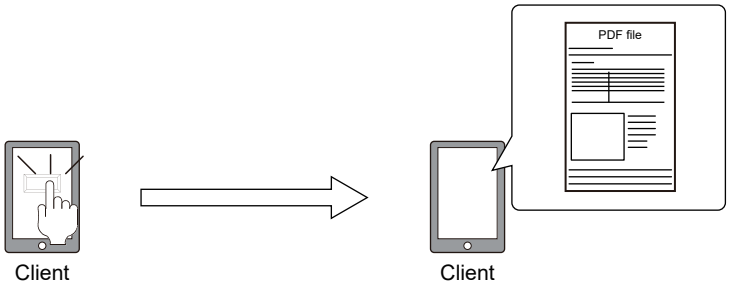
You can access or download a file in the GOT public folder through a browser.

For details on the public folder, refer to the following.

☞ Page 2760 Public folder

Ex.

When accessing a PDF file



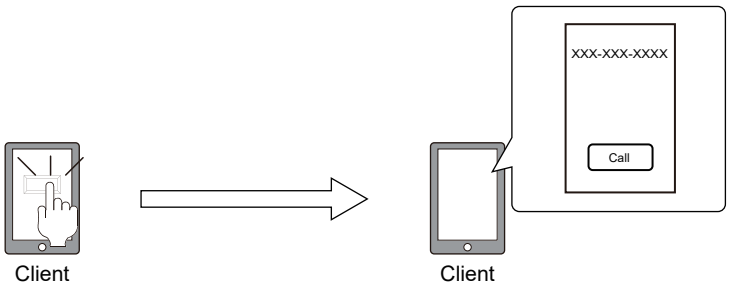
Precautions

To open a file in the public folder, the client to be used must have the application that supports the file format.

If the client does not have the applicable application, the file is downloaded to the client.

Making a phone call

You can call a specified phone number.



Precautions

To call a specified phone number, the client to be used must have a phone call function.

58.2 Specifications of the hyperlink object

GT37 SoftGOT3000

58.2.1 Maximum number of objects that can be placed on one screen

The maximum number of hyperlink objects and other objects combined is 1024 on one screen.

58.2.2 Applicable screen

The hyperlink object can be placed only in the mobile screen.

58.3 How to use the hyperlink object

GT37 SoftGOT3000

58.3.1 Placing a hyperlink object

Place a hyperlink object on the screen editor.

Operating procedure

1. Select [Object] → [Hyperlink] from the menu.
2. Click the position to place a hyperlink object.
3. Double-click the hyperlink object to display the [Hyperlink] dialog.
4. Configure the settings in each tab.

☞ Page 1901 [Hyperlink] dialog

Precautions

■When hyperlink objects overlap one another

If you touch the overlapping portion between hyperlink objects, the hyperlink object at the front operates only.

■When sliding your finger on a hyperlink object

If you slide your finger within the touch area of a hyperlink object, the object operates when you release your finger.

58.3.2 Editing a hyperlink object

Edit a hyperlink object placed on the screen editor.

☞ Page 1001 Placing figures and objects

58.3.3 Configuring the hyperlink object setting

Configure the setting for a hyperlink object placed on the screen editor.

- Common settings for objects

☞ Page 1037 Settings common to objects

- Hyperlink object setting

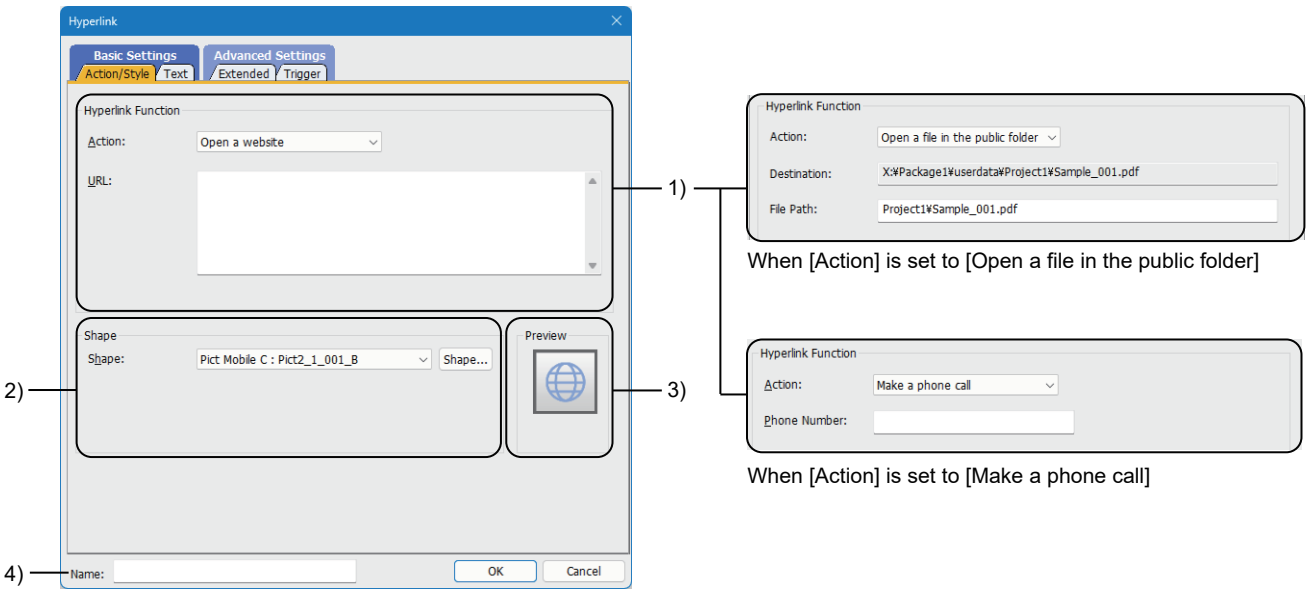
☞ Page 1901 [Hyperlink] dialog

58.4 [Hyperlink] dialog

GT37 SoftGOT3000

☞ Page 1901 [Action/Style] tab
☞ Page 1903 [Text] tab
☞ Page 1907 [Extended] tab
☞ Page 1907 [Trigger] tab

58.4.1 [Action/Style] tab



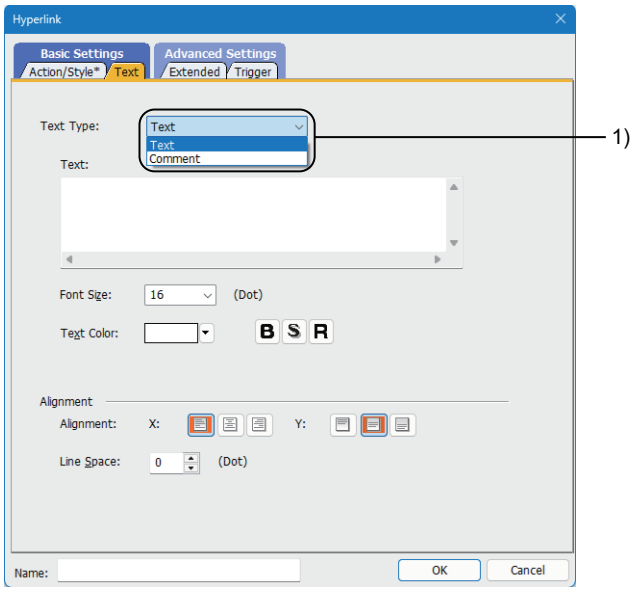
When [Action] is set to [Open a website]

Item			Description
1)	[Hyperlink Function]	[Action]	Set the function assigned to the hyperlink object. The setting items differ depending on the selection for [Action].
		[URL]	Set the URL when [Open a website] is selected for [Action]. Set the URL of a website to be accessed. Specify the URL with one-byte alphanumerics and symbols within 2083 characters.
		[Destination]	Set the destination when [Open a file in the public folder] is selected for [Action]. Displays the full path to the file to be opened in the GOT public folder. If a message saying [The public folder is not set] appears, select [Allow external access to GOT public folder] in the [GOT Mobile Setting] window ([Basic Setting]). ☞ Page 2818 [Basic Setting]
		[File Path]	Set the file path when [Open a file in the public folder] is selected for [Action]. Set the relative path to the file to be opened in the GOT public folder (including sub folders). Example) When opening Sample_001.pdf in the Project1 folder under the GOT public folder File Path: Package1¥Sample_001.pdf Set a folder name and file name so that the total number of characters used for the path is 78 or less. ☞ Page 84 Restrictions for folder names and file names used in GOT If you edit the [Package Folder Name] in the [Type Setting] dialog, the number of characters may exceed 79. ☞ Page 519 [Type Setting] dialog
		[Phone Number]	Set a phone number when [Make a phone call] is selected for [Action]. Set a phone number to be called. Specify the phone number with one-byte numerics and no hyphen within 15 digits.

Item			Description
2)	[Shape]	[Shape]	Set a shape for the hyperlink object. Click the [Shape] button to select shapes other than those in the list box.
		[Frame Color]	Set the frame color of the shape.
		[Shape Color]	Set the color of the shape.
3)	[Preview]		Displays the preview of the object.
4)	[Name]		Set the object name. The name is displayed in places such as the data browser and property sheet. The setting can also be changed in other tabs. Up to 100 characters can be set.

58.4.2 [Text] tab

You can select the text type to display the entered characters or a comment in a comment group on the object.



Item			Description
1)	[Text Type]	[Text]	Directly enter the text to be displayed. If characters have already been entered in the [Text] field, switching the text type from [Text] to [Comment] enables you to register the entered characters in a comment group. For instruction on registering a comment group, refer to the following. ☞ Page 811 Registering the characters in the [Text] field to a comment group
		[Comment]	Displays a comment of the specified comment group on the object.

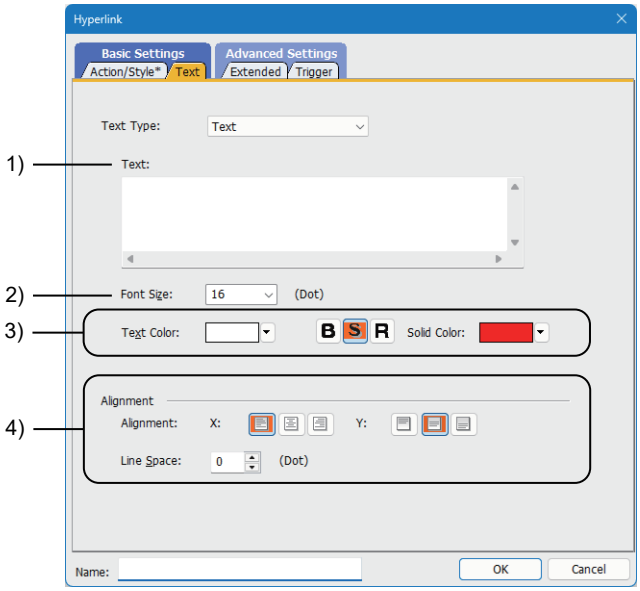
For the comment group settings, refer to the following.

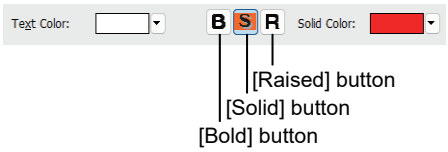
☞ Page 776 Comment setting ([Comment])

Setting items vary depending on the selected text type.

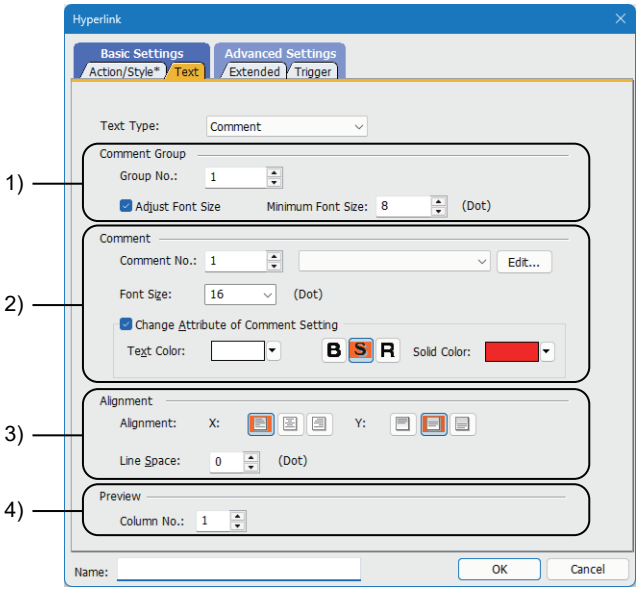
The following shows the setting items for each text type.

[Text]

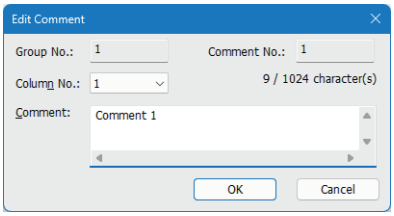
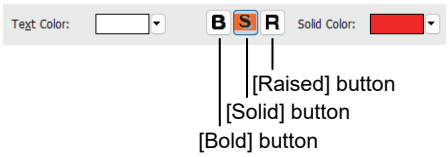


Item			Description
1)	[Text]		Enter characters to be displayed on the object. Up to 1024 characters can be set. To display the text in multiple lines, press the [Enter] key at the end of the text in each line. (When a line feed is inserted, two characters per line feed are added to the number of characters.)
2)	[Font Size]		Set the font size of the text to be displayed on the object. The setting range for the vertical and horizontal orientations is [8] dots to [540] dots (in 1-dot units).
3)	[Text Color]	—	Set the color and style of the text to be displayed on the object. One style ([Bold], [Solid], or [Raised]) is settable only. 
		[Text Color]	Set the text color. ☞ Page 988 Color settings
		[Bold] button	Displays the text in bold.
		[Solid] button	Displays the text with a shadow.
		[Raised] button	Displays the text embossed.
		[Solid Color]	When [Solid] or [Raised] is selected as the text style, set the color of the shadow.
4)	[Alignment]	[Alignment]	Set the vertical and horizontal positions of the text.
		[Line Space]	Set a space between lines in units of dots. The setting range is [0] dots to [128] dots.

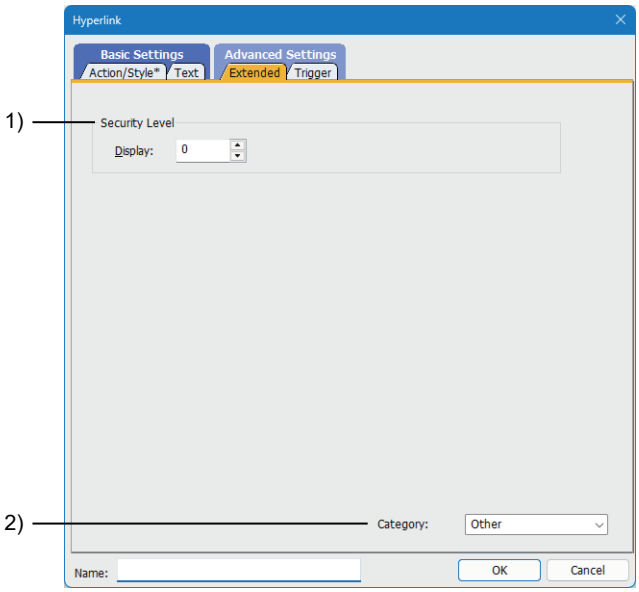
[Comment]



Item			Description
1)	[Comment Group]	[Group No.]	Set the comment group number to be used. The setting range is [1] to [500].
		[Adjust Font Size]	The font size is automatically adjusted according to the object size. When this item is deselected, a line feed is automatically inserted.
		[Minimum Font Size]	Set the minimum font size applied when the font size is automatically adjusted. The setting range is [8] dots to [540] dots.

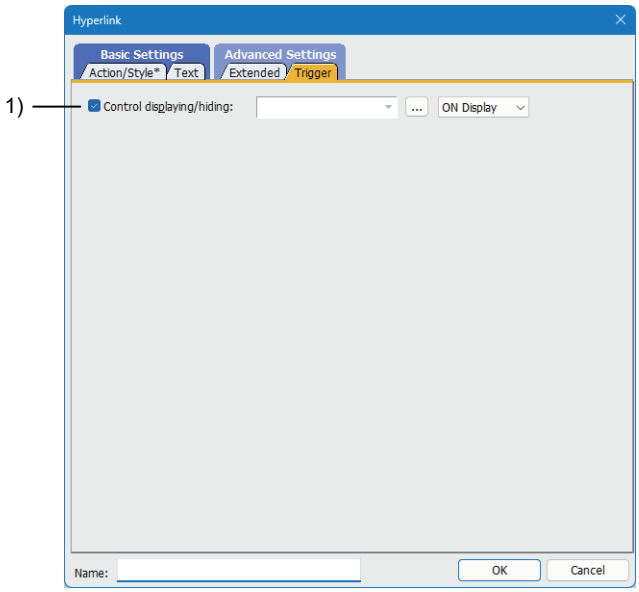
Item			Description
2)	[Comment]	[Comment No.]	Set the comment No. to be displayed. The setting range is [0] to [32767]. To edit the comment to be displayed, click the [Edit] button to display the [Edit Comment] dialog. If an unregistered comment group number or comment number is set, create a new comment.  • [Column No.] Select the column No. of the comment to be edited. • [Comment] Edit the comment in the comment group. If an unregistered comment group number, comment number, or column number is set, create a new comment. Up to 1024 characters can be set for the comment. The number of characters, digits, and rows of the input comment are displayed on the upper right of the comment input field. • Number of characters: A character is counted as one character. The line feed is counted as two characters.
		[Font Size]	Set the size of the text to be displayed on the object. The setting range for the vertical and horizontal orientations is [8] dots to [540] dots (in 1-dot units).
		[Change Attribute of Comment Setting]	Change the comment attributes. Set the color and style of the text to be displayed on the object. One style ([Bold], [Solid], or [Raised]) is settable only.  • [Text Color] Set the text color. ☞ Page 988 Color settings • [Bold] button Displays the text in bold. • [Solid] button Displays the text with a shadow. • [Raised] button Displays the text embossed. • [Solid Color] When [Solid] or [Raised] is selected as the text style, set the color of the shadow.
3)	[Alignment]	[Alignment]	Set the vertical and horizontal positions of the text.
		[Line Space]	Set a space between lines in units of dots. The setting range is [0] dots to [128] dots.
4)	[Preview]	[Column No.]	Set the column No. of the comment to be displayed on the screen of GT Designer3.

58.4.3 [Extended] tab



Item		Description
1)	[Security Level]	Set a security level when using the security function. The setting range is [0] to [15]. If you do not use the security, select [0]. ☞ Page 3038 Restricting display and operation on the GOT (Screen security)
2)	[Category]	Select the category to assign the object. ☞ Page 1121 Managing figures and objects by category

58.4.4 [Trigger] tab



Item		Description
1)	[Control displaying/hiding]	Enables the setting to display the object only when requirements are met. Set the following as requirements. • Bit device for control • Whether to display the object when the bit device for control is on or off

PART 8 Operation log

59 Configuring the settings for collecting the GOT operation history ([Operation Log])

59 Configuring the settings for collecting the GOT operation history ([Operation Log])

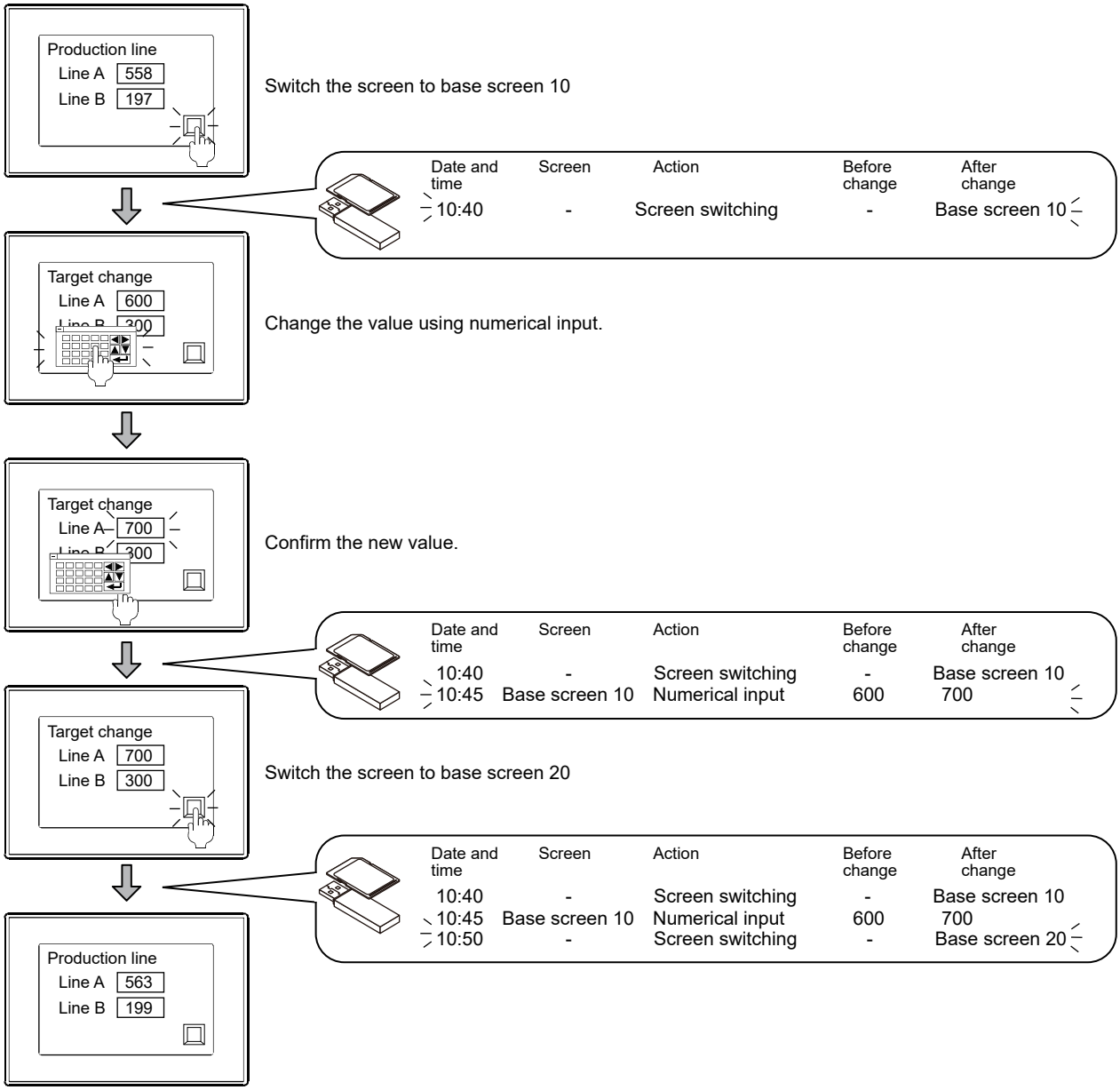
☞ Page 1910 Overview of operation logs
☞ Page 1911 Specifications of the operation log
☞ Page 1927 Log details by operation
☞ Page 2003 How to use operation logs
☞ Page 2011 Recording the operator name as the character string stored in the device
☞ Page 2013 [Operation Log]
☞ Page 2019 [Operation Log File Conversion] dialog
☞ Page 2020 Relevant settings

59.1 Overview of operation logs

GT37 SoftGOT3000

The history of operations performed on the GOT can be saved to data storage.
By saving operation histories, they can be used to investigate the causes of problems at the production site.
The saved history can be checked using the following methods.

- Using the GOT utility
- Using the text editor or other tools of the personal computer
- Using Resource File Viewer



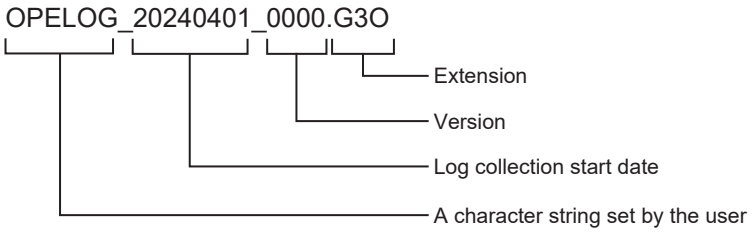
59.2 Specifications of the operation log

GT37 SoftGOT3000

☞ Page 1911 Operation log file name
☞ Page 1912 Save destination for the operation log file
☞ Page 1913 Time intervals at which operation logs are saved
☞ Page 1913 Size setting of operation log files to be saved
☞ Page 1913 Maximum number of logs in the operation log file
☞ Page 1913 Operation log file conversion function
☞ Page 1914 Operation log output types
☞ Page 1915 Functions to be recorded in the operation log
☞ Page 1921 Collection item

59.2.1 Operation log file name

GOT operation logs are saved in a special binary file (.G3O).
A file name is any character string set by a user, followed by the automatically added log collection start date (YYYYMMDD) for the file and the version.



A part of GT SoftGOT3000 operation logs is saved in an application log file (.G3O) separately from the GOT operation log file.
The file name of the application log is as follows:

SGTLOG_(5-digit module No.)_(start date of logging)_(version).G3O
Example) SGTLOG_00001_20241225_0006.G3O

The version starts from 0000, and is incremented by one every time a new file is created.
After the number reaches 9999, it returns to 0000 in the name of the next new file.
For the character type and the number of characters available for file names, refer to the following.
☞ Page 84 Restrictions for folder names and file names used in GOT
For instruction on setting file names, refer to the following.
☞ Page 2013 [Basic] tab

59.2.2 Save destination for the operation log file

The following shows the save destination of the operation log file and the GT SoftGOT3000 application log file.

Drives and folders for saving operation log files

Data storage is needed to save operation logs.

Specify drive A, drive B, drive E, drive F, drive G, or drive X (current drive) for the drive to save operation log files.

The default destination is the following folder on the same drive as the project file (drive X).

X:\(project folder name)\OPELOG\

For instruction on setting the save destination, refer to the following.

☞ Page 2013 [Basic] tab

Precautions

It is recommended to format the data storage before using it.

The number of files to be stored in a folder should be less than 500.

If 500 or more files are stored in a folder, the access performance may be degraded.

Repeated writing or deleting of data may degrade access performance, regardless of the number of files.

In such a case, format the data storage.

Save destination for GT SoftGOT3000 application logs

GT SoftGOT3000 application logs are output at the timing of operation regardless of the security mode of the monitored project.

In addition, files of the output application logs are encrypted with the password for the GT SoftGOT3000 application log file set at the first startup of GT SoftGOT3000.

The save destination of GT SoftGOT3000 application logs differs depending on the type of operation to be recorded.

Operation	Storage folder
GT SoftGOT3000 all data initialization	C:\Users\(user name)\AppData\Local\MITSUBISHI\SGT3000DELLOG
Others	C:\Users\(user name)\AppData\Local\MITSUBISHI\SGT3000\Multi\(5-digit module No.)\OPELOG

Point

Uninstalling GT SoftGOT3000 does not delete operation log files and application log files.

To delete all data, initialize all data first before uninstalling GT SoftGOT3000.

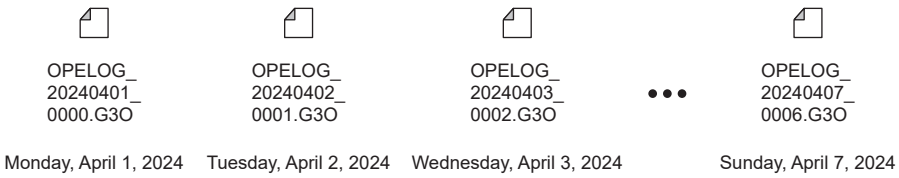
After that, retrieve operation log files and application log files from the storage destination as required, and delete the save destination folder, operation log files, and application log files.

59.2.3 Time intervals at which operation logs are saved

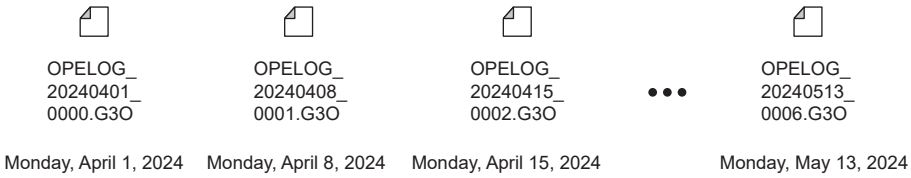
You can select the time intervals, in days or weeks, at which operation logs are saved.

Saved operations log files are stored for a certain period of time and then deleted automatically.

- Saving in days (every day)



- Saving in weeks (every week)



GT SoftGOT3000 application logs are saved daily (the date switching time is fixed at 0:00).

The logs are not deleted automatically.

However, if the storage destination drive does not have enough space, old logs are deleted to continue log collection.

59.2.4 Size setting of operation log files to be saved

The total size of all operation log files that can be saved in data storage can be specified.

When the size exceeds the specified one, the oldest operation log file is automatically deleted.

For GT SoftGOT3000 application log files, the size is unlimited.

59.2.5 Maximum number of logs in the operation log file

Up to 1,048,569 logs can be stored in one operation log file.

The maximum number of logs stored in one application log file of GT SoftGOT3000 is 10000.

59.2.6 Operation log file conversion function

Operation log files (.G3O) and GT SoftGOT3000 application log files (.G3O) in binary format can be converted to Unicode text files or CSV files.

To check the binary file contents, you need the GOT utility or Resource File Viewer. Converting a binary file to a Unicode text file or CSV file facilitates data viewing, processing, analysis, and transformation in other applications.

For details on operation logs, refer to the following.

☞ Page 2005 CSV file conversion or Unicode text file conversion of operation log file

For details on checking operations logs, refer to the following.

☞ Page 2003 Checking operation logs

59.2.7 Operation log output types

To output operation logs, either the detailed log or the regular log is selectable depending on degrees of detail.
The detailed log is saved in a special binary file (.G3O).
When converting the binary file (.G3O) to a Unicode text file or CSV file, you can select either the detailed log or the regular log to be output.
For details on functions to be output in the operation log, refer to the following.
☞ Page 1915 Functions to be recorded in the operation log

Operation log type	Description
Detailed log	All log collection items are output for all functions to be included in the operation log. You can check the output using Resource File Viewer or in a CSV file or Unicode text file converted with the detailed log.
Regular log	The following log collection items are not output in the regular log. • Operating device • Category • Type • Log type ID You can check the output in the list of operation log data in the utility, or in a CSV or Unicode text file converted with the regular log.

59.2.8 Functions to be recorded in the operation log

The following shows the functions to be recorded in the operation log.
Refer to the descriptions for ❶, ❷, and ❸ in the following section, and check the columns for ❶, ❷, and ❸ in the following table.

❶ Functions to be added to [Operation Log Target]
To enable recording in the operation log, some functions need to be added to [Operation Log Target] in GT Designer3 in advance, while others are recorded automatically.
For the addition to [Operation Log Target], select [Environmental Setting] → [Operation Log] → [Log Target] in GT Designer3.
☞ Page 2015 [Log Target] tab
Functions to be recorded automatically are always logged while the operation log is enabled.

❷ Functions to be output in regular log and functions to be output in detailed log
The availability of output in the regular log and detailed log depends on the type of functions recorded in the operation log.
The functions specified in [Operation Log Target] can be checked in the operation log data list in the utility or in the regular log.

❸ Operation log for the GOT Mobile function client
When performing operations on the GOT Mobile function client, some operations are not logged.

○: Applicable, ×: Not applicable

Function type	❶	❷		❸	Model
	Function to be added to [Operation Log Target]	Output in regular log	Output in detailed log	Log collected for operations on the GOT Mobile function client	
☞ Page 1927 GOT startup	(Not required, collected automatically)	○	○	×	GT37 SoftGOT3000
☞ Page 1928 GOT startup (system installation mode)	(Not required, collected automatically)	○	○	×	GT37 SoftGOT3000
☞ Page 1928 GOT termination	(Not required, collected automatically)	○	○	×	GT37 SoftGOT3000
☞ Page 1929 GOT restart Simple restarts (without reset) due to changes in the GOT basic settings in the utility, or restarts with reset	(Not required, collected automatically)	○	○	×	GT37 SoftGOT3000
☞ Page 1929 GOT restart Restarts with reset using a GOT special register (GS639.b15)	(Not required, collected automatically)	○	○	×	GT37 SoftGOT3000
☞ Page 1929 GOT offline mode transition	(Not required, collected automatically)	○	○	×	GT37 SoftGOT3000

Function type	❶	❷		❸	Model
	Function to be added to [Operation Log Target]	Output in regular log	Output in detailed log	Log collected for operations on the GOT Mobile function client	
☞ Page 1930 GOT background processing stop/ restart	(Not required, collected automatically)	○	○	×	GT37 SoftGOT3000
☞ Page 1931 Time zone setting	(Not required, collected automatically)	○	○	×	GT37 SoftGOT3000
☞ Page 1931 Application switching ☞ Page 1933 Application startup/exit	[Application Switching]	○	○	×	GT37 SoftGOT3000
☞ Page 1933 Clock setting, time change Time setting (external device)	Mode 1: [Time Change (Clock Setting and GS Change)] Mode 2: (Not required, collected automatically)	○	○	×	GT37 SoftGOT3000
☞ Page 1933 Clock setting, time change Time setting (GS device) Time setting (SNTP)				×	GT37 SoftGOT3000
☞ Page 1934 Security mode change	(Not required, collected automatically)	×	○	×	GT37 SoftGOT3000
☞ Page 1935 Encrypted communication (unauthenticated) ☞ Page 1935 Encrypted communication (authenticated)	Mode 1: × Mode 2: (Not required, collected automatically)	×	Mode 1: × Mode 2: ○	○	GT37 SoftGOT3000
☞ Page 1936 IP filter ☞ Page 1937 Ethernet restriction	Mode 1: × Mode 2: (Not required, collected automatically)	×	Mode 1: × Mode 2: ○	×	GT37 SoftGOT3000
☞ Page 1937 Displayed system language ☞ Page 1938 System language switching	[System Language Switching]	○	○	○ ×	GT37 SoftGOT3000
☞ Page 1939 Changing the time in the utility	Mode 1: [Time Change (Change from Utilities)] Mode 2: (Not required, collected automatically)	○	○	×	GT37 SoftGOT3000
☞ Page 1939 Time zone setting change in the utility	Mode 1: [Time Change (Change from Utilities)] Mode 2: (Not required, collected automatically)	○	○	×	GT37 SoftGOT3000
☞ Page 1940 GOT ID switching	[GOT ID Switching]	○	○	×	GT37 SoftGOT3000

Function type	❶	❷		❸	Model
	Function to be added to [Operation Log Target]	Output in regular log	Output in detailed log	Log collected for operations on the GOT Mobile function client	
☞ Page 1940 Operator authentication (login) ☞ Page 1941 Operator authentication (logout) ☞ Page 1942 Operator authentication (operator switching) ☞ Page 1942 Operator authentication (password change) ☞ Page 1943 Operator authentication (operator account lock) ☞ Page 1943 Operator authentication (operator blocking) ☞ Page 1944 Operator authentication (operator unblocking)	Mode 1: [Operator Authentication] Mode 2: (Not required, collected automatically)	○	○	○	GT37 SoftGOT3000
☞ Page 1945 Operator management (start/end) ☞ Page 1946 Operator management (save/undo) ☞ Page 1946 Operator management (import/export) ☞ Page 1947 Operator management (function settings) ☞ Page 1949 Operator management (operator management information) ☞ Page 1950 Operator management (new file created at startup) ☞ Page 1951 Operator management (file corrupted at startup) ☞ Page 1951 Operator management (corrupted file restored at startup) ☞ Page 1952 Operator management (ended abnormally)	Mode 1: [Operator Management] Mode 2: (Not required, collected automatically)	○	○	×	GT37 SoftGOT3000
☞ Page 1953 Device monitoring (start/end) ☞ Page 1953 Device monitoring (device writing)	Mode 1: × Mode 2: (Not required, collected automatically)	○	○	×	GT37 SoftGOT3000
☞ Page 1954 File operations (read/write/delete) ☞ Page 1955 File operations (copy/move/rename) ☞ Page 1955 Folder operations (create folder/delete folder) ☞ Page 1956 Drive operations (mount/unmount/remove (GS device)) ☞ Page 1957 Drive operations (removal operation (utility)/format)	Mode 1: × Mode 2: (Not required, collected automatically)	×	Mode 1: × Mode 2: ○	○	GT37 SoftGOT3000
☞ Page 1957 Firmware update ☞ Page 1958 Package data operations	Mode 1: × Mode 2: (Not required, collected automatically)	×	Mode 1: × Mode 2: ○	×	GT37 SoftGOT3000
☞ Page 1959 Initialize all data	Mode 1: × Mode 2: (Not required, collected automatically)	×	Mode 1: × Mode 2: ○	×	GT37 SoftGOT3000
☞ Page 1960 Certificate management	Mode 1: × Mode 2: (Not required, collected automatically)	×	Mode 1: × Mode 2: ○	×	GT37 SoftGOT3000

Function type	❶	❷		❸	Model
	Function to be added to [Operation Log Target]	Output in regular log	Output in detailed log	Log collected for operations on the GOT Mobile function client	
☞ Page 1961 Setting change in the utility	Mode 1: × Mode 2: (Not required, collected automatically)	×	Mode 1: × Mode 2: ○	×	GT37 SoftGOT3000
☞ Page 1962 Screen switching	[Screen Switching]	○	○	○	GT37 SoftGOT3000
☞ Page 1963 Station number switching	[Station No. Switching]	○	○	×	GT37 SoftGOT3000
☞ Page 1964 Buffer memory unit number switching	[Buffer Memory Unit No. Switching]	○	○	×	GT37 SoftGOT3000
☞ Page 1965 Screen gesture	(Not required, collected automatically)	○	○	×	GT37 SoftGOT3000
☞ Page 1965 Language switching	[Language Switching]	○	○	○	GT37 SoftGOT3000
☞ Page 1966 Screen security authentication (level password authentication)	Mode 1: [Password Authentication (Password Entry)] Mode 2: ×	Mode 1: ○ Mode 2: ×	Mode 1: ○ Mode 2: ×	○	GT37 SoftGOT3000
☞ Page 1967 Screen security control (level switching (device))	Mode 1: [Password Authentication (Level Device Change)] Mode 2: ×	Mode 1: ○ Mode 2: ×	Mode 1: ○ Mode 2: ×	○	GT37 SoftGOT3000
☞ Page 1967 Functional operation security authentication	[Functional Operation Security Authentication]	○	○	×	GT37 SoftGOT3000
☞ Page 1973 Object script	[Object Script]	○	○	×	GT37 SoftGOT3000
☞ Page 1969 Touch switch, operation panel ☞ Page 1971 Numerical input ☞ Page 1972 Text input ☞ Page 1974 Alarm display (alarm deletion) ☞ Page 1975 Alarm display (device reset) ☞ Page 1976 Slider ☞ Page 1977 Recipe display (record list)	[Object] To configure settings for each object, set it as the target for the operation log in the object properties.	○	○	○ × (☞ Page 1976 Slider)	GT37 SoftGOT3000

Function type	❶	❷		❸	Model
	Function to be added to [Operation Log Target]	Output in regular log	Output in detailed log	Log collected for operations on the GOT Mobile function client	
☞ Page 1978 SoftGOT-GOT link (connection/disconnection) ☞ Page 1979 SoftGOT-GOT (authorization transfer)	[SoftGOT-GOT Link]	○	○	×	GT37 SoftGOT3000
☞ Page 1979 VNC server (connection/disconnection) ☞ Page 1980 VNC server (authorization transfer)	Mode 1: [VNC Server] Mode 2: (Not required, collected automatically)	○	○	×	GT37 SoftGOT3000
☞ Page 1981 GOT Mobile function (authentication successful) ☞ Page 1982 GOT Mobile function (authentication failed) ☞ Page 1982 GOT Mobile function (disconnection) ☞ Page 1983 GOT Mobile function (GOT Mobile device assignment)	Mode 1: [GOT Mobile] Mode 2: (Not required, collected automatically)	○	○	×	GT37 SoftGOT3000
☞ Page 1984 GOT network interaction (authorization transfer)	[GOT Network Interaction]	○	○	○	GT37 SoftGOT3000
☞ Page 1985 VPN connection (control) ☞ Page 1985 VPN connection/disconnection (GOT → GateManager) ☞ Page 1986 VPN connection/disconnection (LinkManager → GateManager → GOT)	Mode 1: × Mode 2: (Not required, collected automatically)	×	Mode 1: × Mode 2: ○	×	GT37 SoftGOT3000
☞ Page 1987 Web browser	Mode 1: × Mode 2: (Not required, collected automatically)	×	Mode 1: × Mode 2: ○	×	GT37 SoftGOT3000
☞ Page 1987 Log corruption information ☞ Page 1988 Unknown logs	(Not required, collected automatically)	○	○	×	GT37 SoftGOT3000

Function type	❶	❷		❸	Model
	Function to be added to [Operation Log Target]	Output in regular log	Output in detailed log	Log collected for operations on the GOT Mobile function client	
☞ Page 1988 Starting the GT SoftGOT3000 application*1	(Not required, collected automatically)	○	○	×	GT37 SoftGOT3000
☞ Page 1989 Exiting the GT SoftGOT3000 application*1	(Not required, collected automatically)	○	○	×	
☞ Page 1990 Changing the clock (changing the time of the personal computer)*1	(Not required, collected automatically)	○	○	×	
☞ Page 1990 All GT SoftGOT3000 data initialization*1	(Not required, collected automatically)	○	○	×	
☞ Page 1991 Opening a project*1	(Not required, collected automatically)	○	○	×	
☞ Page 1992 Snap shots*1	(Not required, collected automatically)	○	○	×	
☞ Page 1992 Printing*1	(Not required, collected automatically)	○	○	×	
☞ Page 1993 Nonvolatile RAM initialization*1	(Not required, collected automatically)	○	○	×	
☞ Page 1993 Resource data deletion*1	(Not required, collected automatically)	○	○	×	
☞ Page 1994 Monitoring start*1	(Not required, collected automatically)	○	○	×	
☞ Page 1996 Monitoring stop*1	(Not required, collected automatically)	○	○	×	
☞ Page 1996 Import/export*1	(Not required, collected automatically)	○	○	×	
☞ Page 1997 SoftGOT diagnostics*1	(Not required, collected automatically)	○	○	×	
☞ Page 1998 Internal device I/F function*1	(Not required, collected automatically)	○	○	×	
☞ Page 1999 Setting change*1	(Not required, collected automatically)	○	○	×	
☞ Page 2002 Certificate import*1	(Not required, collected automatically)	○	○	×	
When executing a GT SoftGOT3000 event as a Windows application*2	(Not required, collected automatically)	○	○	×	

*1 Recorded in the GT SoftGOT3000 application log.

*2 Recorded in the Windows event log.

59.2.9 Collection item

In the operation log for each operation, some items are common, while others are collected depending on the type of operation.
Additionally, for the same operation, some items are only included in the detailed log, not in the regular log, and their order of output differs.
The following table lists the items included in the detailed log, along with their availability and the order of output in the regular log.
○: Applicable, ×: Not applicable

	Item	Description	Output in regular log	Output order in regular log
1	Date and time	Time when the event occurred	○	1
2	Operating device (type, details)*1	Function type and details (Ethernet, IP address, port number) when the operating device is in a remote area ☞ Page 1922 Operating device (type, details)	×	—
3	Operator name*2	Name of the operator who performed the operation ☞ Page 1923 Operator name, operator ID	○	6
4	Operator ID	ID of the operator who performed the operation ☞ Page 1923 Operator name, operator ID	○	7
5	Category*1	Operation log category (classification) ☞ Page 1923 Category	×	—
6	Type*1	Operation log type (error/warning/information) ☞ Page 1924 Type	×	—
7	Log type ID*1	Number to identify the function (operation)	×	—
8	Function abbreviation	Abbreviation to identify the function (operation) type (up to eight one-byte characters)?	○	3
9	Function type name	Name to identify the function (operation)	○	4
10	Screen No.	Number of the screen on which the operation is performed ☞ Page 1924 Screen No.	○	2
11	Operation name	Name of the object or function that was operated (user-specified)	○	5
12	User ID	ID to identify the object (user-specified)	○	8
13	Action No./Setting ID	• Number representing the order of operations when multiple operations are set for a single touch switch • ID for settings such as the alarm settings to be operated	○	9: (SUB_NO: Sub number)
14	Data type	Data type of the device to be operated ☞ Page 1925 Data type	○	10
15	Device name	Name of the device to be operated (including the communication channel number, device network number, station number, CPU number) ☞ Page 1925 Device name	○	11 (CH_NUM: Channel number) 12 (NET_STA: Network, station number, module number) 13 (DEV_NAME: Device name)
16	Change value	Value after the value or setting has been change by operation ☞ Page 1926 Change value, previous value	○	14
17	Change value (operation)	Value set by the operator on the GOT ☞ Page 1926 Change value (operation), previous value (display)	○	15
18	Previous value	Value before change by an operation or a setting change ☞ Page 1926 Change value, previous value	○	16
19	Previous value (display)	Value displayed on the object before change ☞ Page 1926 Change value (operation), previous value (display)	○	17

*1 Output only when the security mode is set to mode 2.
*2 The operating device and the operator name are output together in the regular log.

Operating device (type, details)

For remote control, the operating device type (function) and its details (route and other information) are recorded.

■Operating device (type)

The following shows the operating device (type) list.

Type	Output
(Operation on actual device, operation on GT SoftGOT3000)	—
Personal computer tool	PC Tool
VNC client	VNC
GOT Mobile	GOT Mobile "Connection No."
OPC UA client	OPC UA
FTP client	FTP
GT SoftGOT3000 Commander	GT SoftGOT3000 Commander

■Operating device (route)

The following shows the operating device (route) list.

Type	Output
USB	Src:USB
Ethernet (including via PLC)	Src: ([IP Address] of the connected controller):([Port No.] of the connected controller) For functions such as the VNC server and web browser functions for which a port number cannot be obtained, [-] is shown as the port number.

Operator name, operator ID

The log is recorded as follows according to the authentication method, [Level], [Operator], or [None].

Type	Authentication method	Output
Operator name	[None]	Level0
	[Level]	LevelX (where X is the current security level)
	[Operator]	Name of the logged-in operator
Operator ID	[None]	0
	[Level]	X (where X is the current security level)
	[Operator]	ID of the logged-in operator

■Regular log

The operating device and the operator name are output together in the regular log.

Type		Authentication method	Output
Operator name	Normal operation	[None]	Level0
		[Level]	LevelX X is the current security level.
		[Operator]	Name of the logged-in operator
	Operation performed on the VNC client	[None]	Asterisk (*) + Level0 + [Client IP address]
		[Level]	When the security level is X: Asterisk (*) + LevelX + [Client IP address]
		[Operator]	Asterisk (*) + Logged-in operator name + [Client IP address] Without login: Asterisk (*) + [Client IP address]
	Operation log for the GOT Mobile client	[None]	Connection No. 1: Asterisk (*) + Level0 + [M1:Client IP address]
		[Level]	Security level X, connection No.1: Asterisk (*) + LevelX + [M1:Client IP address]
		[Operator]	Connection No. 1: Asterisk (*) + Logged-in operator name + [M1:Client IP address] Without login: Asterisk (*) + [M1:Client IP address]
	Operation log for the GOT Mobile client (non-touch operations)	[None]	Connection No. 5: Asterisk (*) + [M5:Client IP address]
		[Level]	
		[Operator]	
Operator ID	Normal operation Operation performed on the VNC client Operation log for the GOT Mobile client	[None]	0
		[Level]	X X is the current security level.
		[Operator]	ID of the logged-in operator
	Operation log for the GOT Mobile client (non-touch operations)	[None]	—
		[Level]	
		[Operator]	

Category

The following describes the categories.

Definition	Output
All events related to access control such as operations for operator authentication	access control
All events related to errors Since they are recorded as system alarms, the information in the operation log is limited.	request errors
All events detected by the GOT3000 series unit	control system events
All events related to the GOT data package acquisition and restoration	backup and restore event
Events related to setting changes	configuration changes
Log operation events such as output to log files, log deletion, and external log output	audit log events
User-specified events	user screen events

Type

The following describes the types.

Definition		Output
Error	Failures caused by the GOT3000 series itself Since they are recorded as system alarms, the information in the operation log is limited.	error
Warning	Events related to deleting data and initialization performed by the operator	warning
Information	Operations related to security settings and security functions in the GOT3000 series, operations performed by the operator, and operations related to the system configured using the GOT3000 series	information

Log type ID, function abbreviation, function type name

Number, abbreviation, and name to identify the operation log type

For details, refer to the following.

☞ Page 1927 Log details by operation

Screen No.

When the user operates a screen, the type and the number of the screen are recorded in the operation log.

A prefix representing the screen type and the screen number is output.

When [0] is specified in [GOT Environmental Setting] - [Screen Switching/Windows] - [Screen No. of the window screen to be hidden], the screen number [0] in the operation log means that the opened overlap window is closed. When [-1] is specified in [GOT Environmental Setting] - [Screen Switching/Windows] - [Screen No. of the window screen to be hidden] and the overlap window 1 is closed, [OVL_-1] is recorded in the operation log.

Screen type	Prefix
Base screen	BASE_
Overlap window 1	OVL1_
Overlap window 2	OVL2_
Overlap window 3	OVL3_
Overlap window 4	OVL4_
Overlap window 5	OVL5_
Superimpose window 1	SPI1_
Superimpose window 2	SPI2_
User customize dialog	DLG_
Operation panel	PNL_1 (fixed)
Key window?	KEY_
Base screen (GOT Mobile)	MBL-BASE_
Overlap window 1 (GOT Mobile)	MBL-OVL1_
Overlap window 2 (GOT Mobile)	MBL-OVL2_
Superimpose window 1 (GOT Mobile)	MBL-SPI1_
Superimpose window 2 (GOT Mobile)	MBL-SPI2_

Data type

The following lists the data types for devices to be operated.

■Numerical value data

Data type	Output
Bit	BIT
Signed 8-bit integer	BIN8
Unsigned 8-bit integer	BIN8_Unsigned
Signed 16-bit integer	BIN16
Unsigned 16-bit integer	BIN16_Unsigned
Signed 32-bit integer	BIN32
Unsigned 32-bit integer	BIN32_Unsigned
Signed 64-bit integer	BIN64
Unsigned 64-bit integer	BIN64_Unsigned
16-bit BCD	BCD16
32-bit BCD	BCD32
64-bit BCD	BCD64
Real number (32-bit)	REAL
Real number (64-bit)	REAL64

■Text data

Character code	Output
Alphanumeric characters (ASCII)	ASCII
Japanese (SJIS)	SJIS
Chinese (Simplified) (GB)	GB
Korean (KS)	KS
Alphanumeric characters (Unicode)	Unicode
Chinese (Traditional) (Big5)	Big5

Device name

The device name of each operating device is recorded.

The device name is the same as the one set in GT Designer3. When a label or tag is specified in the device, the same name will be recorded in the log. When station number switching or the offset function is set, the recorded device name is that of the device actually used for writing after those operations are applied.

■Specifications for recording labels and tags

When operations are logged, label and tag names are also recorded.

The following shows the labels and tags to be recorded.

- Global label
- AB native tag
- OMRON NJ/NX tag
- OPC UA tag

Even if you change the label or tag set for an object or others, you can check the label or tag name at the time the operation log was recorded.

Note that the size of the log file becomes large if the recorded label or tag name is long.

When the station number switching function, the offset function, or other functions are used, the label or tag name recorded in the operation log contains the relevant information.

Ex.

When the global label name is LABEL_B, the station number is 2-3, and the offset device value is 500

The global label name is recorded as [2-3::LABEL_B(+500)].

Change value, previous value

The value after the change is recorded as the change value, and the value before the change is recorded as the previous value. When a device is operated, the device value is recorded.
Device values are output in bit format as [0/1], in exponential notation for real numbers, and as decimal values for other word formats.
Character string device values are output as strings as is.

Output item	Description
Change value	The value resulting from the data operation or object script operation is recorded.
Previous value	The value written in the device itself is recorded.

Precautions

Even if the device value cannot be written due to a communication failure or other reasons, the device change operation is logged.
Also check the system alarm history as required.

Change value (operation), previous value (display)

When an object is operated, the device value after the change (operation) and the value before the change (display) are recorded.
For touch switch operations, you can specify whether to record the value before the change or the value before the change (display) for each project.
Select [GOT environmental Setting] - [Operation Log], then select [Collect previous device values at the time of touch switch operation] in the [Log Target] tab.

Output item	Description
Change value (operation)	The value input on the GOT is recorded as is as character string.
Previous value (display)	After applying the settings for data operation, number of displayed digits, decimal point adjustment, display type, and format string, the resulting character string to be displayed on the GOT is recorded.

59.3 Log details by operation

GT37 SoftGOT3000

The following shows the items output to the operation log file for each operation.
For the list of operations to be logged, refer to the following.
☞ Page 1915 Functions to be recorded in the operation log

59.3.1 GOT startup

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Date and time when the GOT was started or restarted*1	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	(Operation on actual device)	—
3	OPERATOR	Operator name	None	—
4	OPE_ID	Operator ID	None	—
5	CATEGORY	Category	control system events	control system events
6	TYPE	Type	Normal startup (with package data)	information
			Successfully started (project data password verification succeeded)	information
			Failed to start (project data password verification failed)	warning
7	ID	Log type ID	Normal startup (with package data)	10001
			Successfully started (project data password verification succeeded)	10002
			Failed to start (project data password verification failed)	10003
8	ACT_ABBR	Function abbreviation	Normal startup (with package data)	Start
			Successfully started (project data password verification succeeded)	SPassOK
			Failed to start (project data password verification failed)	SPassNG
9	ACTION	Function type name	Normal startup (with package data)	Start GOT
			Successfully started (project data password verification succeeded)	GOT successfully started
			Failed to start (project data password verification failed)	GOT failed to start
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	Project title of the project data at GOT startup It is not recorded in the following cases: • Failed startup • Normal startup before or after successful startup	Example) Project
12	USER_ID	User ID	Project ID of the project data at GOT startup	Example) 123456789
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—
16	CHG_VALUE	Change value	GOT ID of the started GOT	Example) GOT ID:1
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	None	—
19	PREV_VALUE_DISP	Previous value (display)	None	—

*1 If no battery has been installed in the GOT, the clock is initialized on startup. Hence the date and time in initial state are recorded. When time synchronization is performed after the initialization, operation logs that were collected before the synchronization may be lost.
If the startup time needs correct recording, install a battery in the GOT.

59.3.2 GOT startup (system installation mode)

The log is recorded when security mode 2 is set, or when firmware update or package data operation is specified.

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Date and time when the GOT started in the system installation mode	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	(Operation on actual device)	—
3	OPERATOR	Operator name	None	—
4	OPE_ID	Operator ID	None	—
5	CATEGORY	Category	control system events	control system events
6	TYPE	Type	Information	information
7	ID	Log type ID	Start system installation mode	10011
8	ACT_ABBR	Function abbreviation	Start system installation mode	SIMode
9	ACTION	Function type name	Start system installation mode	Start system installation mode
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—
16	CHG_VALUE	Change value	None	—
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	None	—
19	PREV_VALUE_DISP	Previous value (display)	None	—

59.3.3 GOT termination

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Date and time when the GOT was terminated with a GOT special register (GS639.b14)	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	(Operation on actual device)	—
3	OPERATOR	Operator name	None	—
4	OPE_ID	Operator ID	None	—
5	CATEGORY	Category	control system events	control system events
6	TYPE	Type	Information	information
7	ID	Log type ID	GOT termination	10021
8	ACT_ABBR	Function abbreviation	GOT termination	End
9	ACTION	Function type name	GOT termination	Terminate GOT
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—
16	CHG_VALUE	Change value	None	—

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	None	—
19	PREV_VALUE_DISP	Previous value (display)	None	—

59.3.4 GOT restart

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Date and time when the GOT was restarted without reset (simple restart by changing the GOT basic settings in the utility) or with reset	Example) 2025/07/14 19:36:47
			Date and time when the GOT was restarted with reset using a GOT special register (GS639.b15) (GT37 only)	
2	SOURCE	Operating device (type, details)	(Operation on actual device)	—
3	OPERATOR	Operator name	None	—
4	OPE_ID	Operator ID	None	—
5	CATEGORY	Category	control system events	control system events
6	TYPE	Type	Information	information
7	ID	Log type ID	GOT simple restart	10031
			GOT restart by reset	10032
8	ACT_ABBR	Function abbreviation	GOT simple restart	ReStart
			GOT restart by reset	ReStartR
9	ACTION	Function type name	GOT simple restart	Simple restart of GOT
			GOT restart by reset	Reset & Restart GOT
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—
16	CHG_VALUE	Change value	None	—
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	None	—
19	PREV_VALUE_DISP	Previous value (display)	None	—

59.3.5 GOT offline mode transition

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Date and time when transitioning to the offline mode (monitor stop mode) occurred due to operations such as package data writing while monitor screens were displayed	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	(Operation on actual device)	—
3	OPERATOR	Operator name	None	—
4	OPE_ID	Operator ID	None	—
5	CATEGORY	Category	control system events	control system events
6	TYPE	Type	Information	information
7	ID	Log type ID	GOT offline mode transition	10041

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
8	ACT_ABBR	Function abbreviation	GOT offline mode transition	Offline
9	ACTION	Function type name	GOT offline mode transition	Shift to GOT offline mode
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—
16	CHG_VALUE	Change value	None	—
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	None	—
19	PREV_VALUE_DISP	Previous value (display)	None	—

59.3.6 GOT background processing stop/restart

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Date and time when backup/restoration was stopped or restarted	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	(Operation on actual device)	—
3	OPERATOR	Operator name	None	—
4	OPE_ID	Operator ID	None	—
5	CATEGORY	Category	control system events	control system events
6	TYPE	Type	Information	information
7	ID	Log type ID	GOT background processing stop	10042
			GOT background processing restart	10043
8	ACT_ABBR	Function abbreviation	GOT background processing stop	BGStop
			GOT background processing restart	BGRStart
9	ACTION	Function type name	GOT background processing stop	Stop GOT background process
			GOT background processing restart	Resume GOT background process
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—
16	CHG_VALUE	Change value	None	—
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	None	—
19	PREV_VALUE_DISP	Previous value (display)	None	—

59.3.7 Time zone setting

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Time zone change date and time	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	(Operation on actual device)	—
3	OPERATOR	Operator name	None	—
4	OPE_ID	Operator ID	None	—
5	CATEGORY	Category	configuration changes	configuration changes
6	TYPE	Type	Information	information
7	ID	Log type ID	Time zone setting	10101
8	ACT_ABBR	Function abbreviation	Time zone setting	TimeZone
9	ACTION	Function type name	Time zone setting	Set time zone
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—
16	CHG_VALUE	Change value	Time zone	Example) UTC+9:00
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	None	—
19	PREV_VALUE_DISP	Previous value (display)	None	—

59.3.8 Application switching

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Application switching date and time	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	(Operation on actual device)	—
3	OPERATOR	Operator name	None	—
4	OPE_ID	Operator ID	None	—
5	CATEGORY	Category	control system events	control system events
6	TYPE	Type	Information	information
7	ID	Log type ID	Application switching	10051
8	ACT_ABBR	Function abbreviation	Application switching	AppChng
9	ACTION	Function type name	Application switching	Switch applications
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
16	CHG_VALUE	Change value	When monitor screens are displayed	Monitor
			When utilities are launched	Utility
			When the sequence program monitor (Q/L ladder) is started	Sequence program monitor (Q/L ladder)
			When the sequence program monitor (iQ-R/iQ-L ladder) is started	Sequence program monitor (iQ-R/iQ-L ladder)
			When the sequence program monitor (iQ-F ladder) is started	Sequence program monitor (iQ-F ladder)
			When the intelligent module monitor is started	Intelligent module monitor
			When the R motion monitor is started	R motion monitor
			When the setting screen for the backup/restoration function is displayed	Backup/restoration
			When the iQSS utility is started	iQSS Utility
			When the system launcher is started	System launcher
			When the file manager is started	File management
			When the CC-Link IE TSN/CC-Link IE Field Network diagnostics is started	CC-Link IE TSN/CC-Link IE Field Network diagnostics
			When the remote personal computer screen is displayed in full screen mode	Remote personal computer operation (Ethernet)
			When the setting screen for the operator authentication is displayed	Operator authentication
			When the list screen for the operator management information is displayed	Operator information mng. (list)
			When an unknown application is started	Unknown*1
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	None	—
19	PREV_VALUE_DISP	Previous value (display)	None	—

*1 If [Unknown] is displayed, update the BootOS to the latest version.
The BootOS version may be earlier than that of the GOT which created the operation log file.

59.3.9 Application startup/exit

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Date and time when the functions that use window screens, such as the web browser window, were started or terminated	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	(Operation on actual device)	—
3	OPERATOR	Operator name	None	—
4	OPE_ID	Operator ID	None	—
5	CATEGORY	Category	control system events	control system events
6	TYPE	Type	Information	information
7	ID	Log type ID	Application startup	10052
			Application exit	10053
8	ACT_ABBR	Function abbreviation	Application startup	AppStart
			Application exit	AppEnd
9	ACTION	Function type name	Application startup	Start application
			Application exit	End application
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—
16	CHG_VALUE	Change value	When the web browser function is used	Web browser
			When the remote personal computer operation (Ethernet) is performed	Remote PC operation (Ethernet)
			PDF search/bookmark function	PDF search, bookmark function
			Video file management	Video file management
			When an unknown application is used	Unknown
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	Overlap window 1 to 5	OVA1 to OVA5
			Superimpose window 1, 2	SPI1 to SPI2
19	PREV_VALUE_DISP	Previous value (display)	None	—

59.3.10 Clock setting, time change

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Clock change date and time (recorded using the previous clock)	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	(Operation on actual device)	—
3	OPERATOR	Operator name	None	—
4	OPE_ID	Operator ID	None	—
5	CATEGORY	Category	configuration changes	configuration changes
6	TYPE	Type	Information	information
7	ID	Log type ID	When notified from external devices	10102
			When changed using the GOT special register (GS)	10103
			When synchronized with SNTP	10104
8	ACT_ABBR	Function abbreviation	When notified from external devices	GetTime
			When changed using the GOT special register (GS)	SetTime
			When synchronized with SNTP	GetTimeS

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
9	ACTION	Function type name	When notified from external devices	Adjust (External device)
			When changed using the GOT special register (GS)	Adjust (GS)
			When synchronized with SNTP	Set time (SNTP)
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—
16	CHG_VALUE	Change value	Time after change	Example) 2025/08/14 10:30:45
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	Time before change	Example) 2025/08/14 12:33:45
19	PREV_VALUE_DISP	Previous value (display)	None	—

59.3.11 Security mode change

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Security mode change date and time	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	☞ Page 1922 Operating device (type) ☞ Page 1922 Operating device (route)	Example) PC Tool/Src:192.168.3.200:42033
3	OPERATOR	Operator name	None	—
4	OPE_ID	Operator ID	None	—
5	CATEGORY	Category	configuration changes	configuration changes
6	TYPE	Type	Information	information
7	ID	Log type ID	Security mode change	10201
8	ACT_ABBR	Function abbreviation	Security mode change	SecMdChg
9	ACTION	Function type name	Security mode change	Security mode change
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—
16	CHG_VALUE	Change value	Security mode after change	Example) Security Mode:1
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	None	—
19	PREV_VALUE_DISP	Previous value (display)	None	—

59.3.12 Encrypted communication (unauthenticated)

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Date and time when encrypted communication without authentication was started or terminated	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	☞ Page 1922 Operating device (type) ☞ Page 1922 Operating device (route)	Example) PC Tool/Src:192.168.3.200:42033
3	OPERATOR	Operator name	None	—
4	OPE_ID	Operator ID	None	—
5	CATEGORY	Category	access control	access control
6	TYPE	Type	Encrypted communication: Start (connection)	information
			Encrypted communication: Start failed	warning
			Encrypted communication: End (disconnected)	information
7	ID	Log type ID	Start of encrypted communication (connection)	10211
			Failed to start encrypted communication	10212
			Encrypted communication: End (disconnected)	10215
8	ACT_ABBR	Function abbreviation	Start of encrypted communication (connection)	CpCmCnct
			Failed to start encrypted communication	CpCmNG
			Encrypted communication: End (disconnected)	CpCmCut
9	ACTION	Function type name	Encrypted communication: Start (connection)	Encrypted communication: Started
			Encrypted communication: Start failed	Encrypted communication: Failure
			Encrypted communication: End (disconnected)	Encrypted communication: End
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—
16	CHG_VALUE	Change value	Communication channel number, function, target device IP address, and port number after change When the communication channel is not used, the communication channel number is not output.	Example) Ch1/Dst:192.168.3.39:5007
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	Protocol and version of the encrypted communication before change When encrypted communication fails, only the protocol is recorded.	Example) TLS 1.3
19	PREV_VALUE_DISP	Previous value (display)	None	—

59.3.13 Encrypted communication (authenticated)

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Date and time when encrypted communication with authentication was started or terminated	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	☞ Page 1922 Operating device (type) ☞ Page 1922 Operating device (route)	Example) VNC/Src:192.168.3.200:42033
3	OPERATOR	Operator name	Operator name at authentication For the OPC UA client function, [anonymous] is recorded when the user token represents an anonymous user.	Example) gotuser
4	OPE_ID	Operator ID	Authentication dedicated to encrypted communication: 0	0
5	CATEGORY	Category	access control	access control

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
6	TYPE	Type	Connection authentication succeeded	information
			Connection authentication failed	warning
7	ID	Log type ID	Connection authentication succeeded	10213
			Connection authentication failed	10214
8	ACT_ABBR	Function abbreviation	Connection authentication succeeded	CpCmLgin
			Connection authentication failed	CpCmLgNG
9	ACTION	Function type name	Connection authentication succeeded	Encrypted communication: Connection authentication successful
			Connection authentication failed	Encrypted communication: Connectionauthentication failure
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—
16	CHG_VALUE	Change value	Communication channel number, function, target device IP address, and port number after change For the OPC UA client function, a combination of <Security mode>_<Security policy> is recorded.	Example) Ch1/Dst:192.168.3.39:5007
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	Protocol and version of the encrypted communication before change When encrypted communication fails, only the protocol is recorded.	Example) SSH2.0
19	PREV_VALUE_DISP	Previous value (display)	None	—

59.3.14 IP filter

The IP filter function collects logs through external operations. Depending on the timing of collection and load conditions, logs may not be collected.

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Date and time when accessed from a blocked IP address	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	(Operation on actual device)	—
3	OPERATOR	Operator name	None	—
4	OPE_ID	Operator ID	None	—
5	CATEGORY	Category	control system events	control system events
6	TYPE	Type	Warning	warning
7	ID	Log type ID	IP filter	10221
8	ACT_ABBR	Function abbreviation	IP filter	IPFilter
9	ACTION	Function type name	IP filter	IP filter
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
16	CHG_VALUE	Change value	IP address, port number of send source and destination (GOT)	Example) Src:192.168.100.5:20052/ Dst:Ethernet Port1:80
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	None	—
19	PREV_VALUE_DISP	Previous value (display)	None	—

59.3.15 Ethernet restriction

After an Ethernet restriction log is collected, another Ethernet restriction log is not collected for 10 seconds.

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Ethernet restriction start date and time	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	(Operation on actual device)	—
3	OPERATOR	Operator name	None	—
4	OPE_ID	Operator ID	None	—
5	CATEGORY	Category	control system events	control system events
6	TYPE	Type	Warning	warning
7	ID	Log type ID	Ethernet restriction	10222
8	ACT_ABBR	Function abbreviation	Ethernet restriction	EthCtrl
9	ACTION	Function type name	Ethernet restriction	Ethernet restriction
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—
16	CHG_VALUE	Change value	None	—
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	None	—
19	PREV_VALUE_DISP	Previous value (display)	None	—

59.3.16 Displayed system language

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Date and time when the system language was changed in the utility or using the system language switching device*1	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	☞ Page 1922 Operating device (type) ☞ Page 1922 Operating device (route)	Example) GOT Mobile No.1/ Src:192.168.3.100:42100
3	OPERATOR	Operator name	None	—
4	OPE_ID	Operator ID	None	—
5	CATEGORY	Category	user screen events	user screen events
6	TYPE	Type	Information	information
7	ID	Log type ID	Displayed system language	12011
8	ACT_ABBR	Function abbreviation	Displayed system language	DspSysLg
9	ACTION	Function type name	Displayed system language	Display system language

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—
16	CHG_VALUE	Change value	System language after change	Example) English
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	None	—
19	PREV_VALUE_DISP	Previous value (display)	None	—

*1 If the system language switching devices have been enabled, system language switching by using utilities is disabled.
In this case, if you try to change the system language with utilities, the corresponding operation log is output; however, the system languages are not switched.
You can check if the system languages have been switched by checking the operation log of [Display system language] that is output after system language switching.

59.3.17 System language switching

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Date and time when the system language was changed in the utility	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	Operating device	Example) —
3	OPERATOR	Operator name	Name of the logged-in operator when operator authentication is used	Example) gotuser
4	OPE_ID	Operator ID	ID of the logged-in operator when operator authentication is used	Example) 1207
5	CATEGORY	Category	configuration changes	configuration changes
6	TYPE	Type	Information	information
7	ID	Log type ID	System language switching	12012
8	ACT_ABBR	Function abbreviation	System language switching	SysLang
9	ACTION	Function type name	System language switching	Switch system languages
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—
16	CHG_VALUE	Change value	System language after change	Example) English
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	None	—
19	PREV_VALUE_DISP	Previous value (display)	None	—

59.3.18 Changing the time in the utility

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Date and time when the clock was changed in the utility (recorded using the previous clock)	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	☞ Page 1922 Operating device (type) ☞ Page 1922 Operating device (route)	Example) VNC/Src:192.168.3.200:42033
3	OPERATOR	Operator name	Name of the logged-in operator when operator authentication is used	Example) gotuser
4	OPE_ID	Operator ID	ID of the logged-in operator when operator authentication is used	Example) 1207
5	CATEGORY	Category	configuration changes	configuration changes
6	TYPE	Type	Information	information
7	ID	Log type ID	Clock change	12013
8	ACT_ABBR	Function abbreviation	Clock change	ChngTime
9	ACTION	Function type name	Clock change	Change clock
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—
16	CHG_VALUE	Change value	Time after change	Example) 2025/07/14 19:36:47
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	Time before change	Example) 2025/07/13 15:21:35
19	PREV_VALUE_DISP	Previous value (display)	None	—

59.3.19 Time zone setting change in the utility

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Time when the time zone was changed in the utility	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	☞ Page 1922 Operating device (type) ☞ Page 1922 Operating device (route)	Example) VNC/Src:192.168.3.200:42033
3	OPERATOR	Operator name	Name of the logged-in operator when operator authentication is used	Example) gotuser
4	OPE_ID	Operator ID	ID of the logged-in operator when operator authentication is used	Example) 1207
5	CATEGORY	Category	configuration changes	configuration changes
6	TYPE	Type	Information	information
7	ID	Log type ID	Clock change	12013
8	ACT_ABBR	Function abbreviation	Clock change	ChngTZ
9	ACTION	Function type name	Clock change	Change time zone
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—
16	CHG_VALUE	Change value	Time after change	Example) GMT+8:00

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	Time before change	—
19	PREV_VALUE_DISP	Previous value (display)	None	—

59.3.20 GOT ID switching

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Date and time when the GOT ID was switched	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	Operating device	Example) —
3	OPERATOR	Operator name	Name of the logged-in operator when operator authentication is used	Example) gotuser
4	OPE_ID	Operator ID	ID of the logged-in operator when operator authentication is used	Example) 1207
5	CATEGORY	Category	configuration changes	configuration changes
6	TYPE	Type	Information	information
7	ID	Log type ID	GOT ID switching	12015
8	ACT_ABBR	Function abbreviation	GOT ID switching	SwtGOTID
9	ACTION	Function type name	GOT ID switching	Switch GOT ID
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—
16	CHG_VALUE	Change value	GOT ID after change	Example) GOT ID:1
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	None	—
19	PREV_VALUE_DISP	Previous value (display)	None	—

59.3.21 Operator authentication (login)

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Upon successful or failed operator login	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	Login succeeded	Example) PC Tool/Src: USB
			Login failed	Example) —
3	OPERATOR	Operator name	Name of the authenticated operator upon successful login When a login fails, the event is recorded as shown below. • When an incorrect operator name is entered: Operator name specified for authentication (blank when no operator name is specified) • When an incorrect password is entered: Operator name specified for authentication • When login fails while using external authentication or the GOT Mobile function: [-]	Example) gotuser
4	OPE_ID	Operator ID	ID of the authenticated operator upon successful login	Example) 1207
			Login failed	0

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
5	CATEGORY	Category	access control	access control
6	TYPE	Type	Login succeeded	information
			Login failed	warning
7	ID	Log type ID	Login succeeded	12501
			Login failed	12502
8	ACT_ABBR	Function abbreviation	Login succeeded	Login
			Login failed	LoginNG
9	ACTION	Function type name	Login succeeded	Login
			Login failed	Login failed
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—
16	CHG_VALUE	Change value	None	—
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	None	—
19	PREV_VALUE_DISP	Previous value (display)	None	—

59.3.22 Operator authentication (logout)

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Operator logout date and time	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	☞ Page 1922 Operating device (type) ☞ Page 1922 Operating device (route)	Example) GOT Mobile No.6/ Src:192.168.3.101:45678
3	OPERATOR	Operator name	Name of the logged-out operator	Example) gotuser
4	OPE_ID	Operator ID	ID of logged-out operator	Example) 1207
5	CATEGORY	Category	access control	access control
6	TYPE	Type	Information	information
7	ID	Log type ID	Logout	12503
			Automatic logout	12504
			Forced logout	12505
8	ACT_ABBR	Function abbreviation	Logout	Logout
			Automatic logout	ALogout
			Forced logout	CLogout
9	ACTION	Function type name	Logout	Logout
			Automatic logout	Automatic logout
			Forced logout	Forced logout
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—
16	CHG_VALUE	Change value	None	—
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	None	—

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
19	PREV_VALUE_DISP	Previous value (display)	None	—

59.3.23 Operator authentication (operator switching)

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Date and time when operator switching succeeded or failed	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	Operating device	Example) —
3	OPERATOR	Operator name	Name of the operator after switching	Example) gotuser
4	OPE_ID	Operator ID	ID of the new operator after successful switching	Example) 1207
			When operator switching failed	0
5	CATEGORY	Category	access control	access control
6	TYPE	Type	Operator switching succeeded	information
			Operator switching failed	warning
7	ID	Log type ID	Operator switching succeeded	12506
			Operator switching failed	12507
8	ACT_ABBR	Function abbreviation	Operator switching succeeded	ChgOp
			Operator switching failed	ChgOpNG
9	ACTION	Function type name	Operator switching succeeded	Switch operator
			Operator switching failed	Operator switching failed
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—
16	CHG_VALUE	Change value	None	—
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	None	—
19	PREV_VALUE_DISP	Previous value (display)	None	—

59.3.24 Operator authentication (password change)

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Date and time when a password change succeeded or failed	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	☞ Page 1922 Operating device (type) ☞ Page 1922 Operating device (route)	Example) GOT Mobile No.6/ Src:192.168.3.101:45678
3	OPERATOR	Operator name	Operator name	Example) gotuser
4	OPE_ID	Operator ID	Operator ID	Example) 1207
5	CATEGORY	Category	access control	access control
6	TYPE	Type	Password change succeeded	information
			Password change failed	warning
7	ID	Log type ID	Password change succeeded	12508
			Password change failed	12509
8	ACT_ABBR	Function abbreviation	Password change succeeded	ChPass
			Password change failed	ChPassNG
9	ACTION	Function type name	Password change succeeded	Password change
			Password change failed	Password change (failure)

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—
16	CHG_VALUE	Change value	None	—
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	None	—
19	PREV_VALUE_DISP	Previous value (display)	None	—

59.3.25 Operator authentication (operator account lock)

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Date and time when an operator account was locked due to authentication failure	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	None	—
3	OPERATOR	Operator name	Name of the locked-out operator	Example) gotuser
4	OPE_ID	Operator ID	ID of the locked-out operator	Example) 1207
5	CATEGORY	Category	access control	access control
6	TYPE	Type	Warning	warning
7	ID	Log type ID	Operator lock	12510
8	ACT_ABBR	Function abbreviation	Operator lock	OpLock
9	ACTION	Function type name	Operator lock	Operator lock
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—
16	CHG_VALUE	Change value	None	—
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	None	—
19	PREV_VALUE_DISP	Previous value (display)	None	—

59.3.26 Operator authentication (operator blocking)

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Date and time when authentication was prohibited or the prohibition was lifted automatically in case of detection of an unauthorized login attempt for each function	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	☞ Page 1922 Operating device (type)	Example) PC Tool
3	OPERATOR	Operator name	None	—
4	OPE_ID	Operator ID	None	—

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
5	CATEGORY	Category	access control	access control
6	TYPE	Type	Authentication prohibited (detection of unauthorized login attempts)	warning
			Authentication prohibition lifted automatically	information
7	ID	Log type ID	Authentication prohibited (detection of unauthorized login attempts)	12511
			Authentication prohibition lifted automatically	12512
8	ACT_ABBR	Function abbreviation	Authentication prohibited (detection of unauthorized login attempts)	OpAPrhbt
			Authentication prohibition lifted automatically	OpAPrhAR
9	ACTION	Function type name	Authentication prohibited (detection of unauthorized login attempts)	Authentication Prohibition
			Authentication prohibition lifted automatically	Authentication prohibition lifted automatically
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—
16	CHG_VALUE	Change value	None	—
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	None	—
19	PREV_VALUE_DISP	Previous value (display)	None	—

59.3.27 Operator authentication (operator unblocking)

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Date and time when the authentication prohibition was lifted manually in case of detection of an unauthorized login attempt	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	☞ Page 1922 Operating device (type)	Example) —
3	OPERATOR	Operator name	Name of the authenticated operator	Example) gotuser
4	OPE_ID	Operator ID	ID of the authenticated operator	Example) 1207
5	CATEGORY	Category	access control	access control
6	TYPE	Type	Information	information
7	ID	Log type ID	Authentication prohibition lifted	12513
8	ACT_ABBR	Function abbreviation	Authentication prohibition lifted	OpAPrhOR
9	ACTION	Function type name	Authentication prohibition lifted	Authentication prohibition lifted
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—
16	CHG_VALUE	Change value	Target If more than one is applicable, output is separated by [/]. ☞ Page 1922 Operating device (type)	Example) PC Tool/GOT Mobile

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	None	—
19	PREV_VALUE_DISP	Previous value (display)	None	—

59.3.28 Operator management (start/end)

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Date and time: • The operator management screen or the function setting screen is displayed in the utility. • The operator management screen or the function setting screen fails to load in the utility. • The operator management screen or the function setting screen is closed in the utility.	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	☞ Page 1922 Operating device (type) ☞ Page 1922 Operating device (route)	Example) PC Tool/Src: USB
3	OPERATOR	Operator name	Operator name of the administrator or sub-administrator authenticated by the administrator password authentication	Example) Administrator
4	OPE_ID	Operator ID	Operator ID of the administrator or sub-administrator authenticated by the administrator password authentication For the administrator in security mode 1, [-] is recorded. When the screen fails to load, [0] is recorded.	Example) 1207
5	CATEGORY	Category	access control	access control
6	TYPE	Type	When displayed	information
			When the screen fails to load	warning
			When closed	information
7	ID	Log type ID	When displayed	12601
			When the screen fails to load	12602
			When closed	12603
8	ACT_ABBR	Function abbreviation	When displayed	OpMStart
			When the screen fails to load	OpMNG
			When closed	OpMEnd
9	ACTION	Function type name	When displayed	Operator management: Start
			When the screen fails to load	Operator management: Start failure
			When closed	Operator management: End
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—
16	CHG_VALUE	Change value	None	—
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	None	—
19	PREV_VALUE_DISP	Previous value (display)	None	—

59.3.29 Operator management (save/undo)

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Date and time: • When the changes of the operator management information are saved • When the changes of the operator management information are canceled	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	☞ Page 1922 Operating device (type) ☞ Page 1922 Operating device (route)	Example) VNC/Src:192.168.3.200:46123
3	OPERATOR	Operator name	Operator name of the administrator or sub-administrator authenticated by the administrator password authentication	Example) Administrator
4	OPE_ID	Operator ID	Operator ID of the administrator or sub-administrator authenticated by the administrator password authentication	Example) —
5	CATEGORY	Category	configuration changes	configuration changes
6	TYPE	Type	Information	information
7	ID	Log type ID	When the changes of the operator management information are saved	12604
			When the changes of the operator management information are canceled	12605
8	ACT_ABBR	Function abbreviation	When the changes of the operator management information are saved	OpMSave
			When the changes of the operator management information are canceled	OpMUndo
9	ACTION	Function type name	When the changes of the operator management information are saved	Operator management: Save
			When the changes of the operator management information are canceled	Operator management: Undo
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—
16	CHG_VALUE	Change value	None	—
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	None	—
19	PREV_VALUE_DISP	Previous value (display)	None	—

59.3.30 Operator management (import/export)

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Date and time when the operator management information file was imported or exported	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	Operating device	Example) —
3	OPERATOR	Operator name	Operator name of the administrator or sub-administrator authenticated by the administrator password authentication	Example) Administrator
4	OPE_ID	Operator ID	Operator ID of the administrator or sub-administrator authenticated by the administrator password authentication	Example) —
5	CATEGORY	Category	configuration changes	configuration changes

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
6	TYPE	Type	When imported	information
			When import fails	warning
			When exported	information
7	ID	Log type ID	When imported	12606
			When import fails	12607
			When exported	12608
8	ACT_ABBR	Function abbreviation	When imported	OpMImp
			When import fails	OpMImpNG
			When exported	OpMExp
9	ACTION	Function type name	When imported	Operator management: Import
			When import fails	Operator management: Import failure
			When exported	Operator management: Export
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—
16	CHG_VALUE	Change value	Name of the import source file or export destination file (full path)	Example) A:\OPEPASSINF.G3G
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	None	—
19	PREV_VALUE_DISP	Previous value (display)	None	—

59.3.31 Operator management (function settings)

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Date and time when the function setting screen was closed in the utility	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	None	—
3	OPERATOR	Operator name	Operator name of the administrator or sub-administrator authenticated by the administrator password authentication	Example) Administrator
4	OPE_ID	Operator ID	Operator ID of the administrator or sub-administrator authenticated by the administrator password authentication	Example) —
5	CATEGORY	Category	configuration changes	configuration changes
6	TYPE	Type	Information	information
7	ID	Log type ID	Authentication type	12609
			Automatic logout time	12610
			Password expiration date	12611
			External authentication ID	12612
			Authentication prohibited	12613
			Operator lock	12614
			Password requirements	12615
			Password history	12616
			Sub-administrative privileges	12617
			Group	12619

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
8	ACT_ABBR	Function abbreviation	Authentication type	OpMAuthM
			Automatic logout time	OpMALOut
			Password expiration date	OpMPassE
			External authentication ID	OpMEAuID
			Authentication prohibited	OpMAuthP
			Operator lock	OpMLock
			Password requirements	OpMPassR
			Password history	OpMPassH
			Sub-administrative privileges	OpMSuAdm
			Group	OpMGroup
9	ACTION	Function type name	Authentication type	Operator management: Auth. method
			Automatic logout time	Operator management: Automatic logout
			Password expiration date	Operator management: Pwd. exp. date
			External authentication ID	Operator management: Ext. auth. ID
			Authentication prohibited	Operator management: Authentication prohibited
			Operator lock	Operator management: operator lock
			Password requirements	Operator management: Pwd requirements
			Password history	Operator management: Password history
			Sub-administrative privileges	Operator management: Subadministrator authority
			Group	Operator management: Group
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—
16	CHG_VALUE	Change value	Changes made to the function settings ☞ Page 1950 Change value, previous value	☞ Page 1950 Change value, previous value
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	Settings before change ☞ Page 1950 Change value, previous value	☞ Page 1950 Change value, previous value
19	PREV_VALUE_DISP	Previous value (display)	None	—

Change value, previous value

If multiple entries are present in a sub field, the entries are separated by a slash (/). "n" indicates a numerical value.

Function type		Notation in CSV, Unicode text, etc.
Authentication type	Authentication with a password	(Operator name + password)
	Authentication with an external authentication device	External auth (serial)
	Authentication with an external authentication device and auxiliary authentication	Ext. auth. (serial)/Op. name + pwd.
	Authentication with an external authentication device	External auth (USB)
	Authentication with an external authentication device and auxiliary authentication	Ext. auth. (USB)/Op. name + pwd.
Automatic logout time	Automatic logout time	Example) 300 sec
Password expiration date	Expiration date	Expiration: 1000 days
	Prenotification	Example) Notification: 30 days
External authentication ID	Starting position	Example) Start: 1998 bytes
	Valid data length	Example) Data length: 16 bytes

Function type		Notation in CSV, Unicode text, etc.
Login block setting	Number of failed login attempts	Example) Continuous failure count: 10
	Login block time	Example) Prohibition: 3600 s
Operator lock	Number of consecutive failed login attempts to lock an account	Example) Continuous failure count: 10
Password requirements	Password requirement settings	Example) Middle
	Minimum number of characters in password	Example) Minimum: 32 characters
	Password character type	Example) Type: <No check>
Password history	Number of passwords saved	Example) History count: 5
Sub-administrative privileges	Enabling or disabling sub-administrative privileges (only when the security mode is set to mode 1)	Example) Enabled
	Showing of uneditable operator information	Example) Uneditable display: disabled
	Security level to change the function setting	Example) Level 15 or higher
	Editable groups (only when the security mode is set to mode 2)	Example) Group No.: 2,3,4
Group	Group number	Example) No. 3
	Group name	Example) Developer
	Operation authority	Example) Edit operator management information

59.3.32 Operator management (operator management information)

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Date and time when the operator management screen was closed in the utility	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	Operating device	Example) —
3	OPERATOR	Operator name	Operator name of the administrator or sub-administrator authenticated by the administrator password authentication	Example) Administrator
4	OPE_ID	Operator ID	Operator ID of the administrator or sub-administrator authenticated by the administrator password authentication	Example) —
5	CATEGORY	Category	configuration changes	configuration changes
6	TYPE	Type	Operator added	information
			Operator deleted	warning
			Operator edited	information
7	ID	Log type ID	Operator added	12620
			Operator deleted	12621
			Operator edited	12622
8	ACT_ABBR	Function abbreviation	Operator added	OpMAddOp
			Operator deleted	OpMDelOp
			Operator edited	OpMEdiOp
9	ACTION	Function type name	Operator added	Operator management: Add operator
			Operator deleted	Operator management: Delete operator
			Operator edited	Operator management: Edit operator
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	Name and ID of the operator who added, deleted, or edited data	Example) narita(ID: 2715)

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
16	CHG_VALUE	Change value	• When the operator is added: Operator management information of the added operator • When the operator is deleted: Operator management information of the deleted operator • When the operator is edited: Operator management information after editing	☞ Page 1950 Change value, previous value
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	None for added operator	—
			None for deleted operator	—
			Operator settings before editing for edited operator as follows: Operator management: Edit operator	Example) Level: 1/Group No.: 3
19	PREV_VALUE_DISP	Previous value (display)	None	—

Change value, previous value

If multiple entries are present in a sub field, the entries are separated by a slash (/). "n" indicates a numerical value.

Function type		Output
Level	Security level to which the operator belongs	Example) Level: 10
Associated group	Group number of the group to which the operator belongs	Example) Group No.: 3
Password	When the password was changed	Password change
Password expiration date setting	No expiration date	Permanent password: enabled
	With expiration date	Permanent password: disabled
Disabling an operator account	Operator disabled	Disable operators: enabled
	Operator enabled	Disable operators: disabled
Changing a password at the next login	Password change enabled	Change password next login: enabled
	Password change disabled	Change password next login: disabled
External authentication	External authentication enabled	External authentication: enabled
	External authentication disabled	External authentication: disabled
	External authentication ID changed	Change external authentication ID
Operator lock	Operator lock	Locked
	Operator unlocked	Unlock

59.3.33 Operator management (new file created at startup)

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Date and time when the operator management information file could not be read and a new file was created at GOT startup	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	(Operation on actual device)	—
3	OPERATOR	Operator name	None	—
4	OPE_ID	Operator ID	None	—
5	CATEGORY	Category	configuration changes	configuration changes
6	TYPE	Type	Information	information
7	ID	Log type ID	Operator management: Newly created	12623
8	ACT_ABBR	Function abbreviation	Operator management: Newly created	OpMNewOp
9	ACTION	Function type name	Operator management: Newly created	Operator management: New
10	SCRN_NO	Screen No.	None	—

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—
16	CHG_VALUE	Change value	None	—
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	None	—
19	PREV_VALUE_DISP	Previous value (display)	None	—

59.3.34 Operator management (file corrupted at startup)

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Date and time when the operator management information file failed to be read at GOT startup due to file corruption	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	(Operation on actual device)	—
3	OPERATOR	Operator name	None	—
4	OPE_ID	Operator ID	None	—
5	CATEGORY	Category	configuration changes	configuration changes
6	TYPE	Type	Warning	warning
7	ID	Log type ID	Operator management: Corrupted	12624
8	ACT_ABBR	Function abbreviation	Operator management: Corrupted	OpMInfBr
9	ACTION	Function type name	Operator management: Corrupted	Operator management: Corrupted
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—
16	CHG_VALUE	Change value	None	—
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	None	—
19	PREV_VALUE_DISP	Previous value (display)	None	—

59.3.35 Operator management (corrupted file restored at startup)

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Date and time when a corrupted operator management information file was restored from the backup file	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	(Operation on actual device)	Example) —

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
3	OPERATOR	Operator name	Operator name of the administrator or sub administrator who performed the restoration operation	Example) Administrator
4	OPE_ID	Operator ID	Operator ID of the administrator or sub administrator who performed the restoration operation	Example) —
5	CATEGORY	Category	access control	access control
6	TYPE	Type	Information	information
7	ID	Log type ID	Operator management: Restored	12625
8	ACT_ABBR	Function abbreviation	Operator management: Restored	OpMRstor
9	ACTION	Function type name	Operator management: Restored	Operator management: Restore
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—
16	CHG_VALUE	Change value	Date and time when the backup file was edited	Example) Last: 2025/07/14 19:36:47
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	None	—
19	PREV_VALUE_DISP	Previous value (display)	None	—

59.3.36 Operator management (ended abnormally)

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Date and time when the GOT was restarted after the GOT was accidentally powered off while displaying the operator management screen or the function setting screen in the utility	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	Operating device	Example) —
3	OPERATOR	Operator name	Operator name of the logged-in administrator or sub-administrator when the GOT was accidentally powered off	Example) Administrator
4	OPE_ID	Operator ID	Operator ID of the logged-in administrator or sub-administrator when the GOT was accidentally powered off	Example) —
5	CATEGORY	Category	access control	access control
6	TYPE	Type	Warning	warning
7	ID	Log type ID	Operator management: Ended abnormally	12626
8	ACT_ABBR	Function abbreviation	Operator management: Ended abnormally	OpMUnEnd
9	ACTION	Function type name	Operator management: Ended abnormally	Operator management: Illegal end
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
16	CHG_VALUE	Change value	Time when the administrator or sub-administrator logged in before the GOT was accidentally powered off	Example) Start: 2025/07/14 19:36:47
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	None	—
19	PREV_VALUE_DISP	Previous value (display)	None	—

59.3.37 Device monitoring (start/end)

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Date and time when the device monitor of the GOT diagnostics function was started or terminated	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	☞ Page 1922 Operating device (type) ☞ Page 1922 Operating device (route)	Example) Data transfer/ Src:192.168.3.200:42033
3	OPERATOR	Operator name	Name of the logged-in operator when operator authentication is used	Example) gotuser
4	OPE_ID	Operator ID	ID of the logged-in operator when operator authentication is used	Example) 1207
5	CATEGORY	Category	configuration changes	configuration changes
6	TYPE	Type	information	information
7	ID	Log type ID	Device monitoring: Start	12321
			Device monitoring: End	12322
8	ACT_ABBR	Function abbreviation	Device monitoring: Start	DevMnSt
			Device monitoring: End	DevMnSp
9	ACTION	Function type name	Device monitoring: Start	Device monitoring: Started
			Device monitoring: End	Device monitoring: End
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—
16	CHG_VALUE	Change value	None	—
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	None	—
19	PREV_VALUE_DISP	Previous value (display)	None	—

59.3.38 Device monitoring (device writing)

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Date and time when a device value was written in the device monitor of the GOT diagnostics	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	☞ Page 1922 Operating device (type) ☞ Page 1922 Operating device (route)	Example) Data transfer/ Src:192.168.3.200:42033
3	OPERATOR	Operator name	Name of the logged-in operator when operator authentication is used	Example) gotuser
4	OPE_ID	Operator ID	ID of the logged-in operator when operator authentication is used	Example) 1207
5	CATEGORY	Category	configuration changes	configuration changes
6	TYPE	Type	information	information

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
7	ID	Log type ID	Device monitoring: Device writing	12323
8	ACT_ABBR	Function abbreviation	Device monitoring: Device writing	DevMnWt
9	ACTION	Function type name	Device monitoring: Device writing	Device monitoring: Device writing
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	Device type	Example) BIN16
15	DEV_NAME	Device name	Write device	Example) GD1000
16	CHG_VALUE	Change value	Device value after change	Example) 32767
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	Device value before change	Example) 15000
19	PREV_VALUE_DISP	Previous value (display)	None	—

59.3.39 File operations (read/write/delete)

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Date and time when the file was operated (read, written, or deleted)	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	☞ Page 1922 Operating device (type) ☞ Page 1922 Operating device (route)	Example) Data transfer/ Src:192.168.3.200:42033
3	OPERATOR	Operator name	Name of the logged-in operator when operator authentication is used	Example) gotuser
4	OPE_ID	Operator ID	ID of the logged-in operator when operator authentication is used	Example) 1207
5	CATEGORY	Category	configuration changes	configuration changes
6	TYPE	Type	File operation: Reading	information
			File operation: Writing	warning
			File operation: Deletion	warning
7	ID	Log type ID	File operation: Reading	12201
			File operation: Writing	12202
			File operation: Deletion	12203
8	ACT_ABBR	Function abbreviation	File operation: Reading	FileRd
			File operation: Writing	FileWrt
			File operation: Deletion	FileDlt
9	ACTION	Function type name	File operation: Reading	File operation: Reading
			File operation: Writing	File operation: Writing
			File operation: Deletion	File operation: Deletion
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—
16	CHG_VALUE	Change value	Target file name (full path)	Example) A:\DATA.G3D
17	CHG_VALUE_CONT	Change value (operation)	Size of the target file and the date and time when the file was updated	Example) 1.0KB / 2025/07/14 17:15:34
18	PREV_VALUE	Previous value	None	—

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
19	PREV_VALUE_DISP	Previous value (display)	None	—

59.3.40 File operations (copy/move/rename)

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Date and time when the file was operated (copied, moved, or renamed)	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	☞ Page 1922 Operating device (type) ☞ Page 1922 Operating device (route)	Example) Data transfer/ Src:192.168.3.200:42033
3	OPERATOR	Operator name	Name of the logged-in operator when operator authentication is used If operations are performed by VNC clients, the logs are prefixed with an asterisk (*).	Example) gotuser
4	OPE_ID	Operator ID	ID of the logged-in operator when operator authentication is used	Example) 1207
5	CATEGORY	Category	configuration changes	configuration changes
6	TYPE	Type	File operation: Copy	information
			File operation: Move	warning
			File operation: Rename	warning
7	ID	Log type ID	File operation: Copy	12204
			File operation: Move	12205
			File operation: Rename	12206
8	ACT_ABBR	Function abbreviation	File operation: Copy	FileCpy
			File operation: Move	FileMv
			File operation: Rename	FileRNm
9	ACTION	Function type name	File operation: Copy	File operation: Copy
			File operation: Move	File operation: Move
			File operation: Rename	File operation: Rename
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—
16	CHG_VALUE	Change value	Destination file name (full path)	Example) B:\DATA.G3D
17	CHG_VALUE_CONT	Change value (operation)	Size of the target file and the date and time when the file was updated	Example) 1.0KB / 2025/07/14 17:15:34
18	PREV_VALUE	Previous value	Source file name (full path)	Example) A:\DATA.G3D
19	PREV_VALUE_DISP	Previous value (display)	None	—

59.3.41 Folder operations (create folder/delete folder)

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Date and time when the folder was created or deleted	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	☞ Page 1922 Operating device (type) ☞ Page 1922 Operating device (route)	Example) Data transfer/ Src:192.168.3.200:42033
3	OPERATOR	Operator name	Name of the logged-in operator when operator authentication is used	Example) gotuser
4	OPE_ID	Operator ID	ID of the logged-in operator when operator authentication is used	Example) 1207
5	CATEGORY	Category	configuration changes	configuration changes

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
6	TYPE	Type	File operation: Create folder	information
			File operation: Delete folder	warning
7	ID	Log type ID	File operation: Create folder	12207
			File operation: Delete folder	12208
8	ACT_ABBR	Function abbreviation	File operation: Create folder	FldrCrt
			File operation: Delete folder	FldrDlt
9	ACTION	Function type name	File operation: Create folder	File operation: Folder creation
			File operation: Delete folder	File operation: Folder deletion
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—
16	CHG_VALUE	Change value	Target folder name (full path)	Example) A:\USERDATA
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	None	—
19	PREV_VALUE_DISP	Previous value (display)	None	—

59.3.42 Drive operations (mount/unmount/remove (GS device))

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Date and time when the drive was operated (mounted, unmounted, or removed)	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	Operating device	—
3	OPERATOR	Operator name	None	—
4	OPE_ID	Operator ID	None	—
5	CATEGORY	Category	control system events	control system events
6	TYPE	Type	Drive: Mount	information
			Drive: Unmount	warning
			Drive: Removal operation (GS device)	warning
7	ID	Log type ID	Drive: Mount	12251
			Drive: Unmount	12253
			Drive: Removal operation (GS device)	12254
8	ACT_ABBR	Function abbreviation	Drive: Mount	DrvMunt
			Drive: Unmount	DrvUnmnt
			Drive: Removal operation (GS device)	DrvUmGS
9	ACTION	Function type name	Drive: Mount	Drive: Mount
			Drive: Unmount	Drive: Unmount
			Drive: Removal operation (GS device)	Drive: Removal (GS)
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—
16	CHG_VALUE	Change value	Target drive name	Example) A:

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	None	—
19	PREV_VALUE_DISP	Previous value (display)	None	—

59.3.43 Drive operations (removal operation (utility)/ format)

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Date and time when the drive was operated (removed or formatted) by the utility operation	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	☞ Page 1922 Operating device (type) ☞ Page 1922 Operating device (route)	Example) VNC/Src:192.168.3.200:42033
3	OPERATOR	Operator name	Name of the logged-in operator when operator authentication is used If operations are performed by VNC clients, the logs are prefixed with an asterisk (*).	Example) gotuser
4	OPE_ID	Operator ID	ID of the logged-in operator when operator authentication is used	Example) 1207
5	CATEGORY	Category	configuration changes	configuration changes
6	TYPE	Type	Drive: Removal operation (utility)	warning
			Drive: Format	warning
7	ID	Log type ID	Drive: Removal operation (utility)	12255
			Drive: Format	12256
8	ACT_ABBR	Function abbreviation	Drive: Removal operation (utility)	DrvUmOpe
			Drive: Format	DrvFrmt
9	ACTION	Function type name	Drive: Removal operation (utility)	Drive: Removal operation
			Drive: Format	Drive: Format
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—
16	CHG_VALUE	Change value	Target drive name	Example) A:
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	None	—
19	PREV_VALUE_DISP	Previous value (display)	None	—

59.3.44 Firmware update

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Firmware update date and time	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	Operating device	Example) —
3	OPERATOR	Operator name	Name of the logged-in operator when operator authentication is used If operations are performed by VNC clients, the logs are prefixed with an asterisk (*).	Example) Administrator
4	OPE_ID	Operator ID	ID of the logged-in operator when operator authentication is used	Example) —

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
5	CATEGORY	Category	configuration changes	configuration changes
6	TYPE	Type	Information	information
7	ID	Log type ID	Firmware update	12002
8	ACT_ABBR	Function abbreviation	Firmware update	FWUpDt
9	ACTION	Function type name	Firmware update	Firmware update
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—
16	CHG_VALUE	Change value	Update target and version after change • OS (BootSAP) update: CoreOS: ☐/BootOS: ☐ • BootSAP update: BootOS: ☐	Example) CoreOS:B/BootOS: C
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	Update target and version before change • OS (BootSAP) update: CoreOS: ☐/BootOS: ☐ • BootSAP update: BootOS: ☐	Example) CoreOS:A/BootOS: A
19	PREV_VALUE_DISP	Previous value (display)	None	—

59.3.45 Package data operations

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Package data operation date and time	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	Operating device	Example) —
3	OPERATOR	Operator name	Name of the logged-in operator when operator authentication is used If operations are performed by VNC clients, the logs are prefixed with an asterisk (*).	Example) Administrator
4	OPE_ID	Operator ID	ID of the logged-in operator when operator authentication is used	Example) —
5	CATEGORY	Category	backup and restore event	backup and restore event
6	TYPE	Type	Package data: Writing	information
			Package data: Writing failure	warning
			Package data: Update (differential)	information
			Package data: Copy (backup/acquisition)	information
			Package data: Deletion	warning
7	ID	Log type ID	Package data: Writing	12003
			Package data: Writing failure	12004
			Package data: Update (differential)	12005
			Package data: Copy (backup/acquisition)	12006
			Package data: Deletion	12007
8	ACT_ABBR	Function abbreviation	Package data: Writing	PkWrite
			Package data: Writing failure	PkWrtNG
			Package data: Update (differential)	PkUpDt
			Package data: Copy (backup/acquisition)	PkCpy
			Package data: Deletion	PkDlt

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
9	ACTION	Function type name	Package data: Writing	Package data: Writing
			Package data: Writing failure	Package data: Writing failure
			Package data: Update (differential)	Package data: Update
			Package data: Copy (backup/acquisition)	Package data: Copy
			Package data: Deletion	Package data: Deletion
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	Project title	Example) ProjectA
12	USER_ID	User ID	Project ID	Example) 1207
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—
16	CHG_VALUE	Change value	The following items separated by slashes (/) are recorded. • Version of GT Designer3 used to create the package • Update time • Installation destination drive	Example) GT Designer3 Version1 400/2025/8/14 10:29:33/C:
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	None	—
19	PREV_VALUE_DISP	Previous value (display)	None	—

59.3.46 Initialize all data

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Date and time when all data was initialized	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	(Operation on actual device)	—
3	OPERATOR	Operator name	Name of the logged-in operator when operator authentication is used If operations are performed by VNC clients, the logs are prefixed with an asterisk (*).	Example) Administrator
4	OPE_ID	Operator ID	ID of the logged-in operator when operator authentication is used	Example) —
5	CATEGORY	Category	configuration changes	configuration changes
6	TYPE	Type	Warning	warning
7	ID	Log type ID	All data initialization	12001
8	ACT_ABBR	Function abbreviation	All data initialization	AllInit
9	ACTION	Function type name	All data initialization	Full GOT reset
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—
16	CHG_VALUE	Change value	None	—
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	None	—
19	PREV_VALUE_DISP	Previous value (display)	None	—

59.3.47 Certificate management

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Date and time when the certificate management operation is performed	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	Operating device	Example) —
3	OPERATOR	Operator name	Operator name of the administrator or sub-administrator authenticated by the administrator password authentication	Example) Administrator
4	OPE_ID	Operator ID	Operator ID of the administrator or sub-administrator authenticated by the administrator password authentication	Example) —
5	CATEGORY	Category	configuration changes	configuration changes
6	TYPE	Type	Certificate management: Creation	information
			Certificate management: Update	information
			Certificate management: Deletion	warning
			Certificate management: Export	information
			Certificate management: Import	information
			Certificate management: Trust	information
7	ID	Log type ID	Certificate management: Creation	12301
			Certificate management: Update	12302
			Certificate management: Deletion	12303
			Certificate management: Export	12304
			Certificate management: Import	12305
			Certificate management: Trust	12307
8	ACT_ABBR	Function abbreviation	Certificate management: Creation	CrtfCrt
			Certificate management: Update	CrtfUpDt
			Certificate management: Deletion	CrtfDlt
			Certificate management: Export	CrtfExp
			Certificate management: Import	CrtfImp
			Certificate management: Trust	CrtfTrst
9	ACTION	Function type name	Certificate management: Creation	Certificate management: Creation
			Certificate management: Update	Certificate management: Update
			Certificate management: Deletion	Certificate management: Deletion
			Certificate management: Export	Certificate management: Export
			Certificate management: Import	Certificate management: Import
			Certificate management: Trust	Certificate management: Trust
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—
16	CHG_VALUE	Change value	The following items separated by slashes (/) are recorded. • Target certificate type • Common name and organization name of the certificate • Certificate expiration date	Example) GOT Server certificate/GT3712-XRBA _0123456789123456,Mitsubishi/2023/3/4 18:39:56
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	File name for import or export (full path)	Example) A:\GT3712-XRBA _0123456789123456_S_20230401.cer
19	PREV_VALUE_DISP	Previous value (display)	None	—

59.3.48 Setting change in the utility

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	When utility settings are updated GT SoftGOT3000 supports the following functions. • Backup/restoration • ANDON connection • Mail sending	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	(Operation on actual device)	—
3	OPERATOR	Operator name	Name of the operator who performed the operation	Example) gotuser
4	OPE_ID	Operator ID	ID of the operator who performed the operation	Example) 1207
5	CATEGORY	Category	configuration changes	configuration changes
6	TYPE	Type	Information	information
7	ID	Log type ID	Setting change in the utility: IP address	12701
			Setting change in the utility: IP filter setting	12702
			Setting change in the utility: USB device/host	12703
			Setting change in the utility: Time	12704
			Setting change in the utility: Transparent mode	12705
			Setting change in the utility: Sequence program monitor	12706
			Setting change in the utility: Backup/restoration	12707
			Setting change in the utility: iQSS utility	12708
			Setting change in the utility: ANDON connection	12709
			Setting change in the utility: File transfer	12710
			Setting change in the utility: VPN connection function	12711
			Setting change in the utility: Contactless tag function	12712
			Setting change in the utility: Mail send function	12713
			Setting change in the utility: Web browser function	12714
8	ACT_ABBR	Function abbreviation	Setting change in the utility: IP address	ChgIP
			Setting change in the utility: IP filter setting	ChgIPFlt
			Setting change in the utility: USB device/host	ChgUsbDv
			Setting change in the utility: Time	ChgTmSt
			Setting change in the utility: Transparent mode	ChgTrans
			Setting change in the utility: Sequence program monitor	ChgSeqPM
			Setting change in the utility: Backup/restoration	ChgBkRst
			Setting change in the utility: iQSS utility	ChgiQSS
			Setting change in the utility: ANDON connection	ChgAndon
			Setting change in the utility: File transfer	ChgFileT
			Setting change in the utility: VPN connection function	ChgVPN
			Setting change in the utility: contactless tag function	ChgNoTch
			Setting change in the utility: Mail send function	ChgMail
			Setting change in the utility: Web browser function	ChgWeb

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
9	ACTION	Function type name	Setting change in the utility: IP address	Utility settings change: IP Address
			Setting change in the utility: IP filter setting	Utility settings change: IP filter setting
			Setting change in the utility: USB device/host	Utility settings change: USB device/host
			Setting change in the utility: Time	Utility settings change: Time
			Setting change in the utility: Transparent mode	Utility settings change: Transparent mode
			Setting change in the utility: Sequence program monitor	Utility settings change: Seq. program monitor
			Setting change in the utility: Backup/restoration	Utility settings change: Backup restoration
			Setting change in the utility: iQSS utility	Utility settings change: iQSS utility
			Setting change in the utility: ANDON connection	Utility settings change: ANDON connection
			Setting change in the utility: File transfer	Utility settings change: File transfer
			Setting change in the utility: VPN connection function	Utility settings change: VPN connection function
			Setting change in the utility: Contactless tag function	Utility settings change: Contactless tag function
			Setting change in the utility: Mail send function	Utility settings change: Email sending function
			Setting change in the utility: Web browser function	Utility settings change: Web browser function
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—
16	CHG_VALUE	Change value	None	—
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	None	—
19	PREV_VALUE_DISP	Previous value (display)	None	—

59.3.49 Screen switching

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Screen switching completion date and time	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	☞ Page 1922 Operating device (type) ☞ Page 1922 Operating device (route)	Example) GOT Mobile No.1/ 192.168.3.10:41589
3	OPERATOR	Operator name	None	—
4	OPE_ID	Operator ID	None	—
5	CATEGORY	Category	user screen events	user screen events
6	TYPE	Type	Information	information
7	ID	Log type ID	Base screen switching	30001
			Overlap windows 1 to 5 switching	30011 to 30015
			Superimpose windows 1 to 2 switching	30002 to 30003
			Dialog window switching	30031
			User-created key window switching	30032
8	ACT_ABBR	Function abbreviation	Base screen switching	BASE
			Overlap windows 1 to 5 switching	OVA1 to OVA5
			Superimpose windows 1 to 2 switching	SPI1 to SPI2
			Dialog window switching	DLG
			User-created key window switching	KEY

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
9	ACTION	Function type name	Base screen switching	Screen switching: Base
			Overlap windows 1 to 5 switching	Screen switching: Overlap 1 to Screen switching: Overlap 5
			Superimpose windows 1 to 2 switching	Screen switching: Superimpose 1 to Screen switching: Superimpose 2
			Dialog window switching	Screen switching: Dialog
			User-created key window switching	Screen switching: Key
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	Title of the screen after switching	Example) Main menu screen
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—
16	CHG_VALUE	Change value	Screen number after screen switching	Example) BASE_100
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	None	—
19	PREV_VALUE_DISP	Previous value (display)	None	—

59.3.50 Station number switching

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Station number switching completion date and time	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	None	—
3	OPERATOR	Operator name	None	—
4	OPE_ID	Operator ID	None	—
5	CATEGORY	Category	user screen events	user screen events
6	TYPE	Type	Information	information
7	ID	Log type ID	Common station number switching	30051
			Base screen switching	30052
			Overlap windows 1 to 5 switching	30061 to 30065
			Superimpose windows 1 to 2 switching	30053 to 30054
			Dialog window switching	30081
8	ACT_ABBR	Function abbreviation	Common station number switching	CmnST
			Base screen switching	BaseST
			Overlap windows 1 to 5 switching	Ovl1ST to Ovl5ST
			Superimpose windows 1 to 2 switching	Spi1ST to Spi2ST
			Dialog window switching	DlgST
9	ACTION	Function type name	Common station number switching	Station No. switching: Common
			Base screen switching	Station No. switching: Base
			Overlap windows 1 to 5 switching	Station No. switching: Overlap 1 to 5
			Superimpose windows 1 to 2 switching	Station No. switching: Superimpose 1 to 2
			Dialog window switching	Station No. switching: Dialog
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
16	CHG_VALUE	Change value	When station numbers are changed, records the new numbers in the following form. • ST_network number-PLC station number	Example) Network No. 1, PLC station No. 2: [ST_1-2]
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	None	—
19	PREV_VALUE_DISP	Previous value (display)	None	—

59.3.51 Buffer memory unit number switching

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Buffer memory unit number switching completion date and time	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	None	—
3	OPERATOR	Operator name	None	—
4	OPE_ID	Operator ID	None	—
5	CATEGORY	Category	user screen events	user screen events
6	TYPE	Type	Information	information
7	ID	Log type ID	Common buffer memory unit number switching	30101
			Buffer memory unit number switching for the base screen	30102
			Buffer memory unit number switching in the overlap windows 1 to 5	30111 to 30115
			Buffer memory unit number switching in the superimpose windows 1 to 2	30103 to 30104
			Buffer memory unit number switching in dialog windows	30131
8	ACT_ABBR	Function abbreviation	Common buffer memory unit number switching	CmnBM
			Buffer memory unit number switching for the base screen	BaseBM
			Buffer memory unit number switching in the overlap windows 1 to 5	Ovl1BM to Ovl5BM
			Buffer memory unit number switching in the superimpose windows 1 to 2	Spi1BM to Spi2BM
			Buffer memory unit number switching in dialog windows	DlgBM
9	ACTION	Function type name	Common buffer memory unit number switching	BM unit switching: Common
			Buffer memory unit number switching for the base screen	BM unit switching: Base
			Buffer memory unit number switching in the overlap windows 1 to 5	BM unit switching: Overlap 1 to 5
			Buffer memory unit number switching in the superimpose windows 1 to 2	BM unit switching: Superimpose 1 to 2
			Buffer memory unit number switching in dialog windows	BM unit switching: Dialog
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—
16	CHG_VALUE	Change value	Unit number after buffer memory unit number switching	Example) Unit No. 10: [U10]

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	None	—
19	PREV_VALUE_DISP	Previous value (display)	None	—

59.3.52 Screen gesture

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Date and time when the screen gesture mode and the normal operation mode were switched	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	Operating device	—
3	OPERATOR	Operator name	None	—
4	OPE_ID	Operator ID	None	—
5	CATEGORY	Category	control system events	control system events
6	TYPE	Type	Information	information
7	ID	Log type ID	Switching to screen gesture mode	30151
8	ACT_ABBR	Function abbreviation	Switching to screen gesture mode	ChScrGes
9	ACTION	Function type name	Switching to screen gesture mode	Switch screen gesture
10	SCRN_NO	Screen No.	Screen number of the displayed screen after switching to screen gesture mode ☞ Page 1924 Screen No.	Example) BASE_1
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—
16	CHG_VALUE	Change value	Gesture mode after change	Example) When transferred from the normal mode to the screen gesture mode: Screen gesture mode
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	None	—
19	PREV_VALUE_DISP	Previous value (display)	None	—

59.3.53 Language switching

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Language switching completion date and time	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	Operating device	Example) —
3	OPERATOR	Operator name	None	—
4	OPE_ID	Operator ID	None	—
5	CATEGORY	Category	user screen events	user screen events
6	TYPE	Type	Information	information
7	ID	Log type ID	Language switching	30152
8	ACT_ABBR	Function abbreviation	Language switching	DispLang
9	ACTION	Function type name	Language switching	Switch languages
10	SCRN_NO	Screen No.	None	—

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—
16	CHG_VALUE	Change value	Comment column number after change	Example) 3
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	None	—
19	PREV_VALUE_DISP	Previous value (display)	None	—

59.3.54 Screen security authentication (level password authentication)

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Upon successful or failed screen security authentication via password entry	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	Operating device	Example) —
3	OPERATOR	Operator name	Security level when a password is entered	Example) Level1
4	OPE_ID	Operator ID	Security level when a password is entered.	Example) 1
5	CATEGORY	Category	user screen events	user screen events
6	TYPE	Type	Information	information
7	ID	Log type ID	Level password authentication	30201
8	ACT_ABBR	Function abbreviation	Level password authentication	ScrtPwd
9	ACTION	Function type name	Level password authentication	Change security levels(password)
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—
16	CHG_VALUE	Change value	Security level after change If the authentication fails, the current level is output.	Example) 5
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	Authentication result: Success	OK
			Authentication result: Failure	NG
19	PREV_VALUE_DISP	Previous value (display)	None	—

59.3.55 Screen security control (level switching (device))

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Date and time when the level is changed by the security level device during screen security control	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	Operating device	Example) —
3	OPERATOR	Operator name	None	—
4	OPE_ID	Operator ID	None	—
5	CATEGORY	Category	user screen events	user screen events
6	TYPE	Type	Information	information
7	ID	Log type ID	Level switching (device)	30202
8	ACT_ABBR	Function abbreviation	Level switching (device)	ScrtLv
9	ACTION	Function type name	Level switching (device)	Change levels(device)
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—
16	CHG_VALUE	Change value	Security level after change	Example) 5
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	None	—
19	PREV_VALUE_DISP	Previous value (display)	None	—

59.3.56 Functional operation security authentication

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Date and time when the functional operation security authentication succeeded or failed	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	Operating device	Example) —
3	OPERATOR	Operator name	None Operator name when the authentication method is level authentication in security mode 2	—
4	OPE_ID	Operator ID	None Operator ID when the authentication method is level authentication in security mode 2	—
5	CATEGORY	Category	access control	access control
6	TYPE	Type	Information	information
7	ID	Log type ID	Functional operation security (password)	30203
8	ACT_ABBR	Function abbreviation	Functional operation security (password)	AppOpe
9	ACTION	Function type name	Functional operation security (password)	Function operation security auth.
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
16	CHG_VALUE	Change value	Name of the function successfully authenticated ☞ Page 1968 Change value	☞ Page 1968 Change value
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	Authentication result: Success	OK
			Authentication result: Failure	NG
19	PREV_VALUE_DISP	Previous value (display)	None	—

Change value

The name of the function successfully authenticated is recorded.

Function type	Notation in CSV, Unicode text, etc.
Utility (start)	Utility (start)
Q/L sequence program monitor_ladder (device test)	Q/L Seq program monitor_ladder (dev.test)
Q/L sequence program monitor_ladder (edit)	Q/L Seq program monitor_ladder (edit)
iQ-R/iQ-L sequence program monitor_ladder (device test)	iQ-R/iQ-L Seq program monitor_ladder (test)
iQ-R/iQ-L sequence program monitor_ladder (edit)	iQ-R/iQ-L Seq program monitor_ladder (edit)
iQ-F sequence program monitor_ladder (device test)	iQ-F Seq program monitor_ladder (test)
iQ-F sequence program monitor_ladder (edit)	iQ-F Seq program monitor_ladder (edit)
R motion monitor (parameter setting)	R motion monitor (parameter setting)
Unknown application	Unknown

59.3.57 Touch switch, operation panel

Because multiple actions can be set for a touch switch, operations are logged for each action.
For the operation panel, operations are logged for each input on the operation panel.

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Date and time when the touch switch or the operation panel was operated	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	Operating device	Example) —
3	OPERATOR	Operator name	Name of the logged-in operator when operator authentication is used	Example) gotuser
4	OPE_ID	Operator ID	ID of the logged-in operator when operator authentication is used	Example) 1207
5	CATEGORY	Category	user screen events	user screen events
6	TYPE	Type	Information	information
7	ID	Log type ID	Bit set	32001
			Bit reset	32002
			Bit alternate	32003
			Bit momentary	32004
			Word set	32005
			Extended function	32006
			Screen switching	32007
			Station number switching	32008
			When auto repeat starts	32009
			When auto repeat ends	32010
			Screen gesture	32011
			Extended function (recipe data operation): Import	32012
			Extended function (recipe data operation): Export	32013
8	ACT_ABBR	Function abbreviation	Bit set	TSW_SET
			Bit reset	TSW_RST
			Bit alternate	TSW_ALT
			Bit momentary	TSW_MMT
			Word set	TSW_DAT
			Extended function	TSW_APP
			Screen switching	TSW_SCRN
			Station number switching	TSW_ST
			When auto repeat starts	TSW_REPB
			When auto repeat ends	TSW_REPE
			Screen gesture	TSW_GES
			Extended function (recipe data operation): Import	TSW_RCIN
			Extended function (recipe data operation): Export	TSW_RCEX
9	ACTION	Function type name	Bit set	Touch switch: Bit SET
			Bit reset	Touch switch: Bit RST
			Bit alternate	Touch switch: Bit ALT
			Bit momentary	Touch switch: Bit Momentary
			Word set	Touch switch: Word write
			Extended function	Touch switch: Application switching
			Screen switching	Touch switch: Screen switching
			Station number switching	Touch switch: Station No. switching
			When auto repeat starts	Touch switch: Start auto repeat
			When auto repeat ends	Touch switch: End auto repeat
			Screen gesture	Touch switch: Screen gesture
			Extended function (recipe data operation): Import	Touch switch: Recipe operation import
			Extended function (recipe data operation): Export	Touch switch: Recipe operation export

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
10	SCRN_NO	Screen No.	Fixed to [PNL_1] for the operation panel For touch switches, the screen number of the screen on which the touch is placed ☞ Page 1924 Screen No.	Example) BASE_10
11	OPNAME	Operation name	Name set for [Operation Name of Objects] in the [Log Target] tab in [Operation Log] of the [Environmental Setting] window ☞ Page 2015 [Log Target] tab The text displayed on a touch switch immediately before the first operation of the switch is recorded regardless of the settings of [Operation Timing] and [Press Twice]. If text is set for each display position (up, down, right, left, or center), only the centered text will be recorded. When [Text Type] is set to [Text], text is recorded under the following constraints. • The characters completely extending off the object area are not recorded. • Multiple-line text is recorded by merging the lines into one.	Example) Bit set
12	USER_ID	User ID	User ID of the touch switch or the operation panel If the user ID setting is not configured, [-] is recorded.	Example) 100
13	SUB_NO	Action No./Setting ID	Order of actions specified when multiple actions are set for each touch switch or for the operation panel	Example) 5
14	DATA_TYPE	Data type	Data type of the device set for the touch switch or the operation panel ☞ Page 1925 Data type	Example) BIT
15	DEV_NAME	Device name*1	Device set for the touch switch or the operation panel	Example) @2:1-3 D0.b5
16	CHG_VALUE	Change value	The following logs are recorded according to the action set for the touch switch or the operation panel. • [Bit Set], [Bit Reset], [Bit Momentary], [Bit Alternate], [Word Set] As a result of the actions, the values stored in the devices are output. • [Screen Switching] Records the screen numbers of the screens that appear after screen switching. • [Station No. Switching] Records the type of the switching and the new station number. Example) Switched to Network No. 1 and PLC station No. 2 by common station number switching: [CmnST_1-2] • [SP Function] ([Recipe Data Operation]) The recipe number of the import destination or the export source is recorded. The following logs are recorded when auto repeat is set for the touch switch. • When auto repeat ends Number of auto repeat operations	Example) 1
17	CHG_VALUE_CONT	Change value (operation)	Value input using the touch switch or the operation panel When [Recipe Data Operation] is set for [Action], the file name of the import source or export designation is recorded with the full path.	Example) 1
18	PREV_VALUE	Previous value	The previous device value is recorded. To log the values, select [Collect previous device values at the time of touch switch operation] in the [Log Target] tab in [Operation Log] of the [Environmental Setting] window.	Example) 0
19	PREV_VALUE_DISP	Previous value (display)	Previous device value displayed on the object To log the values, select [Collect previous device values at the time of touch switch operation] in the [Log Target] tab in [Operation Log] of the [Environmental Setting] window.	Example) 0

*1 In the regular log, the communication channel number, device network number, station number, and CPU number are output as follows:

CH_NUM: Channel number specified for the device set for the touch switch or the operation panel
NET_STA: Network number, station number, and CPU number specified for the device set for the touch switch or the operation panel
Example) When network No. 2, station No. 1, and CPU No. 3 are specified: '2-1/3

59.3.58 Numerical input

The numerical input operation logs are recorded in the operation log file every time input values are written to devices.

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Date and time when the following operations were executed using numerical inputs • Storing input values in the monitor devices • Storing input values in the target devices for writing • Turning on the write completion devices	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	Operating device	Example) —
3	OPERATOR	Operator name	Name of the logged-in operator when operator authentication is used If operations are performed by VNC clients, the logs are prefixed with an asterisk (*).	Example) gotuser
4	OPE_ID	Operator ID	ID of the logged-in operator when operator authentication is used	Example) 1207
5	CATEGORY	Category	user screen events	user screen events
6	TYPE	Type	Information	information
7	ID	Log type ID	Monitor device	32101
			Write device	32102
			Write completion device	32103
8	ACT_ABBR	Function abbreviation	Monitor device	NUM_VAL
			Write device	:NUM_WDEV
			Write completion device	NUM_WCHK
9	ACTION	Function type name	Monitor device	Numerical Input
			Write device	Numerical Input (Write device)
			Write completion device	Numerical Input (Write check)
10	SCRN_NO	Screen No.	Fixed to [PNL_1] for the operation panel For touch switches, the screen number of the screen on which the touch is placed ☞ Page 1924 Screen No.	Example) BASE_10
11	OPNAME	Operation name	Name set for [Operation Name of Objects] in the [Log Target] tab in [Operation Log] of the [Environmental Setting] window ☞ Page 2015 [Log Target] tab	Example) Data input
12	USER_ID	User ID	User ID of the numerical input If the user ID setting is not configured, [-] is recorded.	Example) 123
13	SUB_NO	Action No./Setting ID	Writing to the monitor device	1
			Writing to the write device	2
			Write Completion Device ON	3
14	DATA_TYPE	Data type	Data type of the device set for the numerical input ☞ Page 1925 Data type	Example) BIN8
15	DEV_NAME	Device name*1	Name of the write destination device for the numerical input When the offset function is specified, the recorded device is the result of adding the offset device value.	Example) D100
16	CHG_VALUE	Change value	Device value after change The execution results of data operations and scripts are also reflected to the device values.	Example) When the user operation value is [0] and the expression is [monitor device + 5]: 5
17	CHG_VALUE_CONT	Change value (operation)	Value input into the numerical input	Example) When the user operation value is [0] and the expression is [monitor device + 5]: 0
18	PREV_VALUE	Previous value	Previous device value	Example) When the device value is [100] and the expression is [monitor device + 5]: 100
19	PREV_VALUE_DISP	Previous value (display)*2	Previous device value displayed in the numerical input before key code input	Example) When the device value is [100] and the expression is [monitor device + 5]: 105

*1 In the regular log, the communication channel number, device network number, station number, and CPU number are output as follows:
CH_NUM: Channel number specified for the device of a numerical input
NET_STA: Network number, station number, and CPU number specified for the device of a numerical input
Example) When network No. 2, station No. 1, and CPU No. 3 are specified: '2-1/3

*2 While a key code is being entered, the corresponding device value is not reflected to the display on the numerical input object until the entry is confirmed.
If the device value is changed before the entry is confirmed, inconsistencies occur in the data of PREV_VALUE and PREV_VALUE_DISP.

59.3.59 Text input

The text input operation logs are recorded in the operation log file every time the input data is written to devices.

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Date and time when the following operations were executed using text inputs • Storing input values in the target devices • Turning on the write completion devices	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	Operating device	Example) —
3	OPERATOR	Operator name	Name of the logged-in operator when operator authentication is used	Example) gotuser
4	OPE_ID	Operator ID	ID of the logged-in operator when operator authentication is used	Example) 1207
5	CATEGORY	Category	user screen events	user screen events
6	TYPE	Type	Information	information
7	ID	Log type ID	Writing to the monitor device	32201
			Write Completion Device ON	32202
8	ACT_ABBR	Function abbreviation	Writing to the monitor device	STR_VAL
			Write Completion Device ON	STR_WCHK
9	ACTION	Function type name	Writing to the monitor device	Input text
			Write Completion Device ON	Input text (Write check)
10	SCRN_NO	Screen No.	Screen number of the screen on which the text input was placed ☞ Page 1924 Screen No.	Example) BASE_10
11	OPNAME	Operation name	Name set for [Operation Name of Objects] in the [Log Target] tab in [Operation Log] of the [Environmental Setting] window ☞ Page 2015 [Log Target] tab	Example) Text input
12	USER_ID	User ID	User ID of the text input If the user ID setting is not configured, [-] is recorded.	Example) 111
13	SUB_NO	Action No./Setting ID	Action number when multiple actions are set	Example) 1
14	DATA_TYPE	Data type	Character code of the monitor device to which data is written ☞ Page 1925 Text data	Example) Unicode
			Data type of the write completion device that is on ☞ Page 1925 Numerical value data	BIT
15	DEV_NAME	Device name*1	Name of the write destination device for the text input	Example) D100
16	CHG_VALUE	Change value	Device value after change when data is written to the monitor device The execution results of scripts are also reflected to the device values.	Example) Character string after change
17	CHG_VALUE_CONT	Change value (operation)	Value input into the text input when data is written to the monitor device	Example) Character string after change
18	PREV_VALUE	Previous value	Previous device value when data is written to the monitor device*2	Example) Character string before change
			Records nothing when the write completion device is on.	—

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
19	PREV_VALUE_DISP	Previous value (display)	Previous device value displayed in text input when data is written to the monitor device	Example) Character string before change
			Records nothing when the write completion device is on.	—

*1 In the regular log, the communication channel number, device network number, station number, and CPU number are output as follows:
CH_NUM: Channel number specified for the device of a text input
NET_STA: Network number, station number, and CPU number specified for the device of a text input
Example) When network No. 2, station No. 1, and CPU No. 3 are specified: '2-1/3

*2 When the previous values are displayed, the new text codes are used.
If the text codes are changed after the values are changed, the previous values may not be displayed normally.

59.3.60 Object script

Operations are logged only when the trigger type of an object script is set to [Key Code Input], [Input Fixation], or [Device Writing].

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Date and time when the object script was activated	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	Operating device	Example) —
3	OPERATOR	Operator name	Name of the logged-in operator when operator authentication is used	Example) gotuser
4	OPE_ID	Operator ID	ID of the logged-in operator when operator authentication is used	Example) 1207
5	CATEGORY	Category	user screen events	user screen events
6	TYPE	Type	Information	information
7	ID	Log type ID	Object script	32301
8	ACT_ABBR	Function abbreviation	Object script	ObScr
9	ACTION	Function type name	Object script	Object script
10	SCRN_NO	Screen No.	Screen number of the displayed screen to which the object belongs ☞ Page 1924 Screen No.	Example) BASE_10
11	OPNAME	Operation name	Name set for [Operation Name of Objects] in the [Log Target] tab in [Operation Log] of the [Environmental Setting] window ☞ Page 2015 [Log Target] tab	Example) Start switch
12	USER_ID	User ID	ID of the object for which the object script is set	Example) 2
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	Data type of the trigger device	BIT
15	DEV_NAME	Device name*1	Name of the trigger device	Example) M123
16	CHG_VALUE	Change value	Result of the object script operation*2	Example) 3
17	CHG_VALUE_CONT	Change value (operation)	Value input into the object by the operator	Example) 3
18	PREV_VALUE	Previous value	None	—
19	PREV_VALUE_DISP	Previous value (display)	None	—

*1 In the regular log, the communication channel number, device network number, station number, and CPU number are output as follows:
CH_NUM: Channel number of the trigger device
NET_STA: Network number, station number, and CPU number of the trigger device
Example) When network No. 2, station No. 1, and CPU No. 3 are specified: '2-1/3

*2 If internal devices are used as the target devices for writing operation results, the results are not output to the operation log file.
When needing the logs of the operation results, use devices of external devices as the target devices.

59.3.61 Alarm display (alarm deletion)

This log is recorded only for operations (delete or delete all) related to occurred alarms.
Operations are not logged when any restored alarm is selected or no alarm is selected.

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Alarm data deletion date and time	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	Operating device	Example) —
3	OPERATOR	Operator name	Name of the logged-in operator when operator authentication is used If operations are performed by VNC clients, the logs are prefixed with an asterisk (*).	Example) gotuser
4	OPE_ID	Operator ID	ID of the logged-in operator when operator authentication is used	Example) 1207
5	CATEGORY	Category	When deleting a user alarm	user screen events
			When deleting all user alarms	
			When deleting a system alarm	audit log events
			When deleting all system alarms	
6	TYPE	Type	When deleting a user alarm	information
			When deleting all user alarms	
			When deleting a system alarm	warning
			When deleting all system alarms	
7	ID	Log type ID	When deleting a user alarm	32401
			When deleting all user alarms	32402
			When deleting a system alarm	32411
			When deleting all system alarms	32412
8	ACT_ABBR	Function abbreviation	When deleting a user alarm	UALM_DEL
			When deleting all user alarms	UALM_DEA
			When deleting a system alarm	SALM_DEL
			When deleting all system alarms	SALM_DEA
9	ACTION	Function type name	When deleting a user alarm	User alarm: Delete
			When deleting all user alarms	User alarm: Delete all
			When deleting a system alarm	System alarm: Delete
			When deleting all system alarms	System alarm: Delete all
10	SCRN_NO	Screen No.	Screen number of the screen on which the alarm display is placed ☞ Page 1924 Screen No.	Example) BASE_10
11	OPNAME	Operation name	Name set for [Operation Name of Objects] in the [Log Target] tab in [Operation Log] of the [Environmental Setting] window ☞ Page 2015 [Log Target] tab	Example) Alarm display
12	USER_ID	User ID	User ID of the alarm display If the user ID setting is not configured, [-] is recorded.	Example) —
13	SUB_NO	Action No./Setting ID	Alarm ID of the user alarm [-] is recorded for system alarms.	Example) 11
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—
16	CHG_VALUE	Change value	None	—
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	None	—
19	PREV_VALUE_DISP	Previous value (display)	None	—

59.3.62 Alarm display (device reset)

This log is recorded only for operations (reset) related to occurred alarms.
Operations are not logged when any restored alarm is selected or no alarm is selected.
Reset operations at higher or middle levels in the hierarchy are also not recorded.

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Date and time when the device was reset for the alarm display	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	Operating device	Example) —
3	OPERATOR	Operator name	Name of the logged-in operator when operator authentication is used If operations are performed by VNC clients, the logs are prefixed with an asterisk (*).	Example) gotuser
4	OPE_ID	Operator ID	ID of the logged-in operator when operator authentication is used	Example) 1207
5	CATEGORY	Category	User alarm: Reset	user screen events
			System alarm: Reset	audit log events
6	TYPE	Type	User alarm: Reset	information
			System alarm: Reset	warning
7	ID	Log type ID	User alarm: Reset	32403
			System alarm: Reset	32413
8	ACT_ABBR	Function abbreviation	User alarm: Reset	UALM_RST
			System alarm: Reset	SALM_RST
9	ACTION	Function type name	User alarm: Reset	User alarm: Reset
			System alarm: Reset	System alarm: Reset
10	SCRN_NO	Screen No.	Screen number of the screen on which the alarm display is placed ☞ Page 1924 Screen No.	Example) BASE_10
11	OPNAME	Operation name	Name set for [Operation Name of Objects] in the [Log Target] tab in [Operation Log] of the [Environmental Setting] window ☞ Page 2015 [Log Target] tab	Example) Alarm display
12	USER_ID	User ID	User ID of the alarm display If the user ID setting is not configured, [-] is recorded.	—
13	SUB_NO	Action No./Setting ID	Alarm ID of the user alarm [-] is recorded for system alarms.	Example) 107
14	DATA_TYPE	Data type	User alarm: Reset Data type of the reset device	BIT
			System alarm: Reset	—
15	DEV_NAME	Device name*1	Name of the reset device for user alarms No record for system alarms	Example) M123
16	CHG_VALUE	Change value	For use alarm, device value after change No record for system alarms	Example) 0
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	For user alarm, previous device value No record for system alarms	Example) 111
19	PREV_VALUE_DISP	Previous value (display)	None	—

*1 In the regular log, the communication channel number, device network number, station number, and CPU number are output as follows:
CH_NUM: Channel number of the reset device for user alarms (no record for system alarms)
NET_STA: Network number, station number, and CPU number of the reset device for user alarms (no record for system alarms)
Example) When network No. 2, station No. 1, and CPU No. 3 are specified: '2-1/3

59.3.63 Slider

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Date and time when the following operations were executed using the slider • Touching the knob or the bar • Releasing the finger from the knob or the bar	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	Operating device	Example) —
3	OPERATOR	Operator name	Name of the logged-in operator when operator authentication is used If operations are performed by VNC clients, the logs are prefixed with an asterisk (*).	Example) gotuser
4	OPE_ID	Operator ID	ID of the logged-in operator when operator authentication is used	Example) 1207
5	CATEGORY	Category	user screen events	user screen events
6	TYPE	Type	Information	information
7	ID	Log type ID	Slider control	32501
8	ACT_ABBR	Function abbreviation	Slider control	SLR_OPE
9	ACTION	Function type name	Slider control	Slider control
10	SCRN_NO	Screen No.	Screen number of the screen on which the slider is placed ☞ Page 1924 Screen No.	Example) BASE_10
11	OPNAME	Operation name	Name set for [Operation Name of Objects] in the [Log Target] tab in [Operation Log] of the [Environmental Setting] window ☞ Page 2015 [Log Target] tab	Example) Sound input
12	USER_ID	User ID	User ID of the slider If the user ID setting is not configured, [-] is recorded.	Example) 123
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	☞ Page 1925 Data type	Example) BIN8
15	DEV_NAME	Device name	Name of the write destination device for the slider When the offset function is specified, the recorded device is the result of adding the offset device value.	Example) D100
16	CHG_VALUE	Change value	Device value after change The execution results of data operations and scripts are also reflected to the device values.	Example) When the user operation value is [0] and the expression is [monitor device + 5]: 5
17	CHG_VALUE_CONT	Change value (operation)	Position of the knob The format is as follows: [Current knob position|Number of effective split points - 1]	Example) 15|20
18	PREV_VALUE	Previous value	Previous device value	Example) When the device value is [95] and the expression is [monitor device + 5]: 95
19	PREV_VALUE_DISP	Previous value (display)	Knob position before change The format is as follows: [Current knob position|Number of effective split points - 1]	Example) 3|20

59.3.64 Recipe display (record list)

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Date and time when the recipe was operated for the recipe display (record list)	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	Operating device	Example) —
3	OPERATOR	Operator name	Name of the logged-in operator when operator authentication is used If operations are performed by VNC clients, the logs are prefixed with an asterisk (*).	Example) gotuser
4	OPE_ID	Operator ID	ID of the logged-in operator when operator authentication is used	Example) 1207
5	CATEGORY	Category	user screen events	user screen events
6	TYPE	Type	Information	information
7	ID	Log type ID	When renaming a record	32601
			When reading a record	32602
			When writing a record	32603
			When deleting a record	32604
8	ACT_ABBR	Function abbreviation	When renaming a record	RVW_RN
			When reading a record	RVW_RD
			When writing a record	RVW_WT
			When deleting a record	RVW_DEL
9	ACTION	Function type name	When renaming a record	Recipe (record list): Change record name
			When reading a record	Recipe (record list): Read
			When writing a record	Recipe (record list): Write
			When deleting a record	Recipe (record list): Delete record
10	SCRN_NO	Screen No.	Screen number of the screen on which the recipe display (record list) is placed ☞ Page 1924 Screen No.	Example) BASE_10
11	OPNAME	Operation name	Name set for [Operation Name of Objects] in the [Log Target] tab in [Operation Log] of the [Environmental Setting] window ☞ Page 2015 [Log Target] tab	Example) Record list
12	USER_ID	User ID	User ID of the recipe display (record list) If the user ID setting is not configured, [-] is recorded.	Example) 123
13	SUB_NO	Action No./Setting ID	Recipe number for the record displayed on the recipe display (record list)	Example) 11
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—
16	CHG_VALUE	Change value	Target record number	Example) RcdNo_1
17	CHG_VALUE_CONT	Change value (operation)	Target record name Record name after change when renamed	Example) Curry: Hot
18	PREV_VALUE	Previous value	None	—
19	PREV_VALUE_DISP	Previous value (display)	Record name before change when renamed Otherwise, [-] is recorded.	Example) Curry: Mild

59.3.65 SoftGOT-GOT link (connection/disconnection)

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Date and time when SoftGOT-GOT linking was started or terminated	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	When SoftGOT is used in security mode 2 ☞ Page 1922 Operating device (type) ☞ Page 1922 Operating device (route)	Example) PC Tool/Src: 192.168.3.200: 49158
3	OPERATOR	Operator name	Name of the operator who performed the operation	Example) gotuser
4	OPE_ID	Operator ID	ID of the operator who performed the operation	Example) 1207
5	CATEGORY	Category	user screen events	user screen events
6	TYPE	Type	Information	information
7	ID	Log type ID	GOT side: When connected	20401
			GOT side: When disconnected	20402
			SoftGOT side: When connected	20403
			SoftGOT side: When disconnected	20404
8	ACT_ABBR	Function abbreviation	GOT side: When connected	SLCnctG
			GOT side: When disconnected	SLDCnctG
			SoftGOT side: When connected	SLCnctS
			SoftGOT side: When disconnected	SLDCnctS
9	ACTION	Function type name	GOT side, SoftGOT side: When connected	Connect SoftGOT-GOT link
			GOT side, SoftGOT side: When disconnected	Disconnect SoftGOT-GOT link
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—
16	CHG_VALUE	Change value	GOT side: The connection request source IP address (SoftGOT side IP address) is recorded for regular output. SoftGOT side: The connection request source IP address (GOT side IP address) is recorded for regular output.	Example) 192.168.3.40
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	None	—
19	PREV_VALUE_DISP	Previous value (display)	None	—

59.3.66 SoftGOT-GOT (authorization transfer)

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Date and time when the operation right was transferred via the SoftGOT-GOT link	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	Logged only when transferred from the GOT to SoftGOT ☞ Page 1922 Operating device (type) ☞ Page 1922 Operating device (route)	Example) PC Tool/Src: 192.168.3.200: 49158
3	OPERATOR	Operator name	Name of the operator who performed the operation	Example) gotuser
4	OPE_ID	Operator ID	ID of the operator who performed the operation	Example) 1207
5	CATEGORY	Category	user screen events	user screen events
6	TYPE	Type	Information	information
7	ID	Log type ID	GOT side: Operation right transfer	20405
			SoftGOT side: Operation right transfer	20406
8	ACT_ABBR	Function abbreviation	GOT side: Operation right transfer	SLChCtlG
			SoftGOT side: Operation right transfer	SLChCtlS
9	ACTION	Function type name	GOT side, SoftGOT side: Operation right transfer	Shift SoftGOT-GOT link authorization
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—
16	CHG_VALUE	Change value	Destination of operation right transfer and IP address	Example) When transferred from the GOT to SoftGOT SoftGOT: 192.168.3.40
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	Source of operation right transfer	Example) When the operation right is transferred from the GOT to SoftGOT GOT:
19	PREV_VALUE_DISP	Previous value (display)	None	—

59.3.67 VNC server (connection/disconnection)

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Date and time when connected to or disconnected from the VNC server	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	☞ Page 1922 Operating device (type) ☞ Page 1922 Operating device (route)	Example) VNC/Src: 192.168.3.200: 42033
3	OPERATOR	Operator name	IP address of the client	Example) 192.168.3.200
4	OPE_ID	Operator ID	None	—
5	CATEGORY	Category	access control	access control
6	TYPE	Type	VNC server connection	information
			VNC server connection failed	warning
			VNC server disconnection	information
7	ID	Log type ID	VNC server connection	20001
			VNC server connection failed	20002
			VNC server disconnection	20003
8	ACT_ABBR	Function abbreviation	VNC server connection	VSCnct
			VNC server connection failed	VSCnctNG
			VNC server disconnection	VSDCnct

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
9	ACTION	Function type name	VNC server connection	Connect VNC server
			VNC server connection failed	VNC server connection failed
			VNC server disconnection	Disconnect VNC server
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—
16	CHG_VALUE	Change value	None	—
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	None	—
19	PREV_VALUE_DISP	Previous value (display)	None	—

59.3.68 VNC server (authorization transfer)

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Date and time when the GOT obtained or released the operation right	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	Operating device	Example) —
3	OPERATOR	Operator name	None	—
4	OPE_ID	Operator ID	None	—
5	CATEGORY	Category	access control	access control
6	TYPE	Type	Information	information
7	ID	Log type ID	VNC server authorization transfer	20004
8	ACT_ABBR	Function abbreviation	VNC server authorization transfer	VSChCtlC
9	ACTION	Function type name	VNC server authorization transfer	Shift VNC server authorization
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—
16	CHG_VALUE	Change value	Destination of operation right transfer	Example) When the operation right is transferred from the VNC server to a VNC client Client: 192.168.3.39
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	Source of operation right transfer	Example) When the operation right is transferred from the VNC server to a VNC client Server
19	PREV_VALUE_DISP	Previous value (display)	None	—

59.3.69 GOT Mobile function (authentication successful)

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Date and time when client authentication succeeded	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	☞ Page 1922 Operating device (type) ☞ Page 1922 Operating device (route)	Example) GOT Mobile No.3/Src: 192.168.3.200: 42033
3	OPERATOR	Operator name	Records events as shown below.*(Operator name)[M(Client No.):(Client IP address)]	Example) *user1[M3:192.168.3.20]
4	OPE_ID	Operator ID	When [GOT Mobile Authentication Method] is set to [GOT Mobile exclusive]	0
			When [GOT Mobile Authentication Method] is set to [Operator]	Operator ID
5	CATEGORY	Category	access control	access control
6	TYPE	Type	Information	information
7	ID	Log type ID	Connection succeeded	20101
			Trial connection established	20102
8	ACT_ABBR	Function abbreviation	Connection succeeded	MBLCnct
			Trial connection established	MBLTrialCnct
9	ACTION	Function type name	Connection succeeded	GOT Mobile connection
			Trial connection established	GOT Mobile trial connection
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—
16	CHG_VALUE	Change value	Information obtained from the User-agent header of the HTTP request (such as the browser name of the client)	Example) Chrome/41.0.2272.101
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	None	—
19	PREV_VALUE_DISP	Previous value (display)	None	—

59.3.70 GOT Mobile function (authentication failed)

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Date and time when client authentication failed	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	☞ Page 1922 Operating device (type) ☞ Page 1922 Operating device (route)	Example) GOT Mobile No.3/Src: 192.168.3.200: 42033
3	OPERATOR	Operator name	*(Operator name entered for authentication)[M-:(Client IP address)]	Example) *user1[M3:192.168.3.20]
4	OPE_ID	Operator ID	Fixed to 0	0
5	CATEGORY	Category	access control	access control
6	TYPE	Type	Warning	warning
7	ID	Log type ID	Connection authentication failed	20103
			Number of clients exceeded the upper limit	20104
8	ACT_ABBR	Function abbreviation	Connection authentication failed	MBLAuthNG
			Number of clients exceeded the upper limit	MBLOver
9	ACTION	Function type name	Connection authentication failed	GOT Mobile authentication failure
			Number of clients exceeded the upper limit	GOT Mobile connection limit over
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—
16	CHG_VALUE	Change value	Information obtained from the User-agent header of the HTTP request (such as the browser name of the client)	Example) Chrome/41.0.2272.101
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	None	—
19	PREV_VALUE_DISP	Previous value (display)	None	—

59.3.71 GOT Mobile function (disconnection)

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Date and time when the client was disconnected from the server (GOT)	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	☞ Page 1922 Operating device (type) ☞ Page 1922 Operating device (route)	Example) GOT Mobile No.3/Src: 192.168.3.200: 42033
3	OPERATOR	Operator name	*[M(Client No.):Client IP address]	Example) *[M3:192.168.3.20]
4	OPE_ID	Operator ID	None	—
5	CATEGORY	Category	access control	access control
6	TYPE	Type	When the connection is disconnected	information
			When the connection is forcibly disconnected using the client control device or the utility	information
			When the trial connection ends	information
			When the connection is disconnected due to a communication error	warning
7	ID	Log type ID	When the connection is disconnected	20105
			When the connection is forcibly disconnected using the client control device or the utility	20106
			When the trial connection ends	20107
			When the connection is disconnected due to a communication error	20108

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
8	ACT_ABBR	Function abbreviation	When the connection is disconnected	MBLDCnct
			When the connection is forcibly disconnected using the client control device or the utility	MBLCDCnct
			When the trial connection ends	MBLTrialDCnct
			When the connection is disconnected due to a communication error	MBLTimeOut
9	ACTION	Function type name	When the connection is disconnected	GOT Mobile disconnection
			When the connection is forcibly disconnected using the client control device or the utility	GOT Mobile forced disconnection
			When the trial connection ends	GOT Mobile end of trial
			When the connection is disconnected due to a communication error	GOT Mobile timeout
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—
16	CHG_VALUE	Change value	None	—
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	None	—
19	PREV_VALUE_DISP	Previous value (display)	None	—

59.3.72 GOT Mobile function (GOT Mobile device assignment)

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Date and time when client authentication succeeded	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	☞ Page 1922 Operating device (type) ☞ Page 1922 Operating device (route)	Example) GOT Mobile No.3/Src: 192.168.3.200: 42033
3	OPERATOR	Operator name	None	—
4	OPE_ID	Operator ID	None	—
5	CATEGORY	Category	control system events	control system events
6	TYPE	Type	Information	information
7	ID	Log type ID	GOT Mobile virtual device allocation	20109
8	ACT_ABBR	Function abbreviation	GOT Mobile virtual device allocation	MBLVtlDev
9	ACTION	Function type name	GOT Mobile virtual device allocation	GOT Mobile virtual device allocation
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	Device type of the GOT internal devices that are assigned to the GOT Mobile devices ☞ Page 1925 Data type	Example) BIN16
15	DEV_NAME	Device name	Start device of the GOT internal devices assigned to the GOT Mobile devices	Example) GD0
16	CHG_VALUE	Change value	Number of the GOT internal devices assigned to the GOT Mobile devices	Example) 1024
17	CHG_VALUE_CONT	Change value (operation)	None	—

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
18	PREV_VALUE	Previous value	Start device of the GOT Mobile devices	Example) VGD0
19	PREV_VALUE_DISP	Previous value (display)	None	—

59.3.73 GOT network interaction (authorization transfer)

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Date and time when the operation right was transferred	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	☞ Page 1922 Operating device (type) ☞ Page 1922 Operating device (route)	Example) GOT Mobile No.3/Src: 192.168.3.200: 49159
3	OPERATOR	Operator name	None for the administrative operator Name of the authenticated operator for the person with the operation right	—
4	OPE_ID	Operator ID	None for the administrative operator ID of the authenticated operator for the person with the operation right	—
5	CATEGORY	Category	user screen events	user screen events
6	TYPE	Type	Information	information
7	ID	Log type ID	Authorization management obtained	20501
			Authorization management released	20502
			Operation right obtained	20503
			Operation right released	20504
			Failed to obtain operation right	20505
8	ACT_ABBR	Function abbreviation	Authorization management obtained	MngCtrlGet
			Authorization management released	MngCtrlRls
			Operation right obtained	UsrCtrlGet
			Operation right released	UsrCtrlRls
			Failed to obtain operation right	UsrCtrlFail
9	ACTION	Function type name	Authorization management obtained	Obtaining operating authority
			Authorization management released	Release operating authority
			Operation right obtained	Obtain operating authority use
			Operation right released	Release operating authority use
			Failed to obtain operation right	Failed to obtain operating authority
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—
16	CHG_VALUE	Change value	None for the administrative operator IP address of the authorization management server for the operator to use the operation right	Example) 192.168.3.40
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	None	—
19	PREV_VALUE_DISP	Previous value (display)	None	—

59.3.74 VPN connection (control)

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Date and time when the VPN connection was started or terminated	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	None	—
3	OPERATOR	Operator name	None	—
4	OPE_ID	Operator ID	None	—
5	CATEGORY	Category	access control	access control
6	TYPE	Type	Information	information
7	ID	Log type ID	VPN connection: Control	20201
8	ACT_ABBR	Function abbreviation	VPN connection: Control	VpnCCtrl
9	ACTION	Function type name	VPN connection: Control	VPN connection: Control
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—
16	CHG_VALUE	Change value	Changes in the ON/OFF status of GS2565.b01	Example) OFF→ON Connection started
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	None	—
19	PREV_VALUE_DISP	Previous value (display)	None	—

59.3.75 VPN connection/disconnection (GOT → GateManager)

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Date and time when the VPN connection was started or terminated	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	None	—
3	OPERATOR	Operator name	None	—
4	OPE_ID	Operator ID	None	—
5	CATEGORY	Category	access control	access control
6	TYPE	Type	Information	information
7	ID	Log type ID	VPN connection: Connection (GOT → GateManager)	20202
			VPN connection: Disconnection (GOT → GateManager)	20203
8	ACT_ABBR	Function abbreviation	VPN connection: Connection (GOT → GateManager)	VpnGCnct
			VPN connection: Disconnection (GOT → GateManager)	VpnGDcnt
9	ACTION	Function type name	VPN connection: Connection (GOT → GateManager)	VPN connection: Gate connection
			VPN connection: Disconnection (GOT → GateManager)	VPN connection: Gate disconnection
10	SCRN_NO	Screen No.	None	—

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—
16	CHG_VALUE	Change value	VPN connection information	Example) Gata/Mitsubishi/GT3799
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	None	—
19	PREV_VALUE_DISP	Previous value (display)	None	—

59.3.76 VPN connection/disconnection (LinkManager → GateManager → GOT)

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Date and time when the VPN connection with the GOT via GateManager was started or terminated	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	Operating device name (name of the host of the device that operates LinkManager)	Example) LinkPC11
3	OPERATOR	Operator name	LinkManager operator name *LinkManager user name [Operating device name (name of the host of the device that operates LinkManager)]	Example) *hanyu[LinkPC11]
4	OPE_ID	Operator ID	None	—
5	CATEGORY	Category	access control	access control
6	TYPE	Type	Information	information
7	ID	Log type ID	VPN connection: Connection (LinkManager → GateManager → GOT)	20204
			VPN connection: Disconnection (LinkManager → GateManager → GOT)	20205
8	ACT_ABBR	Function abbreviation	VPN connection: Connection (LinkManager → GateManager → GOT)	VpnLCnct
			VPN connection: Disconnection (LinkManager → GateManager → GOT)	VpnLDcnt
9	ACTION	Function type name	VPN connection: Connection (LinkManager → GateManager → GOT)	VPN connection: Link connection
			VPN connection: Disconnection (LinkManager → GateManager → GOT)	VPN connection: Link disconnection
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—
16	CHG_VALUE	Change value	Agent name The agent name may not be obtained. If the name cannot be obtained, [-] is recorded.	Example) GOT
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	None	—
19	PREV_VALUE_DISP	Previous value (display)	None	—

59.3.77 Web browser

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Date and time when accessing to the URL using the web browser function	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	None	—
3	OPERATOR	Operator name	Name of the logged-in operator when operator authentication is used If operations are performed by VNC clients, the logs are prefixed with an asterisk (*).	Example) gotuser
4	OPE_ID	Operator ID	ID of the logged-in operator when operator authentication is used	Example) 1207
5	CATEGORY	Category	user screen events	user screen events
6	TYPE	Type	Information	information
7	ID	Log type ID	Web browser access URL	20301
8	ACT_ABBR	Function abbreviation	Web browser access URL	WebAUrl
9	ACTION	Function type name	Web browser access URL	Web browser: Access URL
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—
16	CHG_VALUE	Change value	Accessed URL (up to 2083 characters)	Example) https: //www.mitsubishielectric.co.jp/fa/
17	CHG_VALUE_CONT	Change value (operation)	GS2562.b12 is off (Disable JavaScript is disabled in the web browser)	JavaScript: Enabled
			GS2562.b12 is on (Disable JavaScript is enabled in the web browser)	JavaScript: Disabled
18	PREV_VALUE	Previous value	None	—
19	PREV_VALUE_DISP	Previous value (display)	None	—

59.3.78 Log corruption information

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Date and time when logs could not be recorded in the file[*1]	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	(Operation on actual device)	—
3	OPERATOR	Operator name	None	—
4	OPE_ID	Operator ID	None	—
5	CATEGORY	Category	audit log events	audit log events
6	TYPE	Type	Information	warning
7	ID	Log type ID	149	60001
8	ACT_ABBR	Function abbreviation	Log corruption information	LostLog
9	ACTION	Function type name	Log corruption information	LostLog
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—
16	CHG_VALUE	Change value	Number of logs that were abandoned	Example) 5
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	None	—
19	PREV_VALUE_DISP	Previous value (display)	None	—

*1 When the log cannot be saved to a file, such as when a memory card is removed, the log information is stored in the internal memory, and upon reinserting the memory card, any log corruption information is recorded.

59.3.79 Unknown logs

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Date and time when the unknown operation log was collected	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	(Operation on actual device)	—
3	OPERATOR	Operator name	None	—
4	OPE_ID	Operator ID	None	—
5	CATEGORY	Category	audit log events	audit log events
6	TYPE	Type	Information	information
7	ID	Log type ID	—	—
8	ACT_ABBR	Function abbreviation	Unknown logs	Unknown
9	ACTION	Function type name	Unknown logs	Unknown
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—
16	CHG_VALUE	Change value	None	—
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	None	—
19	PREV_VALUE_DISP	Previous value (display)	None	—

59.3.80 Starting the GT SoftGOT3000 application

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Start date and time	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	GT SoftGOT3000	—
			GT SoftGOT3000 Commander	GT SoftGOT3000 Commander
3	OPERATOR	Operator name	Windows login user name Use ASCII characters for the Windows login user name.	Example) yuzunova257
4	OPE_ID	Operator ID	Fixed to [0]	0
5	CATEGORY	Category	control system events	control system events
6	TYPE	Type	Successful startup	information
			Failed startup	warning

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
7	ID	Log type ID	Successful startup	50002
			Failed startup	50003
8	ACT_ABBR	Function abbreviation	Successful startup	SGTStartOK
			Failed startup	SGTStartNG
9	ACTION	Function type name	Successful startup	GT SoftGOT3000 successfully started
			Failed startup	GT SoftGOT3000 failed to start
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	Successful startup	0
			Failed startup	(Error code)
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—
16	CHG_VALUE	Change value	GT SoftGOT3000 module number	Example) GOT ID:1
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	None	—
19	PREV_VALUE_DISP	Previous value (display)	None	—

59.3.81 Exiting the GT SoftGOT3000 application

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Start date and time	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	GT SoftGOT3000	—
			GT SoftGOT3000 Commander	GT SoftGOT3000 Commander
3	OPERATOR	Operator name	Windows login user name Use ASCII characters for the Windows login user name.	Example) yuzunova257
4	OPE_ID	Operator ID	Fixed to [0]	0
5	CATEGORY	Category	control system events	control system events
6	TYPE	Type	Information	information
7	ID	Log type ID	Exit	50021
8	ACT_ABBR	Function abbreviation	Exit	SGTEnd
9	ACTION	Function type name	Exit	Terminate GT SoftGOT3000
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—
16	CHG_VALUE	Change value	None	—
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	None	—
19	PREV_VALUE_DISP	Previous value (display)	None	—

59.3.82 Changing the clock (changing the time of the personal computer)

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Start date and time	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	None	—
3	OPERATOR	Operator name	Windows login user name Use ASCII characters for the Windows login user name.	Example) yuzunova257
4	OPE_ID	Operator ID	Fixed to [0]	0
5	CATEGORY	Category	configuration changes	configuration changes
6	TYPE	Type	Information	information
7	ID	Log type ID	Clock change (changing the time of personal computer)	52013
8	ACT_ABBR	Function abbreviation	Clock change (changing the time of personal computer)	ChngTimePC
9	ACTION	Function type name	Clock change (changing the time of personal computer)	Change clock (PC)
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—
16	CHG_VALUE	Change value	Time after change	—
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	Time before change	—
19	PREV_VALUE_DISP	Previous value (display)	None	—

59.3.83 All GT SoftGOT3000 data initialization

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Start date and time	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	None	—
3	OPERATOR	Operator name	Windows login user name Use ASCII characters for the Windows login user name.	Example) yuzunova257
4	OPE_ID	Operator ID	Fixed to [0]	0
5	CATEGORY	Category	configuration changes	configuration changes
6	TYPE	Type	Warning	warning
7	ID	Log type ID	All GT SoftGOT3000 data initialization function	52001
8	ACT_ABBR	Function abbreviation	All GT SoftGOT3000 data initialization function	SGTAllInit
9	ACTION	Function type name	All GT SoftGOT3000 data initialization function	All GT SoftGOT3000 data initialization
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
15	DEV_NAME	Device name	None	—
16	CHG_VALUE	Change value	None	—
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	None	—
19	PREV_VALUE_DISP	Previous value (display)	None	—

59.3.84 Opening a project

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Date and time when the project opening operation was executed	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	None	—
3	OPERATOR	Operator name	Windows login user name, or operator name at authentication Use ASCII characters for the Windows login user name.	Example) gotuser
4	OPE_ID	Operator ID	Fixed to [0], or operator ID at authentication	Example) 1207
5	CATEGORY	Category	configuration changes The category is [access control] for log type IDs 12501 to 12513 and 10211 to 10215, while it is [control system events] for all other log type IDs.	configuration changes
6	TYPE	Type	Information	information
7	ID	Log type ID	Open project: Success	53001
			Open project: Failure	53002
			Security mode change	10201
			Operator authentication	12501 to 12503, 12508, 12510 to 12512
8	ACT_ABBR	Function abbreviation	Open project: Success	ProjOpOK
			Open project: Failure	ProjOpNG
			Security mode change	Same as the notation used for the GOT operation log
			Operator authentication	
9	ACTION	Function type name	Open project: Success	Open project: Success
			Open project: Failure	Open project: Failure
			Security mode change	Same as the notation used for the GOT operation log
			Operator authentication	
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—
16	CHG_VALUE	Change value	Open project: Success	0
			Open project: Failure	(Error code)
			Security mode change	Same as the notation used for the GOT operation log
			Operator authentication	
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	Open project: Success	—
			Open project: Failure	
			Security mode change	Same as the notation used for the GOT operation log
			Operator authentication	
			Encrypted communication	

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
19	PREV_VALUE_DISP	Previous value (display)	None	—

59.3.85 Snap shots

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Date and time when the snap shot was taken	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	None	—
3	OPERATOR	Operator name	Windows login user name, or operator name at authentication Use ASCII characters for the Windows login user name.	Example) gotuser
4	OPE_ID	Operator ID	Fixed to [0]	0
5	CATEGORY	Category	control system events	control system events
6	TYPE	Type	Information	information
7	ID	Log type ID	Execute snapshot	53011
8	ACT_ABBR	Function abbreviation	Execute snapshot	SnapShot
9	ACTION	Function type name	Execute snapshot	Execute snapshot
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—
16	CHG_VALUE	Change value	None	—
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	None	—
19	PREV_VALUE_DISP	Previous value (display)	None	—

59.3.86 Printing

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Printing start date and time	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	None	—
3	OPERATOR	Operator name	Windows login user name	Example) yuzunova257
4	OPE_ID	Operator ID	Fixed to [0]	0
5	CATEGORY	Category	control system events	control system events
6	TYPE	Type	Information	information
7	ID	Log type ID	Start printing	53012
8	ACT_ABBR	Function abbreviation	Start printing	PrintStart
9	ACTION	Function type name	Start printing	Start printing
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—
16	CHG_VALUE	Change value	None	—
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	None	—
19	PREV_VALUE_DISP	Previous value (display)	None	—

59.3.87 Nonvolatile RAM initialization

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Date and time when nonvolatile RAM was initialized	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	None	—
3	OPERATOR	Operator name	Windows login user name Use ASCII characters for the Windows login user name.	Example) yuzunova257
4	OPE_ID	Operator ID	Fixed to [0]	0
5	CATEGORY	Category	configuration changes	configuration changes
6	TYPE	Type	Information	information
7	ID	Log type ID	Nonvolatile RAM initialization: Success	53131
			Nonvolatile RAM initialization: Failure	53132
8	ACT_ABBR	Function abbreviation	Nonvolatile RAM initialization: Success	NVRAMDelOK
			Nonvolatile RAM initialization: Failure	NVRAMDelNG
9	ACTION	Function type name	Nonvolatile RAM initialization: Success	Nonvolatile RAM initialization: Success
			Nonvolatile RAM initialization: Failure	Nonvolatile RAM initialization: Failure
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—
16	CHG_VALUE	Change value	None	—
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	None	—
19	PREV_VALUE_DISP	Previous value (display)	None	—

59.3.88 Resource data deletion

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Resource data deletion date and time	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	None	—
3	OPERATOR	Operator name	Windows login user name Use ASCII characters for the Windows login user name.	Example) yuzunova257
4	OPE_ID	Operator ID	Fixed to [0]	0
5	CATEGORY	Category	configuration changes	configuration changes
6	TYPE	Type	Information	information

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
7	ID	Log type ID	Resource data deletion: Success	53133
			Resource data deletion: Failure	53134
8	ACT_ABBR	Function abbreviation	Resource data deletion: Success	ResDtDelOK
			Resource data deletion: Failure	ResDtDelNG
9	ACTION	Function type name	Resource data deletion: Success	Resource data deletion: Success
			Resource data deletion: Failure	Resource data deletion: Failure
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—
16	CHG_VALUE	Change value	None	—
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	None	—
19	PREV_VALUE_DISP	Previous value (display)	None	—

59.3.89 Monitoring start

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Date and time when the monitoring start operation was executed	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	GT SoftGOT3000	—
			GT SoftGOT3000 Commander	GT SoftGOT3000 Commander
3	OPERATOR	Operator name	Windows login user name, or operator name at authentication Use ASCII characters for the Windows login user name.	Example) gotuser
4	OPE_ID	Operator ID	Fixed to [0], or operator ID at authentication	Example) 1207
5	CATEGORY	Category	configuration changes The category is [access control] for log type IDs 12501 to 12513 and 10211 to 10215, while it is [control system events] for all other log type IDs.	configuration changes
6	TYPE	Type	Information	information
7	ID	Log type ID	Monitoring start: Success	53151
			Monitoring start: Failure	53152
			SoftGOT-GOT link function: Monitoring start succeeded	53153
			SoftGOT-GOT link function: Monitoring start failed	53154
			Security mode change	10201
			Operator authentication	12501 to 12503, 12508, 12510 to 12512
			Encrypted communication	10211 to 10215
			Data transfer password authentication: Success	53155
			Data transfer password authentication: Failure	53156

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
8	ACT_ABBR	Function abbreviation	Monitoring start: Success	MtStOK
			Monitoring start: Failure	MtStNG
			SoftGOT-GOT link function: Monitoring start succeeded	MtStSLOK
			SoftGOT-GOT link function: Monitoring start failed	MtStSLNG
			Security mode change	Same as the notation used for the GOT operation log
			Operator authentication	
			Encrypted communication	
			Data transfer password authentication: Success	DTPwOK
			Data transfer password authentication: Failure	DTPwNG
9	ACTION	Function type name	Monitoring start: Success	Monitoring start: Success
			Monitoring start: Failure	Monitoring start: Failure
			SoftGOT-GOT link function: Monitoring start succeeded	SoftGOT-GOT link function monitoring start: Success
			SoftGOT-GOT link function: Monitoring start failed	SoftGOT-GOT link function monitoring start: Failure
			Security mode change	Same as the notation used for the GOT operation log
			Operator authentication	
			Encrypted communication	
			Data transfer password authentication: Success	Data transfer password authentication success
			Data transfer password authentication: Failure	Data transfer password authentication failure
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—
16	CHG_VALUE	Change value	Monitoring start, SoftGOT-GOT link function monitoring start, data transfer password authentication	• Success: [0] • Failure: Error code
			Security mode change, operator authentication, encrypted communication	Same as the notation used for the GOT operation log
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	Monitoring start, SoftGOT-GOT link function monitoring start, data transfer password authentication	—
			Security mode change, operator authentication, encrypted communication	Same as the notation used for the GOT operation log
19	PREV_VALUE_DISP	Previous value (display)	None	—

59.3.90 Monitoring stop

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Date and time when the monitoring stop operation was executed	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	GT SoftGOT3000	—
			GT SoftGOT3000 Commander	GT SoftGOT3000 Commander
3	OPERATOR	Operator name	Windows login user name Use ASCII characters for the Windows login user name.	Example) yuzunova257
4	OPE_ID	Operator ID	Fixed to [0]	0
5	CATEGORY	Category	configuration changes	configuration changes
6	TYPE	Type	Information	information
7	ID	Log type ID	Monitoring stop succeeded	53155
			Monitoring stop failed	53156
			SoftGOT-GOT link function monitoring stop succeeded	53157
			SoftGOT-GOT link function monitoring stop failed	53158
8	ACT_ABBR	Function abbreviation	Monitoring stop succeeded	MtSpOK
			Monitoring stop failed	MtSpNG
			SoftGOT-GOT link function monitoring stop succeeded	MtSpSLOK
			SoftGOT-GOT link function monitoring stop failed	MtSpSLNG
9	ACTION	Function type name	Monitoring stop succeeded	Monitoring stop: Success
			Monitoring stop failed	Monitoring stop: Failure
			SoftGOT-GOT link function monitoring stop succeeded	SoftGOT-GOT link function monitoring stop: Success
			SoftGOT-GOT link function monitoring stop failed	SoftGOT-GOT link function monitoring stop: Failure
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—
16	CHG_VALUE	Change value	Monitoring stop succeeded	Fixed to 0
			Monitoring stop failed	(Error code)
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	None	—
19	PREV_VALUE_DISP	Previous value (display)	None	—

59.3.91 Import/export

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Date and time when import or export operation was executed	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	None	—
3	OPERATOR	Operator name	Windows login user name Use ASCII characters for the Windows login user name.	Example) yuzunova257
4	OPE_ID	Operator ID	Fixed to [0]	0
5	CATEGORY	Category	configuration changes	configuration changes

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
6	TYPE	Type	Information	information
7	ID	Log type ID	Importing succeeded	55001
			Importing failed	55002
			Exporting succeeded	55003
			Exporting failed	55004
8	ACT_ABBR	Function abbreviation	Importing succeeded	ImpOK
			Importing failed	ImpNG
			Exporting succeeded	ExpOK
			Exporting failed	ExpNG
9	ACTION	Function type name	Importing succeeded	Importing succeeded
			Importing failed	Importing failed
			Exporting succeeded	Exporting succeeded
			Exporting failed	Exporting failed
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—
16	CHG_VALUE	Change value	Setting changed successfully	Fixed to 0
			Setting change failed	(Error code)
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	None	—
19	PREV_VALUE_DISP	Previous value (display)	None	—

59.3.92 SoftGOT diagnostics

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Date and time when SoftGOT diagnostics was executed	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	None	—
3	OPERATOR	Operator name	Windows login user name Use ASCII characters for the Windows login user name.	Example) yuzunova257
4	OPE_ID	Operator ID	Fixed to [0]	0
5	CATEGORY	Category	control system events	control system events
6	TYPE	Type	Information	information
7	ID	Log type ID	SoftGOT diagnostics monitoring start	52321
			SoftGOT diagnostics monitoring stop	52322
8	ACT_ABBR	Function abbreviation	SoftGOT diagnostics monitoring start	DiagMnSt
			SoftGOT diagnostics monitoring stop	DiagMnSp
9	ACTION	Function type name	SoftGOT diagnostics monitoring start	SoftGOT diagnostics monitoring start
			SoftGOT diagnostics monitoring stop	SoftGOT diagnostics monitoring stop
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
16	CHG_VALUE	Change value	None	—
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	None	—
19	PREV_VALUE_DISP	Previous value (display)	None	—

59.3.93 Internal device I/F function

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Date and time when the internal device I/F function operation was executed	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	Operating device	PC Tool
3	OPERATOR	Operator name	Windows login user name Use ASCII characters for the Windows login user name.	Example) yuzunova257
4	OPE_ID	Operator ID	Fixed to [0]	0
5	CATEGORY	Category	configuration changes	configuration changes
6	TYPE	Type	Information	information
7	ID	Log type ID	GDev_OpenMapping execution succeeded	53241
			GDev_OpenMapping execution failed	53242
			GDev_CloseUnMapping execution	53243
			sgt_GDevOpenMapping execution succeeded	53244
			sgt_GDevOpenMapping execution failed	53245
			sgt_GDevCloseUnMapping execution	53246
8	ACT_ABBR	Function abbreviation	GDev_OpenMapping execution succeeded	GDOpenOK
			GDev_OpenMapping execution failed	GDOpenNG
			GDev_CloseUnMapping execution	GDClose
			sgt_GDevOpenMapping execution succeeded	SGDOpenOK
			sgt_GDevOpenMapping execution failed	SGDOpenNG
			sgt_GDevCloseUnMapping execution	SGDClose
9	ACTION	Function type name	GDev_OpenMapping execution succeeded	GDev_OpenMapping execution: Success
			GDev_OpenMapping execution failed	GDev_OpenMapping execution: Failure
			GDev_CloseUnMapping execution	GDev_CloseUnMapping execution
			sgt_GDevOpenMapping execution succeeded	sgt_GDevOpenMapping execution: Success
			sgt_GDevOpenMapping execution failed	sgt_GDevOpenMapping execution: Failure
			sgt_GDevCloseUnMapping execution	sgt_GDevCloseUnMapping execution
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—
16	CHG_VALUE	Change value	Success	1
			Failure	0
			Execution	0
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	None	—
19	PREV_VALUE_DISP	Previous value (display)	None	—

59.3.94 Setting change

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Date and time when the configuration change operation was executed	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	GT SoftGOT3000	—
			GT SoftGOT3000 Commander	GT SoftGOT3000 Commander
3	OPERATOR	Operator name	Windows login user name Use ASCII characters for the Windows login user name.	Example) yuzunova257
4	OPE_ID	Operator ID	Fixed to [0]	0
5	CATEGORY	Category	configuration changes	configuration changes
6	TYPE	Type	Information	information
7	ID	Log type ID	SoftGOT3000 security password setting	54001
			Project specification	54002
			Printer setup	54003
			Page setup	54004
			Display language switching setting	54005
			Connection settings - Controller settings - CH1	54101
			Connection settings - Controller settings - CH2	54102
			Connection settings - Controller settings - CH3	54103
			Connection settings - Controller settings - CH4	54104
			Connection settings - Connecting to accessories - Barcode	54105
			Connection settings - Connecting to accessories - RFID	54106
			Connection settings - Add-On Function settings - SoftGOT-GOT link function	54107
			Connection settings - Add-On Function settings - Gateway Server Function	54108
			Connection settings - Add-On settings - GOT Network Interaction Function	54109
			Environmental settings - Action settings	54201
			Environmental settings - Display position settings	54202
			Environmental settings - Display settings	54203
			Environmental settings - Operation settings	54204
			Environmental settings - Option settings	54205
			Mail send function settings	54301
			External application startup trigger settings - Basic application startup settings	54401
			External application startup trigger settings - Advanced application startup settings	54402
			External application startup trigger settings - Auxiliary settings	54403

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
8	ACT_ABBR	Function abbreviation	SoftGOT3000 security password setting	SGTPwSet
			Project specification	ProjSet
			Printer setup	PrintSet
			Page setup	PageSet
			Display language switching setting	LangSet
			Connection settings - Controller settings - CH1	Com1Set
			Connection settings - Controller settings - CH2	Com2Set
			Connection settings - Controller settings - CH3	Com3Set
			Connection settings - Controller settings - CH4	Com4Set
			Connection settings - Connecting to accessories - Barcode	BcrdSet
			Connection settings - Connecting to accessories - RFID	RfidSet
			Connection settings - Add-On Function settings - SoftGOT-GOT link function	SGTLKSet
			Connection settings - Add-On Function settings - Gateway Server Function	GWSVSet
			Connection settings - Add-On settings - GOT Network Interaction Function	NWLKSet
			Environmental settings - Action settings	ActSet
			Environmental settings - Display position settings	DispPSet
			Environmental settings - Display settings	DispSet
			Environmental settings - Operation settings	OpeSet
			Environmental settings - Option settings	OptSet
			Mail send function settings	MailSet
			External application startup trigger settings - Basic application startup settings	AppBaseSet
			External application startup trigger settings - Advanced application startup settings	AppAdvSet
			External application startup trigger settings - Auxiliary settings	AppAuxSet

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
9	ACTION	Function type name	SoftGOT3000 security password setting	SoftGOT3000 security password setting
			Project specification	Project specification
			Printer setup	Printer setup
			Page setup	Page setup
			Display language switching setting	Display language switching setting
			Connection settings - Controller settings - CH1	Connection settings - Controller settings - CH1
			Connection settings - Controller settings - CH2	Connection settings - Controller settings - CH2
			Connection settings - Controller settings - CH3	Connection settings - Controller settings - CH3
			Connection settings - Controller settings - CH4	Connection settings - Controller settings - CH4
			Connection settings - Connecting to accessories - Barcode	Connection settings - Connecting to accessories - Barcode
			Connection settings - Connecting to accessories - RFID	Connection settings - Connecting to accessories - RFID
			Connection settings - Add-On Function settings - SoftGOT-GOT link function	Connection settings - Add-On Function settings - SoftGOT-GOT link function
			Connection settings - Add-On Function settings - Gateway Server Function	Connection settings - Add-On Function settings - Gateway Server Function
			Connection settings - Add-On settings - GOT Network Interaction Function	Connection settings - Add-On settings - GOT Network Interaction Function
			Environmental settings - Action settings	Environmental settings - Action settings
			Environmental settings - Display position settings	Environmental settings - Display position settings
			Environmental settings - Display settings	Environmental settings - Display settings
			Environmental settings - Operation settings	Environmental settings - Operation settings
			Environmental settings - Option settings	Environmental settings - Option settings
			Mail send function settings	Mail send function settings
			External application startup trigger settings - Basic application startup settings	External application startup trigger settings - Basic application startup settings
			External application startup trigger settings - Advanced application startup settings	External application startup trigger settings - Advanced application startup settings
			External application startup trigger settings - Auxiliary settings	External application startup trigger settings - Auxiliary settings
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—
16	CHG_VALUE	Change value	None	—
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	None	—
19	PREV_VALUE_DISP	Previous value (display)	None	—

59.3.95 Certificate import

No.	Title in CSV, Unicode text	Corresponding item	Description	Notation in CSV, Unicode text, etc.
1	DATE	Date and time	Date and time when the certificate import operation was executed	Example) 2025/07/14 19:36:47
2	SOURCE	Operating device (type, details)	None	—
3	OPERATOR	Operator name	Windows login user name Use ASCII characters for the Windows login user name.	Example) yuzunova257
4	OPE_ID	Operator ID	Operator ID of the administrator or sub-administrator authenticated by the administrator password authentication	Example) —
5	CATEGORY	Category	configuration changes	configuration changes
6	TYPE	Type	Information	information
7	ID	Log type ID	Certificate management: Import	12305
8	ACT_ABBR	Function abbreviation	Certificate management: Import	CrtfImp
9	ACTION	Function type name	Certificate management: Import	Certificate management: Import
10	SCRN_NO	Screen No.	None	—
11	OPNAME	Operation name	None	—
12	USER_ID	User ID	None	—
13	SUB_NO	Action No./Setting ID	None	—
14	DATA_TYPE	Data type	None	—
15	DEV_NAME	Device name	None	—
16	CHG_VALUE	Change value	The following items separated by slashes (/) are recorded. • Target certificate type • Common name and organization name of the certificate • Certificate expiration date	Example) GOT Server certificate/GT3712-XRBA _0123456789123456,Mitsubishi/2023/3/4 18:39:56
17	CHG_VALUE_CONT	Change value (operation)	None	—
18	PREV_VALUE	Previous value	File name for import (full path)	Example) A:\GT3712-XRBA _0123456789123456_S_20230401.cer
19	PREV_VALUE_DISP	Previous value (display)	None	—

59.4 How to use operation logs

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☞ Page 2003 Output settings for operation logs
☞ Page 2003 Checking operation logs
☞ Page 2004 Operating operation log files (utility)
☞ Page 2005 CSV file conversion or Unicode text file conversion of operation log file
☞ Page 2007 Viewing the operation log file (Resource File Viewer)
☞ Page 2010 Checking the operation log status

59.4.1 Output settings for operation logs

Configure the output settings for operation logs in GT Designer3.

The collection setting is not required for GT SoftGOT3000 application logs and Windows event logs.

1. Select [Common] → [GOT Environmental Setting] → [Operation Log] from the GT Designer3 menu.

This displays [Operation Log] in the [Environmental Setting] window.

2. Select [Collect operation logs] and configure the settings for each item.

For details, refer to the following.

☞ Page 2013 [Operation Log]

59.4.2 Checking operation logs

Operation logs can be checked by the following three methods.

Method	Details
Using the GOT utility	Operation logs can be checked and the files can be managed by the [Operation Log Information] utility. Regular logs can be checked on the screen. For the operations of the utility, refer to the following manual. 📖GOT3000 Series User's Manual (Utility & Maintenance Functions) The GT SoftGOT3000 application logs cannot be checked using the utility.
Using the text editor or other tools of the personal computer	Operation logs can be checked by using the text editor or other tools of the personal computer. To enable this, convert the operation log file (*.G3O) to a CSV or Unicode text file. When converting the log in the utility or using the [Resource Data Conversion] menu in GT Designer3, you can choose whether to output in the detailed log or the regular log. The regular log is output when converting with the Trigger File Conversion device. For information on how to convert the operation log file (*.G3O), refer to the following. ☞ Page 2005 CSV file conversion or Unicode text file conversion of operation log file
Using Resource File Viewer (independent startup)	If you launch the exe file of Resource File Viewer independently (hereafter "independent startup"), the operation log file (*.G3O) and application log file (*.G3O) are viewable on the personal computer without being converted in a CSV or Unicode text format. Detailed logs can be checked in the operation log file (*.G3O). In the CSV or Unicode text file, you can check the logs selected for conversion (detailed logs or regular logs). Using the search function, you can specify the date and time or other keywords to find the operation log history to be checked. ☞ Page 2007 Viewing the operation log file (Resource File Viewer)

59.4.3 Operating operation log files (utility)

The following operations can be performed on operation log files using the utility.

Item	Description
Creating a folder	Creates a folder where operation log files are stored. Folders are created by date or time period and operation log files are so managed.
Deleting a folder	Deletes a folder that stores operation log files.
Copying a file	Copies an operation log file. Perform this operation to back up an operation log file.
Deleting a file	Deletes an operation log file.
Renaming a file	Renames an operation log file.
Moving a file	Moves an operation log file to another folder. Perform this operation to back up an operation log file.
Converting a G3O file to a CSV or Unicode text file	Converts an operation log file (*.G3O) to a CSV or Unicode text file.
Search	Searches for an operation log in an operation log file by date of creation or time.
Latest display of the list	Updates the operation log list.

For the operations of the utility, refer to the following manual.

GOT3000 Series User's Manual (Utility & Maintenance Functions)

59.4.4 CSV file conversion or Unicode text file conversion of operation log file

An operation log file (*.G3O) or GT SoftGOT3000 application log file (G3O) can be converted to a Unicode text file or CSV file.
The following three conversion methods are available.
The conversion method differs between the operation log file and the GT SoftGOT3000 application log file.
○: Available for output, —: Not available for output

Reference	Operation log file		Application log file
	Detailed log	Regular log	
☞ Page 2005 Converting with GT Designer3	○	○	○
☞ Page 2006 Converting in the utility	○	○	—
☞ Page 2006 Converting with the Trigger File Conversion device	—	○	—

Converting with GT Designer3

1. Transfer an operation log file (*.G3O) to the personal computer using either of the following methods.

• Transferring with GT Designer3

Select [Communication] → [Read from GOT] from the menu to transfer a file to the personal computer.

☞ Page 441 Reading the data from the GOT

• Storing in the data storage

Save the operation log file to the data storage and read the data using the personal computer.

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

2. Select [Tools] → [Resource Data Conversion] → [Operation Log File] from the GT Designer3 menu.

The [Operation Log File Conversion] dialog appears.

3. Configure each setting and click the [Convert] button.

☞ Page 2019 [Operation Log File Conversion] dialog

When the operation log file is output with the information protection function enabled, the [Encryption Password Entry] dialog appears. Enter the encryption password accordingly.

☞ Page 3068 [File Protection]

For GT SoftGOT3000 application log files, enter the password for the GT SoftGOT3000 application log file set at the first startup of GT SoftGOT3000.

4. When the detailed log output confirmation message appears, click the [Yes] button to output detailed logs to the converted file, or click the [No] button to output only regular logs to the converted file.

The files are converted.

Converting in the utility

1. Start the GOT and touch the [Data mng.] tab.
2. Touch the [Operation log information] to display the [Operation Log Information] screen.
3. Select a file to convert, and touch either of the following buttons.

• [G3O→CSV] button

Converts an operation log file (.G3O) to a CSV file.

• [G3O→TXT] button

Converts an operation log file (.G3O) to a Unicode text file.

4. When you click the [OK] button and the output confirmation message appears, click the [OK (Detail)] button to output the detailed log file, or click the [OK] button to output the regular log file.

Converted files are saved in the same location as operation log files (*.G3O).

Precautions

When converting operation log files (*.G3O) to CSV files or Unicode text files in the utility, convert one file at a time.
Even if multiple files are selected at once, they cannot be converted.

Converting with the Trigger File Conversion device

To convert an operation log file (*.G3O) in which events are being collected to a CSV file, turn on the Trigger File Conversion device with an object such as a bit switch.
The regular log file is output.
Set the Trigger File Conversion device on the [File Conversion] tab in [Operation Log].
☞ Page 2017 [File Conversion] tab
Check the file conversion status using the Notify Operation Log Status device.
☞ Page 2010 Checking the operation log status

59.4.5 Viewing the operation log file (Resource File Viewer)

If you launch the exe file of Resource File Viewer independently (hereafter "independent startup"), the operation log file (*.G3O) and application log file (*.G3O) are viewable on the personal computer without being converted in a CSV or Unicode text format.

Since the search function is available in Resource File Viewer, you can specify the date and time or other keywords to find the operation log history to be checked quickly.

☞ Page 2007 Specifications of Resource File Viewer (independent startup)?
☞ Page 2007 How to use Resource File Viewer (independent startup)
☞ Page 2009 Screen layout of Resource File Viewer (independent startup)

Resource File Viewer can also be used from the GOT offline monitor, but in this case, not only operation logs but also alarm files can be viewed.

In the case of independent startup, only operation log files are viewed and the functions are slightly different.

Specifications of Resource File Viewer (independent startup)

■Operating environment

The operating environment is the same as that for GT Designer3.

For information on the operating environment of GT Designer3, refer to the following.

☞ Page 54 Operating environment

■Viewable operation log files

Files with the following extensions are viewable.

G3O, CSV, TXT

Point

If the operation log file has the extension .G3O, all detailed logs are displayed.

To display the log as a regular log, convert the operation log file to a CSV file or a Unicode text file containing the regular logs in advance.

■Number of Resource File Viewer modules that can be started

Up to 16 Resource File Viewer modules can be started simultaneously.

When a module is started, the smallest unused number from 1 to 16 is assigned to the module.

How to use Resource File Viewer (independent startup)

This section describes how to use resource files.

☞ Page 2008 Obtaining a resource file
☞ Page 2008 Starting Resource File Viewer
☞ Page 2008 Exiting Resource File Viewer
☞ Page 2008 Viewing the operation log file (Resource File Viewer)

The following functions are operated in the same way as Resource File Viewer used in the GOT offline monitor.

For details, refer to the following.

☞ Page 3120 Searching for histories in the resource files
☞ Page 3120 Changing the items to be displayed in the history display area
☞ Page 3121 Switching the display language for Resource File Viewer

■Obtaining a resource file

Before starting Resource File Viewer, obtain a resource file.

The following shows how to obtain a resource file.

Resource file source	Method to obtain	Reference
GOT	Obtaining a resource file using GT Designer3	☞ Page 465 [Communicate with GOT] dialog
	Obtaining a resource file output to a USB memory or SD card	
	Obtaining a resource file from the GOT using Data Transfer Tool	🕮Help For Data Transfer Tool
	Obtaining a resource file using the FTP server function	☞ Page 2904 Transferring files between the GOT and peripheral devices (FTP server function)
GT Simulator3	Obtaining a resource file from the working folder	☞ Page 365 Destination to save data
GT SoftGOT3000	Obtaining a resource file from a virtual drive	🕮GT SoftGOT3000 User's Manual

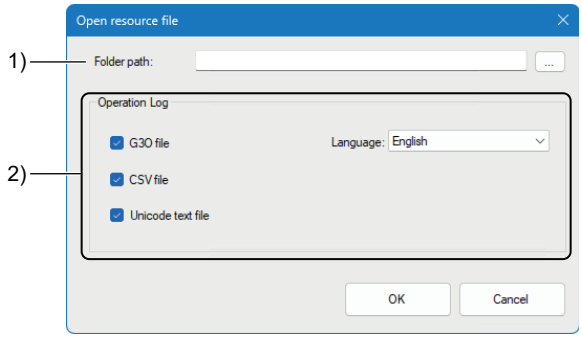
■Starting Resource File Viewer

Start Resource File Viewer by either of the following methods.

1. Double-click the Resource File Viewer exe in the directory: (Path to the installation location of GT Designer3)\App\GSS3_3000\RCFView\RCFView3000.exe.

The [Open resource file] dialog appears.

2. Configure the settings and click the [OK] button.



Item		Description
1)	[Folder Path]	Set the path to the operation log file to be read to Resource File Viewer.
2)	[Operation Log]	Select the extension of the operation log file displayed in Resource File Viewer. When selecting a G3O file, select the language displayed in Resource File Viewer.

If a password has been set for the operation log file, enter the password in the [Encryption Password Entry] dialog.

Resource File Viewer is started.

■Refreshing the Resource File Viewer display

While Resource File Viewer is running, if you change the resource file location or the extension of the file to be read, or if you update, add, or delete the file itself, the display will be refreshed accordingly.

Case	Display update method
When changing the resource file location or the file extension	Select [Project] → [Open] from the menu, and in the [Open resource file] dialog, change the [Folder Path] and extension settings as necessary.
When a resource file has been changed, added, or deleted	Click the [Update] button in the [Navigation] window of Resource File Viewer.

■Exiting Resource File Viewer

Exit Resource File Viewer by either of the following methods.

- Select [Project] → [Exit Application] from the menu.
- Click the [×] button.

■Switching the operation log display language

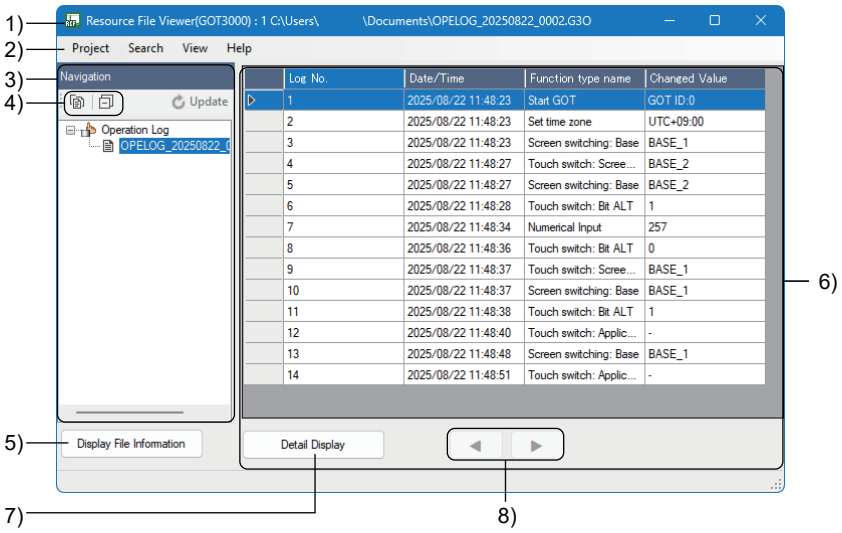
When the operation log file is a binary file, histories are displayed in the system language set on the GOT.

☞ Page 546 Setting for switching the language displayed on the GOT ([Language Switching])

Switch the display language before starting Resource File Viewer.

Screen layout of Resource File Viewer (independent startup)

The following shows the screen layout of Resource File Viewer (independent startup).



Item		Description
1)	Title bar	Displays the Resource File Viewer module number and path to the displayed resource file. The icons to minimize, maximize, and close the screen are also displayed.
2)	Menu bar	Displays the operation menus of Resource File Viewer. ☞ Page 2009 Screen layout of Resource File Viewer (independent startup)
3)	[Navigation]	Lists the resource files. • [!] Appears when a resource file has been updated, added, deleted, or renamed. • [Update] button Updates the resource files.
4)	[Unfold All] button [Fold All] button	Opens or closes the tree.
5)	[File Information] button	In the [Display File Information] dialog, displays the information of the operation log file selected in [Navigation].
6)	History display area	Displays the details (operation histories) of the operation log file selected in [Navigation]. Set the display items in the [Display Item Setting] dialog. ☞ Page 3126 [Display Item Setting] dialog (Resource File Viewer)
7)	[Detail Display] button	In the [Detail Display] dialog, displays the details of the history selected in the history display area.
8)	Arrow buttons	Switches between the operation log files displayed in the history display area.

■Menu bar

Menu		Description	Shortcut key
[Project]	[Exit Application]	Exits the Resource File Viewer module.	Alt + F4
	[Open]	In the [Open resource file] dialog, select an operation log file to be read to Resource File Viewer.	—
Search		Search for the operation logs read to Resource File Viewer. ☞ Page 3125 [Search] dialog	Ctrl + F
[View]	[Navigation]	Displays or hides [Navigation].	—
	[Display Items]	Set the items to be displayed in the history display area. ☞ Page 3126 [Display Item Setting] dialog (Resource File Viewer)	—
	[Switch Display Language]	Switch the display language of the Resource File Viewer module.	—
[Help]	[GT Designer3 Help]	Displays GT Designer3 Help.	F1
	[About Resource File Viewer]	Display the Resource File Viewer version.	—

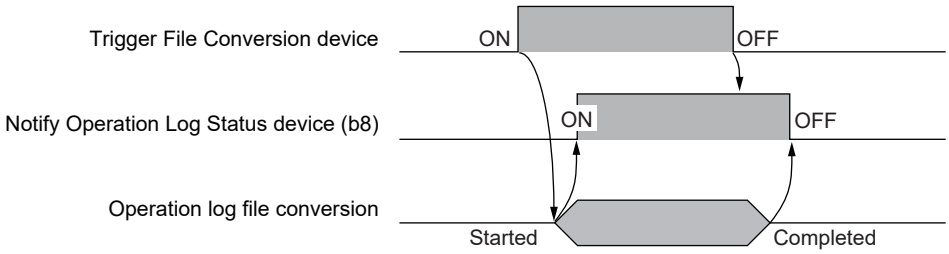
59.4.6 Checking the operation log status

Check the operation log status by using the Notify Operation Log Status device.

Set the Notify Operation Log Status device on the [Basic] tab for [Operation Log] in the [Environmental Setting] window.

☞ Page 2013 [Basic] tab

The following shows the details on the Notify Operation Log Status device.

Bit number	Description
b0	Turns on when operation events cannot be collected. Turns off when collecting operation events is enabled.
b1 to b7	Use prohibited
b8	Turns on when an operation log file conversion is started by using the Trigger File Conversion device. Turns off when the conversion is completed and the Trigger File Conversion device turns off. 
b9	Turns on when an automatic operation log file conversion is started. Turns off when the conversion is completed.
b10 to b15	Use prohibited

Set the Trigger File Conversion device and the automatic operation log file conversion on the [File Conversion] tab for [Operation Log] in the [Environmental Setting] window.

☞ Page 2017 [File Conversion] tab

59.5 Recording the operator name as the character string stored in the device

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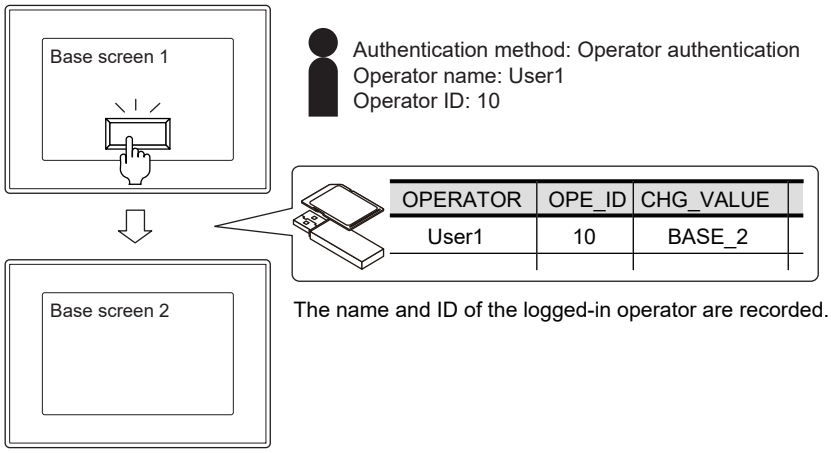
The operator name, substituted by the user-defined character string stored in the specified device, is recorded in the operation log.

The character string specified using this function is prioritized over the operator name to be recorded when the screen security authentication method is operator authentication or level authentication.

Ex.

When this function is disabled and the operator authentication method is selected for screen security

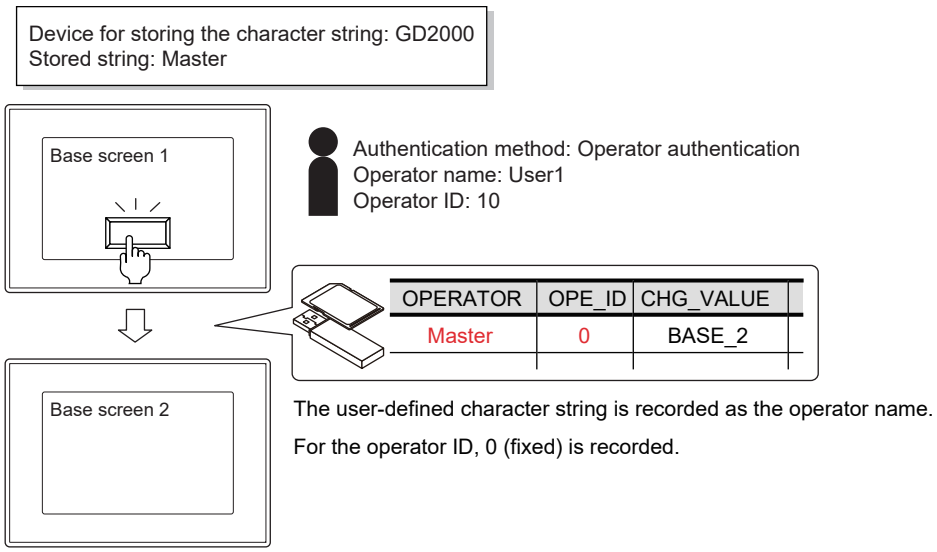


The name and ID of the logged-in operator are recorded.

Switch the screen to base screen 2.

Ex.

When this function is enabled and the operator authentication method is selected for screen security



The user-defined character string is recorded as the operator name.

For the operator ID, 0 (fixed) is recorded.

Switch the screen to base screen 2.

59.5.1 Operation logs in which the operator name is substituted by a character string

This function is available for operation logs in which the operator name (output item: OPERATOR) is recorded.
☞ Page 1927 Log details by operation
Note that this function is not available for operation logs when:

- A login attempt for the operator authentication fails.
- An operator switching for the operator authentication fails.
- An operator account for the operator authentication is locked.
- The operator management information is changed.

The operator name is not substituted by a character string for the operations performed on a VNC client or GOT Mobile function client.

59.5.2 Substituting the operator name with a character string

Select [Record [Contents]-[Operator Name] with the strings stored in the device (up to 16 characters)] on the [Log Target] tab in [Operation Log], and set [Device (8 points)].
☞ Page 2013 [Operation Log]
Store an operator name in eight consecutive word devices starting from a specified device.
Store an operator name in ASCII code (0x20 to 0x7E) in order from the lower bit to the upper bit of each device.
Store Null (0x00) at the end of the operator name.

59.5.3 When the substituted operator name is recorded in the operation log

After the substituted operator name is stored in the device, the operator name is recorded in the operation log.

Precautions

If you perform another operation before storing the substituted operator name in the device, the operator name is not recorded in the operation log.
Ensure that the operator name is stored in the device in advance.
While the GOT is being started or restarted, if an operation log is recorded at any of the following timing, the operator name may be left blank.

- Obtaining operation rights
- Releasing operation rights
- Failing to obtain operation rights

For details on substituting the operator name with a character string, refer to the following.
☞ Page 2011 Recording the operator name as the character string stored in the device

59.6 [Operation Log]

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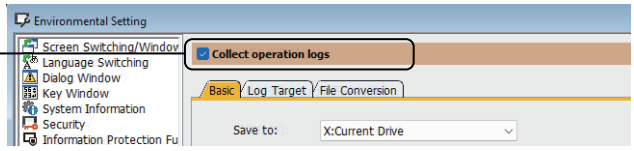
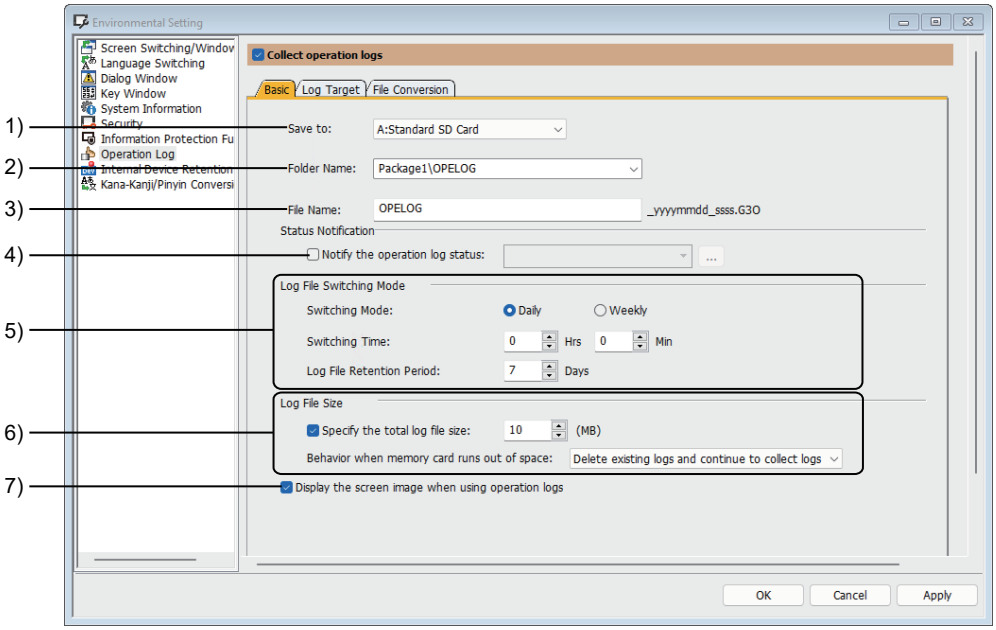
The output settings for operation logs can be configured in [Operation Log] within [Environmental Setting].
From the menu, select [Common] → [GOT Environmental Setting] → [Operation Log], and select [Collect operation logs] in the displayed setting screen.

Select this item.



☞ Page 2013 [Basic] tab
☞ Page 2015 [Log Target] tab
☞ Page 2017 [File Conversion] tab

59.6.1 [Basic] tab



Item		Description
1)	[Save to]	Select the save destination to save for the operation log file (.G3O). For the available drives by GOT model, refer to the following. ☞ Page 81 Drive configuration and capacity of the GOT
2)	[Folder Name]	Set the name of the folder to which the operation log file (.G3O) is saved. For the character type and the number of characters available for folder names, refer to the following. ☞ Page 84 Restrictions for folder names and file names used in GOT
3)	[File Name]	Set the file name of the operation log file (.G3O). The log collection start date (YYYYMMDD) for the file and the version are added automatically to the set file name. For the character type and the number of characters available for file names, refer to the following. ☞ Page 84 Restrictions for folder names and file names used in GOT
4)	[Notify the operation log status]	Set devices for notifying the collecting status of the operation log. The word device is available. For details on the Notify Operation Log Status device, refer to the following. ☞ Page 2010 Checking the operation log status

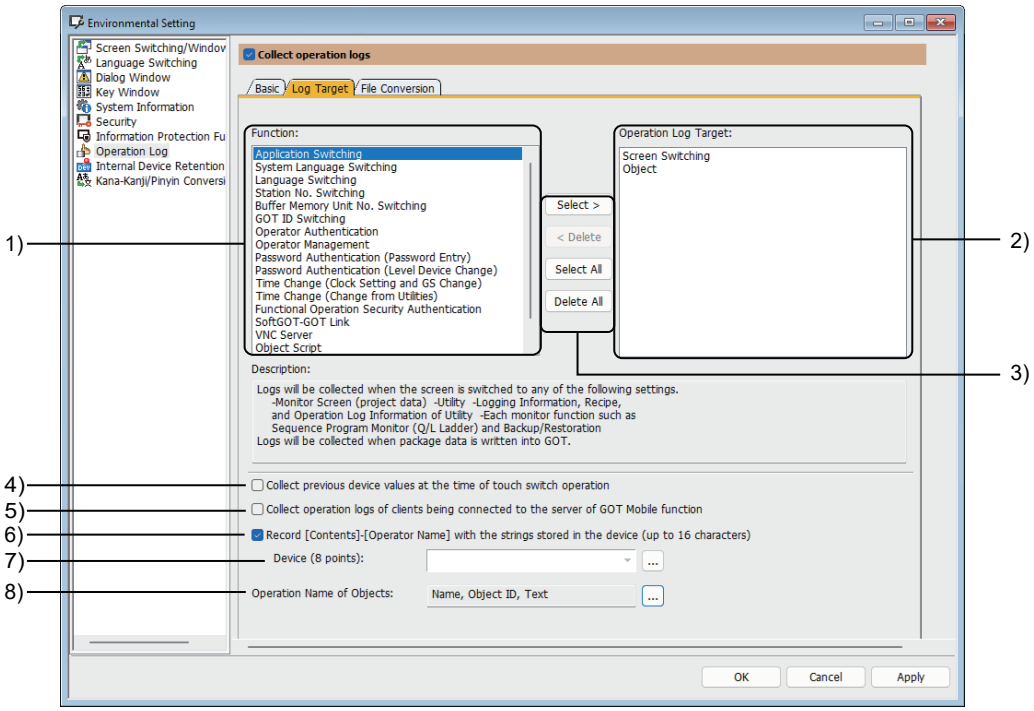
Item			Description
5)	[Log File Switching Mode]	[Switching Mode]	Set the switching mode, time, and storage period for the save destination file of the operation log. Select the switching mode for the save destination file of the operation log. The following shows selectable items. • [Daily]: Switches the save destination file once a day. • [Weekly]: Switches the save destination file once a week. After selecting this item, select the day to switch.
		[Switching Time]	Set the time to switch the save destination file. Set the time by minutes.
		[Log File Retention Period]	Set the storage period for the operation log file (.G3O). The following shows the setting ranges. • When [Daily] is selected for [Switching Mode]: [7] days to [100] days • When [Weekly] is selected for [Switching Mode]: [4] weeks to [53] weeks
6)	[Log file size]	[Specify the total log file size]	Set the maximum capacity of all the operation log files (.G3O) in the save destination folder and define the operation when there is insufficient capacity. Set the maximum capacity of all the operation log files (.G3O) in the save destination folder. When the capacity of all the operation log files exceeds the set capacity, the oldest operation log file is deleted. The setting range is [10] MB to [1024] MB.
		[Behavior when memory card runs out of space]	Select the operation if the capacity is insufficient when a file is saved.
7)	[Display the screen image when using operation logs]		Displays the screen image of the operation log selected in the operation log information screen. For the screen image, refer to the following. 📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

Precautions

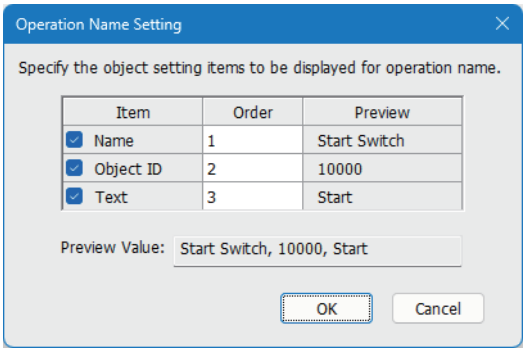
The file size of an operation log cannot be calculated in advance.

To use a data storage in other functions as well, limiting the capacity used for an operation log file by setting [Specify the total log file size] in GT Designer3 is recommended.

59.6.2 [Log Target] tab



Item			Description
1)	[Function]		Lists the items which can be set as the targets of the operation log. The items in this list are not recorded in the operation log file. For details on each function, refer to the following. ☞ Page 1915 Functions to be recorded in the operation log
2)	[Operation Log Target]		Lists the items which are set as the target of the operation log. The items in this list are recorded in the operation log file.
3)	Manipulation buttons	[Select] button	The following buttons are used for selecting or deleting items. Moves the item selected in [Function] to [Operation Log Target].
		[Delete] button	Moves the item selected in [Operation Log Target] to [Function].
		[Select All] button	Moves all the items in [Function] to [Operation Log Target].
		[Delete All] button	Moves all the items in [Operation Log Target] to [Function].
4)	[Collect previous device values at the time of touch switch operation]		Logs the previous device value with each touch switch operation.
5)	[Collect operation logs of clients being connected to the server of GOT Mobile function]		Logs operations performed on the client in the GOT Mobile function. The operation log is saved in the GOT.
6)	[Record [Contents]-[Operator Name] with the strings stored in the device (up to 16 characters)]		The operator name, substituted by the user-defined character string stored in the specified device, is recorded in the operation log. For the operator ID, 0 is recorded. ☞ Page 2011 Recording the operator name as the character string stored in the device
7)	[Device (8 devices)]		Specify the first device of consecutive word devices to which a character string is stored. Eight consecutive devices starting from a specified device are used.

Item			Description
8)	[Operation Name of Objects]	—	Set the items to be recorded as OPNAME for an object. Click the [...] button to display the [Operation Name Setting] dialog. 
		[Item]	Select an item to be recorded as OPNAME for an object. The following shows selectable items. • [Name] The name specified in the setting dialog of an object is recorded. • [Object ID] The object ID is recorded. • [Text] The text displayed on a touch switch is recorded. When [Text Type] is set to [Text], only the centered text will be recorded. This setting is applied to a touch switch only.
		[Order]	Set the order in which the selected items are recorded as OPNAME for an object. The setting range is [1] to [3].

Precautions

■Log target when recording an operation log per object

Do not select [Object] in the [Log Target] tab of the operation log setting.

Doing so sets all the objects as the target of the operation log function.

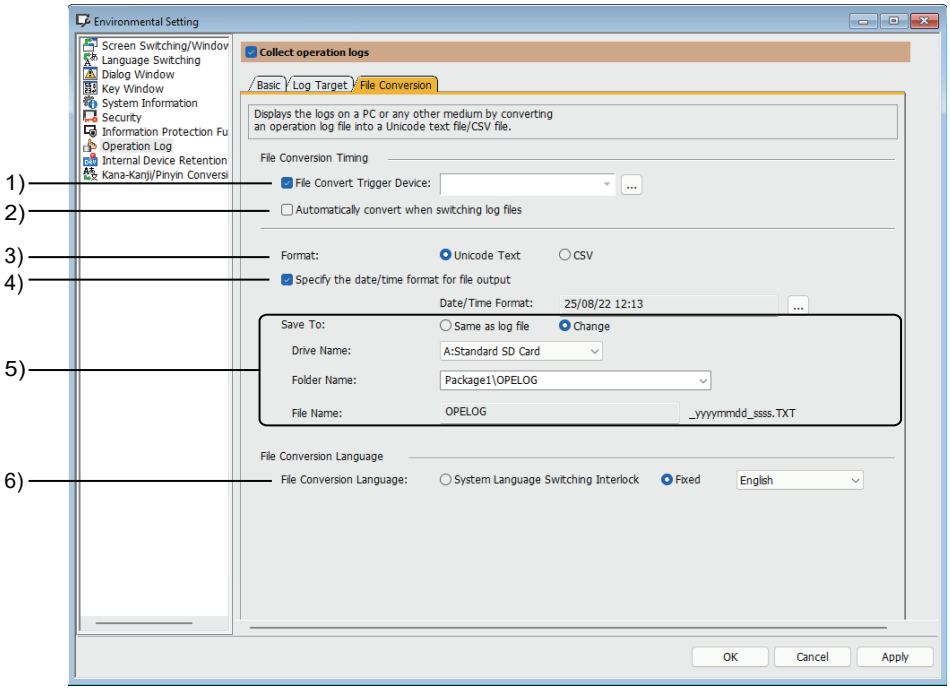
To record an operation log per object, select [Operation Log Information] in each object setting.

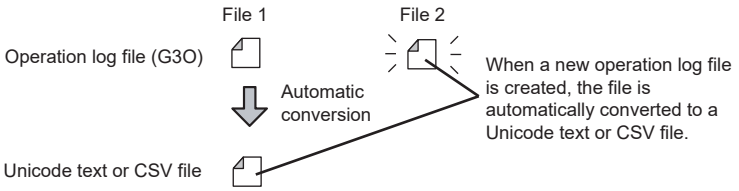
■Target function for an operation log

Do not set the function which is not set in GT Designer3 as the target of the operation log.

Doing so may record an operation log even though the function does not operate.

59.6.3 [File Conversion] tab



Item			Description
1)	[File Convert Trigger Device]		Set a trigger device to convert an operation log file (.G3O) in which events are being collected to a CSV or Unicode text file. The bit device is available.
2)	[Automatically convert when switching log files]		Converts a file automatically when recording of an operation log file (.G3O) is completed. 
3)	[Format]		Select the file format after the conversion.
4)	[Specify the date/time format for file output]		Specify the date and time format for a conversion destination file. Click the [...] button to specify the date and time format in the [Date/Time Setting] dialog. ☞ Page 3684 [Date/Time Setting] dialog (screen)
5)	[Save to]	—	Select the save destination folder for a converted file. The following shows selectable items. • [Same as log file]: Saves a file to the same folder as that of an operation log file (.G3O). • [Change]: Set the destination to save a file. After selecting this item, set [Drive Name] and [Folder Name].
		[Drive Name]	Set a drive to save a converted file. For the available drives by GOT model, refer to the following. ☞ Page 81 Drive configuration and capacity of the GOT
		[Folder Name]	Set the folder name of the destination to save a file. For the character type and the number of characters available for folder names, refer to the following. ☞ Page 84 Restrictions for folder names and file names used in GOT
		[File Name]	The file name after the conversion is displayed.
6)	[File Conversion Language]		*1

*1 Select the language of the converted file.
The following shows selectable items.
[System Language Switching Interlock]
Converts the file to the same language as the system language.
[Fixed]
Converts the file to the selected language.

The languages that are selectable differ depending on the format of the converted file.

The file format of the file after conversion	
Unicode text	**CSV**
[Japanese] [English] [Chinese (Simplified)] [Chinese (Traditional)] [Korean]	[Japanese] [English]

Precautions

When [System Language Switching Interlock] is set for [File Conversion Language] in the operation log setting, an operation log file is not converted in the language specified in the system language switching device.
A file is converted in the system language set in the utility.

59.7 [Operation Log File Conversion] dialog

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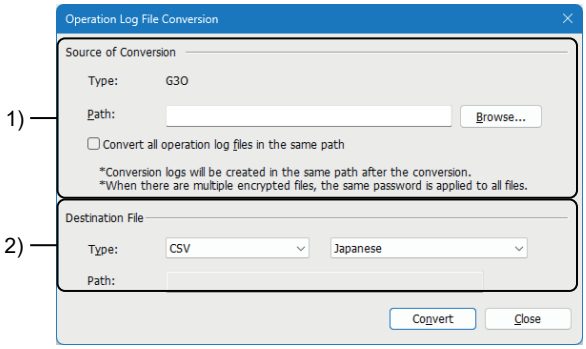

Item			Description
1)	[Source of Conversion]	[Type]	Set the destination to save the conversion source file and the target file. The conversion source file type. [G3O] is displayed.
		[Path]	Set the destination path to save the conversion source file.
		[Convert all operation log files in the same path]	Select this item to set all the operation log files (.G3O) in the conversion source folder as the target of the conversion.
2)	[Destination File]	[Type]	Set the file format of the converted file and the destination to save the file. Set the file format and the language of the converted file. The settable language depends on the selected file format. The following shows selectable items. • [CSV] Converts an operation log file (.G3O) to a CSV file. [Japanese] or [English] can be selected for the language. • [Unicode] Converts an operation log file (.G3O) to a Unicode text file. [Japanese], [English], [Chinese(Simplified)], [Chinese(Traditional)], or [Korean] can be selected as the language.
		[Path]	Set the destination path to save the converted file.

59.8 Relevant settings

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Configure the relevant settings in addition to the specific settings for the operation log as required.
The following shows the functions that are available by configuring the relevant settings.

59.8.1 GOT internal devices

☞ Page 3581 GOT special register (GS)

Function	Setting item
Changes the character code to Unicode when a binary file is converted to CSV format.	GS522.b2
Disables all buttons except the [List] and [Latest] buttons on the [Operation Log Information] screen of the utility.	GS522.b3
Changes the date format used for the operation log information of the utility.	GS632.b0, GS632.b1

Precautions

Before converting an operation log file (*.G3O) in a language other than Japanese or English to a CSV file, turn on the Character Code for CSV Conversion signal (GS522.b2).
If this signal (GS522.b2) is not turned on, the characters are not displayed correctly.
For details on the Character Code for CSV Conversion signal (GS522.b2), refer to the following.
☞ Page 3581 GOT special register (GS)

PART 9 Alarm

60 Collecting alarms by monitoring devices

61 Collecting alarms by monitoring the system

62 Enabling the popup display for when an alarm occurs

63 Viewing alarm events (Alarm display)

64 Sending an e-mail from the GOT when an alarm occurs (mail send function)

60 Collecting alarms by monitoring devices

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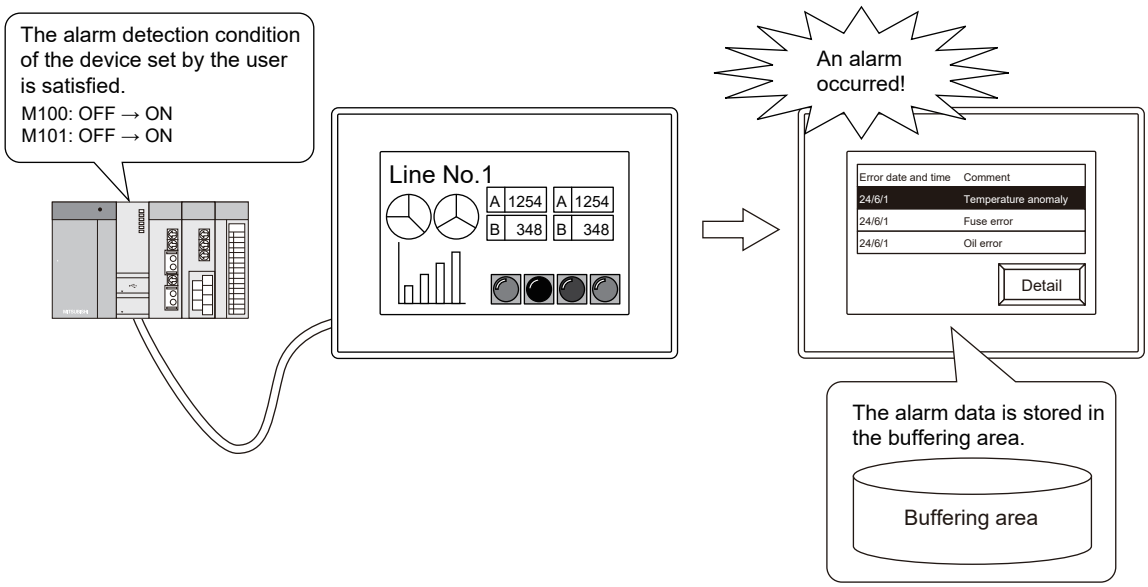
☞ Page 2023 Overview of the user alarm monitoring
☞ Page 2024 Specifications of the user alarm monitoring
☞ Page 2033 Procedure for setting the user alarm monitoring
☞ Page 2034 Power failure backup by storing the user alarm
☞ Page 2038 Converting alarm log files
☞ Page 2043 [Alarm Common Setting] dialog
☞ Page 2044 [User Alarm Observation List] dialog
☞ Page 2045 [User Alarm Observation] dialog
☞ Page 2072 [Alarm File Conversion] dialog
☞ Page 2073 Relevant settings

60.1 Overview of the user alarm monitoring

In the user alarm monitoring, the time and comments are recorded as the user alarm data history in a built-in memory of the GOT when conditions set for alarm detection are satisfied for the specified devices.



This chapter describes the user alarm monitoring, which collects and stores alarms set by users.

To display the collected alarms on the screen of the GOT, configure the settings for the alarm display (user) or the alarm popup display in addition to the settings for the user alarm monitoring.

☞ Page 2022 Collecting alarms by monitoring devices

☞ Page 2022 Collecting alarms by monitoring devices

60.2 Specifications of the user alarm monitoring

GT37 SoftGOT3000

☞ Page 2024 Detection condition
☞ Page 2024 Collection cycle (monitoring cycle)
☞ Page 2024 Setting range
☞ Page 2025 Alarm collecting procedure and alarm history collecting method
☞ Page 2030 Storing and deleting the collected user alarm data
☞ Page 2031 Size and notification of the buffering area
☞ Page 2032 Effect of station number switching

60.2.1 Detection condition

- Rising (OFF → ON) or falling (ON → OFF) of the bit device
- When the value of the word device corresponds to the set range expression

60.2.2 Collection cycle (monitoring cycle)

The user alarms can be collected and updated to a buffering area of the GOT in a cycle set by the user regardless of a displayed screen.
The setting range of the cycle is 0.1 to 3600 second(s).

60.2.3 Setting range

Item	Description
User alarm monitoring setting	The setting specifies a pattern of collecting alarms. Each setting has an alarm ID, which is used to specify its corresponding setting as the target of the alarm display (user) or others. Up to 300 user alarm monitoring settings can be set. The setting range of the alarm ID is 1 to 32767.
Alarm points	The alarm points refer to the number of monitored devices. Up to 32767 devices can be set in one user alarm monitoring setting. Up to 65535 devices can be set in one project.

60.2.4 Alarm collecting procedure and alarm history collecting method

☞ Page 2025 Alarm collecting procedure
☞ Page 2025 Alarm history collecting method and information to be collected
☞ Page 2027 Example of displaying alarms for each history collecting method

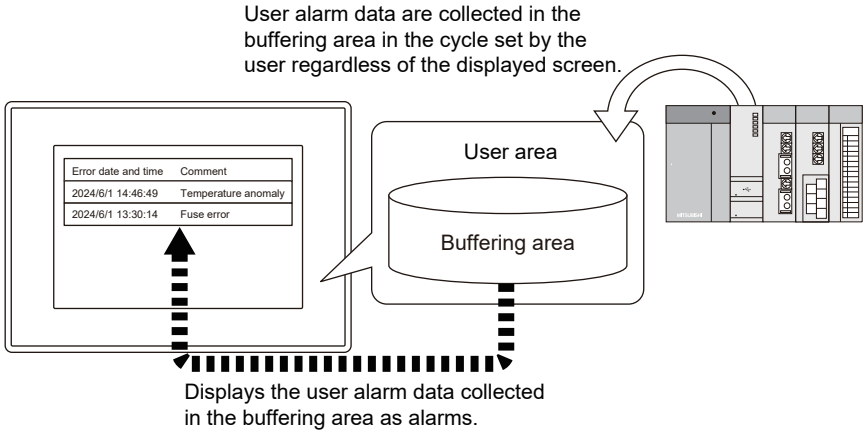
Alarm collecting procedure

The user alarm monitoring function collects alarm data to the buffering area of the user area in the user-specified cycle regardless of the displayed screen.

For the data collection cycle, refer to the following.

☞ Page 2024 Specifications of the user alarm monitoring

The buffering area stores the collected user alarms as histories temporarily, and displays them on the GOT as alarms.



For information on how to delete the data in the buffering area, refer to the following.

☞ Page 2030 Storing and deleting the collected user alarm data

The data to be stored in the buffering area of the user area differs depending on the history collecting method.

Alarm history collecting method and information to be collected

The following shows the alarm history collecting method.

Alarm history collecting method	Description
Historical mode	Collects the history of alarm occurrences. An event is added to the history every time an alarm occurs.
Cumulative mode	Collects the latest alarm status and the alarm counts or time together for each alarm.
Current alarm only	Collects the alarms that are currently occurring only. The history of the user alarms that have been restored are not stored.

For information on the setting of the alarm history collecting method, refer to the following.

☞ Page 2046 [Basic] tab

Depending on the collecting method, the types of information collected differs.

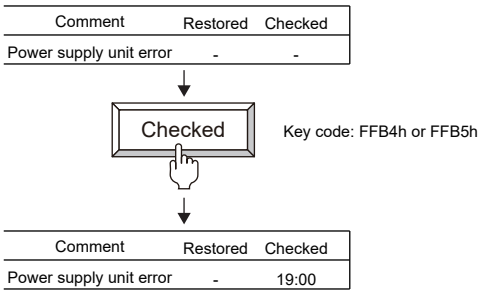
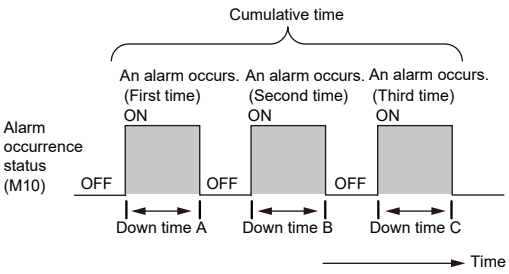
Ex.

Alarm display (user)

Error date and time	Comment	Alarm status	Restored	Checked	Frequency	Cumulative time	Down time	Level	Group	Occurrence log
2024/06/0120:00	Power supply unit error	-	-	-	1	-	-	1	2	
2024/06/0118:30	Hydraulic pressure failure	Checked	-	18:50	2	-	-	1	1	
2024/06/0116:10	Drive module error	Checked	16:30	16:20	2	00:40	00:20	2	1	
1)	2)	3)	4)	5)	6)	7)	8)	9)	10)	11)

○: Collected

—: Not collected

Displayed information		[Collection Mode] setting			Description
		[Historical]	[Cumulative]	[Only current alarm]	
1)	Error date and time	○	○	○	Displays the date and time when an alarm occurred.
2)	Comment	○	○	○	Displays the comment assigned to the alarm at the alarm occurrence.
3)	Alarm status	○	○	○	Displays the alarm status that is currently displayed. • Occurred: The alarm has occurred. (The occurrence of the alarm has not been checked.) • Checked: The occurrence of the alarm has been checked. • Restored: The monitor target already recovered from the alarm.
4)	Restored date and time	○	○	○	Displays the date and time when an alarm is restored.
5)	Checked date and time	○	○	○	Displays the date and time of when the occurrence of an alarm was checked. Check the occurrence of an alarm with the touch switch or device that is set for the alarm check. ☞ Page 2141 Key code switches for operating alarm displays ☞ Page 2048 [Device] tab Example) Operation with a touch switch 
6)	Frequency	—	○	—	Displays the number of error occurrence.
7)	Cumulative time	—	○	—	Displays the total time of alarm occurrence including the past alarm occurrence time. 
8)	Down time	—	○	—	Displays the time from the alarm occurrence to the alarm restoration.
9)	Level	○	○	○	Displays the levels set for alarms. The alarms can be classified into the level according to the alarm importance. You can display the alarm with higher level preferentially or display the alarms with specific level only. ☞ Page 2064 Narrowing the display by level or group
10)	Group	○	○	○	Displays the groups set for alarms. The alarms can be classified into groups according to the alarm contents. You can display the alarms in order of the group or display the alarms with specific group only. ☞ Page 2064 Narrowing the display by level or group
11)	Log on occurrence	○	○	○	Collects the value of the log collection device when an alarm event occurs and displays the value by embedding it in the comment. ☞ Page 2065 Log collection and embedding display in the comment

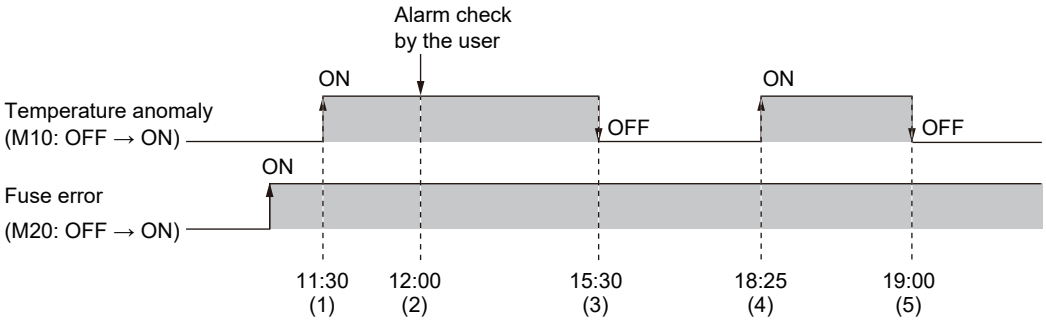
Example of displaying alarms for each history collecting method

The following shows the examples for displaying alarms at the time when the device values change as follows for each history collecting method.

To display the collected alarms, use the alarm display (user) of the object.

Ex.

Monitored devices: M10, M20



☞ Page 2027 Example of displaying historical mode
☞ Page 2028 Example of displaying cumulative mode
☞ Page 2029 Example of only displaying occurred alarms

■Example of displaying historical mode

Collects the history of alarm occurrences.

An event is added to the history every time an alarm occurs.

These items are not collected in the historical.

(1) A temperature anomaly occurs.

Error date and time	Comment	Restored	Checked	Frequency	Cumulative time	Down time
2024/06/01 11:30	Temperature anomaly		12:00			
2024/06/01 10:25	Fuse error					

← A temperature anomaly occurs.

(2) A temperature anomaly has been checked.

Error date and time	Comment	Restored	Checked	Frequency	Cumulative time	Down time
2024/06/01 11:30	Temperature anomaly		12:00			
2024/06/01 10:25	Fuse error					

A temperature anomaly has been checked.

Key code: FFB4h

(3) The system has been restored from the temperature anomaly.

Error date and time	Comment	Restored	Checked	Frequency	Cumulative time	Down time
2024/06/01 11:30	Temperature anomaly	15:30	12:00			
2024/06/01 10:25	Fuse error					

Displays the restored time.

(4) A temperature anomaly occurs again after the restoration.

Error date and time	Comment	Restored	Checked	Frequency	Cumulative time	Down time
2024/06/01 18:25	Temperature anomaly					
2024/06/01 11:30	Temperature anomaly	15:30	12:00			
2024/06/01 10:25	Fuse error					

← Displays the alarm in a new row added.

(5) The system has been restored from the temperature anomaly.

Error date and time	Comment	Restored	Checked	Frequency	Cumulative time	Down time
2024/06/01 18:25	Temperature anomaly	19:00				
2024/06/01 11:30	Temperature anomaly	15:30	12:00			
2024/06/01 10:25	Fuse error					

Displays the restored time.

■Example of displaying cumulative mode

Collects the latest alarm status, the alarm counts, and the time together for each alarm.

(1) A temperature anomaly occurs.

Error date and time		Comment	Restored	Checked	Frequency	Cumulative time	Down time
2024/06/01	11:30	Temperature anomaly			1	00:00	
2024/06/01	10:25	Fuse error			1	00:00	

← A temperature anomaly occurs.

(2) A temperature anomaly has been checked.

Error date and time		Comment	Restored	Checked	Frequency	Cumulative time	Down time
2024/06/01	11:30	Temperature anomaly		12:00	1	00:00	
2024/06/01	10:25	Fuse error			1	00:00	

← A temperature anomaly has been checked.

Key code: FFB4h

(3) The system has been restored from the temperature anomaly.

Error date and time		Comment	Restored	Checked	Frequency	Cumulative time	Down time
2024/06/01	11:30	Temperature anomaly	15:30	12:00	1	04:00	04:00
2024/06/01	10:25	Fuse error		12:00	1	00:00	

← Displays the restored time, down time, and cumulative time.

(4) A temperature anomaly occurs again after the restoration.

Error date and time		Comment	Restored	Checked	Frequency	Cumulative time	Down time
2024/06/01	18:25	Temperature anomaly			2	04:00	
2024/06/01	10:25	Fuse error		12:00	1	00:00	

← Displays the time when the alarm occurred again in the same row and increments the occurrence frequency by one.

(5) The system has been restored from the temperature anomaly.

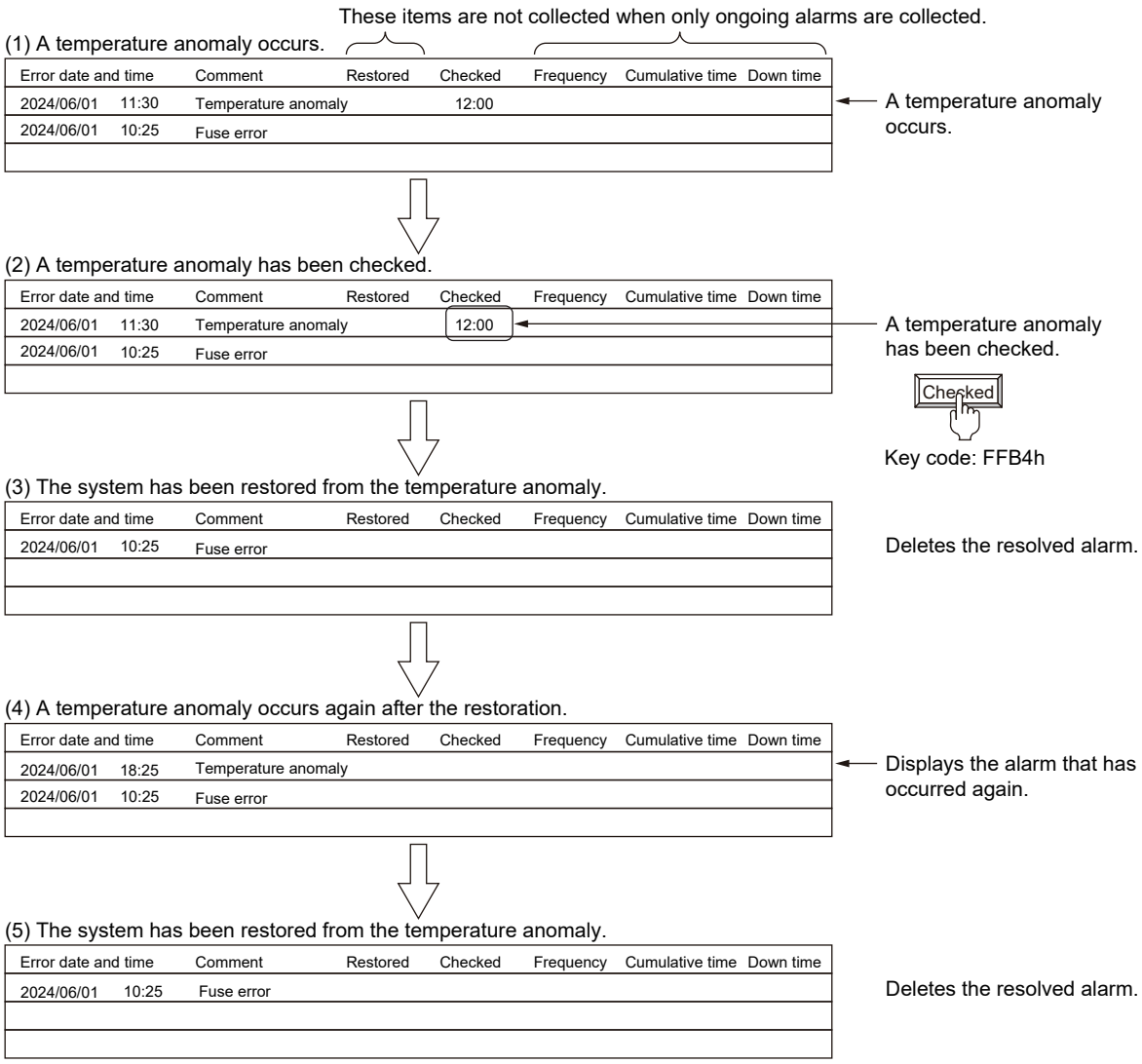
Error date and time		Comment	Restored	Checked	Frequency	Cumulative time	Down time
2024/06/01	18:25	Temperature anomaly	19:00		2	04:35	00:35
2024/06/01	10:25	Fuse error		12:00	1	00:00	

← Displays the restored time, downtime. The duration of the alarm is displayed in cumulative time.

■Example of only displaying occurred alarms

Collects the alarms that are currently occurring only.

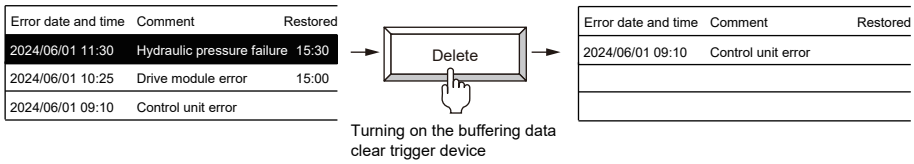
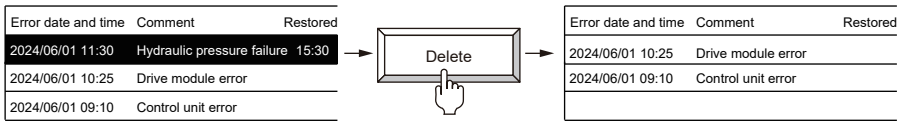
The histories of the alarms that have been recovered are not stored.



60.2.5 Storing and deleting the collected user alarm data

The user alarm data are stored in the buffering area in the user area of the GOT.

The stored user alarms are deleted at the following timing.

Deletion timing	Description
When turning on the buffering data clear trigger device	Turn on [Buffering Data Clear Trigger Device] set in the [Basic] tab of the [User Alarm Observation] dialog to delete all alarm data in the "Restored" status. ☞ Page 2045 [User Alarm Observation] dialog  Turning on the buffering data clear trigger device
When inputting a key code for deletion using a touch switch	Use a touch switch to delete one or all alarm data items in the "Restored" status.  Key code: Delete one event. FFB6h Delete all events. FFB7h
When powering off or resetting the GOT	Power off or reset the GOT to delete alarm data. However, when the alarm data is stored in a data storage, the data is retained even after the GOT is powered off.
When changing the [Controller] setting in the utility	Change the [Controller] setting in [GOT basic set] in the utility to delete all alarm data in the "Restored" status.
When writing/deleting data to/from the GOT	Perform any of the following operations in the [Communicate with GOT] dialog to delete all alarm data in the "Restored" status. • Writing package data • Deleting an item from the drive information • Formatting a drive

60.2.6 Size and notification of the buffering area

Size of the buffering area used

The size of the operation memory (RAM) used by the user alarm monitoring buffering area increases or decreases depending on the setting.

The buffering area is reserved in the user area in the operation memory (RAM).

Because the user area in the operation memory (RAM) is used by multiple functions, adjust the size of the buffering area so that it does not exceed the upper limit.

The size of the buffering area required for the set user alarm monitoring can be checked in the [Basic] tab of the [User Alarm Observation] dialog.

☞ Page 2046 [Basic] tab

For information on the operation memory (RAM), refer to the following.

☞ Page 415 Transferred data and GOT storage destination

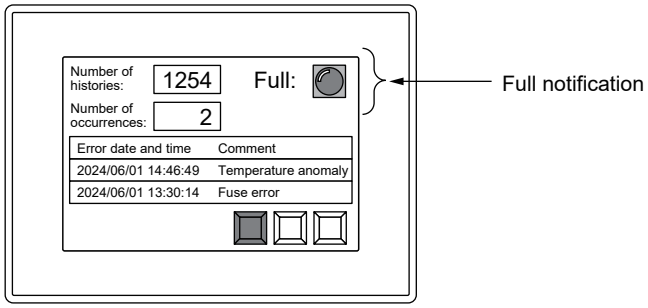
Operation when the buffering area is full

When the number of alarms temporarily stored in the buffering area reaches [Stored Number] set in the [Basic] tab of the [User Alarm Observation] dialog, the area becomes full.

Select the operation when the buffering area is full in [Action When Buffer is Full] in the [User Alarm Observation] dialog ([Basic] tab).

To execute the notification before the buffer area becomes full, set [Full Notification Signal Device] in the [User Alarm Observation] dialog ([Basic] tab).

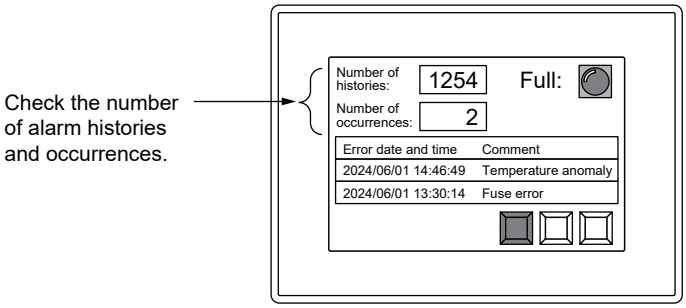
☞ Page 2046 [Basic] tab



Confirming the number of the alarm histories and the alarms

The number of histories and the number of occurrences temporarily stored in the buffering area are stored in the devices for output set in the [User Alarm Observation] dialog ([External Output] tab).

☞ Page 2071 [External Output] tab



60.2.7 Effect of station number switching

If station number switching is performed on the monitored device, the following effects occur.

Alarm history collecting method	Effect of station number switching
Historical mode Current alarm only	When station number switching is performed, the status of the alarm changes from "occurring" to "restored".
Cumulative mode	The accumulated value is cleared.

Precautions

Since the monitored device changes after station number switching, the data before and after the switching will be inconsistent.

60.3 Procedure for setting the user alarm monitoring

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1. Select [Common] → [Alarm] → [User Alarm Observation] from the menu to display the [User Alarm Observation List] dialog.

☞ Page 2044 [User Alarm Observation List] dialog

2. Perform one of the following operations to display the [User Alarm Observation] dialog.

- Click the [New] button.
- Select a user alarm monitoring setting and click the [Edit] button.

☞ Page 2045 [User Alarm Observation] dialog

3. Configure necessary settings in each tab in the [User alarm observation] dialog, and click the [OK] button to complete the user alarm monitoring setting.

Tab	Description
[Basic] tab	Configure the settings related to the alarm ID, history collecting method, and buffering area. ☞ Page 2046 [Basic] tab
[Device] tab	Set a cycle for monitoring, devices to be monitored for the detection, and comments to be displayed. ☞ Page 2048 [Device] tab
[File Save] tab	Set a trigger for storing the alarm log file, storage destination, file conversion using a device, and others. ☞ Page 2068 [File Save] tab
[Extended] tab	Select a device search method for alarms at the sequence program monitor startup and whether to notify alarms to Pocket GOT. ☞ Page 2070 [Extended] tab
[External Output] tab	Set the following items to save the number of user alarms and the occurrences. ☞ Page 2071 [External Output] tab

60.4 Power failure backup by storing the user alarm

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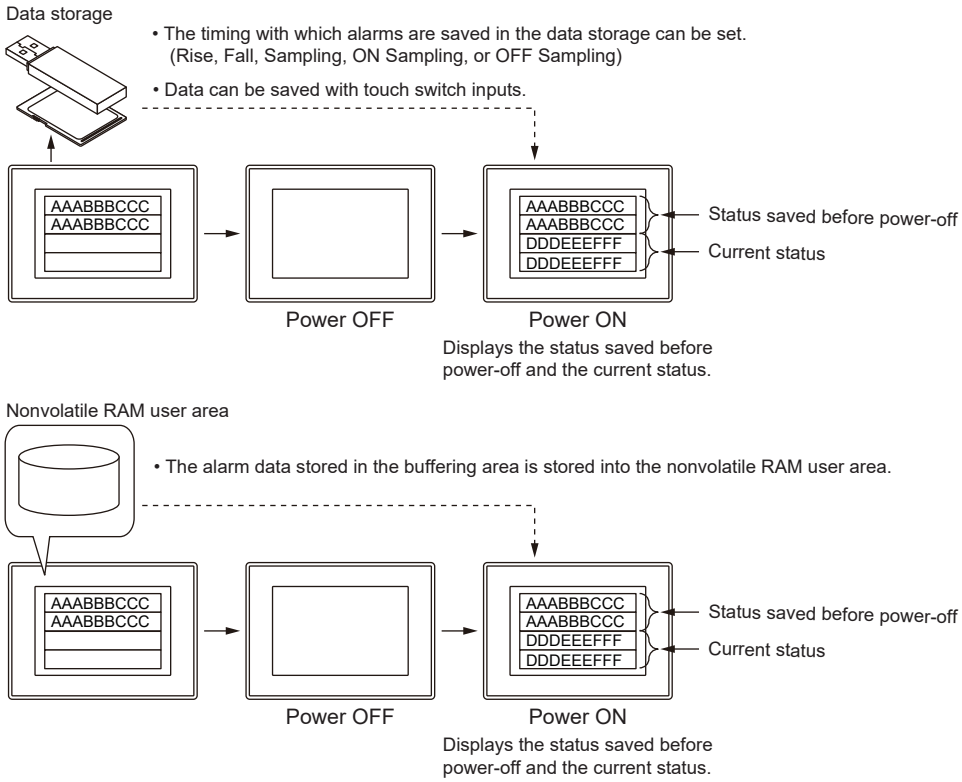
☞ Page 2034 Overview of the power failure backup
☞ Page 2035 Information to be stored
☞ Page 2035 Power failure backup by using a data storage
☞ Page 2037 Power failure backup by using a nonvolatile RAM

60.4.1 Overview of the power failure backup

Once the user alarm data is stored in a data storage or the nonvolatile RAM user area as the alarm log file, the data is retained even after the GOT is powered off.
When the GOT is powered on, the alarm log file (if stored in the data storage or the nonvolatile RAM user area) is automatically read and the user alarm history before the power-off is restored.



Point

To save the file in the data storage, it is recommended that you format the file before using it to maintain the file access performance.
The number of files to be stored in a folder should be less than 500.
If 500 or more files are stored in a folder, file access performance may be lowered.
Repeated writing or deleting of data may lower access performance, regardless of the number of files.
In such a case, format the data storage.

60.4.2 Information to be stored

The information in the alarm log file to be stored in the data storage or the nonvolatile RAM user area differs depending on the history collecting method.

☞ Page 2025 Alarm history collecting method and information to be collected

60.4.3 Power failure backup by using a data storage

☞ Page 2035 Required setting
☞ Page 2035 Backing up the alarm log file stored in the data storage
☞ Page 2035 Precautions for using a data storage

Required setting

Perform one of the following operations.

Storage method	Reference
Storage by the store trigger device	Configure the setting in the [File Save] tab of the [User Alarm Observation] dialog. Select [Save alarm log files] and set the storage destination for the log file and the storage trigger. ☞ Page 2068 [File Save] tab
Storage by the key code switch (key code: FFBB)	☞ Page 2141 Key code switches for operating alarm displays
Storage by GS520.b0	☞ Page 3647 Buffering And File Access Control (GS520) Because all the data in the buffering area are saved in the data storage, the storage process may take a few minutes to complete. To prevent the monitoring from stopping for a long time, save the data using any other method.

Backing up the alarm log file stored in the data storage

Select [Automatically backup at the time of saving] in the [File Save] tab of the [User Alarm Observation] dialog to store the alarm log file as a backup file when the alarm log file is saved.

Precautions for using a data storage

☞ Page 2035 Precautions for starting the GOT
☞ Page 2035 Precautions for removing an SD card
☞ Page 2036 Storage process
☞ Page 2036 Error occurred during the alarm log file saving
☞ Page 2036 Restoring the alarm histories when powering-off to on the GOT

■Precautions for starting the GOT

When reading and restoring the user alarm from the data storage, install the data storage on the GOT before powering-on the GOT.

After the powering-on the GOT, the data in the data storage cannot be restored.

In addition, when the data storage is installed after the power-on, the user alarm data in the data storage are overwritten when other user alarm data are stored in the data storage.

■Precautions for removing an SD card

When you open the SD card cover, the files are stored automatically.

Before removing the SD card, make sure that the file saving is complete by checking one of the following conditions.

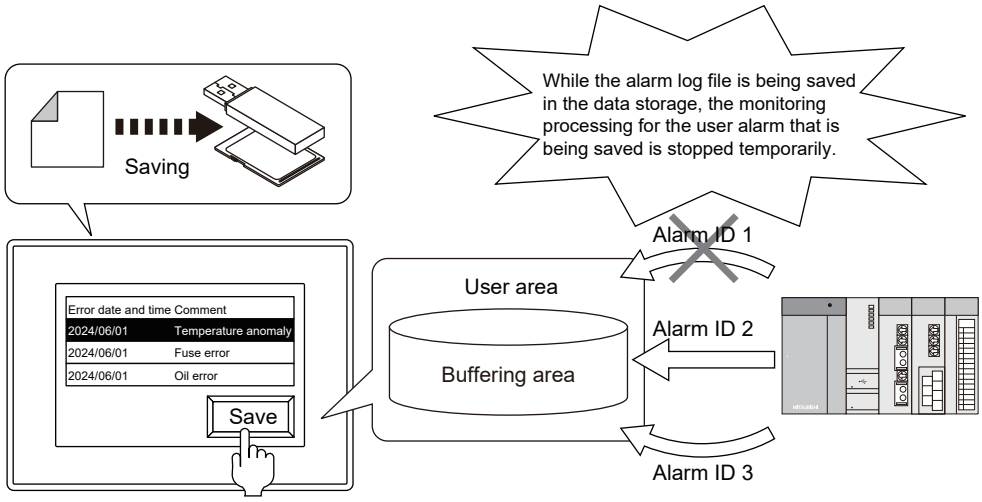
- The Drive Status Notification signal (system signal 2-2.b0, b1) is turned off.
- The SD card access LED is turned off.

Storing may take longer because all the user alarms and system alarms for saving the alarm log files are stored.

■Storage process

While the alarm log file is being saved in the data storage, the monitoring processing for the user alarm of the alarm ID that is being saved is stopped temporarily.

User alarms occurred or restored during the storing are not displayed.



■Error occurred during the alarm log file saving

When an error occurs during the alarm log file saving, the [Writing Error Notification Device] set in the [File Save] tab of the [User Alarm Observation] dialog turns on.

If the Writing Error Notification device turns on, check that the following conditions are satisfied.

- The SD card cover of the GOT is closed.
- The data storage works normally.

The user needs to turn off this device.

■Restoring the alarm histories when powering-off to on the GOT

When the alarm log file in the data storage is not created in the project in the GOT, the file cannot be read from the GOT.

In this case, an alarm occurs or a device turns on.

- A system alarm 525 occurs.
- The [Writing Error Notification Device] set in the [File Save] tab of the [User Alarm Observation] dialog turns on.

60.4.4 Power failure backup by using a nonvolatile RAM

☞ Page 2037 Required setting
☞ Page 2037 Storage timing
For the specifications of the nonvolatile RAM user area and operations performed on it, refer to the following.
☞ Page 3679 Specifications and operations of the nonvolatile RAM user area

Required setting

Select [Retain data in the embedded memory in GOT even when the power goes off] in the [Basic] tab of the [User Alarm Observation] dialog.
The size of the nonvolatile RAM user area used can also be checked in the [Basic] tab.
Up to 10 user alarm monitoring settings can be configured with the nonvolatile RAM power-failure backup function enabled.
☞ Page 2046 [Basic] tab

Precautions

The nonvolatile RAM user area is used by multiple functions, and thus its space is limited.
For the specifications of the nonvolatile RAM user area, refer to the following.
☞ Page 3679 Specifications and operations of the nonvolatile RAM user area

Storage timing

Every time the data in the buffering area is changed, the data is stored in the nonvolatile RAM user area.

60.5 Converting alarm log files

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Alarm log files generated by user alarms are binary format files (*.G3A).

To display and edit the alarm log files on a personal computer, convert them into Unicode text files or CSV files.

The following shows how to convert the alarm log files.

☞ Page 2039 Conversion using the utility

☞ Page 2040 Conversion using a device

☞ Page 2041 Conversion using GT Designer3

For the format of the converted file, refer to the following.

☞ Page 2041 Configurations of a Unicode text file and a CSV file

Precautions

■Character code and conversion destination file

If an alarm log file contains any character other than ASCII and Shift JIS characters, convert the file as shown below.

- Convert the file to Unicode text format.
- Convert the file to a CSV file by turning on GS522.b2.

■Precautions for a CSV file or Unicode text file

For the precautions for using CSV files and Unicode text files, refer to the following.

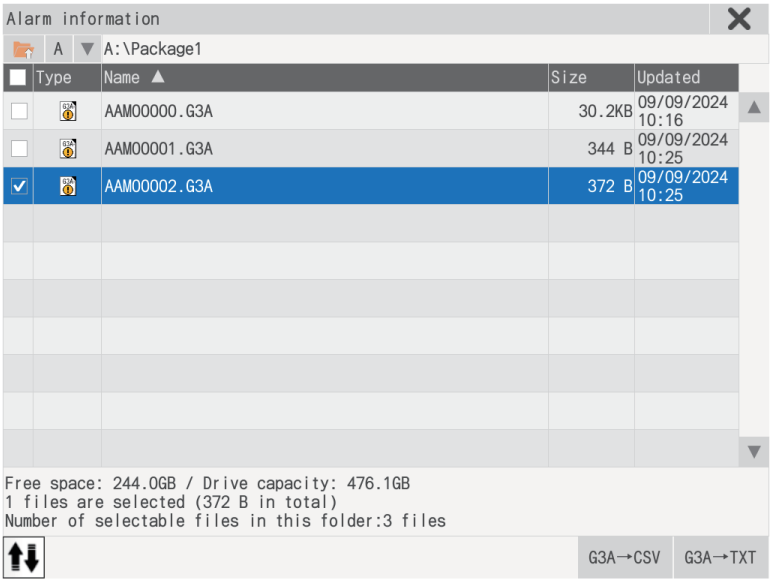
☞ Page 3668 Precautions for using CSV file

☞ Page 3669 Precautions for using Unicode text file

60.5.1 Conversion using the utility

Convert a binary file (*.G3A) stored in the data storage to a Unicode text file or a CSV file using the utility.
When a file is converted using the utility, the value of the language switching device is applied to the column number of the comment group used during conversion.

1. Select a binary file (*.G3A) in [Alarm information] of the utility and touch the [G3A→TXT] or [G3A→CSV] button.



2. Store the created Unicode text file or CSV file into a personal computer by one of the following methods.

Method	Description
Transferring with GT Designer3	Reads resource data from the GOT.
Storing by using the data storage	Stores the alarm log file to the data storage and reads the alarm log file from the data storage.

3. Display or edit the converted Unicode text file or the CSV file on a personal computer.

For the operations of the utility, refer to the following.
📖GOT3000 Series User's Manual (Utility & Maintenance Functions)
To read the resource data from the GOT, refer to the following.
☞ Page 441 Reading the data from the GOT

Precautions

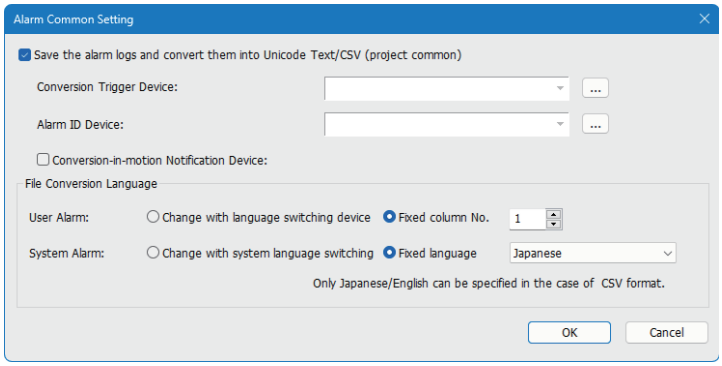
When converting an alarm log file (*G3A) into a CSV file or a Unicode text file with a utility, execute a conversion by each file.
Even if multiple files are selected at once, they cannot be converted.

60.5.2 Conversion using a device

Turning on a specified device converts a binary format file (*.G3A) stored in the data storage into a Unicode text file or a CSV file.

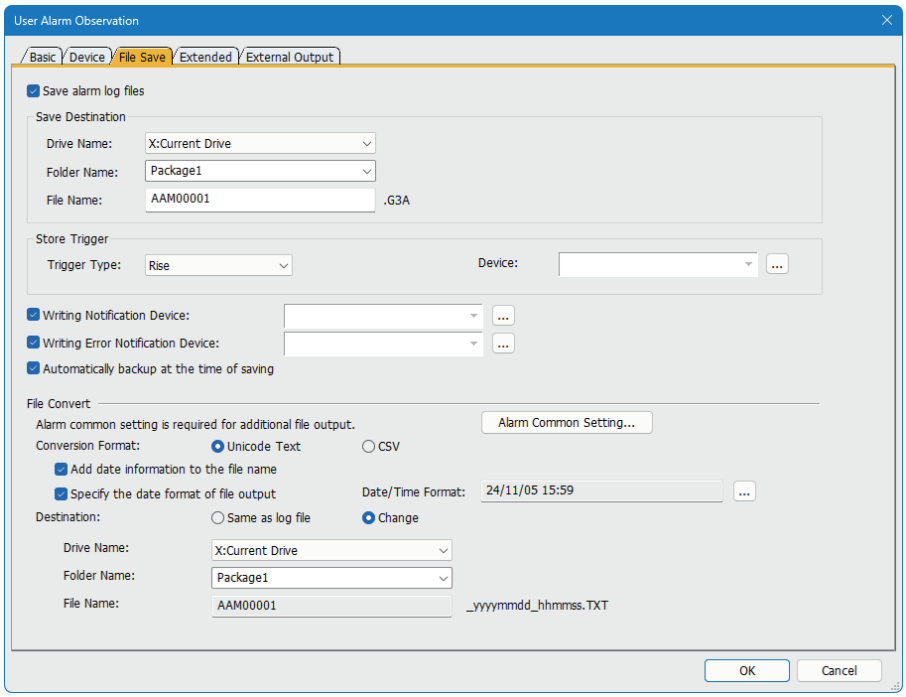
1. Configure the setting for control the alarm log file conversion with the device in the [Alarm Common Setting] dialog.

☞ Page 2043 [Alarm Common Setting] dialog



2. Configure the setting for storing the alarm log file stored in the buffering area to the data storage in the [File Save] tab of the [User Alarm Observation] dialog.

☞ Page 2068 [File Save] tab



Precautions

Before converting the alarm log files, write the user alarm monitor ID that generates a file to the alarm ID specification device.
When the conversion trigger device is turned on before the user alarm monitor ID is written, the alarm log file is not converted.
Make sure to turn off the conversion trigger device after the conversion of the alarm log file starts.
If the conversion trigger device is on even after the conversion is complete, the conversion notification device does not turn off.

60.5.3 Conversion using GT Designer3

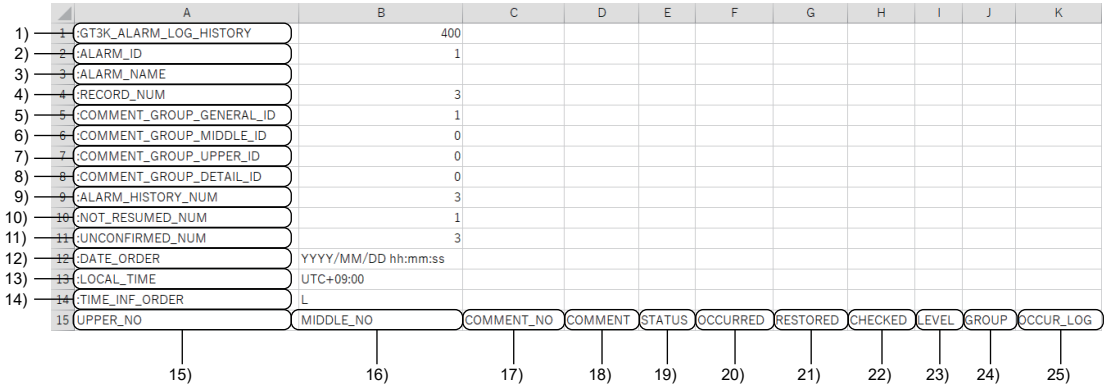
Convert a binary file (*.G3A) stored on the personal computer to a Unicode text file or a CSV file using GT Designer3. Conversion is performed in the [Alarm Log File Conversion] dialog.

☞ Page 2072 [Alarm File Conversion] dialog

60.5.4 Configurations of a Unicode text file and a CSV file

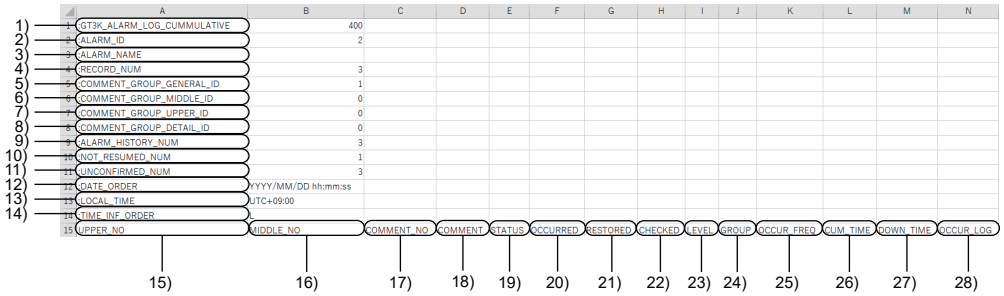
☞ Page 2041 Configuration of historical mode
☞ Page 2042 Configuration of cumulative mode

Configuration of historical mode



No.	Description
1)	Alarm collecting method
2)	Alarm ID
3)	Alarm name
4)	Number of data points
5)	Basic comment group number
6)	Middle comment group number
7)	Upper comment group number
8)	Detailed comment group number
9)	Number of the alarm histories
10)	Number of unrestored alarms
11)	Number of unchecked alarms
12)	Order of the dates
13)	Difference from UTC
14)	Order of the output time
15)	Upper comment number
16)	Middle comment number
17)	Basic comment number
18)	Comment for a basic alarm
19)	Alarm status (O: Alarm has been occurring, but has not been confirmed, OC: Alarm has been occurring, and has been confirmed, R: Alarm has been restored, but has not been confirmed, RC: Alarm has been restored, and has been confirmed)
20)	Date and time when an alarm occurred
21)	Date and time when an alarm is restored
22)	Date and time when an alarm occurrence is checked
23)	Level set for an alarm
24)	Group set for an alarm
25)	Log collected when an alarm event occurs

Configuration of cumulative mode



No.	Description
1)	Alarm collecting method
2)	Alarm ID
3)	Alarm name
4)	Number of data points
5)	Basic comment group number
6)	Middle comment group number
7)	Upper comment group number
8)	Detailed comment group number
9)	Number of the alarm histories
10)	Number of unrestored alarms
11)	Number of unchecked alarms
12)	Order of the dates
13)	Difference from UTC
14)	Order of the output time
15)	Upper comment number
16)	Middle comment number
17)	Basic comment number
18)	Comment for a basic alarm
19)	Alarm status (O: Alarm has been occurring, but has not been confirmed, OC: Alarm has been occurring, and has been confirmed, R: Alarm has been restored, but has not been confirmed, RC: Alarm has been restored, and has been confirmed)
20)	Date and time when an alarm occurred
21)	Date and time when an alarm is restored
22)	Date and time when an alarm occurrence is checked
23)	Level set for an alarm
24)	Group set for an alarm
25)	Number of alarm occurrences
26)	Total time of alarm occurrence including the past alarm occurrence time (total downtime)
27)	Time from the alarm occurrence to the alarm restoration
28)	Log collected when an alarm event occurs

60.6 [Alarm Common Setting] dialog

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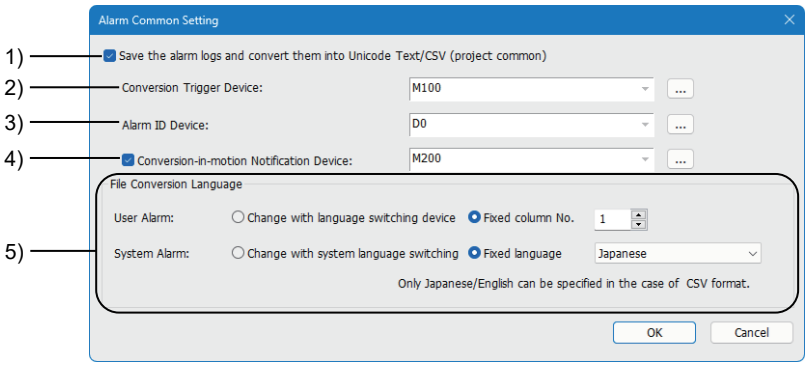
Configure this setting when controlling the alarm log file conversion by devices.

Select [Common] → [Alarm] → [Alarm Common Setting] from the menu to display the following dialog.

To control the alarm log file conversion by devices, configure the [File Convert] setting in the [File Save] tab of the [User Alarm Observation] dialog.

☞ Page 2045 [User Alarm Observation] dialog



Item			Description	
1)	[Save the alarm logs and convert them into Unicode Text/CSV (project common)]		Configure this setting for controlling the alarm log file conversion by devices.	
2)	[Conversion Trigger Device]		Set trigger devices for the file conversion.	
3)	[Alarm ID Device]		Set the device that specifies the alarm monitoring ID for generating a conversion target file.	
4)	[Conversion-in-motion Notification Device]		Set the device to notify that a file is being converted. After the alarm log file conversion is started, make sure to turn off the conversion trigger device. If the conversion trigger device is on even after the conversion is complete, the conversion notification device does not turn off.	
5)	[File Conversion Language]	User alarm	Set the column No. of the comment group to be used in the file conversion.	
			[Change with language switching device]	Converts files with a column No. switched by the language switching device.
			[Fixed column No.]	Converts files with a set column No. The setting range is [1] to [30].
		System alarm	Set the system language to be used for the file conversion.	
			[Change with system language switching]	Converts files in the system language displayed on the GOT.
			[Fixed language]	Converts files with a set language.

60.7 [User Alarm Observation List] dialog

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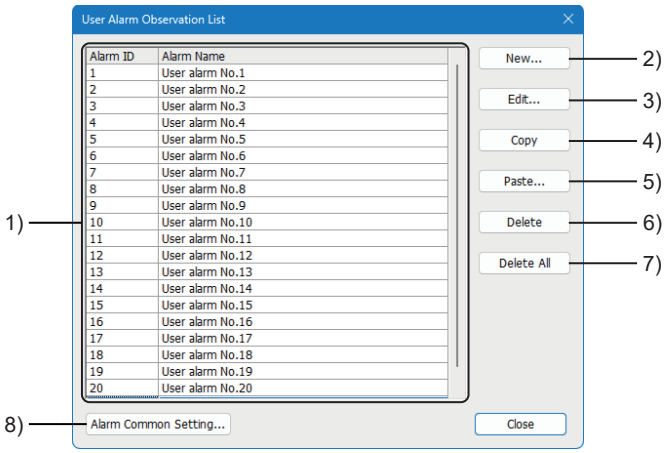
Displays the list of the user alarm monitoring settings and manages the settings.

Select [Common] → [Alarm] → [User Alarm Observation] from the menu to display the following dialog.



Item			Description
1)	User alarm monitoring list	—	List of the user alarm monitoring settings in a project
		[Alarm ID]	Alarm ID for each user alarm monitoring setting
		[Alarm Name]	Alarm name for each user alarm monitoring setting
2)	[New] button		Displays the [User Alarm Observation] dialog. Create a new user alarm monitoring setting. ☞ Page 2045 [User Alarm Observation] dialog
3)	[Edit] button		Displays the [User Alarm Observation] dialog. Edit a selected setting. ☞ Page 2045 [User Alarm Observation] dialog
4)	[Copy] button		Copies a selected alarm ID.
5)	[Paste] button		Use a copied user alarm monitoring setting to configure a user alarm setting. In the displayed dialog, set which alarm ID is to be used for the copied user alarm monitoring setting.
6)	[Delete] button		Deletes a selected setting.
7)	[Delete All] button		Deletes all the settings.
8)	[Alarm Common Setting] button		Displays the [Alarm Common Setting] dialog. ☞ Page 2043 [Alarm Common Setting] dialog

60.8 [User Alarm Observation] dialog

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☞ Page 2046 [Basic] tab
☞ Page 2048 [Device] tab
☞ Page 2068 [File Save] tab
☞ Page 2070 [Extended] tab
☞ Page 2071 [External Output] tab

Precautions

After the first settings and any change of the following setting items, if you change the settings again or import settings from a CSV file, note the following: The history data may be partially deleted or displayed incorrectly.
Before you change the setting, backing up the alarm files of the GOT is recommended.

- Alarm ID
- Collection Mode
- Stored Number
- Alarm Points
- Middle Comment No.
- Upper Comment No.

60.8.1 [Basic] tab

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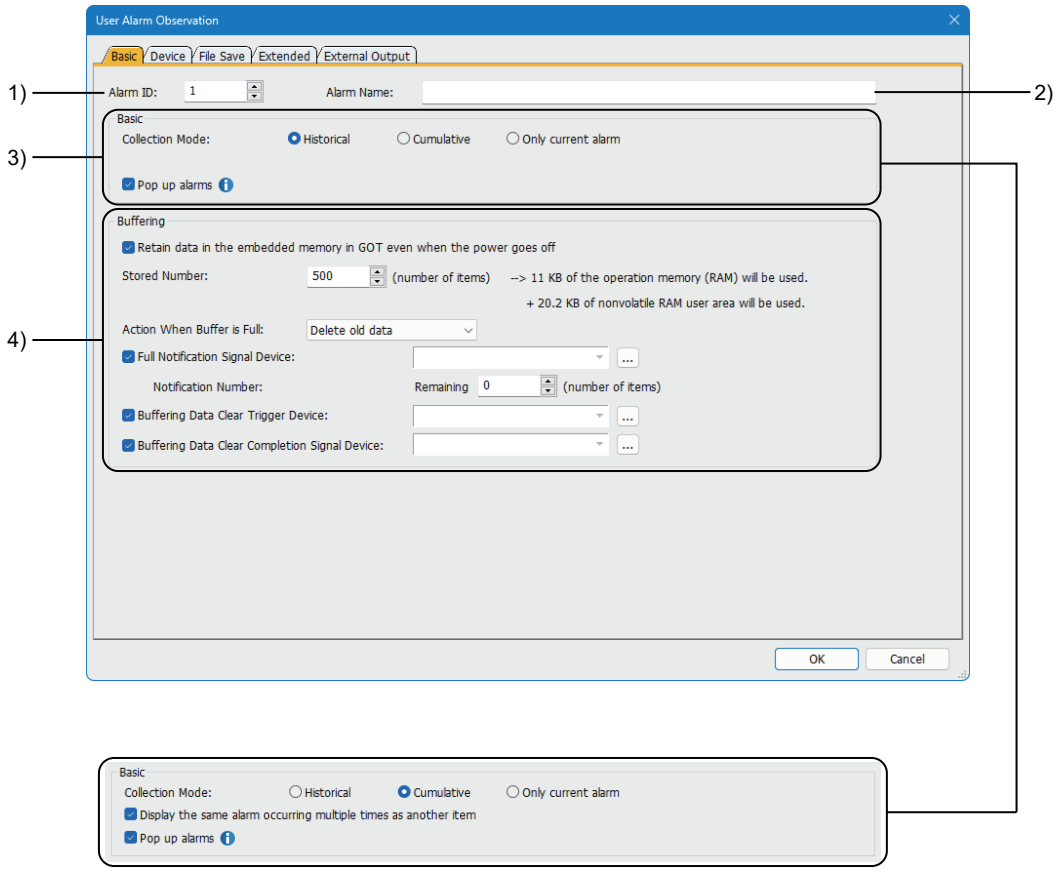
Set the alarm history collecting method and the buffering that stores the alarm history.



When [Cumulative] is selected for the [Collection Mode].

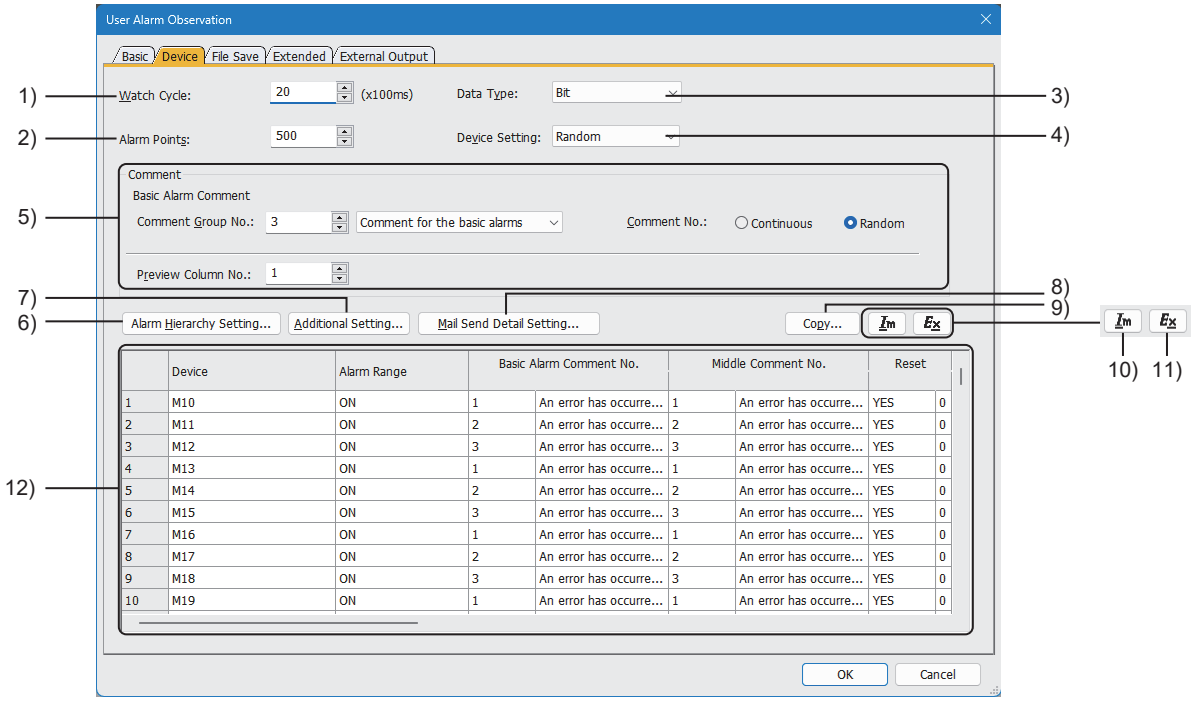
Item			Description
1)	[Alarm ID]		Set the alarm ID of the user alarm. The setting range is [1] to [32767].
2)	[Alarm Name]		Set an alarm name of the user alarm. Up to 32 characters can be set as an alarm name.
3)	[Basic]	[Collection Mode]	Select a user alarm collecting method. ☞ Page 2025 Alarm history collecting method and information to be collected
		[Display the same alarm occurring multiple times as another item]	This item can be set only when the [Collection Mode] is [Cumulative]. Displays the same alarm, which occurred multiple times, as another item at each time of occurrence.
		[Pop up alarms]	Pops up a user alarm message. Configure the following settings additionally. • Alarm popup display settings ☞ Page 2118 [Alarm Popup Display] dialog • Settings of the screen (base screen or mobile screen) where an alarm message pops up ☞ Page 314 [Basic] tab ☞ Page 2831 [Basic] tab

Item			Description
4)	[Buffering]	—	Configure settings for the buffering that stores the collected user alarms.
		[Retain data in the embedded memory in GOT even when the power goes off]	Select this item to store alarm data in the buffering area in the nonvolatile RAM user area. Up to 10 user alarm monitoring settings can be configured with the nonvolatile RAM power-failure backup function enabled. ☞ Page 2034 Power failure backup by storing the user alarm
		[Stored Number]	Set this item when setting [Collection Mode] to [Historical]. Set the number of user alarm history events to be stored. The setting range is [Alarm Points] set in the [Device] tab to [32767]. The buffer size increases as the number of the stored events increases.
		[Action When Buffer is Full]	Set this item when setting [Collection Mode] to [Historical]. Select the operation executed when the number of the user alarms stored in the buffering area reaches the [Stored Number].
		[Full Notification Signal Device]	Set this item when setting [Collection Mode] to [Historical]. Notifies that the storable number of user alarm histories becomes the number set in the [Notification Number] or less by the set device. ☞ Page 834 How to set devices, labels, and tags
		[Notification Number]	When setting [Full Notification Signal Device], set this item. Set the number of the user alarm histories for which the [Full Notification Signal Device] is notified. The setting range is [0] to [255]. Example) When [Stored Number] is set to 1000 and [Notification Number] is set to 10 [Full Notification Signal Device] turns on when the number of stored user alarm histories becomes 990 because the number of storable user alarm histories becomes 10.
		[Buffering Data Clear Trigger Device]	Deletes the restored user alarms stored in the buffering area by the set device. ☞ Page 834 How to set devices, labels, and tags
		[Buffering Data Clear Completion Signal Device]	When setting [Buffering Data Clear Trigger Device], set this item. Notifies you with a set device that deleting buffering data is complete. ☞ Page 834 How to set devices, labels, and tags

60.8.2 [Device] tab

GT37 SoftGOT3000

Configure settings for the timing for collecting user alarms or user alarm settings (devices set for user alarms, comments displayed at a user alarm occurrence, resetting user alarms, and level/group setting).



Item			Description
1)	[Watch Cycle]		Set a cycle at which the device is monitored. The setting range is [1] to [36000].
2)	[Alarm Points]		Set the number of alarms. The setting range is [1] to [32767].
3)	[Data Type]		Select the data type of the device.
4)	[Device Setting]		Select whether to set devices sequentially or not. [Identical] can be selected only when [Data Type] is other than [Bit]. Selecting [Identical] sets the same device for all the alarms. This helps you identify the alarm that has occurred by setting the same device for multiple alarms and setting different [Alarm Range] for each alarm.
5)	[Comment]	[Basic Alarm Comment]	Set [Comment Group No.] and [Comment No.] to be used for the basic alarm comment. For [Comment No.], select whether to set comment Nos. consecutively or individually.
		[Preview Column No.]	This item becomes enabled when the language switching device is set in the [Environmental Setting] window ([Language Switching]). Set the column No. of the comment to be previewed in the alarm setting list in this dialog.
6)	[Alarm Hierarchy Setting] button		In the [Alarm Hierarchy Setting] dialog, set the hierarchy level of alarms. ☞ Page 2049 [Alarm Hierarchy Setting] dialog
7)	[Additional Setting] button		In the [Additional Setting] dialog, set the items displayed in the alarm setting list. ☞ Page 2050 [Additional Setting] dialog
8)	[Mail Send Detail Setting] button		Displays the [Mail Send Detail Setting] dialog to set details for an email to be sent. ☞ Page 2051 [Mail Send Detail Setting] dialog
9)	[Copy] button		In the [Copy Advanced User Alarm Observation] dialog, copy the contents in the alarm setting list. ☞ Page 2052 [Copy User Alarm Observation] dialog
10)	Import button		Imports the alarm monitoring setting file to overwrite the settings of the [Device] tab.
11)	Export button		Exports the setting in the [Device] tab to a Unicode text file or CSV file. You can edit the exported file in spreadsheet software and others. The edited file can be imported with GT Designer3. ☞ Page 2053 Format of the exported alarm setting list ☞ Page 3668 Precautions for using CSV file ☞ Page 3669 Precautions for using Unicode text file

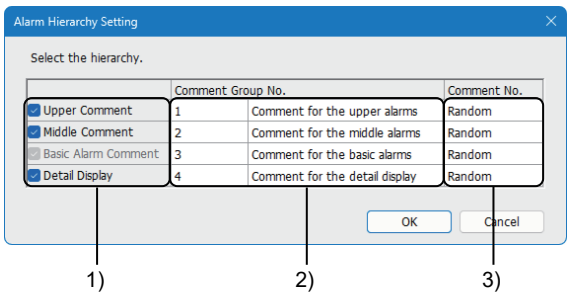
Item		Description
12)	Alarm setting list	Set devices to be monitored, comments to be displayed when an alarm occurs, and so on. ☞ Page 2055 Details of the alarm setting list

[Alarm Hierarchy Setting] dialog

Hierarchize the user alarms.

For the hierarchization, refer to the following.

☞ Page 2058 Alarm hierarchization

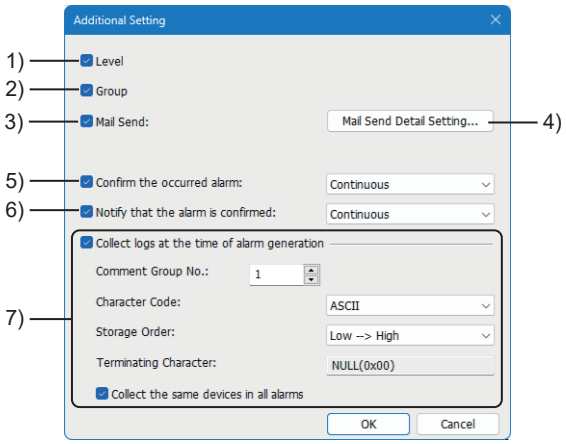


Item		Description
1)	[Hierarchy]	Select the hierarchy level to be added.
2)	[Comment Group No.]	Set the comment group No. of the comment. The set comment group name is displayed.
3)	[Comment No.]	Select whether to set comment Nos. consecutively or individually.

[Additional Setting] dialog

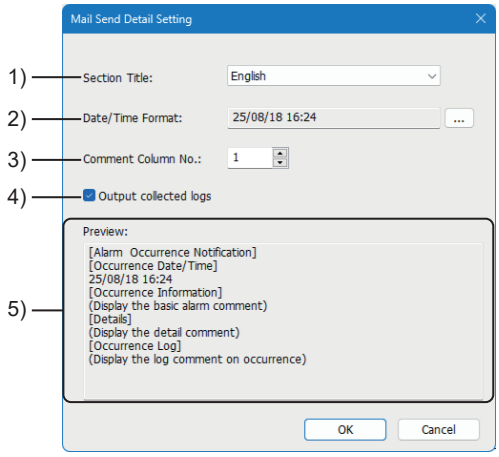
Adds items to the alarm setting list in the [User Alarm Observation] dialog ([Device] tab).

☞ Page 2048 [Device] tab



Item			Description
1)	[Level]		Adds a level setting.
2)	[Group]		Adds a group setting.
3)	[Mail Send]		Adds a mail send setting.
4)	[Mail Send Detail Setting] button		Displays the [Mail Send Detail Setting] dialog to set details for an email to be sent. ☞ Page 2051 [Mail Send Detail Setting] dialog
5)	[Confirm the occurred alarm]		Adds the setting of a device to change the status of an alarm to "Checked". Select whether to set devices sequentially or not.
6)	[Notify that the alarm is confirmed]		Adds the setting of a device to notify that the status of an alarm has been changed to "Checked". Select whether to set devices sequentially or not.
7)	[Collect logs at the time of alarm generation]	—	Adds the setting related to the log collection when an alarm event occurs. When a log collection device is specified separately from the device to be monitored, the value of the log collection device are collected when an alarm occurs. The collection device value can be displayed by embedding it in the comment. ☞ Page 2065 Log collection and embedding display in the comment When this item is selected, the following items are displayed.
		[Comment Group No.]	Set the comment group where the comment in which the collection device value is to be embedded is registered. Set the comment in which the collection device value is to be embedded in [Log Comment No. on Occurrence] in the alarm setting list.
		[Character Code]	This item is displayed when [String] is selected for [Data Type] in [Log Collection] in the alarm setting list. Select the character code of the log collection device.
		[Storage Order]	This item is displayed when [String] is selected for [Data Type] in [Log Collection] in the alarm setting list. Select the order for storing the string data in the log collection device.
		[Terminating Character]	This item is displayed when [String] is selected for [Data Type] in [Log Collection] in the alarm setting list. The setting is fixed to [NULL(0x00)].
		[Collect the same devices in all alarms]	Clicking the [OK] button with this item selected configures the same setting in [Log Collection] for all the alarms. To configure settings efficiently, select this item for items to be common to all the alarms and deselect this item for items to be different for each alarm.

[Mail Send Detail Setting] dialog

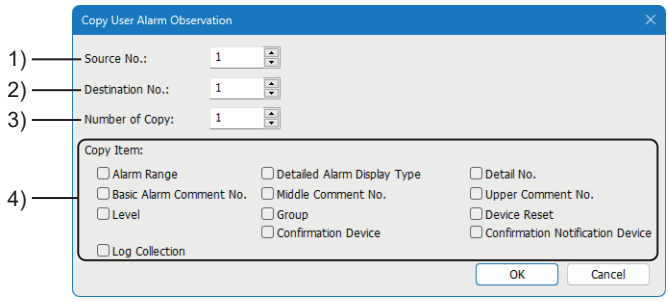


Item		Description
1)	[Section Title]	Select a language for the title.
2)	[Date/Time Format]	Set the date and time format. ☞ Page 3684 [Date/Time Setting] dialog (screen)
3)	[Comment Column No.]	Set the comment column number. The setting range is [1] to [30].
4)	[Output collected logs]	Outputs the log in the body of the email message.
5)	[Preview]	Displays the mail text.

[Copy User Alarm Observation] dialog

Copies the setting of the specified row to another in the alarm setting list in the [User Alarm Observation] dialog ([Device] tab).

☞ Page 2048 [Device] tab



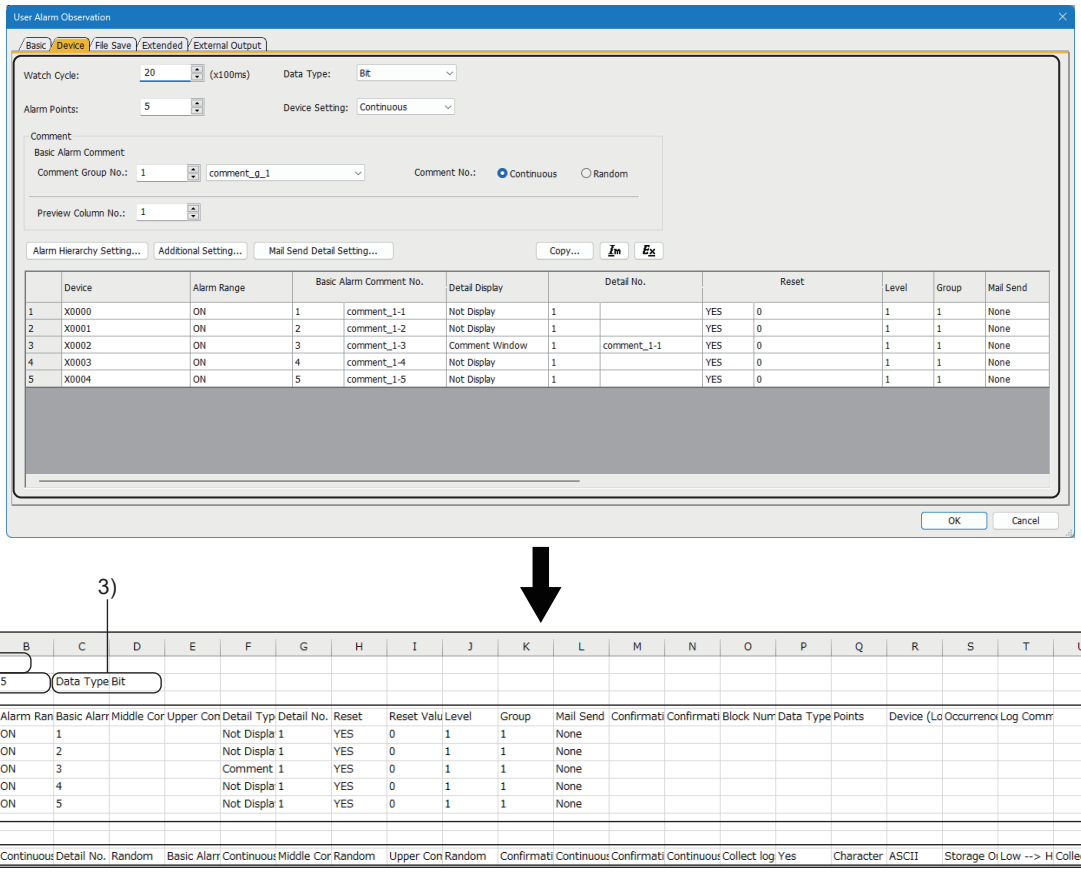
Item		Description
1)	[Source No.]	Set a line number to be copied.
2)	[Destination No.]	Set a line number where the copied contents are pasted.
3)	[Number of Copy]	Set the number of times the copied contents are pasted. Pastes the copied contents sequentially for the number of lines set in the [Number of Copy] from the line No. set in the [Source No.].
4)	[Copy Item]	Select items to be copied. Contents of the columns having the same names as the selected items are pasted to the column set in [Destination No.].

Format of the exported alarm setting list

The alarm setting list in the [User Alarm Observation] dialog ([Device] tab) is exported with the following format.

Ex.

When exporting the alarm setting list to a CSV file

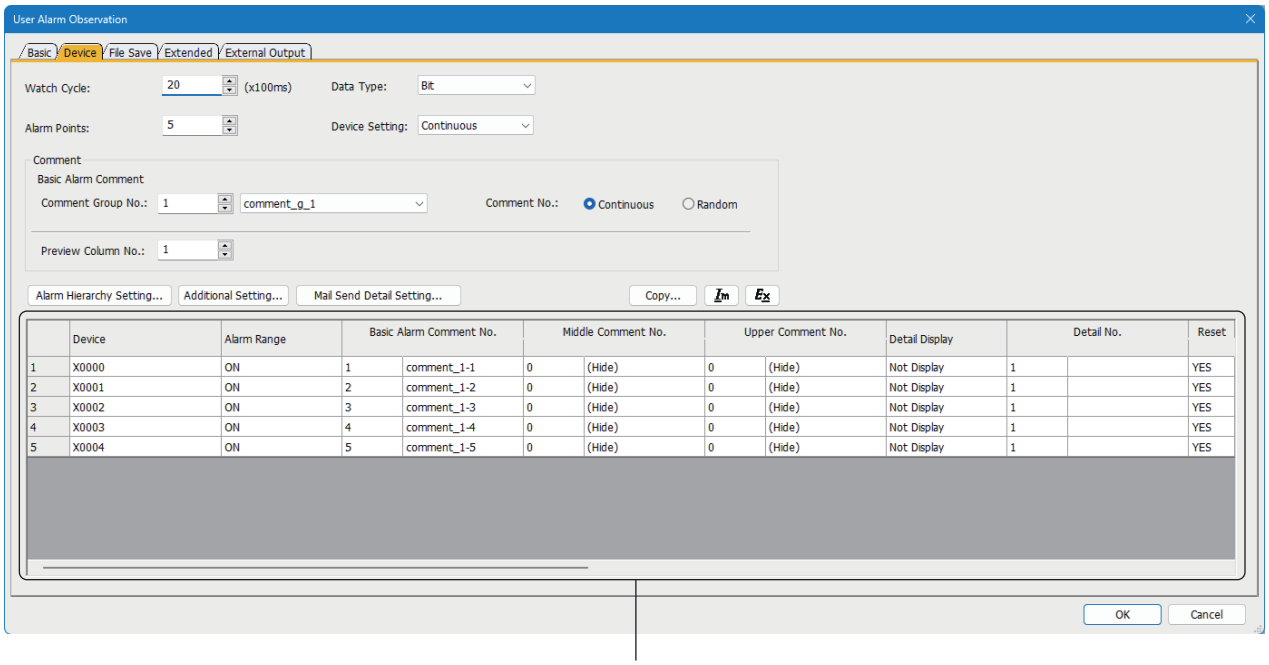


Item		Description
1)	[User Alarm]	Indicates that the file is the one in which the user alarm monitoring settings have been exported.
2)	[Alarm Points]	Setting value of [Alarm Points]
3)	[Data Type]	Setting value of [Data Type]
4)	Alarm setting list	Items and setting values in the alarm setting list

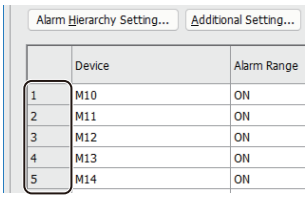
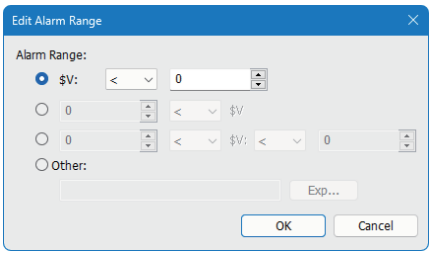
Item			Description
5)	Other settings	[Device No.]	Setting value of [Device Setting]
		[Detail No.]	Setting method of [Comment No.] for [Detail Display] in the [Alarm Hierarchy Setting] dialog
		[Basic Alarm Comment No.]	Setting method of [Comment No.] for [Basic Alarm Comment] in the [Alarm Hierarchy Setting] dialog
		[Middle Comment No.]	Setting method of [Comment No.] for [Middle Comment No.] in the [Alarm Hierarchy Setting] dialog
		[Upper Comment No.]	Setting method of [Comment No.] for [Upper Comment No.] in the [Alarm Hierarchy Setting] dialog
		[Confirmation Device]	Setting method of [Confirmation Device] set for [Confirm the occurred alarm] in the [Additional Setting] dialog
		[Confirmation Notification Device]	Setting method of [Confirmation Notification Device] set for [Notify that the alarm is confirmed] in the [Additional Setting] dialog
		[Collect logs at the time of alarm generation]	Whether [Collect logs at the time of alarm generation] is selected in the [Additional Setting] dialog • [Yes]: Selected • [No]: Deselected
		[Character Code]	Setting value of [Character Code] in the [Additional Setting] dialog
		[Storage Order]	Setting value of [Storage Order] in the [Additional Setting] dialog
		[Collect the same devices in all alarms]	Whether [Collect the same devices in all alarms] is selected in the [Additional Setting] dialog • [Yes]: Selected • [No]: Deselected

Details of the alarm setting list

The following shows the columns set in the alarm setting list in the [User Alarm Observation] dialog ([Device] tab).



Alarm setting list

Item	Description	
Monitored alarm number	The numbers displayed in the leftmost column of the alarm setting list. Monitoring alarm numbers can be used as a sort criterion for the alarm display (user). ☞ Page 2144 [Alarm Display(User)] dialog 	
[Device]	Set the devices to be monitored. ☞ Page 834 How to set devices, labels, and tags	
[Alarm Range]	Set the alarm occurrence condition. The setting item depends on the setting of [Data Type].	
	When [Data Type] is [Bit]	Select whether the alarm occurrence condition is when the bit device is on or off.
	When [Data Type] is other than [Bi]	Set the range expression to be the alarm occurrence condition. Click the [...] button to display the [Edit Alarm Range] dialog.  [$V] is the value read from the monitored device. When you select [Other], click the [Exp] button to display the [Edit Range] dialog and set the range expression. ☞ Page 1043 [Edit Range] dialog

Item	Description	
[Basic Alarm Comment No.] [Middle Comment No.] [Upper Comment No.]	Set the comment No. of the comment to be displayed at an alarm occurrence. For one alarm, set the comment No. of the comment used at each hierarchy level. To hide middle- and upper-level alarms, set [0]. For the alarm hierarchization, refer to the following. ☞ Page 2058 Alarm hierarchization	
	When configuring the following settings to comments displayed at an alarm occurrence, [No Message] is displayed at an alarm occurrence. • No comment is set ([0] is specified for the comment No.). • A comment is not registered in the set comment No. To prevent [No Message] from being displayed, register a space in the comment and specify the corresponding comment No.	
[Detail Display] [Detail No.]	Set the display method and content to be displayed in the detail display. ☞ Page 2062 Detail display destination When setting the [Detail Display] for each alarm, set [Comment No.] to [Random] in the [Detail Comment] of the [Alarm Hierarchy Setting] dialog. When [Comment No.] is set to [Continuous], the [Detail Display] of all alarms are set as same as the head alarm. ☞ Page 2049 [Alarm Hierarchy Setting] dialog	
	[Not Display]	The details are not displayed.
	[Comment Window]	The window for the detail display is set as the display destination of the details. The comment corresponding to the comment No. set in [Detail No.] is displayed.
	[Base Screen]	The base screen is set as the display destination of the details. Select the base screen where the details are to be displayed in [Detail No.].
	[Window Screen]	The window screen (overlap window 1) is set as the display destination of the details. Select the window screen where the details are to be displayed in [Detail No.].
[Reset]	Set the reset operation for the alarm.	
	[YES]	Enables the reset operation for the alarm. The bit device turns off the specified device. The word device turns the specified device value to the reset value. Set the reset value after selecting.
	[NO]	Disables the reset operation for the alarm.
[Level]	Set the level of alarms. The setting range is [1] to [255]. You can display the alarm with higher level preferentially or display the alarms with specific level only. ☞ Page 2064 Narrowing the display by level or group	
[Group]	Set the group of alarms. The setting range is [1] to [255]. You can display the alarms in order of the group or display the alarms with specific group only. ☞ Page 2064 Narrowing the display by level or group	
[Mail Send]	Set the mail sending method.	
	[None]	No mail is sent.
	[Occur]	Sends the date of occurrence or comment contents at an alarm occurrence (when a specified device condition is satisfied) by mail.
	[Restore]	Sends the date of restoration or comment contents at an alarm restoration (when a specified device condition is not satisfied) by mail.
	[Occur/Restore]	Sends the date or occurrence or restoration and comment contents at an alarm occurrence or alarm restoration by mail.
[Confirmation Device]	Set a bit device to change the status of an alarm to "Checked". ☞ Page 834 How to set devices, labels, and tags When the set device is turned on, the status of the corresponding alarm is changed to "Checked". The GOT monitors the set device in the cycle that is specified with [Watch Cycle].	
[Confirmation Notification Device]	Set a bit device to notify that the status of an alarm has been changed to "Checked". ☞ Page 834 How to set devices, labels, and tags When the status of the corresponding alarm is changed to "Checked", the set device turns on. You need to turn off the device after it is turned on.	

Item		Description
[Log Collection]	—	Specify a log collection device separately from the device to be monitored, and collect the value of the log collection device when an alarm occurs. The collected value can be displayed by embedding it in the comment. The maximum number of log collection devices to be set is as follows. • 512 per project • 16 per alarm The log collection device can be set when [Log on Occurrence] is set to [Valid]. For information on how to set the comment in which the collected value is to be embedded, refer to the following. ☞ Page 2065 Log collection and embedding display in the comment
	[Block Number]	Unit for setting the log collection device for each alarm For each block, set the log collection device, data type, and number of points.
	[Data Type]	Data type of the log collection device
	[Points]	Set the number of devices to be specified as the log collection device. When two or more devices are specified, set the log collection device for each row.
	[Device]	Set the log collection device. ☞ Page 834 How to set devices, labels, and tags
	[Log on Occurrence]	When [Valid] is selected, log collection settings for each alarm are enabled.
	[Log Comment No. on Occurrence]	Set the comment to be displayed with the value of the log collection device embedded when an alarm event occurs. Set the comment group in the [Additional Setting] dialog.

Alarm hierarchization

☞ Page 2059 Narrowing the alarm location
☞ Page 2059 Operation that can be executed to multiple alarms in a batch
☞ Page 2061 Operation that cannot be executed to multiple alarms in a batch

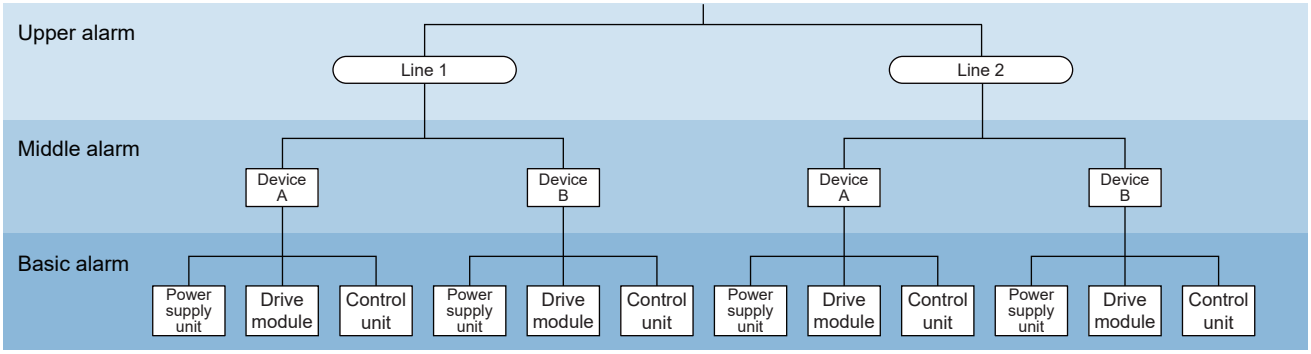
Hierarchizing alarms enables narrowing down alarm locations and batch processing for multiple alarms.

The following hierarchy levels are available and referred to as the alarm hierarchy.

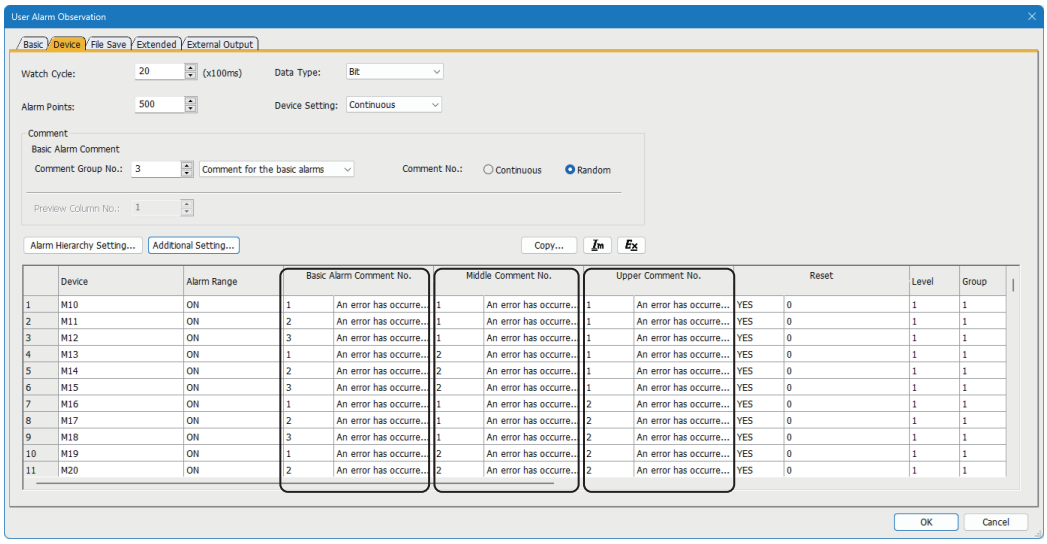
Alarm hierarchy	Description
Upper-level alarm	For upper-level alarms, the comment set as the upper comment is displayed.
Middle-level alarm	For middle-level alarms, the comment set as the middle comment is displayed.
Basic alarm	For basic alarms, the comment set as the basic alarm comment is displayed.

The following shows the settings and operation examples with alarms hierarchized as follows.

Ex.

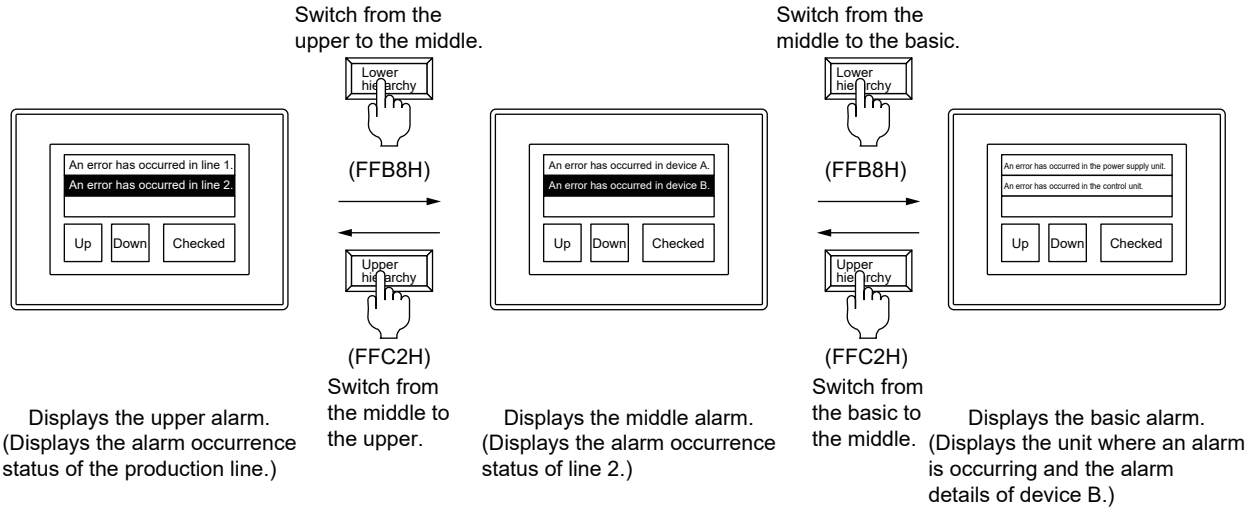


Classify the comment for each alarm level: upper-level, middle-level, and basic alarm, and configure the settings in the [Device] tab of the [User Alarm Observation] dialog.



■Narrowing the alarm location

The alarm can be displayed from the overview to the detail.



Displays the upper alarm. (Displays the alarm occurrence status of the production line.)

Switch from the middle to the upper.

Displays the middle alarm. (Displays the alarm occurrence status of line 2.)

Switch from the basic to the middle.

Displays the basic alarm. (Displays the unit where an alarm is occurring and the alarm details of device B.)

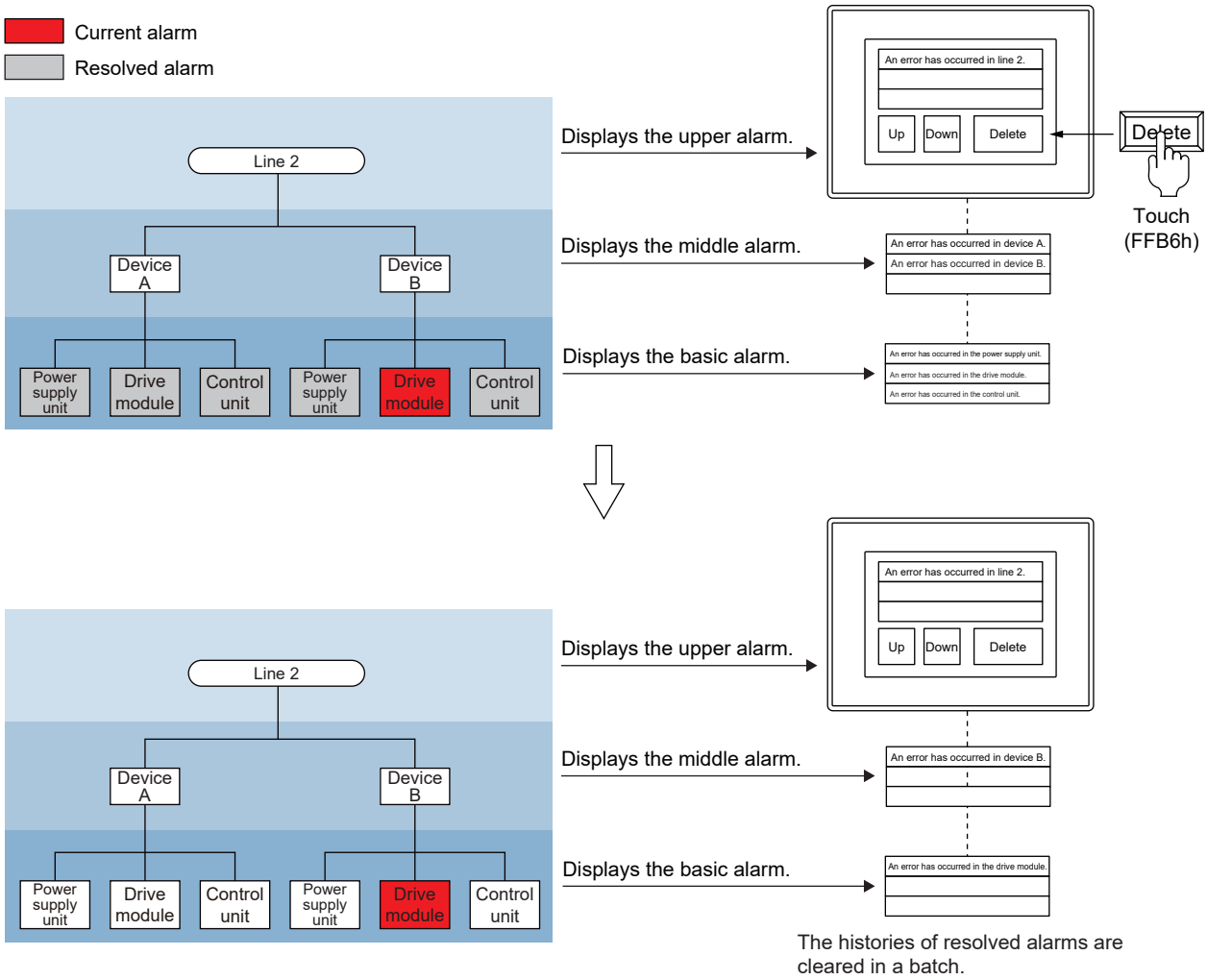
■Operation that can be executed to multiple alarms in a batch

The following operations can be executed in a batch for multiple alarms at lower hierarchy levels.

Operation	Description
Check	Records the date and time when an alarm occurrence has been confirmed.
Deleting a project	Deletes the alarm history that has been restored.

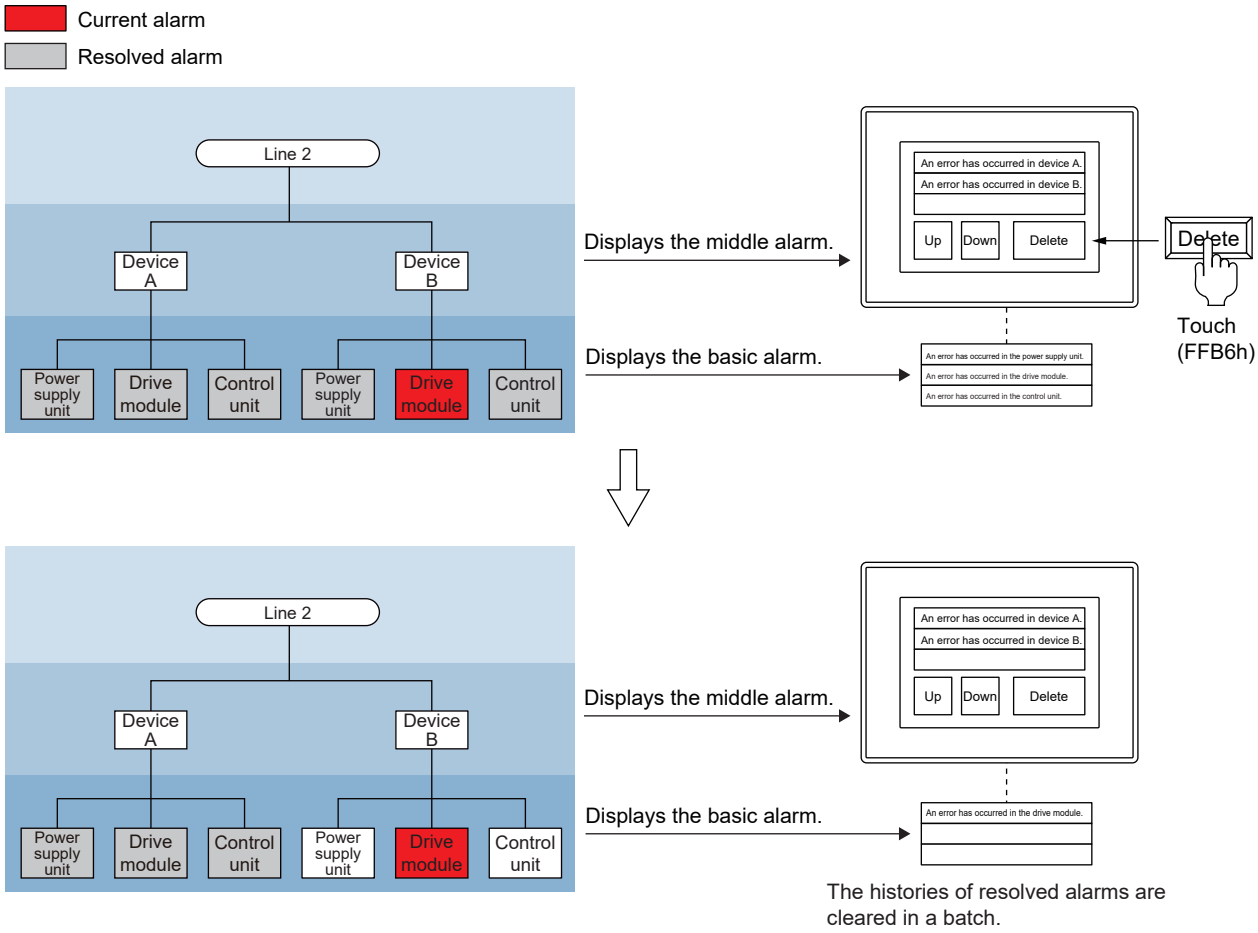
Ex.

Executing the check (FFB4h) or the deletion (FFB6h) in the upper-level alarms executes the same operation for the middle-level alarms and the basic alarms under the upper-level alarms.



Ex.

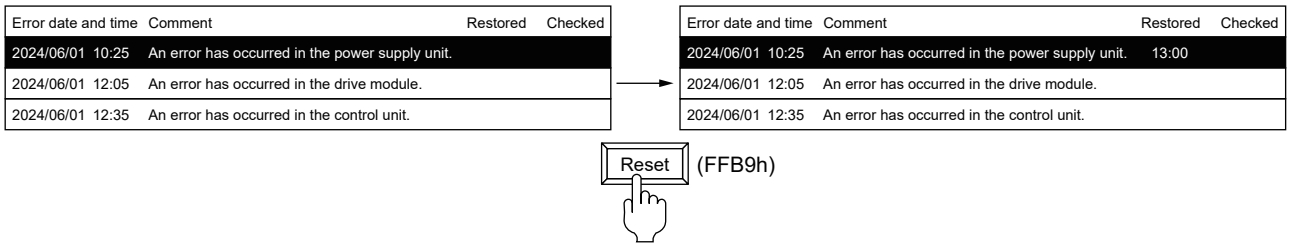
Executing the check (FFB4h) or the deletion (FFB6h) in the middle-level alarms executes the same operation for the basic alarms under the middle-level alarms.



■Operation that cannot be executed to multiple alarms in a batch

The operation to eliminate alarms (turning on to off or entering the reset value) manually by the reset (FFB9h) cannot be executed to multiple alarms in a batch.

Execute the resetting in the basic alarm display.



Execute the reset operation for each alarm.

Detail display destination

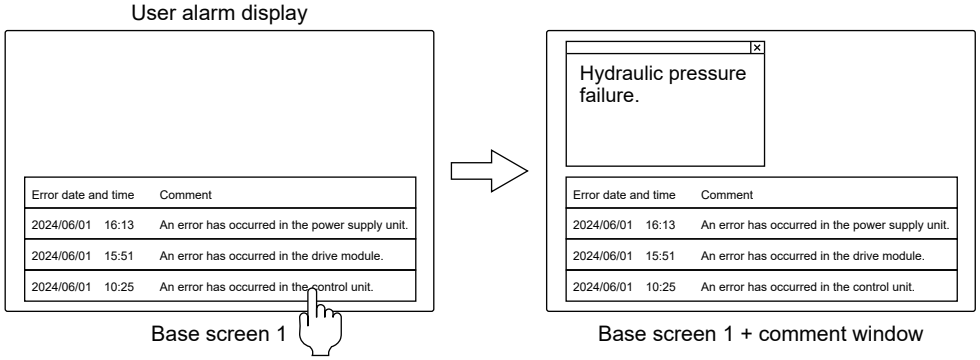
In the basic alarm, the detailed information such as the cause or measure of the alarm in the comment window, the base screen, and the window screen.

☞ Page 2062 Comment window
☞ Page 2063 Base screen
☞ Page 2063 Window screen

■Comment window

Displays a comment a user registers.

In the comment window, more detailed comments such as the measures for alarms are displayed.

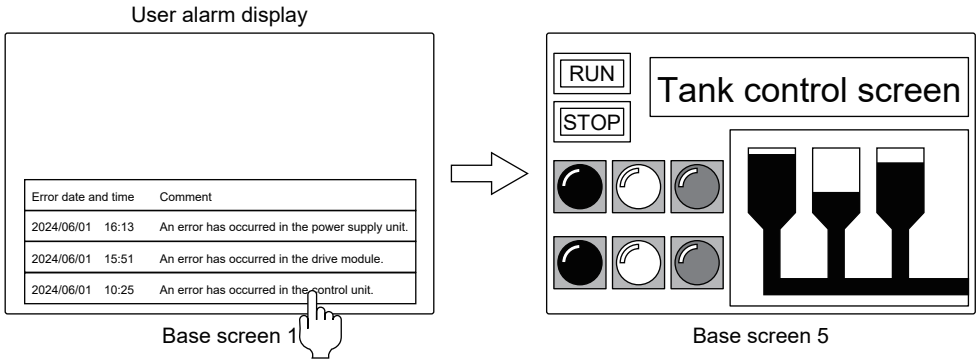


The following table lists the specifications of the comment window.

Item	Specifications
Number of characters that can be displayed in a comment window	Up to 418 one-byte characters (11 lines of 38 characters) are displayed. Up to 209 two-byte characters (11 lines of 19 characters) are displayed.
Display position of the comment window	A comment window is displayed on the base screen. The window can be moved and closed in the same way that operates window screens.
Display of comments	Text size is fixed to one time high and one time wide. Regardless of the settings made when comments are registered, a blink and HQ characters are not displayed.
Display of comment rows	From the top left of the comment window, the registered comments are displayed. When a comment is longer than the display range of the comment window, the comment is wrapped around to be displayed. To display the comment in the center of the comment window, adjust the position of the comment by inserting line feeds.

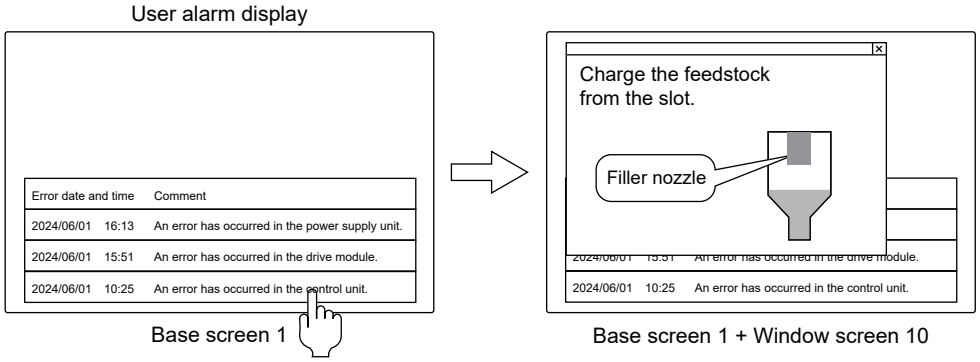
■Base screen

Displays the specified base screen.



■Window screen

Displays the specified window screen (overlap window 1).



Narrowing the display by level or group

Categorizing alarms by level or group in advance allows you to narrow the alarms to be displayed.

To narrow the alarms to be displayed, set the switching device for the following alarm display functions.

Function	Reference for setting
Alarm popup display	☞ Page 2124 [Extended] tab
Alarm display (user)	☞ Page 2155 [Extended] tab

When a value is stored in the device for switching the level or group, only the alarms categorized in the same level or group are displayed.

Displaying alarms in chronological order.

Error date and time	Comment	Level	Group
2024/06/01 16:51	Hydraulic pressure failure	1	1
2024/06/01 14:25	Cooling water hydraulic pressure drop	2	1
2024/06/01 12:25	Supply oil	1	2
2024/06/01 09:40	The amount of the remaining feedstock is low.	1	2
2024/06/01 07:35	Supply fuel	2	2

Level switching device (D32) 0

Group switching device (D33) 0

Only the alarms in level 1 are displayed.

Error date and time	Comment	Level	Group
2024/06/01 16:51	Hydraulic pressure failure	1	1
2024/06/01 12:25	Supply oil	1	2
2024/06/01 09:40	The amount of the remaining feedstock is low.	1	2

Level switching device (D32) 1

Group switching device (D33) 0

Only the alarms in group 2 are displayed.

Error date and time	Comment	Level	Group
2024/06/01 12:25	Supply oil	1	2
2024/06/01 09:40	The amount of the remaining feedstock is low.	1	2

Level switching device (D32) 1

Group switching device (D33) 2

Log collection and embedding display in the comment

☞ Page 2065 Format specifier
☞ Page 2067 Communication specifications of log collection

In the user alarm monitoring, the value of the log collection device is collected when an alarm is detected, and displayed by embedding it in the comment.

Set the log collection device separately from the device to be monitored for alarm detection.

Configure the log collection settings in the alarm setting list in the [Device] tab.

☞ Page 2055 Details of the alarm setting list

Ex.

Display the temperature as the log on occurrence when a temperature anomaly alarm event is detected.

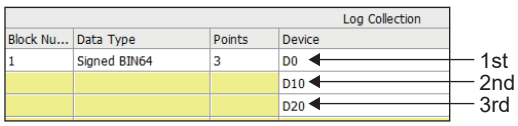
■Format specifier

To embed the value of the log collection device, describe the following format specifier in the comment.

Format specifier	Comment description example
%{Output order}[Flag][Field width][.Precision][Type specifier]	Format specifier Temperature: %{1}-5.1d℃ Type specifier .Precision Field width Flag {Output order}

Always describe % and [Type specifier].

The following shows each element of the format specifier.

Item	Description
Output order	Specify which device (nth device) of the set collection devices is the output target. Enclose the value to be set in { }. Regardless of the data type, each device is counted as one in the output order. Example) When [Data Type] is [Signed BIN64] and [Points] is [3] Although D20 is the 9th device, its output order is 3rd.  Multiple collection devices can be described in a comment. When the output order is not specified, the log collection devices are output in the order described in the comment. For parts where the output order is specified, the device with the specified output order is output. Example) When the following five devices are set as log collection devices • 1st: D0 • 2nd: D1 • 3rd: D2 • 4th: D3 • 5th: D4 The following shows the relationship between the format specifier and the device to be output. Output order not specified %d %d %d %d %d 5th: D4 4th: D3 3rd: D2 2nd: D1 1st: D0 Output order specified %{5}d %d %d %d %d 5th: D4 4th: D3 3rd: D2 2nd: D1 5th: D4

Item	Description	
Flag	-	Left-aligns the output value when a field width is specified.
	+	Adds a sign before the numerical value to be output.
	Space	Adds a space before the positive value to be output instead of the + sign. Use this item to match the digits of positive values to those of negative values with the - signs.
	0	Pads spaces in the output value with zero when a field width is specified.
	#	Adds [0] (zero), [0x], or [0X] as a prefix when an octal or hexadecimal value (o, x, or X) is output. Adds the decimal point without fail when a real number (f, e, E, g, or G) is output. For g and G, unnecessary zeros after the decimal point are output in addition to the above.
Field width	Specify the number of characters to be displayed. The setting range is [0] to [32].	
Precision	Set the number of decimal points or the number of significant digits. The setting range is [0] to [30].	
Type specifier	c	Outputs a single character.
	s	Outputs character strings.
	d	Outputs integers in decimal numbers.
	lld	Outputs 64-bit integers in decimal numbers.
	u	Outputs unsigned integers in decimal numbers.
	llu	Outputs 64-bit unsigned integers in decimal numbers.
	o	Outputs integers in octal numbers.
	x X	Outputs integers in hexadecimal numbers. When the type specifier is X, alphabets are output in uppercase.
	llx llX	Outputs 64-bit integers in hexadecimal numbers. When the type specifier is X, alphabets are output in uppercase.
	f	Outputs real numbers. Double-precision real numbers are supported.
	e E	Outputs real numbers in scientific notation. When the type specifier is E, alphabets are output in uppercase. Example 1) For %e, "1.2345e-001" Example 2) For %E, "1.2345E-001" The exponents are displayed with three digits. Double-precision real numbers are supported.
	g G	Outputs real numbers in an optimal form. When the type specifier is G, alphabets are output in uppercase. Values are output in exponents when the exponent is smaller than -4 or equal to or larger than the precision, and they are output in real numbers in other cases. Zeros at the end of the fractional portion are eliminated. Double-precision real numbers are supported.
	%%	Outputs the character "%". (Specifying the corresponding device is not required.)
	T	Outputs a decimal point in the digit specified by the precision for integers.
	llT	Outputs a decimal point in the digit specified by the precision for 64-bit integers.
	K	Outputs a decimal point in the digit specified by the precision for unsigned integers.
	llK	Outputs a decimal point in the digit specified by the precision for 64-bit unsigned integers.

■Examples of describing format specifiers with comments

The following table lists examples of describing format specifiers with comments and the display of the collected logs.

Comment description example	Log collection device and collected value		Display of the collected log
Temperature: %{1}-4.1d°C	Number of log collection devices: 1 GD1000: 123		Temperature: 123°C
Remaining amount: %{2}04.0d/%{1}04.0d L	Number of log collection devices: 2		Remaining amount: 80/950 L
	1st device	GD2000: 950	
	2nd device	GD2001: 80	
Progress rate: %{1}05.2f%	Number of log collection devices: 1 GD3000: 35.70		Progress rate: 35.70%

■Communication specifications of log collection

Item	Specifications
When obtaining the value of the log collection device failed	No retry will be performed. In the format specifier field, "-" (hyphen) is displayed.
When the specified cycle ends before the collection of the device value is completed	Alarm monitoring is restarted after the collection of the device value is completed. If the alarm [Watch Cycle] is short, it may not be possible to collect alarms according to the specified cycle.

Precautions

When a comment including a format specifier is displayed on the alarm display (user) or output to the alarm log file, the output string consists of up to 1024 characters.

The 1025th and subsequent characters are not output.

60.8.3 [File Save] tab

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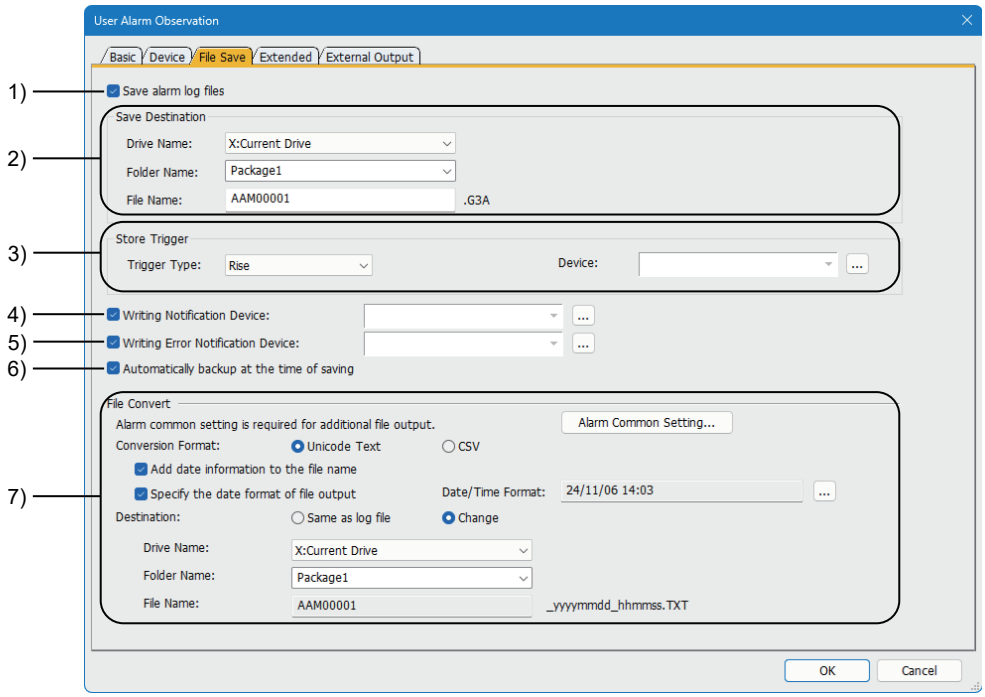
Set the following items to save the alarm histories stored in the buffering area in the data storage.



Item			Description
1)	[Save alarm log files]		Writes the history of user alarms stored in the buffering area to the data storage as an alarm log file when [Historical] or [Cumulative] is selected for [Collection Mode] on the [Basic] tab. Into data storage, the log file is written as a binary file (*.G3A).
2)	[Save Destination]	[Drive Name]	Select a destination drive. For the available drives by GOT model, refer to the following. ☞ Page 81 Drive configuration and capacity of the GOT
		[Folder Name]	Set the folder name of the destination to save a file. The default is set to the folder name that is specified with [Package Folder Name] in the [Type Setting] dialog. Alphanumeric characters and following symbols are available for the folder name. #$%&'()+-.=@[]^_{}~\ For the restrictions on the folder name used in the GOT, refer to the following. ☞ Page 84 Restrictions for folder names and file names used in GOT
		[File Name]	Set the file name of the destination to save a file. As the default, AAM***** is set for the file name. (* indicates alarm IDs.) Alphanumeric characters and following symbols are available for the file name. #$%&'()+-.=@[]^_{}~ For the restrictions of the file name used in the GOT, refer to the following. ☞ Page 84 Restrictions for folder names and file names used in GOT
3)	[Store Trigger]	[Trigger Type]	Select the timing when the user alarm stored in the buffering area is stored to the data storage. When setting [Sampling], [ON Sampling], or [OFF Sampling], set a cycle. The setting range is [1] minute to [1440] minutes.
		[Device]	Set a device used as a store trigger. ☞ Page 834 How to set devices, labels, and tags
4)	[Writing Notification Device]		Set a device which notifies that the alarm log file is in the process of being written. ☞ Page 834 How to set devices, labels, and tags
5)	[Writing Error Notification Device]		Set a device which notifies an error when alarm log file writing fails. ☞ Page 834 How to set devices, labels, and tags
6)	[Automatically backup at the time of saving]		Saves the alarm log file created immediately before it is saved as a backup file (*.BAK). If the name of the alarm log file is AAM00001.G3A, the name of the backup file is AAM00001.bak. The stored backup file is not displayed in the utility of the GOT.

Item			Description
7)	[File Convert]	—	Set the following items to convert files. To use file conversion, the setting of [Alarm Common Setting] is required. Click the [Alarm Common Setting] button and set the [Alarm Common Setting] dialog.
		[Conversion Format]	Set the file format applied after the conversion.
		[Add date information to the file name]	Date information is added to the name of the alarm log file.
		[Specify the date format of file output]	Click the [...] button, and set the date/time formats in the [Date/Time Setting] dialog. ☞ Page 3684 [Date/Time Setting] dialog (screen)
		[Destination]	Select the save destination folder for a converted file. When you select [Change], set [Drive Name] and [Folder Name]. The setting method is the same as that of [Destination] for the alarm log file. [File Name] is the same as that of the alarm log file. The file is saved as (*.TXT) if the conversion format is [Unicode Text] and (*.CSV) if [CSV].

60.8.4 [Extended] tab

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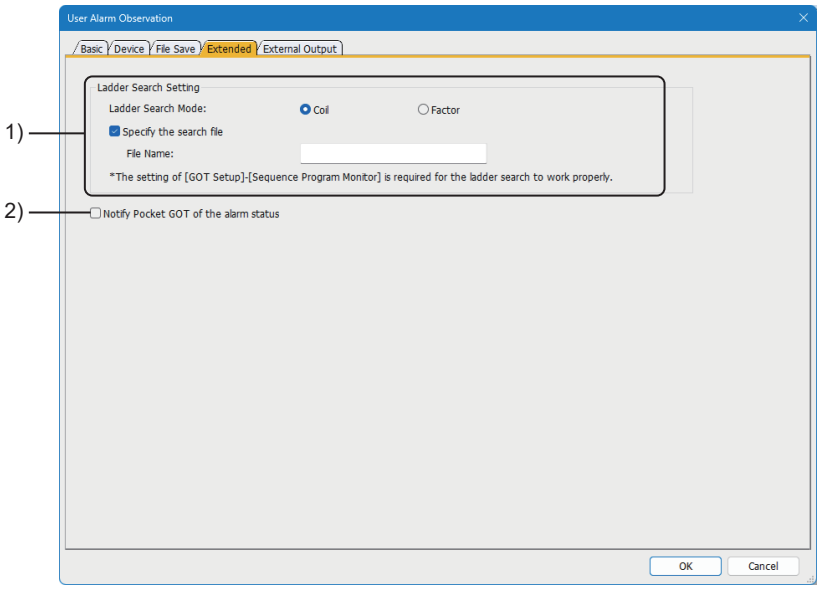
Select whether to notify alarms to Pocket GOT.



Item			Description
1)	[Ladder Search Setting]	[Ladder Search Mode]	Select a ladder searching method.
		[Specify the search file]	Select this item to specify the name of the program file to be searched for. A file whose name is up to 60 characters long can be searched for. A file whose name includes both two-byte and one-byte characters can also be searched for. A file whose name includes one-byte spaces or any symbol below cannot be searched for. (" \ / ; : ? < > ¦ + = [ ] . ,)
2)	[Notify Pocket GOT of the alarm status]		When a user alarm occurs, it is notified to Pocket GOT. When this item is selected in the user alarm monitoring setting, notification is enabled for the alarm ID. In one project, notification is available for up to 40 alarm IDs in ascending order. Notification will not be issued for alarm IDs 41 and later. Up to five latest alarms in the history are notified in one alarm ID. When you select this item, configure the settings in Pocket GOT to obtain alarm information. For details, refer to the following manual. 📖Pocket GOT Mobile App Operating Manual

60.8.5 [External Output] tab

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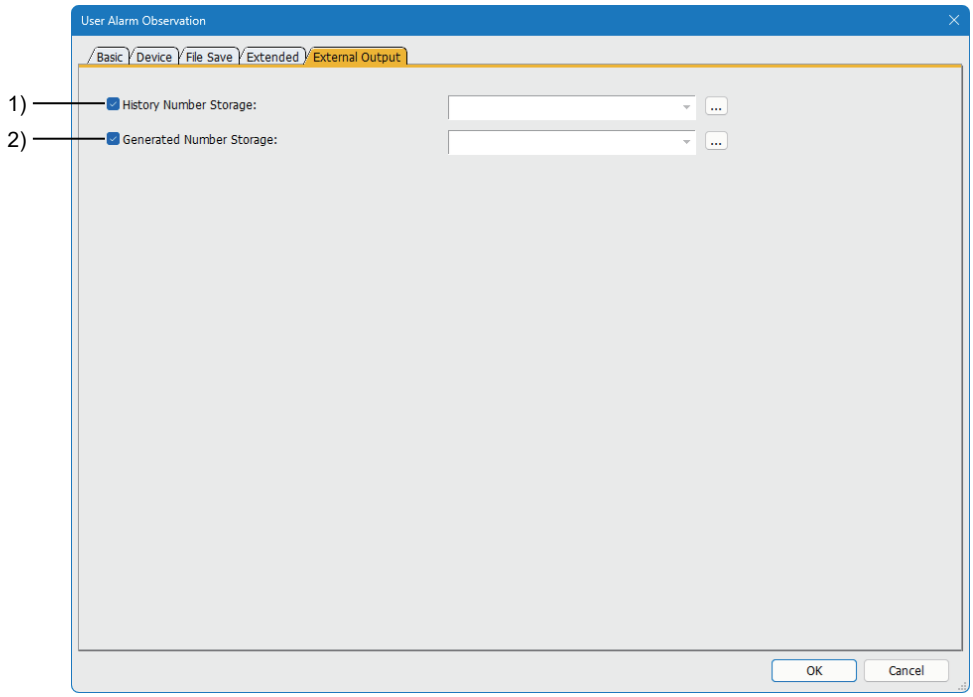
Set the following items to save the number of user alarms and the occurrences.



Item		Description
1)	[History Number Storage]	Select this item to store the number of the user alarm histories in the word device. All the errors in the status of "Occurred", "Checked", and "Restored" are included in the number of the histories to be stored. ☞ Page 834 How to set devices, labels, and tags
2)	[Generated Number Storage]	Select this item to store the number of user alarms that are currently occurring in the word device. ☞ Page 834 How to set devices, labels, and tags

60.9 [Alarm File Conversion] dialog

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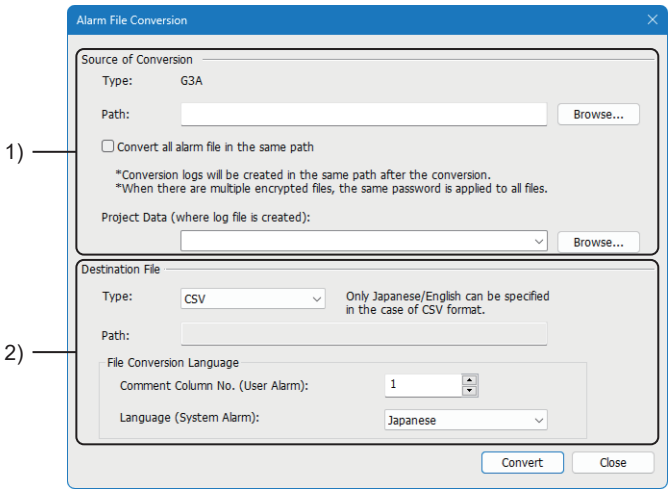
The file format of the alarm log file is converted.

Select [Tools] → [Resource Data Conversion] → [Alarm File] from the menu to display the following dialog.

When the information protection function is enabled, a dialog to enter a password is displayed during file conversion.

☞ Page 3065 Protecting the files in the GOT (Information protection function)



Item				Description
1)	[Source of Conversion]	[Type]		The conversion source file type.
		[Path]		Specify a path of the conversion source file.
		[Convert all alarm file in the same path]		Select this item to set all binary files (*.G3A) on the same path to the conversion target. A conversion log is created to a destination with the set path automatically. You can check the full path of the converted files, the conversion results or the creation date of files with the conversion log.
		[Project Data (where log file is created)]		Select the project data used for generating the alarm log file for the conversion. If project security is set for the selected project data, user authentication is performed. ☞ Page 2972 Protecting a project by registering users (Project security)
2)	[Destination File]	[Type]		Select a file type of a file to be created after the conversion.
		[Path]		A path for a destination where a destination file is saved. The same path as the one of the conversion source file is displayed.
		[File Conversion Language]	[Comment Column No. (User Alarm)]	Select the comment column No. when the conversion source file is a user alarm.
			[Language (System Alarm)]	Select the language when the conversion source file is a system alarm.

60.10 Relevant settings

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Set the relevant settings other than the specific settings for the user alarm monitoring as required.
The following shows the functions that are available by configuring the relevant settings.

60.10.1 GOT environmental settings (System information)

Select [Common] → [GOT Environmental Setting] → [System Information] from the menu to display the [Environmental Setting] dialog.
☞ Page 576 Setting a device which controls the GOT operations or notifies the GOT status ([System Information])

Function	Setting item
Notifying the status of the access to the drive*1	[System Signal 2-2] System signal 2-2.b0, b1
Notifying that the free space in the drive is insufficient*1	[System Signal 2-2] System signal 2-2.b4, b5
Notifying the failure of the access to the drive*1	[System Signal 2-2] System signal 2-2.b7, b8
Turning off the Key Input signal	[System Signal 1-1] System signal 1-1.b3
Disabling all the key inputs	[System Signal 1-1] System signal 1-1.b9
Notifying the key codes set to the input keys when the keys are input to ASCII input, touch switch, or other objects.	[Key Code Input]
Notifying a key input	[System Signal 2-1] System signal 2-1.b3

*1 A signal which notifies the full during the access exists in the user alarm monitoring. The signal differs from that of the Drive status notification signal.
For details, refer to the following.
☞ Page 2073 Differences between the notification devices used for the user alarm monitoring and the system information

Differences between the notification devices used for the user alarm monitoring and the system information

The following shows the differences between the notification devices.

Notification details	Difference between the notification devices	
	User alarm monitoring	System information
Drive full notification	Notification device: Full Notification Signal Device Turns on when the number of log files reaches [Stored Number] set in the [Basic] tab.	Notification device: System signal 2-2.b4, b5 Turns on when the data storage is full.
Writing to drive notification	Notification device: Writing Notification Device Turns on while the user alarm is being written to the data storage.	Notification device: System signal 2-2.b0, b1 Turns on while any data is being written to the data storage.
Writing to drive error notification	Notification device: Writing Error Notification Device Notifies that an error has occurred due to any of the following causes. • The alarm log file in the data storage is not created in the project in the GOT. • No data storage is installed. • The SD card cover is open.	Notification device: System signal 2-2.b7, b8 Notifies that an error has occurred due to any of the following causes. • No data storage is installed. • The SD card cover is open.

60.10.2 GOT internal device

☞ Page 3581 GOT special register (GS)

Function	Setting item
Saving the data in the buffering area to data storage*1	GS520.b0
Changing the character code to Unicode when a binary file is converted to CSV format	GS522.b2

*1 Only when [Save alarm log files] is selected in the [File Save] tab of the [User Alarm Observation], the data is saved. When [Save alarm log files] is not selected, the user alarm is not saved.
☞ Page 2068 [File Save] tab

61 Collecting alarms by monitoring the system

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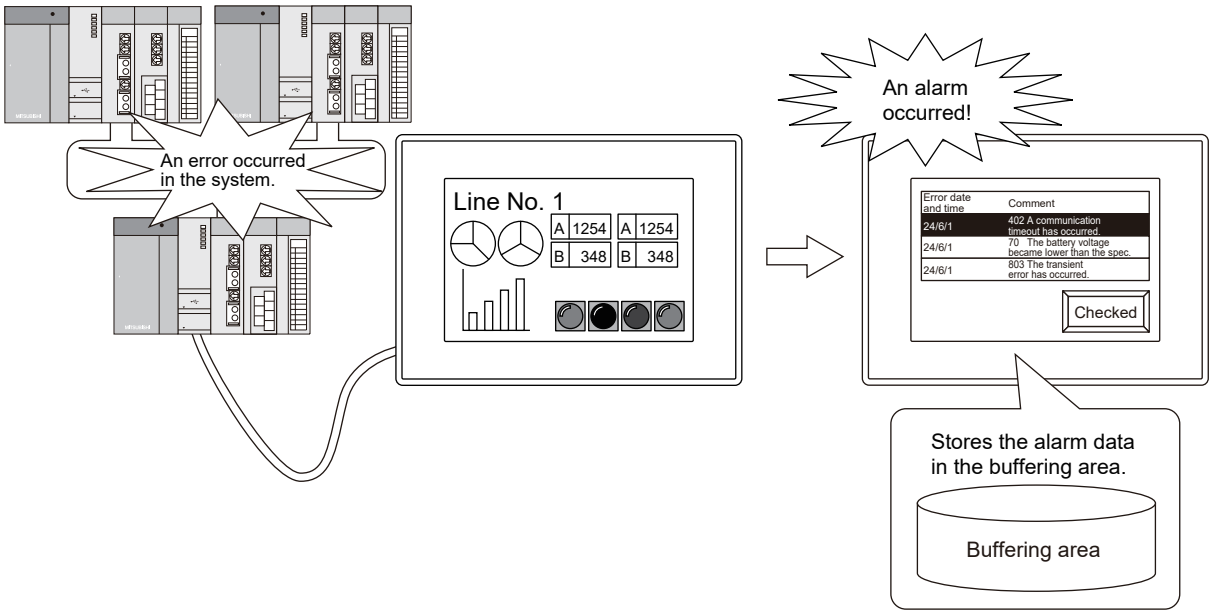
☞ Page 2076 Overview of system alarm monitoring
☞ Page 2077 Specifications of the system alarm monitoring
☞ Page 2084 Procedure for setting the system alarm monitoring
☞ Page 2085 Recovery from alarms
☞ Page 2088 Deleting alarm data
☞ Page 2089 Power failure backup by storing the user alarm
☞ Page 2093 Converting alarm log files
☞ Page 2097 [System Alarm Observation] dialog
☞ Page 2103 Relevant settings

61.1 Overview of system alarm monitoring

The system alarm monitoring logs errors occurred in the GOT, controller, or network as system alarm events in the GOT built-in memory.



This chapter describes the system alarm monitoring, which collects and stores alarms held by the system.
To display the collected alarms on the screen of the GOT, configure the settings for the alarm display (system) or the alarm popup display in addition to the settings for the system alarm monitoring.

☞ Page 1909 Configuring the settings for collecting the GOT operation history ([Operation Log])
☞ Page 2075 Collecting alarms by monitoring the system

61.2 Specifications of the system alarm monitoring

GT37 SoftGOT3000

☞ Page 2077 Target for the system alarm monitoring
☞ Page 2078 Alarm collecting procedure and alarm history collecting method
☞ Page 2083 Size and notification of the buffering area

61.2.1 Target for the system alarm monitoring

The following items can be monitored by the system alarm monitoring.

Monitoring target	Description
CPU error	Indicates an error of a controller.
GOT error	Indicates an error of the GOT. A GOT Mobile error, which occurs on a GOT Mobile function client, is categorized as a GOT error.
Network error	Indicates an error of the communication unit mounted on the GOT.

Set the type of system alarm to be monitored in the [System Alarm Observation] dialog.

☞ Page 2097 [System Alarm Observation] dialog

Precautions

■Controllers for which system alarms are not displayed on the GOT

The CPU errors which occur in the following controllers cannot be displayed on the GOT system alarm display (system). Check the errors with the software for the controllers.

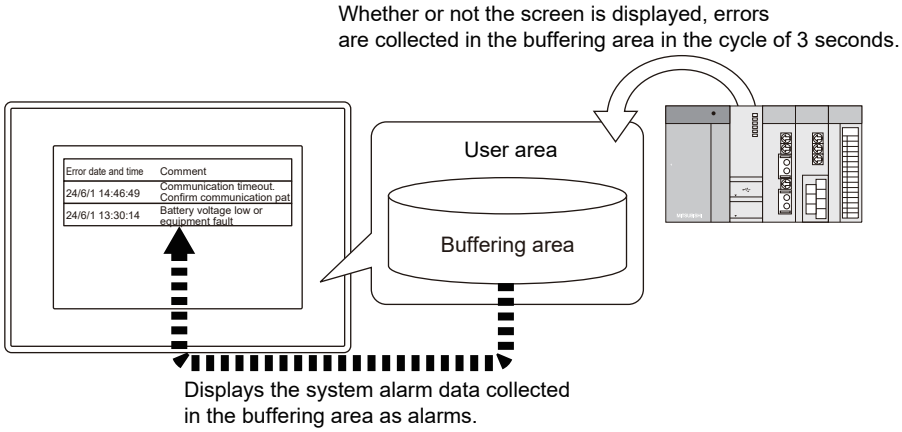
- SIEMENS PLC CPU
- Inverter

61.2.2 Alarm collecting procedure and alarm history collecting method

☞ Page 2078 Alarm collecting procedure
☞ Page 2079 Alarm history collecting method and information to be collected
☞ Page 2081 Example of displaying alarms for each history collecting method

Alarm collecting procedure

The speed at which alarms are collected depends on the target.

Monitoring target	Description
CPU error Network error	CPU errors and network errors are collected in 3-second cycles in the buffering area in the user area of the GOT, regardless of the screen being displayed. The buffering area stores the collected system alarms as histories temporarily, and displays them on the GOT as alarms. 
GOT error	GOT errors are collected in the buffering area in the user area when alarms occur.

For information on how to delete the data in the buffering area, refer to the following.

☞ Page 2088 Deleting alarm data

The data to be stored in the buffering area of the user area differs depending on the history collecting method.

Alarm history collecting method and information to be collected

The following shows the alarm history collecting method.

Alarm history collecting method	Description
Historical mode	Collects the history of alarm occurrences. An event is added to the history every time an alarm occurs.
Current alarm only	Collects the alarms that are currently occurring only. The history of system alarms that have been restored is not stored.

For information on the setting of the alarm history collecting method, refer to the following.

☞ Page 2098 [Basic] tab

Depending on the collecting method, the types of information collected differs.

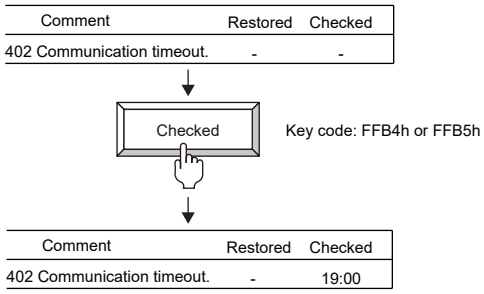
Ex.

Alarm display (system)

Error date and time	Comment	Alarm status	Restored	Checked
24/06/01 20:00	402 A communication timeout. Confirm communicat	-	-	-
24/06/01 18:30	70 Battery voltage low or equipment fault	Checked	-	18:50
24/06/01 16:10	803 Transient error	Checked	16:30	16:20
1)	2)	3)	4)	5)

○: Collected

—: Not collected

Displayed information		[Collection Mode] setting		Description
		[Historical]	[Only current alarm]	
1)	Error date and time	○	○	Displays the date and time when an alarm occurred.
2)	Message	○	○	Displays an error code and message when an alarm occurs. For error codes and the corrective actions, refer to the following. GOT3000 Series User's Manual (Utility & Maintenance Functions) Messages registered in the GOT beforehand are displayed as alarm messages. When the collection of detailed information is enabled, information for channels and other items in addition to error codes and error messages is displayed. ☞ Page 2080 Collecting detailed information
3)	Alarm status	○	○	Displays the alarm status that is currently displayed. • Occurred: The alarm has occurred. (The occurrence of the alarm has not been checked.) • Checked: The occurrence of the alarm has been checked. • Restored: The monitor target already recovered from the alarm.
4)	Restored date and time	○	—	Displays the date and time when an alarm is restored.
5)	Checked date and time	○	○	Displays the date and time of when the occurrence of an alarm was checked. Check the occurrence of the alarm with a touch switch for the alarm check. ☞ Page 2141 Key code switches for operating alarm displays 

■Collecting detailed information

Information to specify the point of alarm occurrence can be added to the information collected for the system alarm.

To add information, select [Get detailed alarm information] in the [System Alarm Observation] dialog ([Basic] tab).

☞ Page 2098 [Basic] tab

The following shows whether the data is collected depending on the setting.

○: Collected

—: Not collected

Information to be collected	[Get detailed alarm information] setting		Remarks
	Deselected	Selected	
Error code	○	○	—
Error date and time			—
Restored date and time			—
Checked date and time			—
Channel	—	○	—
Network No.			—
Station No.			—
CPU No.			—
Device			—
Screen No.			—
Definition screen No.			Screen number on which an object having an error is actually placed when the set overlay screen function is used.
Object ID			—
Function name			—
Drive name			—
MAC address			MAC address of the controller found to have a duplicate IP address. Collected when system alarm 425 occurs.

The information collected for each alarm differs. Unrelated and undetectable information is not collected.

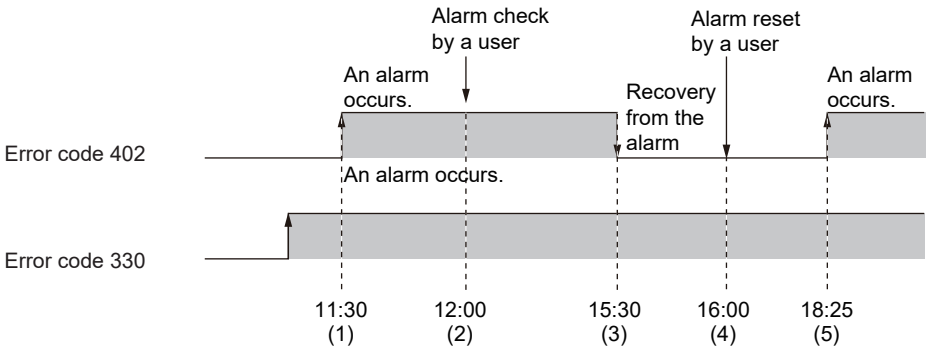
Even if system alarms with the same error code occur, they will be treated as different system alarms with different causes if the channels or other factors are different.

Example of displaying alarms for each history collecting method

The following shows the examples for displaying alarms with the alarm display (system) for each alarm collecting method.
To display the collected alarms, use the alarm display (system) of the object.

Ex.

Error codes 402 and 330 occurred.



☞ Page 2081 Example of displaying historical mode
☞ Page 2082 Example of only displaying occurred alarms

■Example of displaying historical mode

Collects the history of alarm occurrences.

An event is added to the history every time an alarm occurs.

(1) Occurrence of a communication timeout

Error date and time	Comment	Alarm status	Restored	Checked
24/06/01 11:30	402 Communication timeout. Confirm communic	Occurred		
24/06/01 10:25	330 Insufficient memory media capacity. Confirm drive capacity.	Occurred		

← A communication timeout has occurred.

(2) Communication timeout check

Error date and time	Comment	Alarm status	Restored	Checked
24/06/01 11:30	402 Communication timeout. Confirm communic	Checked		12:00
24/06/01 10:25	330 Insufficient memory media capacity. Confirm drive capacity.	Occurred		

← The communication timeout error has already been checked.

Checked

Key code: FFB4h

(3) Communication timeout restoration

Error date and time	Comment	Alarm status	Restored	Checked
24/06/01 11:30	402 Communication timeout. Confirm communic	Checked		~~12:00~~
24/06/01 10:25	330 Insufficient memory media capacity. Confirm drive capacity.	Occurred		

← The alarm status of the GOT does not turn "Restored".

(4) Alarm reset

Error date and time	Comment	Alarm status	Restored	Checked
24/06/01 11:30	402 Communication timeout. Confirm communic	Checked	16:00	~~12:00~~
24/06/01 10:25	330 Insufficient memory media capacity. Confirm drive capacity.	Occurred		

← The alarm was reset.

Reset

Key code: FFB4h

The alarm status of the GOT turns "Restored" and the recovery time is displayed.

(5) The communication timeout occurs again after the restoration

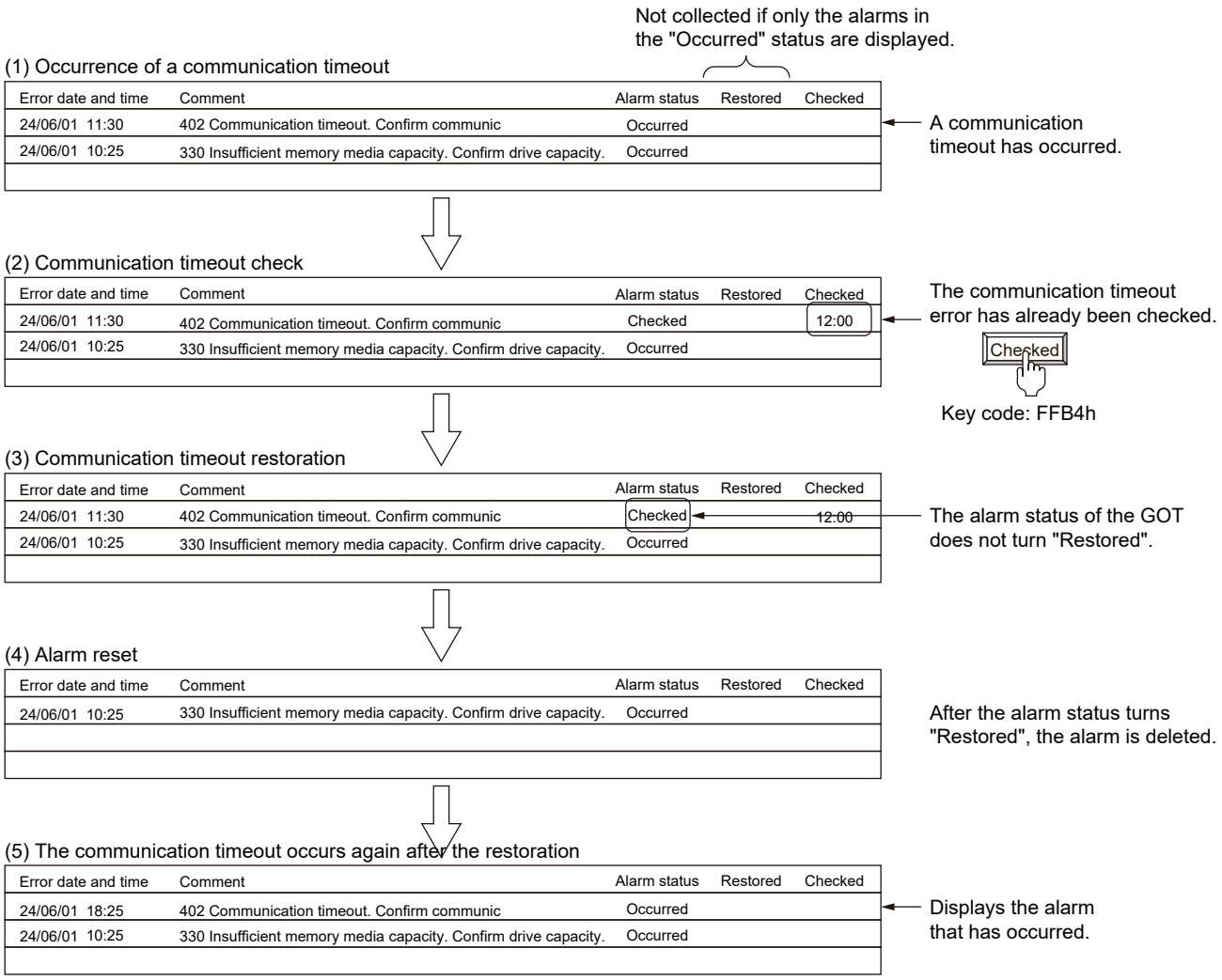
Error date and time	Comment	Alarm status	Restored	Checked
24/06/01 18:25	402 Communication timeout. Confirm communic	Occurred		
24/06/01 11:30	402 Communication timeout. Confirm communic	Checked	16:00	12:00
24/06/01 10:25	330 Insufficient memory media capacity. Confirm drive capacity.	Occurred		

← Displays the alarm in a new row added.

■Example of only displaying occurred alarms

Only the latest GOT error, CPU error, and network error are collected.

The histories of the alarms that have been recovered are not stored.



61.2.3 Size and notification of the buffering area

Size of the buffering area used

The size of the buffering area to be used for the system alarm monitoring varies depending on the setting.

The buffering area is reserved in the user area in the operation memory (RAM).

Because the user area in the operation memory (RAM) is used by multiple functions, adjust the size of the buffering area so that it does not exceed the upper limit.

The size of the buffering area required for the set system alarm monitoring can be checked in the [Basic] tab of the [System Alarm Observation] dialog.

☞ Page 2098 [Basic] tab

For information on the operation memory (RAM), refer to the following.

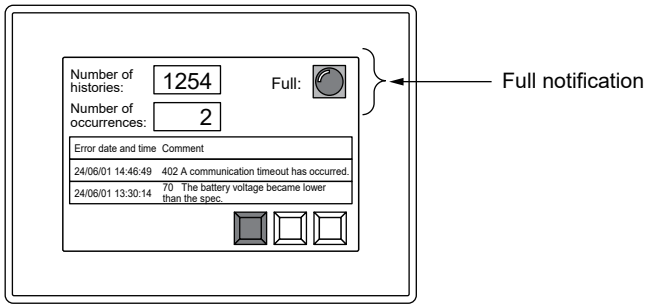
☞ Page 415 Transferred data and GOT storage destination

Operation when the buffering area is full

When the number of alarms temporarily stored in the buffering area reaches [Stored Number] set in the [Basic] tab of the [System Alarm Observation] dialog, the area becomes full.

Select the operation when the buffering area is full in [Action When Buffer is Full] in the [System Alarm Observation] dialog ([Basic] tab).

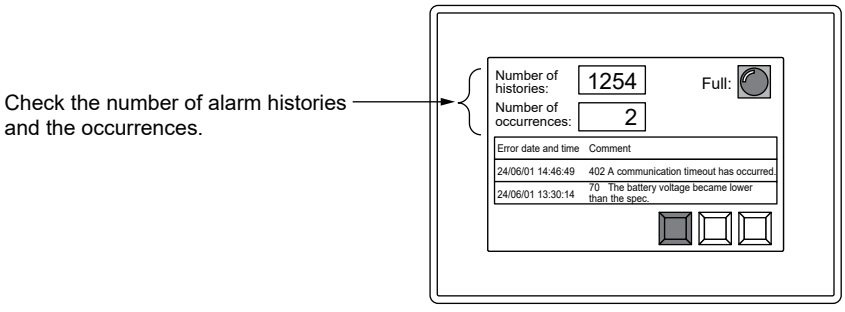
To execute the notification before the buffer area becomes full, set [Full Notification Signal Device] in the [System Alarm Observation] dialog ([Basic] tab).



Confirming the number of the alarm histories and the alarms

The number of histories and the number of occurrences temporarily stored in the buffering area are stored in the devices for output set in the [System Alarm Observation] dialog ([External Output] tab).

☞ Page 2102 [External Output] tab



61.3 Procedure for setting the system alarm monitoring

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1. Select [Common] → [Alarm] → [System Alarm Observation] from the menu to display the [System Alarm Observation] dialog.

☞ Page 2097 [System Alarm Observation] dialog

2. In the [Basic] tab, select [Use System Alarm].

3. Configure necessary settings in each tab in the [System Alarm observation] dialog, and click the [OK] button to complete the system alarm monitoring setting.

Tab	Description
[Basic] tab	Configure the settings related to the errors to be monitored, the history collecting method, and the buffering area. ☞ Page 2098 [Basic] tab
[File Save] tab	Set a trigger for storing the alarm log file, storage destination, file conversion using a device, and others. ☞ Page 2101 [File Save] tab
[External Output] tab	Configure the settings to store the history of system alarms and the number of occurrences in the device. ☞ Page 2102 [External Output] tab

61.4 Recovery from alarms

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The following shows the procedure to change the alarm status of each error to "Restored".

☞ Page 2085 CPU errors
☞ Page 2085 Network errors
☞ Page 2086 GOT errors

61.4.1 CPU errors

Eliminate all the alarm causes of the CPU error.

The alarm status of the system error caused by the CPU error turns "Restored" by eliminating all the alarm causes.

When the multi-channel function is used, the alarm status of all the channels turns "Restored" by eliminating the alarm causes of all the channels.

61.4.2 Network errors

Eliminate all the alarm causes of the network error.

The alarm status of the system error caused by the network error turns "Restored" by eliminating all the alarm causes.

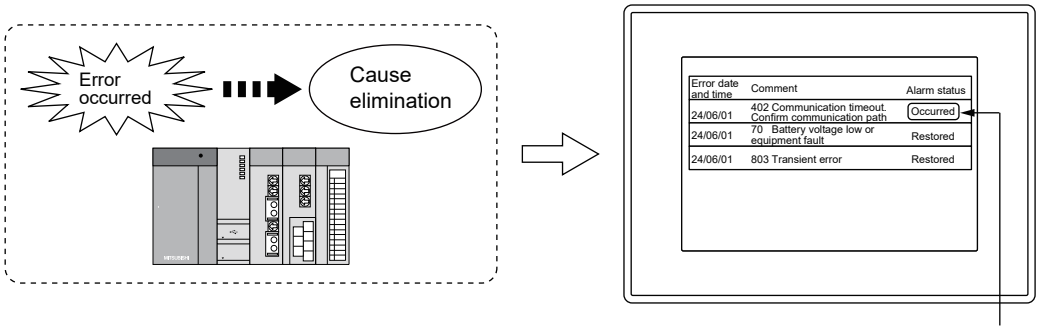
Precautions

The alarm status of network errors that occur in the CC-Link communication unit does not turn "Restored" even if the cause of the alarms is eliminated until the GOT is powered off or reset.

61.4.3 GOT errors

Eliminate all the alarm causes of the GOT error.

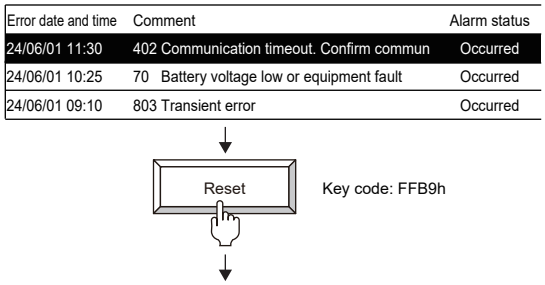
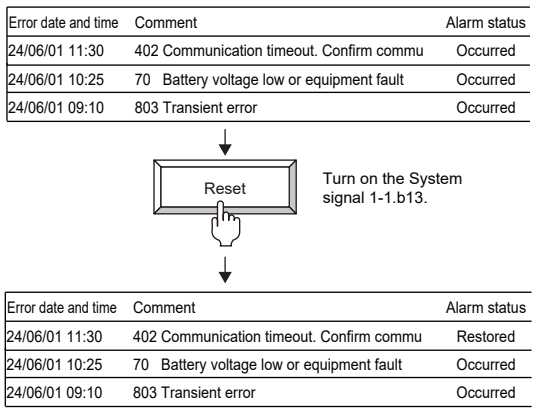
The alarm status of GOT errors does not turn "Restored" automatically even after the alarm causes are eliminated.



Eliminate the cause of the alarm of the GOT, a controller, or a network.

The alarm status of the GOT error remains "Occurred" even if the cause of the alarm is eliminated.

To change the status to "Restored", perform one of the following operations.

Operation	Description
Changing the alarm status of the selected error to "Restored"	Change the alarm status of the selected error to "Restored" using a touch switch. ☞ Page 2141 Key code switches for operating alarm displays 
Changing the alarm status of all the GOT errors to "Restored" using the system information	Change the alarm status of all the GOT errors to "Restored" by turning on the GOT Error Reset signal (System signal 1-1.b13). ☞ Page 576 Setting a device which controls the GOT operations or notifies the GOT status ([System Information]) 
Changing the alarm status of all the GOT errors to "Restored" using the utility	Change the alarm status of all the GOT errors from "Occurred" to "Restored" using the alarm display (system) of the utility. 📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

Precautions

If the alarm status is changed from "Occurred" to "Restored" while the alarm cause of the GOT error has not been resolved, the same alarm will occur again.

Ex.

When the alarm of error code 460 occurs and the alarm is reset before the cause is eliminated

Error date and time	Comment	Alarm status
24/06/01 11:30	803 Transient error	Occurred
24/06/01 10:25	460 Communication unit error	Occurred

Reset

Reset the alarm.
(Turn on the System signal 1-1.b13.)

Error date and time	Comment	Alarm status
24/06/01 11:30	803 Transient error	Occurred
24/06/01 10:25	460 Communication unit error	Restored

The status of the GOT error turns "Restored".

Error date and time	Comment	Alarm status
24/06/01 12:00	460 Communication unit error	Occurred
24/06/01 11:30	803 Transient error	Occurred
24/06/01 10:25	460 Communication unit error	Restored

After the rest, the same alarm occurred again.

The error date and time displayed shows the date and time when the alarm was detected again after the reset.

61.5 Deleting alarm data

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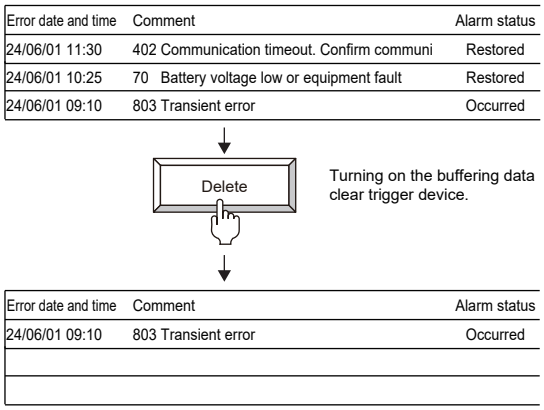
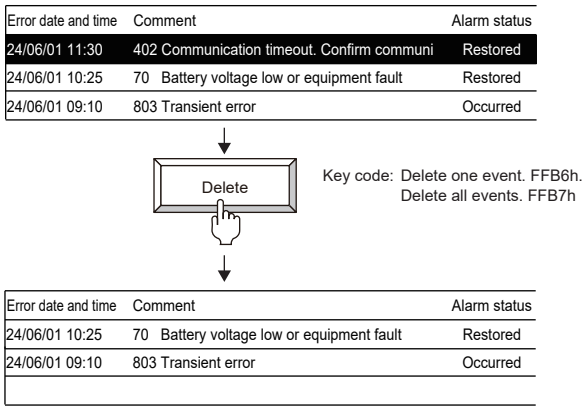
Alarms in the "Restored" status can be deleted from the history.

To delete alarms, change the alarm status from "Occurred" to "Restored".

☞ Page 2085 Recovery from alarms

To delete alarm data, perform one of the following operations.

Operation	Description
Deleting with a device	Turn on [Buffering Data Clear Trigger Device] set in the [Basic] tab of the [System Alarm Observation] dialog to delete all alarm data in the "Restored" status. 
Deleting with a touch switch	Use a touch switch to delete one or all alarm data items in the "Restored" status. 
Powering off or resetting the GOT	Power off or reset the GOT to delete alarm data. When the system alarm data is stored in a data storage or the nonvolatile RAM user area, the data is retained even after the GOT is powered off. ☞ Page 2089 Power failure backup by storing the user alarm
Changing the [Controller] setting in the utility	Change the [Controller] setting in [GOT basic set] in the utility to delete all alarm data in the "Restored" status.
Writing/deleting data to/from the GOT	Perform any of the following operations in the [Communicate with GOT] dialog to delete all alarm data in the "Restored" status. • Writing package data • Deleting an item from the drive information • Formatting a drive

61.6 Power failure backup by storing the user alarm

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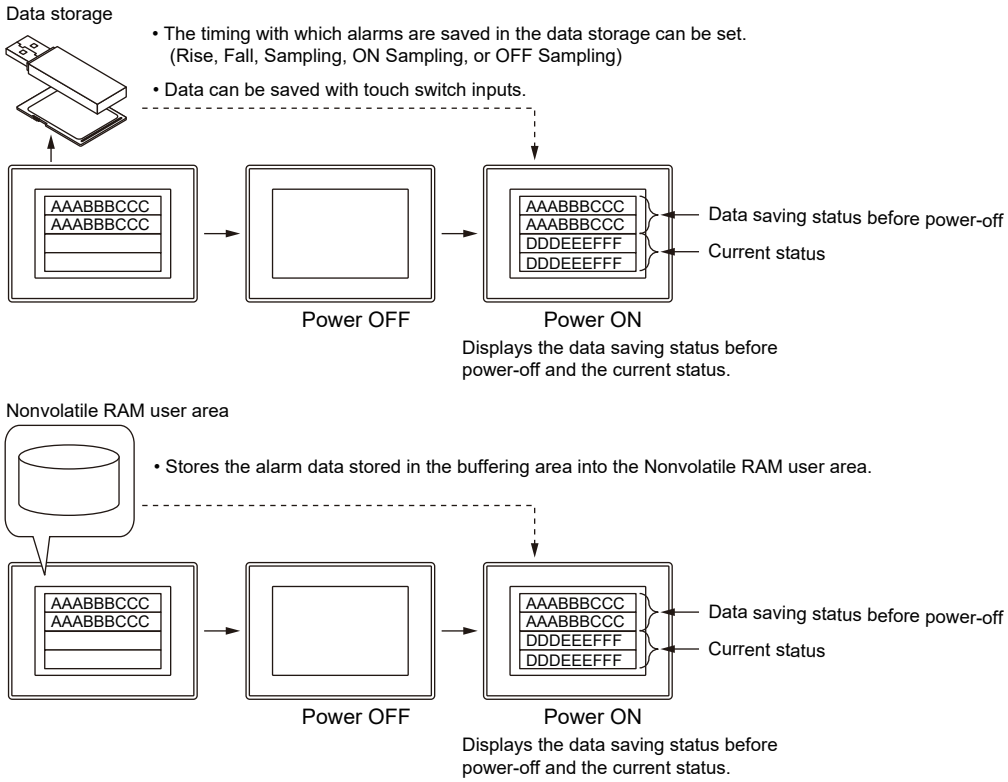
☞ Page 2089 Overview of the power failure backup
☞ Page 2090 Information to be stored
☞ Page 2090 Power failure backup by using a data storage
☞ Page 2092 Power failure backup by using a nonvolatile RAM

61.6.1 Overview of the power failure backup

Once the system alarm data is stored in a data storage or the nonvolatile RAM user area as the alarm log file, the data is retained even after the GOT is powered off.

When the alarm log file is stored in the data storage or the nonvolatile RAM user area when the GOT is powered on, the alarm log file is read automatically and the system alarm history before the power-off is recovered.



Point

To save the file in the data storage, it is recommended that you format the file before using it to maintain the file access performance.

The number of files to be stored in a folder should be less than 500.

If 500 or more files are stored in a folder, file access performance may be lowered.

Repeated writing or deleting of data may lower access performance, regardless of the number of files.

In such a case, format the data storage.

61.6.2 Information to be stored

The information in the alarm log file to be stored in the data storage or the nonvolatile RAM user area differs depending on the history collecting method.

☞ Page 2079 Alarm history collecting method and information to be collected

61.6.3 Power failure backup by using a data storage

☞ Page 2090 Required setting
☞ Page 2090 Backing up the alarm log file stored in the data storage
☞ Page 2090 Precautions for using a data storage

Required setting

Perform one of the following operations.

Storage method	Reference
Storage by the store trigger device	Configure the setting in the [File Save] tab of the [System Alarm Observation] dialog. Select [Save alarm log files] and set the storage destination for the log file and the storage trigger. ☞ Page 2101 [File Save] tab
Storage by the key code switch (key code: FFBB)	☞ Page 2141 Key code switches for operating alarm displays
Storage by GS520.b0	☞ Page 3647 Buffering And File Access Control (GS520) Because all the data in the buffering area are saved in the data storage, the storage process may take a few minutes to complete. To prevent the monitoring from stopping for a long time, save the data using any other method.

Backing up the alarm log file stored in the data storage

Select [Automatically backup at the time of saving] in the [File Save] tab of the [System Alarm Observation] dialog to store the alarm log file as a backup file when the alarm log file is saved.

Precautions for using a data storage

☞ Page 2090 Precautions for starting the GOT
☞ Page 2091 Precautions for removing an SD card
☞ Page 2091 Storage process
☞ Page 2091 Error occurred during the alarm log file saving
☞ Page 2091 Restoring the alarm histories when powering-off to on the GOT

■Precautions for starting the GOT

When reading and restoring the user alarm from the data storage, install the data storage on the GOT before powering-on the GOT.

After the powering-on the GOT, the data in the data storage cannot be restored.

In addition, when the data storage is installed after the power-on, the user alarm data in the data storage are overwritten when other user alarm data are stored in the data storage.

■Precautions for removing an SD card

When you open the SD card cover, the files are stored automatically.

Before removing the SD card, make sure that the file saving is complete by checking one of the following conditions.

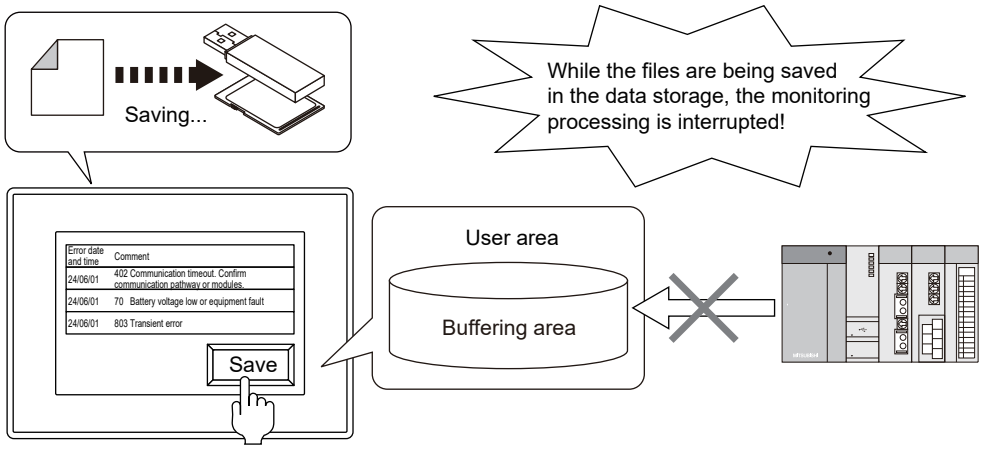
- The Drive Status Notification signal (system signal 2-2.b0, b1) is turned off.
- The SD card access LED is turned off.

Storing may take longer because all the user alarms and system alarms for saving the alarm log files are stored.

■Storage process

While alarm log files are saved in the data storage, the system alarm monitoring processing is interrupted.

System alarms occurred or recovered during the storing are not displayed.



■Error occurred during the alarm log file saving

When an error occurs during the alarm log file saving, the [Writing Error Notification Device] set in the [File Save] tab of the [System Alarm Observation] dialog turns on.

If the Writing Error Notification device turns on, check that the following conditions are satisfied.

- The SD card cover of the GOT is closed.
- The data storage works normally.

The user needs to turn off this device.

■Restoring the alarm histories when powering-off to on the GOT

When the alarm log file in the data storage is not created in the project in the GOT, the file cannot be read from the GOT.

In this case, an alarm occurs or a device turns on.

- A system alarm 525 occurs.
- The [Writing Error Notification Device] set in the [File Save] tab of the [System Alarm Observation] dialog turns on.

61.6.4 Power failure backup by using a nonvolatile RAM

☞ Page 2092 Required setting
☞ Page 2092 Storage timing
For the specifications of the nonvolatile RAM user area and operations performed on it, refer to the following.
☞ Page 3679 Specifications and operations of the nonvolatile RAM user area

Required setting

Select [Retain data in the embedded memory in GOT even when the power goes off] in the [Basic] tab of the [System Alarm Observation] dialog.
The size of the nonvolatile RAM user area used can also be checked in the [Basic] tab.
☞ Page 2098 [Basic] tab
Every time the data in the buffering area is changed, the data is stored in the nonvolatile RAM user area.

Precautions

The nonvolatile RAM user area is used by multiple functions, and thus its space is limited.
For the specifications of the nonvolatile RAM user area, refer to the following.
☞ Page 3679 Specifications and operations of the nonvolatile RAM user area

Storage timing

Every time the data in the buffering area is changed, the data is stored in the nonvolatile RAM user area.

61.7 Converting alarm log files

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Alarm log files generated by system alarms are binary format files (*.G3A).
To display and edit the alarm log files on a personal computer, convert them into Unicode text files or CSV files.
The following shows how to convert the alarm log files.
☞ Page 2094 Conversion using the utility
☞ Page 2095 Conversion using a device
☞ Page 2096 Conversion using GT Designer3
For the format of the converted file, refer to the following.
☞ Page 2096 Configurations of a Unicode text file and a CSV file

Precautions

■Character code and conversion destination file

If an alarm log file contains any character other than ASCII and Shift JIS characters, convert the file as shown below.

- Convert the file to Unicode text format.
- Convert the file to a CSV file by turning on GS522.b2.

■Precautions for a CSV file or Unicode text file

For the precautions for using CSV files and Unicode text files, refer to the following.
☞ Page 3668 Precautions for using CSV file
☞ Page 3669 Precautions for using Unicode text file

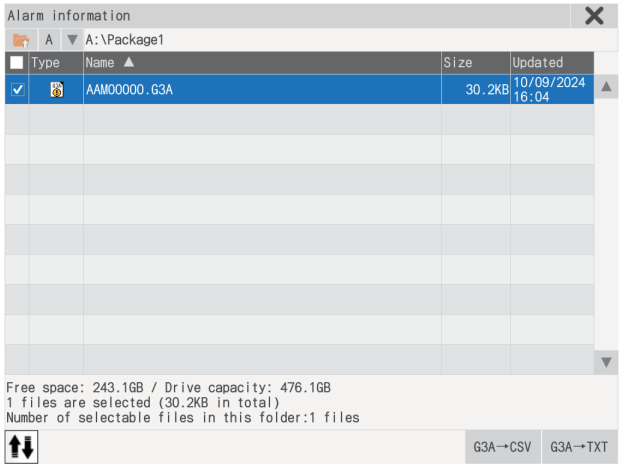
■System language applied at the conversion of the system alarm files

When [System Language Switching Operation] is set for [System Alarm] of [File Conversion Language] in the [Alarm Common Setting] dialog, system alarm files are not converted in the language specified in the system language switching device.
A file is converted in the system language set in the utility.

61.7.1 Conversion using the utility

Convert a binary file (*.G3A) stored in the data storage to a Unicode text file or a CSV file using the utility.
When a file is converted using the utility, the system language is applied to the system alarm language used during conversion.

1. Select a binary file (*.G3A) in [Alarm information] of the utility and touch the [G3A→TXT] or [G3A→CSV] button.



2. Store the created Unicode text file or CSV file into a personal computer by one of the following methods.

Method	Description
Transferring with GT Designer3	Reads resource data from the GOT.
Storing by using the data storage	Stores the alarm log file to the data storage and reads the alarm log file from the data storage.

3. Display or edit the converted Unicode text file or the CSV file on a personal computer.

For the operations of the utility, refer to the following.
GOT3000 Series User's Manual (Utility & Maintenance Functions)
To read the resource data from the GOT, refer to the following.
Page 441 Reading the data from the GOT

Precautions

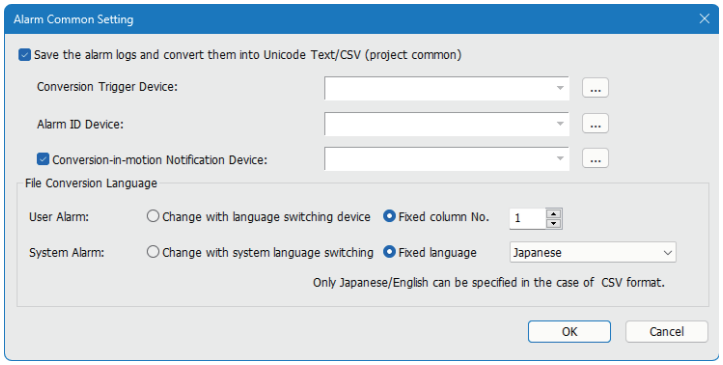
When converting an alarm log file (*G3A) into a CSV file or a Unicode text file with a utility, execute a conversion by each file.
Even if multiple files are selected at once, they cannot be converted.

61.7.2 Conversion using a device

Turning on a specified device converts a binary format file (*.G3A) stored in the data storage into a Unicode text file or a CSV file.

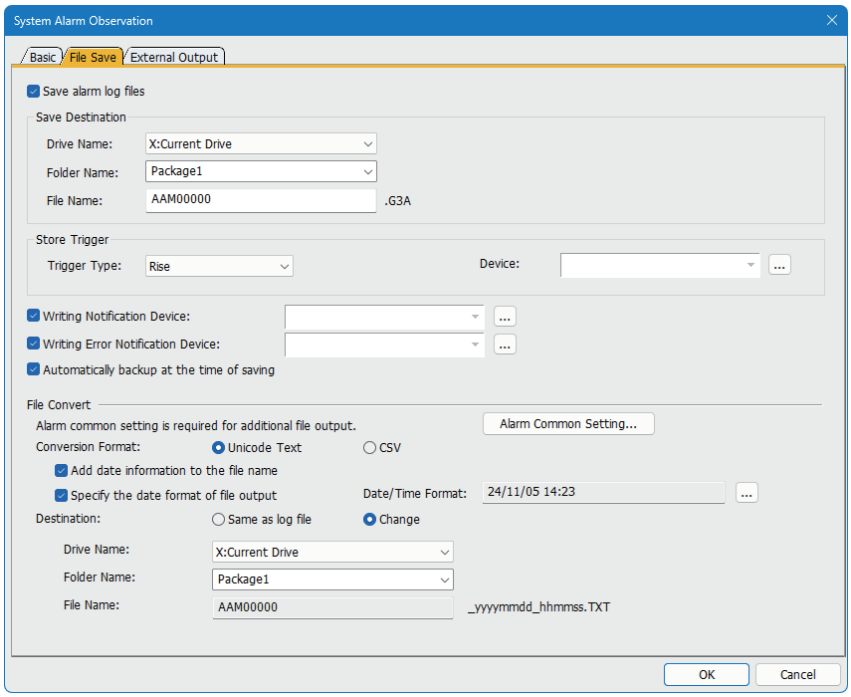
1. Configure the setting for control the alarm log file conversion with the device in the [Alarm Common Setting] dialog.

☞ Page 2043 [Alarm Common Setting] dialog



2. Configure the setting for storing the alarm log file stored in the buffering area to the data storage in the [File Save] tab of the [System Alarm Observation] dialog.

☞ Page 2101 [File Save] tab



Precautions

Before converting the alarm log files, store 0 to the device set in [Alarm ID Device] in [Alarm Common Setting] dialog.

Make sure to turn off the conversion trigger device after the conversion of the alarm log file starts.

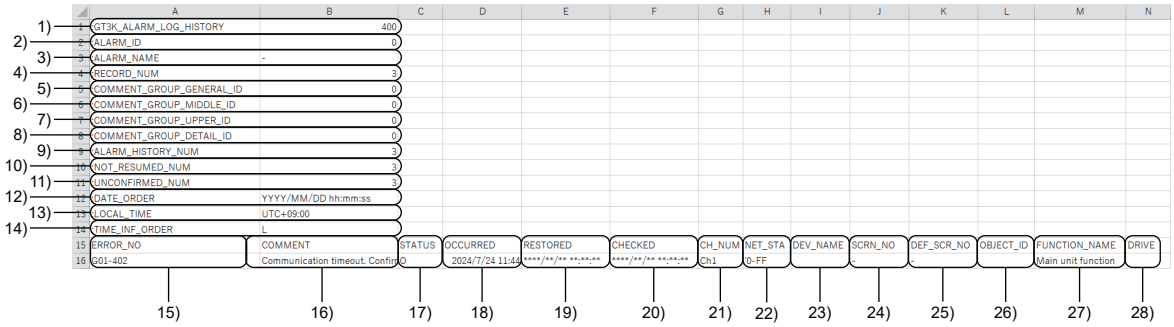
If the conversion trigger device is on even after the conversion is complete, the conversion notification device does not turn off.

61.7.3 Conversion using GT Designer3

Convert a binary file (*.G3A) stored on the personal computer to a Unicode text file or a CSV file using GT Designer3. Conversion is performed in the [Alarm Log File Conversion] dialog.

☞ Page 2072 [Alarm File Conversion] dialog

61.7.4 Configurations of a Unicode text file and a CSV file



No.	Description
1)	Alarm collecting method
2)	Alarm ID. For system alarms, this item is fixed to 0.
3)	Alarm name. For system alarms, this item is left blank.
4)	Number of data points
5)	Basic comment group number. For system alarms, this item is fixed to 0.
6)	Middle comment group number. For system alarms, this item is fixed to 0.
7)	Upper comment group number. For system alarms, this item is fixed to 0.
8)	Detailed comment group number. For system alarms, this item is fixed to 0.
9)	Number of the alarm histories
10)	Number of unrestored alarms
11)	Number of unchecked alarms
12)	Order of the dates
13)	Difference from UTC
14)	Order of the output time
15)	Error number
16)	System alarm message
17)	Alarm status (O: Alarm has been occurring, but has not been confirmed, OC: Alarm has been occurring, and has been confirmed, R: Alarm has been restored, but has not been confirmed, RC: Alarm has been restored, and has been confirmed)
18)	Date and time when an alarm occurred
19)	Date and time when an alarm is restored
20)	Date and time when an alarm occurrence is checked
21)*1	Channel number (Ch1 to Ch4)
22)*1	Network number, station number, and module number
23)*1	Device name
24)*1	Screen type (BASE: Base screen, OVL1 to OVL5: Overlap windows 1 to 5, SPI1 to SPI2: Superimpose windows 1 to 2, DLG: Dialog window, PNL: Operation panel, KEY: Key window, MBL-BASE: Base screen (GOT Mobile), MBL-OVL1 to OVL2: Overlap windows 1 to 2 (GOT Mobile), MBL-SPI1 to SPI2: Superimpose windows 1 to 2 (GOT Mobile))
25)*1	Definition screen number (B: Base screen, W: Window screen, MB: Mobile screen)
26)*1	Object ID
27)*1	Function name
28)*1	Drive name (A, B, E, F, G)

*1 Collected when [Get detailed alarm information] is selected in the [System Alarm Observation] dialog ([Basic] tab).

☞ Page 2098 [Basic] tab

61.8 [System Alarm Observation] dialog

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☞ Page 2098 [Basic] tab
☞ Page 2101 [File Save] tab
☞ Page 2102 [External Output] tab

Precautions

After the initial setting of the system alarm monitoring, changing the settings in the [Basic] tab affects the already recorded label names and tag names.

Setting	Details of the change	Influence
[Record label/tag name at the time of alarm generation]	When clearing this item after recording	The already recorded label and tag names are discarded.
	When selecting this item after recording	For the already collected system alarms, the label and tag names remain unrecorded.
[Number of characters to be recorded]	When decreasing the number of characters	Of an already recorded label or tag name, the characters up to the newly-specified number of characters remain and the rest is discarded.
	When increasing the number of characters	The already recorded label and tag names are retained.

61.8.1 [Basic] tab

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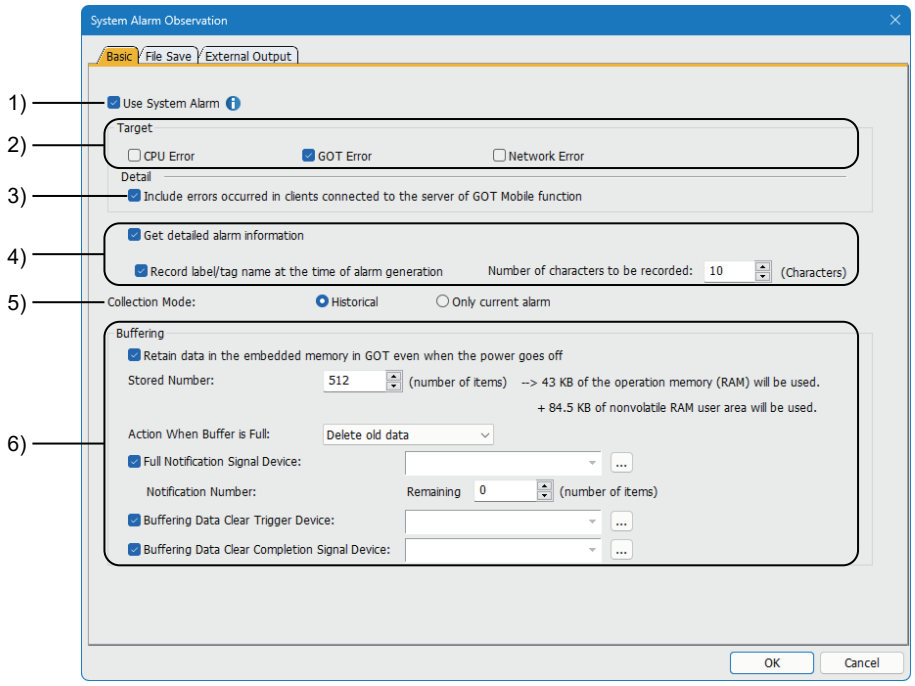
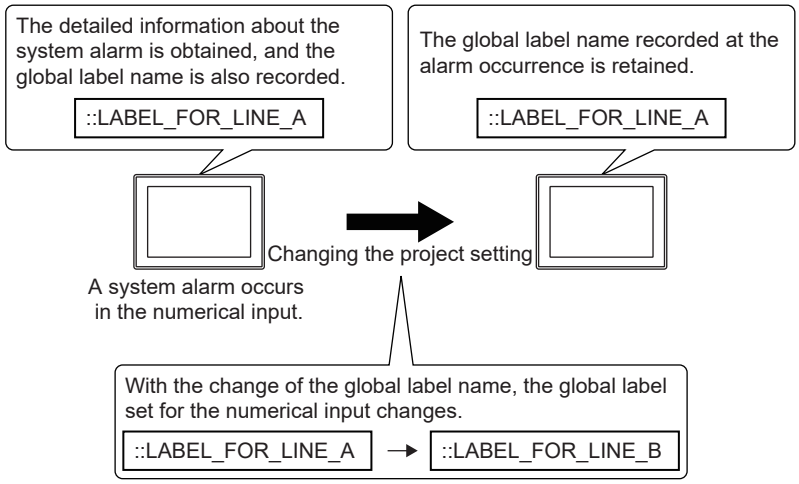
Set the type of the alarm to be monitored, alarm history collecting method and the buffering that stores the alarm history.



Item		Description
1)	[Use system alarm]	Set whether to enable or disable the system alarm function. To pop up an alarm message, configure the following settings additionally. • Alarm popup display settings ☞ Page 2118 [Alarm Popup Display] dialog • Settings of the screen (base screen or mobile screen) where an alarm message pops up ☞ Page 314 [Basic] tab ☞ Page 2831 [Basic] tab
2)	[Target]	Select the system alarm to be monitored.
3)	[Include errors occurred in clients connected to the server of GOT Mobile function]	This item is settable only when [Target] is set to [GOT Error]. Monitors errors of a GOT Mobile function client (GOT Mobile errors).

Item			Description
4)	[Get detailed alarm information]	—	Makes it easy to identify where the alarm has occurred by obtaining the detail information of the system alarm. ☞ Page 2080 Collecting detailed information
		[Record label/tag name at the time of alarm generation]	Records the label or tag name and the assigned device when a system alarm occurs. Even if you change the label or tag set for an object or others after the system alarm collection, you can check the label or tag name as of the system alarm collection. Specify the number of characters of a label or tag name to be recorded with [Number of characters to be recorded]. The more the numbers of recorded characters and stored items, the larger the used area of the operation memory (RAM). The following shows the operation when this item is selected. Example) When the global label name set for the numerical input is changed after system alarm collection  Even if this item is not selected, the label or tag name appears on the alarm display or others. The number of characters is unlimited. However, if you change a label or tag, the label or tag name as of the system alarm collection does not appear. The symbol (::) indicating a label or tag and the characters indicating the offset setting are displayed. When an alarm log file is converted to a CSV file or Unicode text file, the label and tag names are not output.
		[Number of characters to be recorded]	Specify the number of characters of a label or tag name to be recorded. The characters up to the set number of characters are recorded, and the rest is unrecorded. The setting range is [10] to [300]. The more the number of characters, the larger the used area of the operation memory (RAM) and the size of the alarm log file.
5)	[Collection Mode]		Select a system alarm collecting method. ☞ Page 2079 Alarm history collecting method and information to be collected

Item			Description
6)	[Buffering]	—	Set the buffering that stores collected system alarms.
		[Retain data in the embedded memory in GOT even when the power goes off]	Select this item to store alarm data in the buffering area in the nonvolatile RAM user area. ☞ Page 2089 Power failure backup by storing the user alarm
		[Stored Number]	Set this item when setting [Collection Mode] to [Historical]. Set the number of the system alarms to be stored. The setting range is [512] to [32767]. The buffer size increases as the number of the stored events increases.
		[Action When Buffer is Full]	Set this item when setting [Collection Mode] to [Historical]. Select the operation performed when the number of the system alarms stored in the buffering area reaches [Stored Number].
		[Full Notification Signal Device]	Set this item when setting [Collection Mode] to [Historical]. A set device notifies you that the number of system alarm histories which can be stored in the remaining space in the buffering becomes the same as [Notification Number] or smaller. ☞ Page 834 How to set devices, labels, and tags
		[Notification Number]	When setting [Full Notification Signal Device], set this item. Set the number of the system alarm histories for which the [Full Notification Signal Device] is notified. The setting range is [0] to [255]. Example) When [Stored Number] is set to 1000 and [Notification Number] is set to 10 The [Full Notification Signal Device] turns on when the number of stored system alarm histories becomes 990 because the number of storable system alarm histories becomes 10.
		[Buffering Data Clear Trigger Device]	Deletes with a set device the system alarms which the monitor targets recovered from and are stored in the buffering area. ☞ Page 834 How to set devices, labels, and tags
		[Buffering Data Clear Completion Signal Device]	When setting [Buffering Data Clear Trigger Device], set this item. Notifies you with a set device that deleting buffering data is complete. ☞ Page 834 How to set devices, labels, and tags

61.8.2 [File Save] tab

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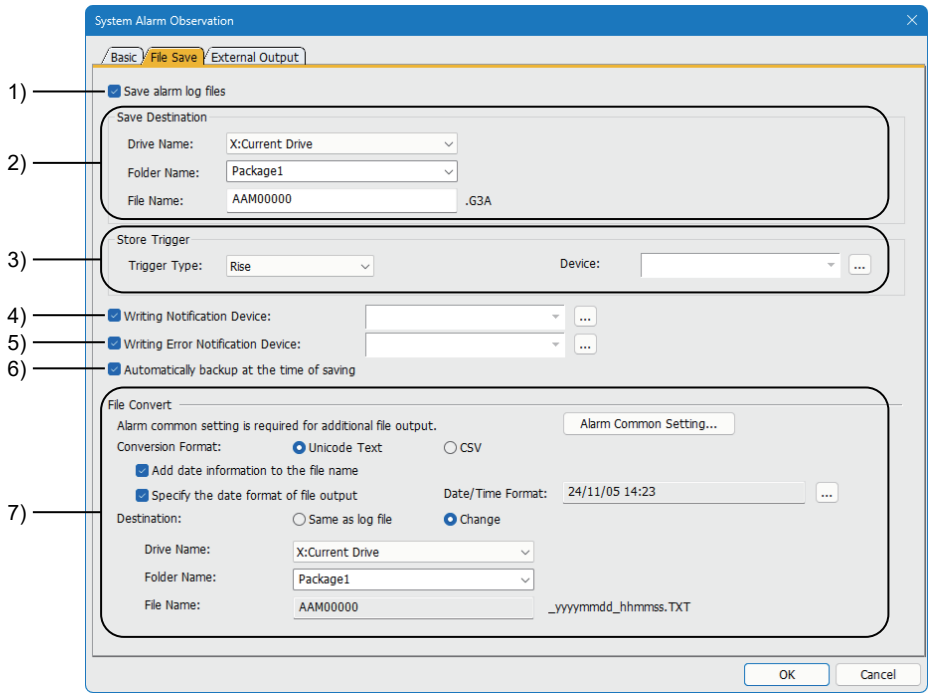
Set the following items to save the alarm histories stored in the buffering area in the data storage.



Item			Description
1)	[Save alarm log files]		Writes the history of system alarms stored in the buffering area to the data storage as an alarm log file when [Historical] is selected for [Collection Mode] on the [Basic] tab. Into data storage, the log file is written as a binary file (*.G3A).
2)	[Save Destination]	[Drive Name]	Select a destination drive. For the available drives by GOT model, refer to the following. ☞ Page 81 Drive configuration and capacity of the GOT
		[Folder Name]	Set the folder name of the destination to save a file. The default is set to the folder name that is specified with [Package Folder Name] in the [Type Setting] dialog. Alphanumeric characters and following symbols are available for the folder name. #$%&'()+-.=@[]^_{}~\ For the restrictions on the folder name used in the GOT, refer to the following. ☞ Page 84 Restrictions for folder names and file names used in GOT
		[File Name]	Set the file name of the destination to save a file. The default is set to AAM00000. Alphanumeric characters and following symbols are available for the file name. #$%&'()+-.=@[]^_{}~ For the restrictions of the file name used in the GOT, refer to the following. ☞ Page 84 Restrictions for folder names and file names used in GOT
3)	[Store Trigger]	[Trigger Type]	Select the timing with which system alarms stored in the buffering area are stored into the data storage. When setting [Sampling], [ON Sampling], or [OFF Sampling], set a cycle. The setting range is [1] minute to [1440] minutes.
		[Device]	Set a device used as a store trigger. ☞ Page 834 How to set devices, labels, and tags
4)	[Writing Notification Device]		Set a device which notifies that the alarm log file is in the process of being written. ☞ Page 834 How to set devices, labels, and tags
5)	[Writing Error Notification Device]		Set a device which notifies an error when alarm log file writing fails. ☞ Page 834 How to set devices, labels, and tags
6)	[Automatically backup at the time of saving]		Saves the alarm log file created immediately before it is saved as a backup file (*.BAK). If the name of the alarm log file is AAM00000.G3A, the name of the backup file is AAM00000.bak. The stored backup file is not displayed in the utility of the GOT.

Item			Description
7)	[File Convert]	[Convert Format]	Set the following items to convert files. To use file conversion, the setting of [Alarm Common Setting] is required. Click the [Alarm Common Setting] button and set the [Alarm Common Setting] dialog. Set the file format applied after the conversion.
		[Add date information to the file name]	Date information is added to the name of the alarm log file.
		[Specify the date format of file output]	Click the [...] button, and set the date/time formats in the [Date/Time Setting] dialog. ☞ Page 3684 [Date/Time Setting] dialog (screen)
		[Destination]	Select the save destination folder for a converted file. When you select [Change], set [Drive Name] and [Folder Name]. The setting method is the same as that of [Destination] for the alarm log file. [File Name] is the same as that of the alarm log file. The file is saved as (*.TXT) if the conversion format is [Unicode Text] and (*.CSV) if [CSV].

61.8.3 [External Output] tab

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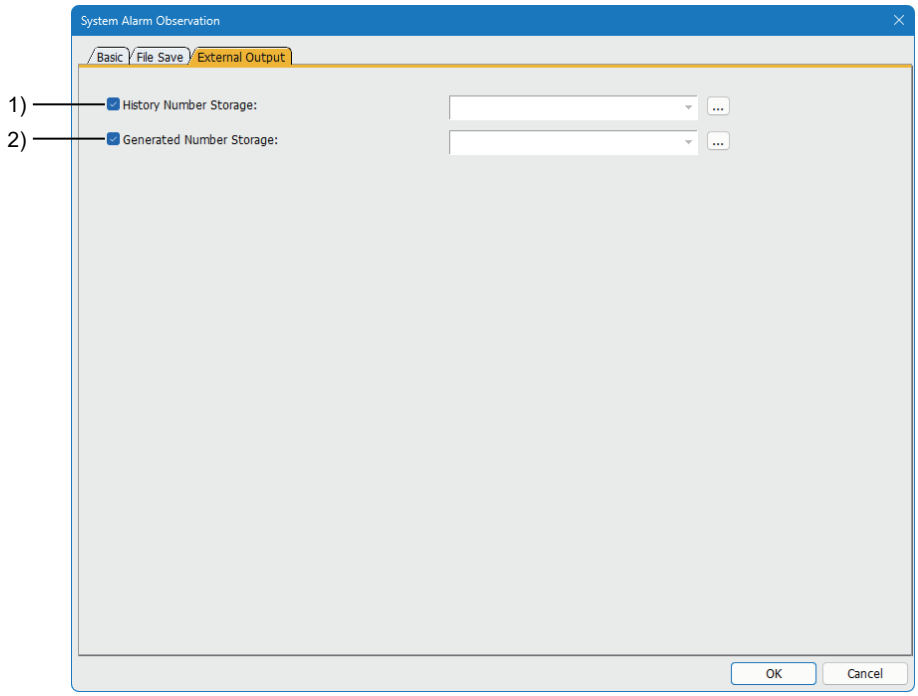
Configure the settings to store the history of system alarms and the number of occurrences in the device.



Item		Description
1)	[History Number Storage]	Stores the number of system alarm histories in a set word device. All the errors in the status of "Occurred", "Checked", and "Restored" are included in the number of the histories to be stored. ☞ Page 834 How to set devices, labels, and tags
2)	[Generated Number Storage]	Stores the number of system alarms in the "Occurred" status in a set word device. ☞ Page 834 How to set devices, labels, and tags

61.9 Relevant settings

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Set the relevant settings other than the specific settings for the system alarm monitoring as required.
The following shows the functions that are available by configuring the relevant settings.

61.9.1 GOT environmental settings (System information)

Select [Common] → [GOT Environmental Setting] → [System Information] from the menu to display the [Environmental Setting] dialog.
☞ Page 576 Setting a device which controls the GOT operations or notifies the GOT status ([System Information])

Function	Setting item
Resetting system alarms and system information (GOT error code, GOT Error Detection)	[System Signal 1-1] System signal 1-1.b13
Notifying the status of the access to the drive*1	[System Signal 2-2] System signal 2-2.b0, b1
Notifying that the free space in the drive is insufficient*1	[System Signal 2-2] System signal 2-2.b4, b5
Notifying the failure of the access to the drive*1	[System Signal 2-2] System signal 2-2.b7, b8
Turning off the Key Input signal	[System Signal 1-1] System signal 1-1.b3
Disabling all the key inputs	[System Signal 1-1] System signal 1-1.b9
Notifying the key codes set to the input keys when the keys are input to ASCII input, touch switch, or other objects.	[Key Code Input]
Notifying a key input	[System Signal 2-1] System signal 2-1.b3

*1 A signal which notifies the full during the access exists in the user alarm monitoring. The signal differs from that of the Drive status notification signal.
For details, refer to the following.
☞ Page 2103 Differences between the notification devices used for the system alarm monitoring and the system information

Differences between the notification devices used for the system alarm monitoring and the system information

The following shows the differences between the notification devices.

Notification details	Difference between the notification devices	
	System alarm monitoring	System information
Drive full notification	Notification device: Full Notification Signal Device Turns on when the number of log files reaches [Stored Number] set in the [Basic] tab.	Notification device: System signal 2-2.b4, b5 Turns on when the data storage is full.
Writing to drive notification	Notification device: Writing Notification Device Turns on while the system alarm is being written to the data storage.	Notification device: System signal 2-2.b0, b1 Turns on while any data is being written to the data storage.
Writing to drive error notification	Notification device: Writing Error Notification Device Notifies that an error has occurred due to any of the following causes. • The alarm log file in the data storage is not created in the project in the GOT. • No data storage is installed. • The SD card cover is open.	Notification device: System signal 2-2.b7, b8 Notifies that an error has occurred due to any of the following causes. • No data storage is installed. • The SD card cover is open.

61.9.2 GOT internal device

☞ Page 3581 GOT special register (GS)

Function	Setting item
Saving the data in the buffering area to data storage*1	GS520.b0
Changing the character code to Unicode when a binary file is converted to CSV format	GS522.b2
Storing the channel No. that has been assigned to the channel where a system alarm (GOT error) occurs	GS262
Storing the channel No. that has been assigned to the channel where a system alarm (CPU error) occurs	GS263
Storing the channel No. that has been assigned to the channel where a system alarm (network error) occurs	GS264

*1 Only when [Save alarm log files] is selected in the [File Save] tab of the [System Alarm Observation] dialog, the data is saved.
☞ Page 2101 [File Save] tab

62 Enabling the popup display for when an alarm occurs

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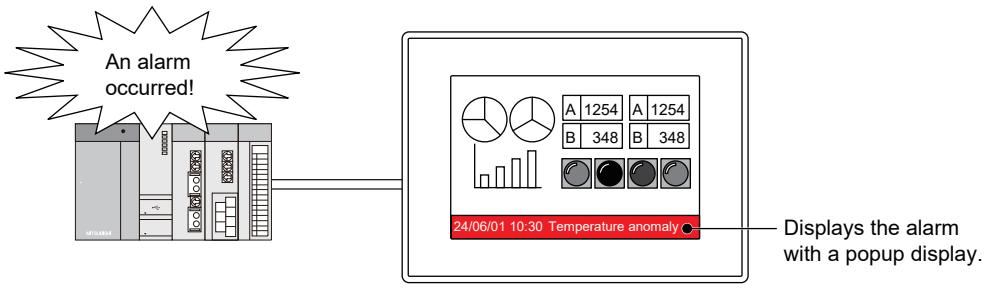
☞ Page 2106 Overview of the alarm popup display
☞ Page 2107 How to use the alarm popup display
☞ Page 2114 Specifications of the alarm popup display
☞ Page 2118 [Alarm Popup Display] dialog
☞ Page 2131 Relevant settings

62.1 Overview of the alarm popup display

The alarm popup display shows the alarm details in front of all figures and objects on the same screen when an alarm occurs. With the popup display, you can notice alarm events even if the alarm list is not placed on the screen.



- The user alarm and/or system alarm can be specified as the display target(s) for each project.
- When specifying the user alarm as the display target, set whether to display the popup for each alarm ID of the user alarm monitoring.
- If user alarms and system alarms occur simultaneously when both are specified as the display targets, system alarms are prioritized.

User alarms do not pop up until the system alarms are eliminated.

- The popup can be displayed on base screens and mobile screens.

When there are multiple screens, specify whether to display the popup for each screen.

62.2 How to use the alarm popup display

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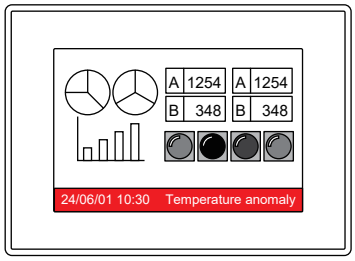
☞ Page 2107 Setting the display position of alarm popup display
☞ Page 2108 Specifying whether to use the fixed display or scrolling display
☞ Page 2108 Specifying a text color and background color
☞ Page 2109 Switching to the specified screen by touch operation
☞ Page 2109 Switching the alarm hierarchy level (user alarms only)
☞ Page 2112 Switching the displayed contents according to the device values
☞ Page 2113 Writing the alarm information to devices

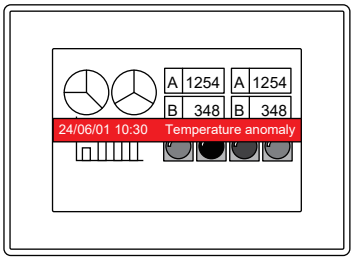
62.2.1 Setting the display position of alarm popup display

The alarm popup can be displayed at any one of the following positions: uppermost part, center, or lowermost part of the screen. The position can be specified for each screen.
For example, you can display the alarm popup at the lowermost part of base screen 1 and display it at the uppermost part of base screen 2.

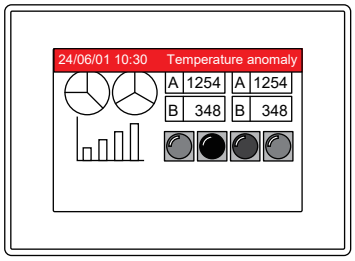
☞ Page 2117 Setting whether to display the alarm popup display and the display position (property of screens)



Displays in the lowermost part of the screen.



Displays in the center of screen.

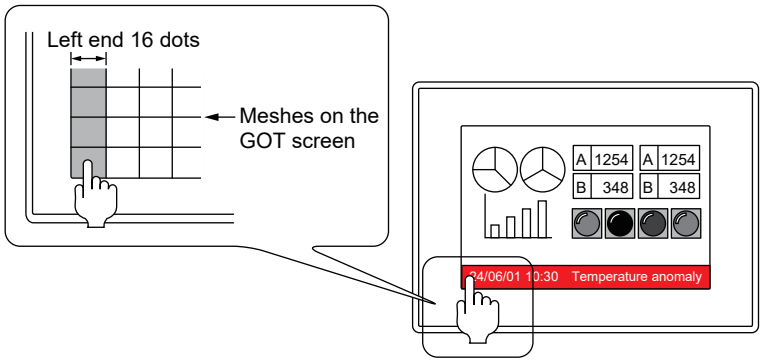


Displays in the uppermost part of the screen.

Switching display positions by touch operation

If another object is hidden under the alarm popup display, the hidden object cannot be touched.
For such a case, a function to switch the display positions by touch operation is provided.
Every time the operator touches the left end of the alarm popup display area (16 dots) on the GOT screen, the display positions are switched in the order of the upper part, center, and lower part of the screen.
Enable/disable this function in [Display Position Switching] in the [Alarm Popup Display] dialog ([Basic] tab).

☞ Page 2119 [Basic] tab



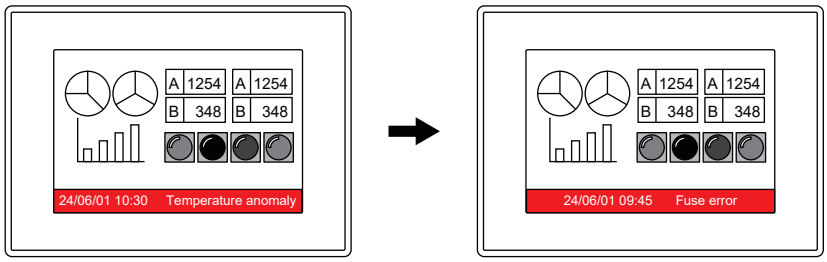
62.2.2 Specifying whether to use the fixed display or scrolling display

The text (comment) in the alarm popup display can be displayed at the fixed position in the display area or displayed by scrolling display.
This item is specified for a whole project. It cannot be set for each screen.
Configure the setting in [Display Type] in the [Alarm Popup Display] dialog ([Basic] tab).
☞ Page 2119 [Basic] tab

Display at the fixed position

When displaying the text at the fixed position in the display area, you can set the display cycle in seconds.
When multiple alarms are set to be displayed, comments of the alarms that have occurred are automatically switched and displayed according to the display cycle.
When the alarm comment spans multiple rows, only the first row is displayed; the second and subsequent rows are not.

An alarm displayed automatically switches to the next alarm.

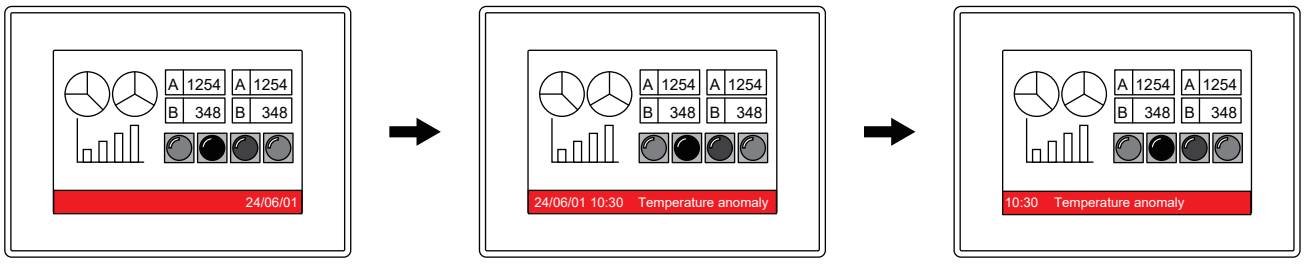


First alarm　　Second alarm

Scrolling display

The alarm text can be displayed by scrolling across the display area from right to left repeatedly.
Even when the alarm comment is long, the entire text can be displayed.
When a comment spans multiple rows, the first row is displayed initially, and the second and subsequent rows are displayed by scrolling.
When multiple alarms have occurred, comments of the alarms are displayed sequentially.

The character string flows from right to left.

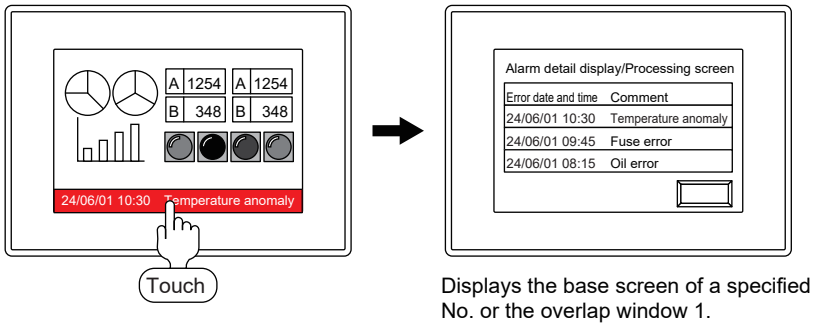


62.2.3 Specifying a text color and background color

You can draw the operator's attention by setting an effect for the text in the alarm popup display or setting the background color of the display area.
In addition, by setting the display color for each level or group set in the user alarm monitoring, each of them can be visually identified.
Configure the settings in the [Alarm Popup Display] dialog ([Text Format] tab).
☞ Page 2122 [Text Format] tab

62.2.4 Switching to the specified screen by touch operation

You can configure the setting to switch the screen to the base screen with the specified number or overlap window 1 when the alarm popup display is touched.
For example, you can transition the screen to the alarm list processing screen by touching the alarm popup display if the touch keys for alarm display and alarm operation have been placed on the destination screen in advance.
Configure the setting in [Touch Mode] in the [Alarm Popup Display] dialog ([Basic] tab).
☞ Page 2119 [Basic] tab



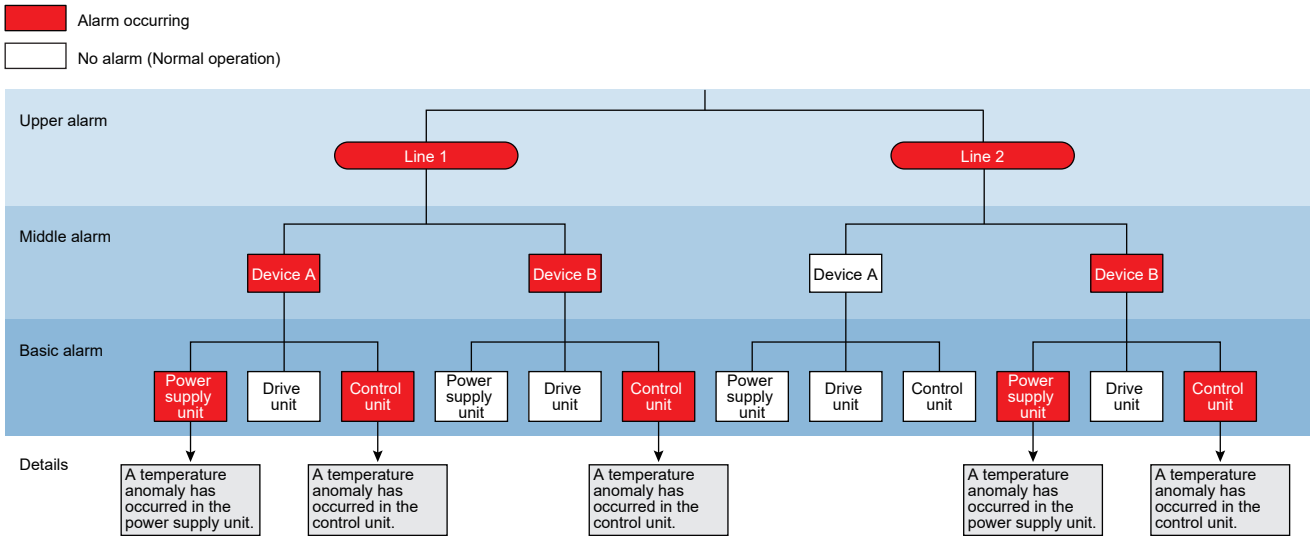
Displays the base screen of a specified No. or the overlap window 1.

62.2.5 Switching the alarm hierarchy level (user alarms only)

You can configure the settings to switch the hierarchy level of the currently occurring user alarm to another level.
The following two methods are available for switching the hierarchy level.

Switching method	Description
☞ Page 2110 Switching the hierarchy level using touch operation	Touching the alarm popup display will switch the hierarchy level down.
☞ Page 2111 Switching the hierarchy level using a device	Switches the hierarchy level to be displayed in the alarm popup display depending on the value stored in the device.

The display range differs depending on the switching method.
The following system examples show differences in display ranges according to the switching methods.



Point

To display hierarchized comments, it is recommended to set upper-level alarms to be displayed at the initial display hierarchy level.
Set the initial display hierarchy level in the [Basic] tab in the [Alarm Popup Display] dialog.
☞ Page 2119 [Basic] tab

Switching the hierarchy level using touch operation

You can configure the settings so that touching the popup display will switch the hierarchy level of the touched alarm down. Only the level below the touched alarm is displayed.

If no comment is set in the switching destination level or the comment could not be obtained, [No message] is displayed.

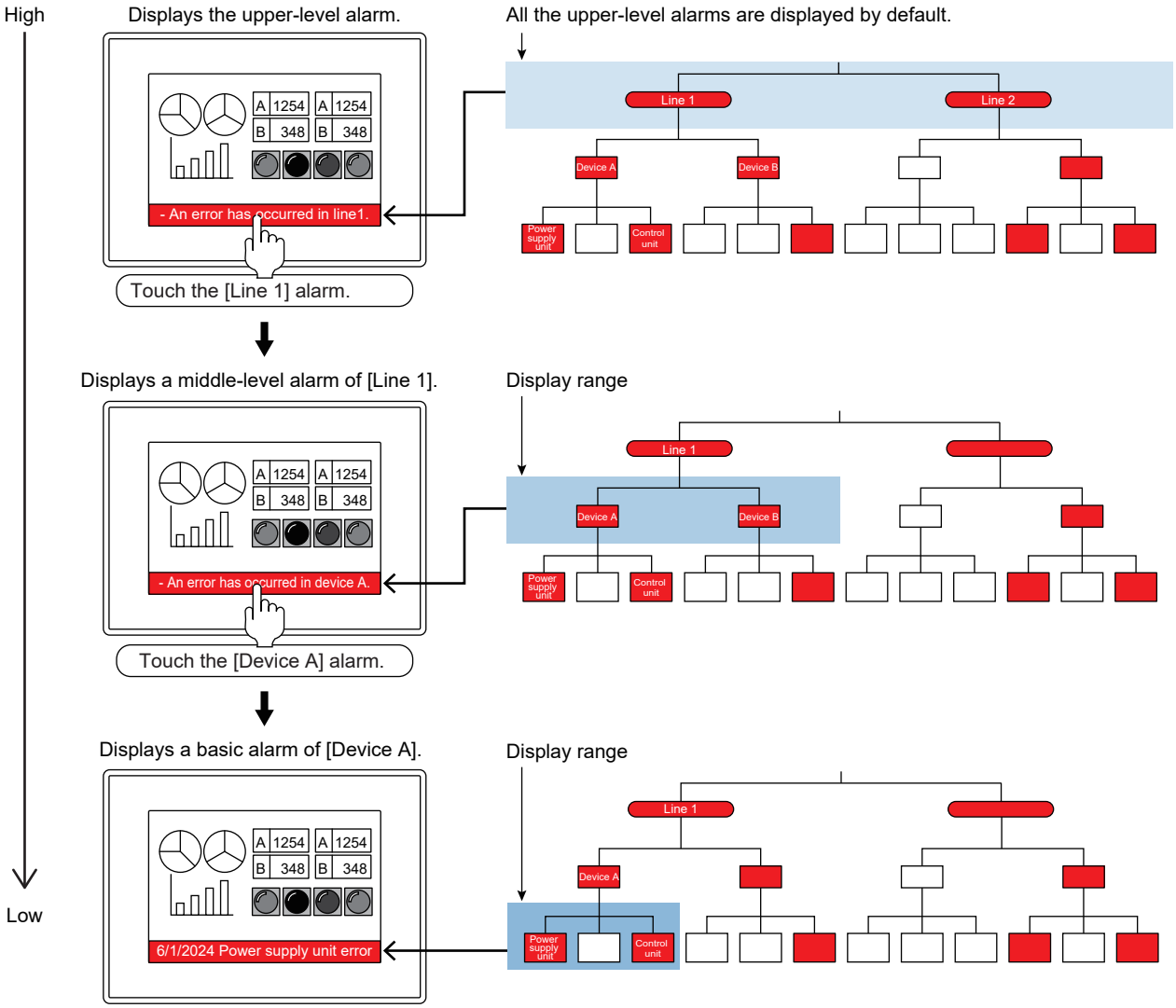
■Target of the alarm hierarchy change

The alarm hierarchy change applies to the alarm that appears in the popup display when it is touched.

When multiple alarms are displayed at the same time by scrolling display, the alarm displayed first is the target of the hierarchy change if any part of it is still displayed on the screen.

Ex.

When [Initial Display Hierarchy] is set to upper-level alarms in the [Basic] tab in the [Alarm Popup Display] dialog



■When the alarm is restored after the hierarchy level is changed

When the displayed alarm is restored after level switching by a touch operation, if there are other alarms, all of them will appear in the popup display at the level specified as the initial display hierarchy level.

■How to switch the hierarchy level up

Touch operation cannot switch the hierarchy level up.

To switch the hierarchy level up, use a device.

☞ Page 2111 Switching the hierarchy level using a device

Precautions

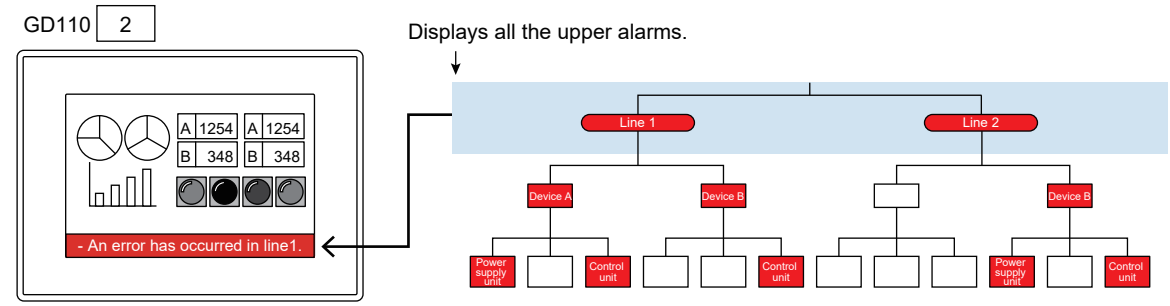
When an alarm from a lower hierarchy level is displayed, a newly occurring alarm from a different higher hierarchy level will not be displayed.
To display the new alarm, display all the alarms of the specified hierarchy level using the hierarchy switching device. Alternatively, specify an upper hierarchy level using the hierarchy switching device and change the hierarchy level of the new alarm.

Switching the hierarchy level using a device

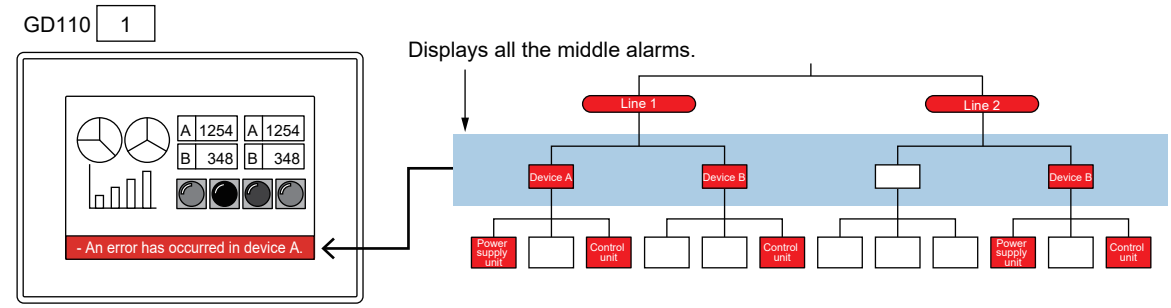
The alarm hierarchy of the alarm displayed on the alarm popup display can be specified using a device.
When levels are switched using a device, the comments of all the current alarms at the level specified by the device are displayed in the popup display sequentially unlike the level switching by touch operation.
Specify the hierarchy switching device in [Hierarchy] under [Switching Device] in the [Alarm Popup Display] dialog ([Extended] tab).
☞ Page 2125 [Hierarchy]
If no comment is set in the switching destination level, [No message] is displayed.

Ex.
When the hierarchy switching device is set to GD110

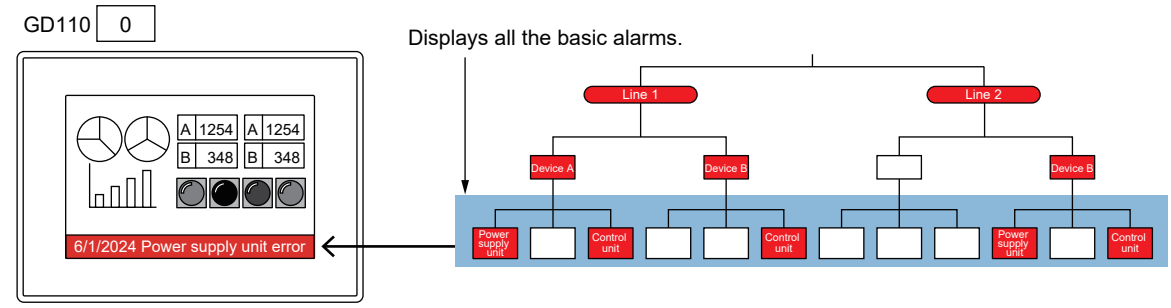
Displays the upper alarm.



Displays the middle alarm.



Displays the basic alarm.



62.2.6 Switching the displayed contents according to the device values

The contents displayed in the alarm popup display can be switched according to the device values.

Configure the settings in the [Alarm Popup Display] dialog ([Extended] tab).

☞ Page 2124 [Extended] tab

The following table lists the items that can be switched according to the device values.

Item that can be switched by using devices	Alarms to be displayed in the popup display	
	User alarm	System alarm
Hierarchy*1	The comments of all the current alarms at the specified level are displayed.	—
Level*1	The alarm events in the specified level are displayed.	
Group*1	The alarm events in the specified group are displayed.	
Priority display attribute	The display order is switched between the ascending order and descending order. Date and time of occurrence, level, or group can be selected as the basis on which the order is arranged.	
User alarm monitoring	The setting of the user alarm monitoring (alarm ID) to be displayed can be changed. Multiple alarms can be displayed by changing the alarm ID.	—
Basic comment group	The alarm events are displayed using the comments of the specified comment group. You can change the comments according to your purpose.	
Middle comment group		
Upper comment group		

*1 To set the hierarchy level, level number, and group for alarms, use the user alarm monitoring dialog.

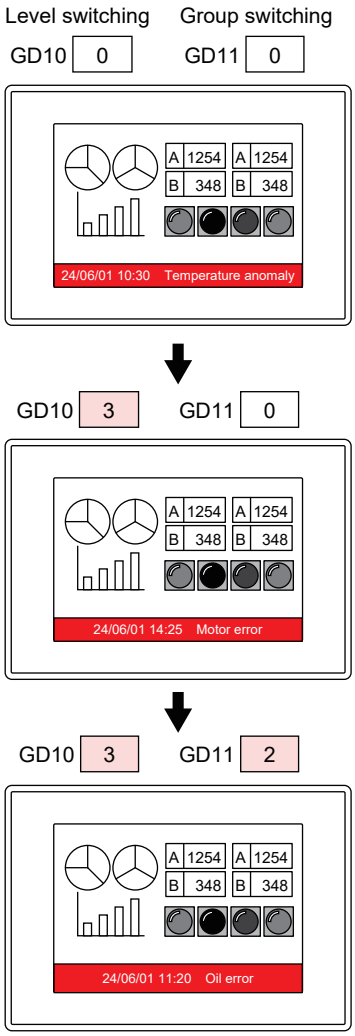
☞ Page 2045 [User Alarm Observation] dialog

Ex.

Example in which the following devices are set and the device values are changed

Level switching device: GD10

Group switching device: GD11



When the following alarms have occurred

Error date and time		Comment	Alarm status	Level	Group
24/06/01	10:30	Temperature anomaly	Occurred	1	1
24/06/01	14:25	Motor error	Occurred	3	1
24/06/01	11:20	Oil error	Checked	3	2
24/06/01	10:00	Fuel error	Occurred	3	2
24/06/01	08:10	Internal pressure error	Occurred	2	1
24/06/01	07:40	Fuse error	Restored	3	1

An alarm in the [Restored] status cannot be displayed in the alarm popup display.

Narrowed down to Level 3

Display target alarms

Error date and time		Comment	Alarm status	Level	Group
24/06/01	14:25	Motor error	Occurred	3	1
24/06/01	11:20	Oil error	Checked	3	2
24/06/01	10:00	Fuel error	Occurred	3	2

Narrowed down to Group 2

Display target alarms

Error date and time		Comment	Alarm status	Level	Group
24/06/01	11:20	Oil error	Checked	3	2
24/06/01	10:00	Fuel error	Occurred	3	2

62.2.7 Writing the alarm information to devices

A function is provided to write the information (such as the alarm ID, alarm status, and date and time of occurrence) of the alarm touched in the alarm popup display to devices.

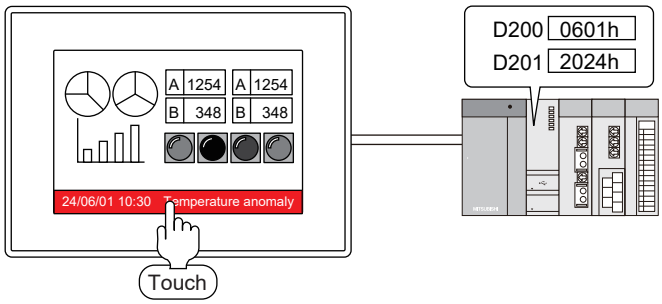
Information that cannot be displayed in the alarm popup display, such as downtime, can also be written to devices.

Configure the settings in the [Alarm Popup Display] dialog ([External Output] tab).

☞ Page 2128 [External Output] tab

Ex.

Writing the date of alarm occurrence to D200 and D201



62.3 Specifications of the alarm popup display

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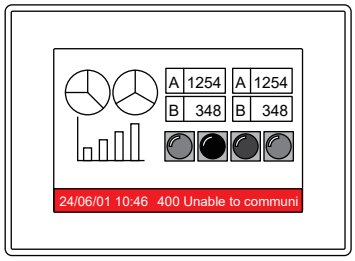
☞ Page 2114 Alarms that can be displayed in the alarm popup display
☞ Page 2115 Displayable screens
☞ Page 2115 Number of alarms to be displayed in the alarm popup
☞ Page 2115 Vertical length of the popup display area
☞ Page 2115 Precautions

62.3.1 Alarms that can be displayed in the alarm popup display

The user alarm and/or system alarm can be specified as the display target(s).
If the same system alarm occurs repeatedly, the date and time of the first occurrence is displayed.
For user alarms, only the alarms with the alarm ID numbers for which [Pop up alarms] is selected in the [User Alarm Observation] dialog are displayed.

Order of the priority given to displays

If user alarms and system alarms occur simultaneously, only the system alarms are displayed.



Displays the system alarm.

Current system alarms

Error date and time	Comment	
24/06/01 10:46	400 Unable to communicate with CPU.	← Displayed in the first row.
24/06/01 09:35	9 AC down detected.	← Displayed in the second row.
24/06/01 07:10	803 Transient error.	← Displayed in the third row.

Current user alarms

Error date and time	Comment	
24/06/01 10:30	Temperature anomaly	Not displayed until all the system alarms are eliminated.
24/06/01 09:20	Fuse error	
24/06/01 08:50	Oil error	

Status of alarms displayed in the alarm popup display

Displays alarms in the [Occurred] or [Checked] status.
When the alarm status becomes [Restored] (including already checked alarms which the monitor targets recovered from), the display is hidden.
Once system alarms are restored with the GOT Error Reset signal, they are not displayed in the alarm popup display.
If there is a current user alarm when the alarm status of all the system alarms turns "Restored", it is displayed in the alarm popup display.
For instructions on how to recover from system alarms, refer to the following.
☞ Page 2085 Recovery from alarms

62.3.2 Displayable screens

The alarm popup display can be displayed on the following two screens.

- Base screen
- Mobile screen

To display the alarm popup display on the screen, set whether to display the alarm popup display and the position of the alarm popup display for each screen.

Configure the alarm popup display settings in the screen properties dialog.

☞ Page 2116 Configuring the display setting of the alarm popup display ([Alarm Popup Display] dialog)

62.3.3 Number of alarms to be displayed in the alarm popup

Specify whether to display one alarm or multiple alarms in the alarm popup display.

Number of alarms to be displayed	Description
One alarm	Of the current alarms, only the highest priority alarm is displayed. The alarm with the most recent date and time of occurrence is displayed by default.
Multiple alarms	Current alarms are displayed sequentially. Alarms are displayed in descending order from the one with the most recent date and time of occurrence by default.

The priority criteria and sort order can be changed using devices.

For the setting method, refer to the following.

☞ Page 2126 [Priority Display Attribute]

62.3.4 Vertical length of the popup display area

The vertical length of the alarm popup display is the minimum height calculated by multiplying 16 by n dots (n is an integer) in which the specified font can fit.

This value cannot be set freely.

62.3.5 Precautions

- If a nonexistent value (column number) is stored in the comment group with the language switching device, [No message] is displayed in the alarm popup display.
- To the alarm popup display, a touch switch for storing alarms cannot be assigned.

To place a button for storing alarm data, make either of the following settings.

◇ Setting the store trigger device for the alarm monitoring

Set [Store Trigger] in the [File Save] tab in the [User Alarm Observation] dialog or the [System Alarm Observation] dialog.

◇ Storing alarm data with a touch switch for alarm display

Place a touch switch for alarm display on the screen where an alarm display object is placed.

☞ Page 2141 Key code switches for operating alarm displays

62.4 Setting the alarm popup display

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To display the alarm popup display, configure the settings described in this section.

Configuring the settings in multiple dialogs is required.

☞ Page 2116 Specifying alarms to be displayed in the popup display (alarm monitoring dialog)
☞ Page 2116 Configuring the display setting of the alarm popup display ([Alarm Popup Display] dialog)
☞ Page 2117 Setting whether to display the alarm popup display and the display position (property of screens)

62.4.1 Specifying alarms to be displayed in the popup display (alarm monitoring dialog)

After configuring the alarm monitoring settings in the relevant dialogs, configure the settings to display the alarms in the popup display.

Popup display target	Required setting
User alarm	Select [Pop up alarms] in the [Basic] tab in the [User Alarm Observation] dialog. ☞ Page 2046 [Basic] tab
System alarm	Select [Target] in the [Basic] tab in the [User Alarm Observation] dialog. The selected system alarm is displayed in the popup display.

62.4.2 Configuring the display setting of the alarm popup display ([Alarm Popup Display] dialog)

In the [Alarm Popup Display] dialog, specify the alarm type of the alarms to be displayed in the alarm popup display and set the number of displayed alarms and others.

These settings are configured for each project.

The procedure differs depending on whether alarms are displayed on a GOT or mobile screen.

Displaying alarms on a GOT screen

1. Select [Common] → [Alarm] → [Alarm Popup Display] from the menu to display the [Alarm Popup Display] dialog.
2. Configure each setting.

For details, refer to the following.

☞ Page 2118 [Alarm Popup Display] dialog

Displaying alarms on a mobile screen

Configure the setting in [Alarm Popup Display] in [GOT Mobile Setting].

For details, refer to the following.

☞ Page 2828 [Alarm Popup Display]

62.4.3 Setting whether to display the alarm popup display and the display position (property of screens)

Set whether to display the alarm popup display and the display position for each screen.

Configure the alarm popup display setting in [Pop up alarms] and [Display Position] in the property of screens.

- GOT screen settings

☞ Page 314 [Basic] tab

- Mobile screen settings

☞ Page 2831 [Basic] tab

Precautions

If the display position of the alarm popup display overlaps with other objects, the objects hidden under the alarm popup display are not operable.

To operate the hidden objects, switch the display positions of the alarm popup display by touch operation.

For details, refer to the following.

☞ Page 2107 Switching display positions by touch operation

62.5 [Alarm Popup Display] dialog

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☞ Page 2119 [Basic] tab
☞ Page 2122 [Text Format] tab
☞ Page 2124 [Extended] tab
☞ Page 2128 [External Output] tab

Window

• Setting the alarm popup display to be displayed on the GOT

Select [Common] → [Alarm] → [Alarm Popup Display] from the menu to display the dialog.

• Setting the alarm popup display to be displayed on a client of the GOT Mobile function

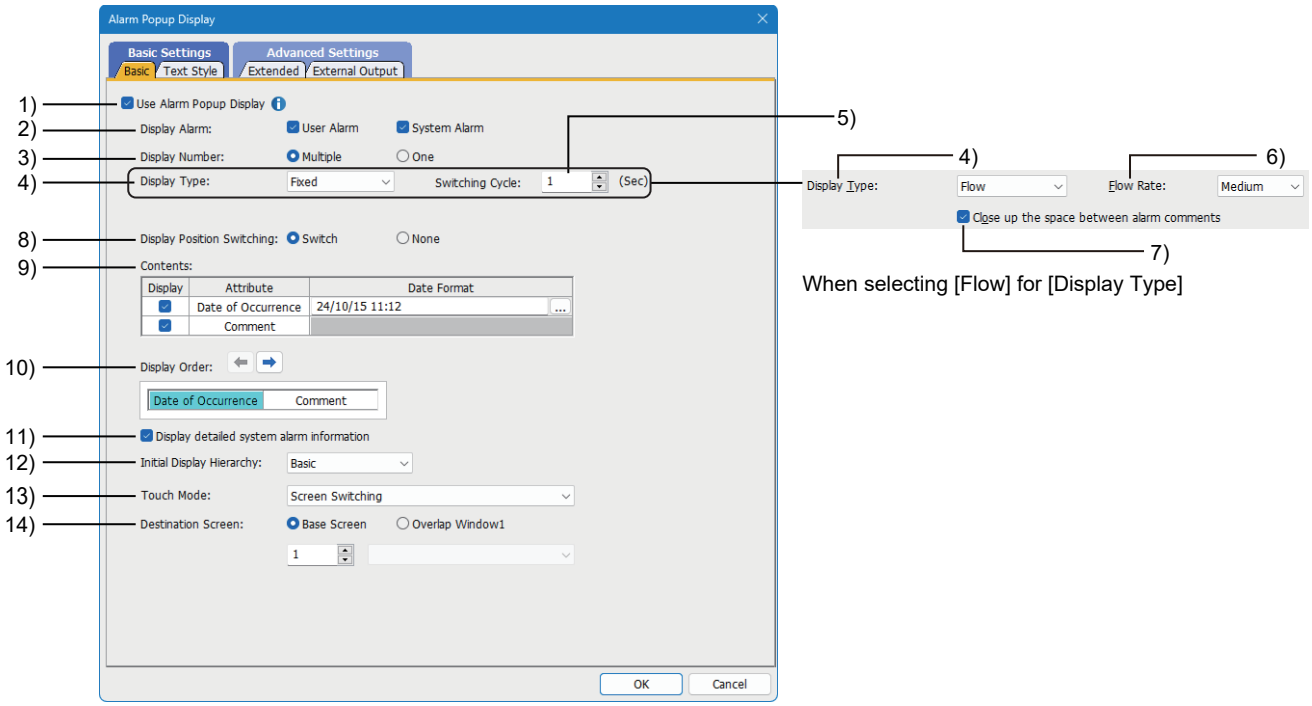
Display the dialog from the [GOT Mobile Setting] window ([Alarm Popup Display]).

62.5.1 [Basic] tab

Configure the type of alarms to be displayed in the alarm popup display, the number of alarms to be displayed, the display content, and the action when touched, and other settings.

Some setting items cannot be set in the [GOT Mobile Setting] window ([Alarm Popup Display]).

☞ Page 2742 Usable functions



When selecting [Flow] for [Display Type]

Item		Description
1)	[Use Alarm Popup Display]	Select this item to use the alarm popup display. To use the alarm popup display, configuring other settings is required in addition to this item. For details, refer to the following. ☞ Page 2116 Setting the alarm popup display
2)	[Display Alarm]	Select the alarm type to be displayed.
3)	[Display Number]	Select the number of the alarms to be displayed. • [Multiple] Current alarms are displayed sequentially. Alarms are displayed in descending order from the one with the most recent date and time of occurrence by default. • [One] Of the current alarms, only the highest priority alarm is displayed. The alarm with the most recent date and time of occurrence is displayed by default.
4)	[Display Type]	Select the display method of the comments for alarms. • [Fixed] Each comment is displayed in one row without scrolling. Part of a comment that extends off the display area, including the second and subsequent rows of multi-row comments, is not displayed. • [Flow] Comments are displayed by scrolling across the screen from right to left. For a comment that spans multiple rows, the GOT displays the entire comment, including the second and subsequent rows. ☞ Page 2108 Specifying whether to use the fixed display or scrolling display
5)	[Switching Cycle]	Set this item when [Display Type] is [Fixed]. Set a cycle at which alarms to monitor are switched when multiple alarms occur. The setting range is [1] to [60].
6)	[Flow Rate]	Set this item when [Display Type] is [Flow]. Select the speed at which the display is scrolled.
7)	[Close up the space between alarm comments]	Set whether to reduce the space between scrolling comments when [Flow] is specified for [Display Type]. When this item is selected, the space between comments is reduced to two one-byte characters. When this item is deselected, a space of a half the screen width is inserted between comments.
8)	[Display Position Switching]	Set whether to enable or disable the touch operation for display position switching of the alarm popup display.

Item			Description
9)	[Contents]	[Display]	Select the items to be displayed in the alarm popup display.
		[Attribute]	Displays the items to be displayed in the alarm popup display. • [Date of Occurrence] Displays the date and time of occurrence of an alarm. To display the date and time, set the display format in the [Date Format] field. • [Comment] Displays the comment which is set for the alarm.
		[Date Format]	Set the display format of the alarm occurrence date and time. Click the [...] button to specify the date and time format in the [Date/Time Setting] dialog. ☞ Page 3684 [Date/Time Setting] dialog (screen)
10)	[Display Order]		Set the display order when the [Display] checkboxes for both [Date of Occurrence] and [Comment] are selected. Select either [Date of Occurrence] or [Comment] (the cell turns blue), and click the left or right arrow button to move the display position.
11)	[Display detailed system alarm information]		When [System Alarm] is selected for [Display Alarm], select this item to display the detailed information on the system alarm when it occurs. For the contents to be displayed when this item is selected, refer to the following. ☞ Page 2120 Displaying the detailed information
12)	[Initial Display Hierarchy]		Set this item when [User Alarm] is selected for [Display Alarm]. Select a level in the alarm hierarchy to be displayed first when a user alarm occurs.
13)	[Touch Mode]		Set the action when the alarm popup display is touched. ☞ Page 2107 How to use the alarm popup display The following shows selectable items. • [NO] Select this item to disable touch operations. • [Screen Switching] The screen is switches when the popup display is touched. Set the destination screen in the [Destination Screen] section. • [Hierarchy Switching/Detail Display] This item cannot be selected when [Close up the space between alarm comments] is selected. The alarm hierarchy level switches when the alarm popup display is touched. The operations differ depending on the alarm being displayed. When upper- or middle-level alarms are displayed, the display is switched to a lower level in the alarm hierarchy. When basic alarms are displayed, the detail screen is displayed.
14)	[Destination Screen]		Set this item when [Screen Switching] is selected for [Touch Mode]. Set the destination screen when the alarm popup display is touched. After selecting [Base Screen] or [Overlap Window1], set the number of the screen to be displayed. The setting range of the screen number is [0] to [32767]. The title of the selected screen is displayed in the field on the right.

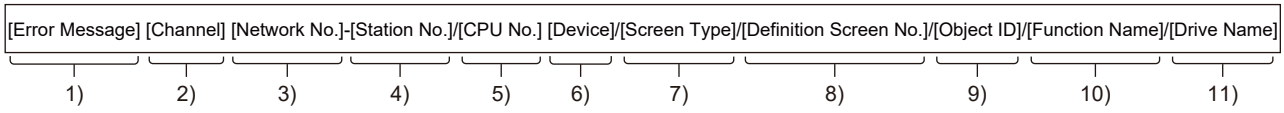
Displaying the detailed information

The following shows the contents displayed when [Display detailed system alarm information] is selected.

The information collected for each system alarm differs. Unrelated or undetectable information is not displayed.

If detailed information is displayed, the message becomes longer.

When all information is not be displayed, select scrolling (flow) as the display type.



Information		Description	Format, display example
1)	Error message	Displays the error code of a system error and the error message.	—

Information		Description	Format, display example	
2)	Channel	Displays the channel number.	DEV:Ch (Channel) (Network No.)-(Station No.)/(CPU No.) (Device)	
3)	Network number	Displays the network number.		
4)	Station number	Displays the station number.		
5)	CPU number	Displays the CPU number.		
6)	Device	Displays the device. For the device to which offset is specified, the device name and device number after the offset are displayed. If the device number after the offset is out of the range, ?? is displayed.		
7)	Screen number	Displays the screen type and the screen number.	Screen type:(Screen number) The screen number is displayed with five digits. When the number of digits in the displayed number is less than five, the number is displayed with zero(s) added. The following shows the formats for each screen type.	
			Base screen	BASE
			Overlap window	Example) Overlap window 1 OVL1
			Superimpose window	Example) Superimpose window 1 SPI1
			User customize dialog	DLG
			Key window	KEY
			Base screen (GOT Mobile)	MBL-BASE
			Overlap window (GOT Mobile)	Example) Overlap window 1 MBL-OVL1
			Superimpose window (GOT Mobile)	Example) Superimpose window 1 MBL-SPI1
8)	Definition screen number	Displays the definition screen type and the screen number.	Definition screen type:(Screen number) The screen number is displayed with five digits. When the number of digits in the displayed number is less than five, the number is displayed with zero(s) added. The following shows the formats for each definition screen type.	
			Base screen	B
			Window screen	W
			Mobile screen	MB
9)	Object ID	Displays the object ID.	ID:(Object ID) The object ID is displayed with five digits. When the number of digits in the displayed number is less than five, the number is displayed with zero(s) added.	
10)	Function name	Displays the function name. Languages are switched along with the language switching.	—	
11)	Drive name	Displays the drive name.	DRV:(Drive name)	

Ex.

Channel (1), device (X1000), screen No. (overlap window 3, screen No. 251), definition screen No. (window screen, screen No. 251), object ID (10000), function name (shape display)

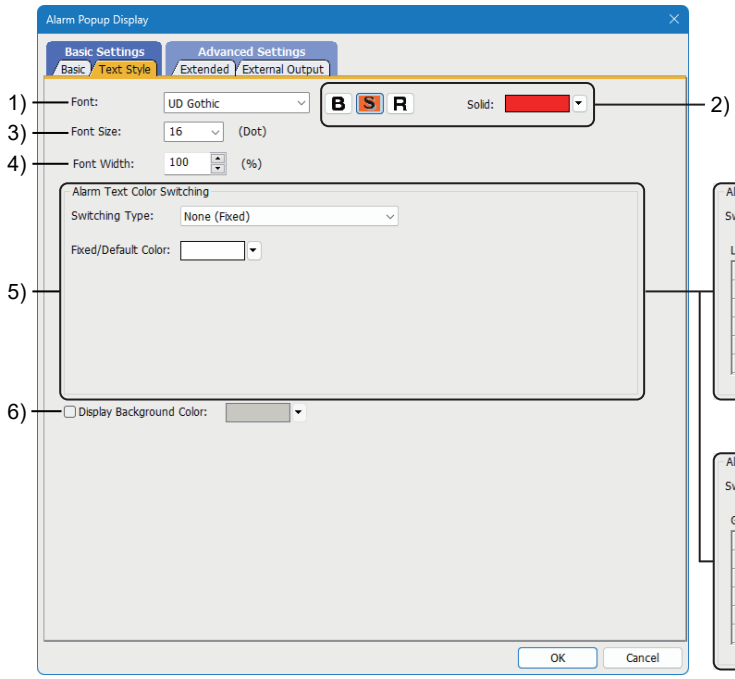
G01-322 The specified device No. is out of the range. Check the available range. DEV:Ch1 X1000/OVL3:00251/W:00251/ID:10000/Shape display

62.5.2 [Text Format] tab

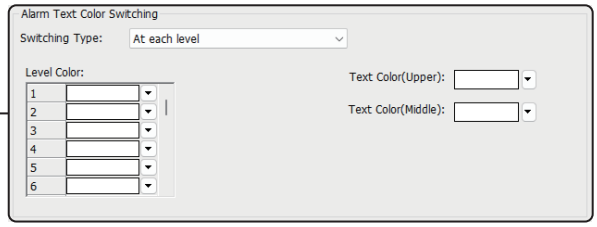
Set the text format of the alarm popup display.

Some setting items cannot be set in the [GOT Mobile Setting] window ([Alarm Popup Display]).

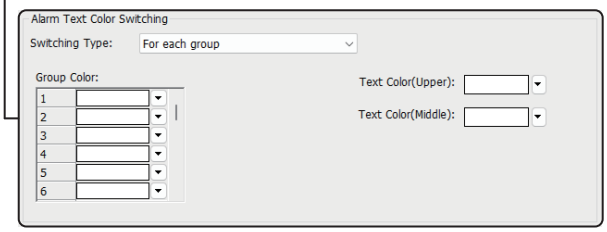
☞ Page 2742 Usable functions



When selecting [None (Fixed)] or
[Comment Color (System Alarm: Fixed)] for [Switching Type]



When selecting [At each level] for [Switching Type]



When selecting [For each group] for [Switching Type]

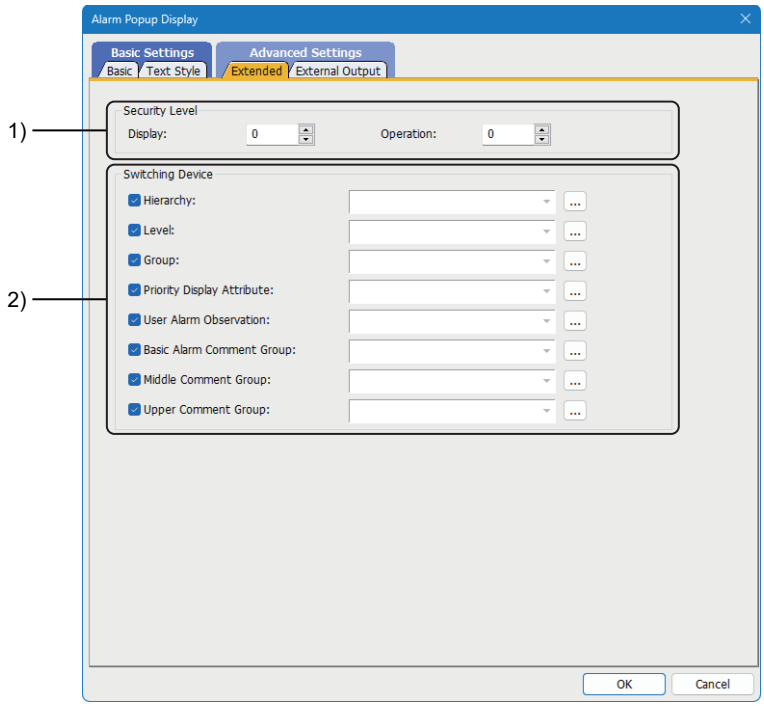
Item			Description
1)	[Font]		Select the font of the displayed text.
2)	Text style		Set the text style. Only one style ([Bold], [Solid], or [Raised]) is settable. When selecting [Solid] or [Raised], set the color of the shadow.
3)	[Font Size]		Select a text size. The setting range is [8] dots to [540] dots.
4)	[Font Width]		Set a horizontal text size. The horizontal size is specified with the magnification relative to [Font Size] (vertical text size). The setting range is [6]% to [1600]%. Note that the size per character is always within the range of [8] dots to [540] dots.
5)	[Alarm Text Color Switching]	[Switching Type]*1	Set the switching method of the text color. This item is fixed to [None (Fixed)] for system alarms. • [None (Fixed)] Displays texts in a single color. • [At each level] Changes the text color for each level. • [For each group] Changes the text color for each group. • [Comment Color (System Alarm: Fix)] Displays user alarms in text colors set for comment groups. The settings other than that of the text color are displayed in the settings of the [Alarm Popup Display] dialog. System alarms are displayed in the color set for [Fixed/Default Color].
		[Fixed/Default Color]	Select the text color when [None (Fixed)] or [Comment Color (System Alarm: Fix)] is selected for [Switching Type].
		[Level Color]	When [At each level] is selected for [Alarm Text Color Switching], specify a text color for each level.
		[Group Color]	When [For each group] is selected for [Alarm Text Color Switching], specify a text color for each group.
		[Text Color (Upper)] Text Color (Middle)	Set the text color when upper- or middle-level of alarms are displayed. These settings are prioritized over [Level Color] and [Group Color].
6)	[Display Background Color]		Select the background color of the alarm popup display. A semitransparent popup window appears in a user-specified color.

*1 The following shows the relation between the set text color and text color displayed.

Alarm to be displayed	Setting for [Switching Type] and applied text color			
	[None (Fixed)]	[At each level]	[For each group]	[Comment Color (System Alarm: Fix)]
User alarm	Displays in the color set for [Fixed/Default Color].	Displays in the color set for [Level Color].	Displays in the color set for [Group Color].	Displays in the color set for each comment group. In a case where no comment exists, displays in the color set for [Fixed/Default Color].
System alarm		Displays in the color set for [1] of [Level Color].	Displays in the color set for [1] of [Group Color].	Displays in the color set for [Fixed/Default Color].

62.5.3 [Extended] tab

Set the security level of the object and devices for switching the contents displayed in the alarm popup display.



Item		Description
1)	[Security Level]	Set the security level. The setting range is [0] to [15]. If you do not use the security function of the GOT, select [0]. ☞ Page 3038 Restricting display and operation on the GOT (Screen security) The setting of security level of [Operation] must be set to the one exceeding the security level of [Display].
2)	[Switching Device]	The contents displayed in the alarm popup can be switched according to the device values. Select the items to be switched by using the switching device, and then set the devices (word devices and word-specified bit devices). ☞ Page 835 Setting a device in the device setting dialog Items that can be switched by using devices are as follows. When [System Alarm] is selected for [Display Alarm] in the [Basic] tab, only [Priority Display Attribute] can be set. ☞ Page 2125 [Hierarchy] ☞ Page 2126 [Level] ☞ Page 2126 [Group] ☞ Page 2126 [Priority Display Attribute] ☞ Page 2126 [User Alarm Observation] ☞ Page 2127 [Basic Alarm Comment Group] ☞ Page 2127 [Middle Alarm Comment Group] ☞ Page 2127 [Upper Alarm Comment Group]

Precautions

If the displayed contents are changed by using switching devices when the number of monitored devices is large in the user alarm monitoring, displaying the alarms may require a few seconds.

[Hierarchy]

This item is settable when [User Alarm] is selected for [Display Alarm] in the [Basic] tab.

The hierarchy level to be displayed is switched by using a device.

This device is referred to as the hierarchy switching device.

The hierarchy switching device has the following functions.

- Switching the display target hierarchy level (b0 to b7)
- Notifying the switching method and display target hierarchy level when the hierarchy level is switched (b15)

To switch the hierarchy level, write the corresponding value to b0 to b7 of the hierarchy switching device (refer to the following table).

The following shows the functions of each bit of the hierarchy switching device.

Bit	Description
b0 to b7	Switches the hierarchy level to be displayed by changing the device value. Comments of all the current user alarms at the specified level in the alarm hierarchy are displayed sequentially. The following shows the relationship between the device values and the displayed hierarchy levels. • 0: Basic alarm • 1: Middle-level alarm • 2: Upper-level alarm
b8 to b14	Use prohibited
b15	Notifies the switching method when the hierarchy level is switched. This bit turns on when the hierarchy level is switched using touch operation. It does not turn off automatically. While this bit is on, hierarchy level switching using b0 to b7 of the hierarchy switching device is not applied.

Precautions

- Alarm hierarchy setting

Configure the alarm hierarchy setting in the [User Alarm Observation] dialog in advance.

☞ Page 2045 [User Alarm Observation] dialog

- Display update when the level in the alarm hierarchy is changed

When [Display Type] is set to [Fixed] in the [Basic] tab of the [Alarm Popup Display] dialog and the display target hierarchy level is switched using the hierarchy switching device, the display is updated with the timing set for [Switching Cycle]. Therefore, the display may not be switched soon after the hierarchy level is switched.

■Initial display hierarchy level and hierarchy level switching device

In the alarm popup display, the hierarchy level specified in [Initial Display Hierarchy] is written to the hierarchy switching device at the following timings.

The hierarchy level to be displayed is switched.

- When screens are switched (user alarms only)
- When the alarm display (user) is displayed for the first time
- When the IDs of alarms to be displayed are switched by using the alarm ID switching device

Select the initial display hierarchy level for [Initial Display Hierarchy] in the [Alarm Popup Display] dialog ([Basic] tab).

☞ Page 2119 [Basic] tab

For the setting of the alarm ID switching device, refer to the following.

☞ Page 2126 [User Alarm Observation]

[Level]

This item is settable when [User Alarm] is selected for [Display Alarm] in the [Basic] tab.
The levels of the alarm to be displayed are switched by using a device.
To display a specific level, specify a level number within 1 to 255.
If a nonexistent level No is specified, alarms are not displayed.
To display all levels, specify the level No. 0 or a No. over 256.

[Group]

This item is settable when [User Alarm] is selected for [Display Alarm] in the [Basic] tab.
The groups of the alarm to be displayed are switched by using a device.
To display a specific group, specify a group number within 1 to 255.
If a nonexistent group No is specified, alarms are not displayed.
To display all groups, specify 0 or 256 or more.

[Priority Display Attribute]

Switch the items to be the sort criteria and sorting order according to the device values.
Store values to the device as follows to switch the order of alarm display.
While upper- and middle-level alarms are displayed, they can only be sorted by occurrence date and time.

Bit	Description
b0 to b3	Specify the sort criteria. • □000h: Normal (date and time of occurrence) • □001h: Date and time of occurrence • □005h: Level (User alarm only) • □006h: Group (User alarm only) If a value other than the above is stored, alarms are displayed in the order of the date and time of occurrence.
b4 to b14	Use prohibited
b15	Specify the ascending or descending order. • 000□h: Descending • 800□h: Ascending

[User Alarm Observation]

This item is settable when [User Alarm] is selected for [Display Alarm] in the [Basic] tab.
The user alarms to be displayed are switched by using a device.
Store the alarm ID of the user alarm monitoring to the device.
Alarm IDs for which [Pop up alarms] is not selected in the [Basic] tab of the [User Alarm Observation] dialog are also displayed.
When the alarm ID switching device is not set or 0 is stored in the device, alarms are displayed only when they have alarm IDs whose [Pop up alarms] setting of the user alarm monitoring is selected.
If a nonexistent alarm ID is specified, alarms are not displayed.

[Basic Alarm Comment Group]

This item is settable when [User Alarm] is selected for [Display Alarm] in the [Basic] tab.
Switch the comment group to be displayed in the basic alarm according to the device values.
If 0 is stored to the device, alarms are displayed with the comment group which is set for the user alarm monitoring. When a nonexistent comment group number is specified, [No message] is displayed.

[Middle Alarm Comment Group]

This item is settable when [User Alarm] is selected for [Display Alarm] in the [Basic] tab.
Switch the comment group to be displayed in the middle-level alarm according to the device values.
If 0 is stored to the device, alarms are displayed with the comment group which is set for the user alarm monitoring. When a nonexistent comment group number is specified, [No message] is displayed.

[Upper Alarm Comment Group]

This item is settable when [User Alarm] is selected for [Display Alarm] in the [Basic] tab.
Switch the comment group to be displayed in the upper-level alarm according to the device values. If 0 is stored to the device, alarms are displayed with the comment group which is set for the user alarm monitoring. When a nonexistent comment group number is specified, [No message] is displayed.

62.5.4 [External Output] tab

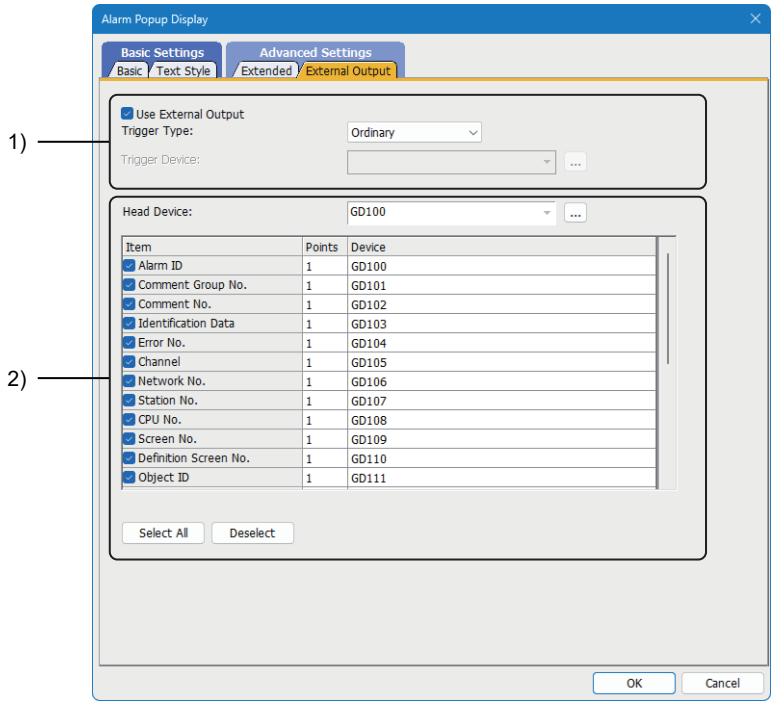
Configure the setting for writing the information of touched alarm in the alarm popup display into devices.

Precautions

To write the alarm information to devices, configure the following settings in the [Basic] tab in the [Alarm Popup Display] dialog.

☞ Page 2118 [Alarm Popup Display] dialog

- Select [Screen Switching] or [Hierarchy Switching/Detail Display] for [Touch Mode].
- Select [Fixed] for [Display Type].
- Deselect [Close up the space between alarm comments] when [Flow] is selected for [Display Type].



Item			Description
1)	[Use External Output]	—	Select this item to write the alarm information to devices. ☞ Page 2113 Writing the alarm information to devices
		[Trigger Type]	Select the timing to write the alarm information into a device. • [Ordinary] Writes the information of the touched alarm to the device. • [ON] Writes the alarm information into the device when the alarm display area is touched while the device is on. • [OFF] Writes the alarm information into the device when the alarm display area is touched while the device is off.
		[Trigger Device]	When selecting [ON] or [OFF] in [Trigger Type], set the device (bit device or bit-specified word device) to be a trigger. ☞ Page 835 Setting a device in the device setting dialog
2)	[Head Device]	—	Set the start device (word device) to which the information of the alarm is written. The bit device cannot be specified as the word device. ☞ Page 834 How to set devices, labels, and tags Selecting the items to be output externally sets consecutive devices starting from the head device as the external output devices for each item. For the targets and output specifications of external output, refer to the following. ☞ Page 2129 Targets and output specifications of external output
		[Select All] button	Selects all the output target items.
		[Deselect] button	Deselects all the output target items.

Targets and output specifications of external output

The following shows the target items and output specifications of external output.

The output target items differ between user alarms and system alarms.

○: Items to be output

×: Items not to be output

Item	Alarm type		Output specifications	
	User alarm	System alarm		
[Alarm ID]	○	×	—	
[Comment Group No.]	○	×	—	
[Comment No.]	○	×	—	
[Identification Data]	×	○	A system error No. is displayed.	
[Error No.]	×	○	—	
[Channel]*1	×	○	—	
[Network No.]*1	×	○	For the host station, the network No. is 0x0000.	
[Station No.]*1	×	○	For the host station, the station No. is 0x00FF.	
[CPU No.]*1	×	○	—	
[Screen No.]*1	×	○	—	
[Definition Screen No.]*1	×	○	—	
[Object ID]*1	×	○	—	
[Alarm Status]*2	○	○	The following bits of the word device are used to output the alarm status.	
			b0	• Occurring: ON • Restored: OFF
			b1	• Checked: ON • Unchecked: OFF
			b2	• When external output of the alarm status is enabled: ON • When external output of the alarm status is disabled: OFF
			b3 to b15	Use prohibited
[Occurred Date]	○	○	For the data storage specifications of date and time, refer to the following. ☞ Page 2130 Data storage specifications of date and time	
[Occurred Time]*2	○	○		
[Restored Date]*3	○	○		
[Restored Time]*2*3	○	○		
[Checked Date]*3	○	○		
[Checked Time]*2*3	○	○		
[Level]	○	○	—	
[Group]	○	○	—	
[Frequency of Occurrences]*4	○	×	If the occurrence frequency exceeds 1 word (65535), 65535 is output.	
[Cumulative Time]*4	○	×	The cumulative time (in hours and minutes) is stored in BCD code in two word devices. Example) When the cumulative time is 12 hours and 35 minutes Device value: 1235	
[Down Time]*4	○	×	The downtime (in hours and minutes) is stored in BCD code in two word devices. Example) When the downtime is 2 hours and 10 minutes Device value: 210	

*1 This information makes it easy to identify where the error has occurred.
The contents to be output differ depending on the settings configured for [Display detailed information on the target alarm] in the [User Alarm Observation] dialog.
In addition, obtained information differs depending on the system alarm. The information which is not related to the error is not output even if the information is set.

*2 For the output specifications when upper- or middle-level alarms are displayed, refer to the following.
☞ Page 2130 Output specifications when upper- or middle-level alarms are displayed

*3 This item can be selected only when the alarm history collecting method is the cumulative mode or history mode.

*4 This item can be selected only when the alarm history collecting method is the cumulative mode.

■Output specifications when upper- or middle-level alarms are displayed

When upper- or middle-level alarms are displayed, the output time includes the following information.

Item	Output specifications
[Occurred Time]	The occurrence time of the most recent alarm at the hierarchy level is output.
[Restored Time]	An invalid value (0) is output because restored alarms are not displayed in the alarm popup display.
[Checked Time]	The check time of the most recent alarm at the hierarchy level is output.

If any unchecked or unrestored alarm is included under the alarm currently displayed, the entire hierarchy is handled as unchecked or unrestored, and thus an invalid value (0) is output to the external output device.
If the levels or groups to be displayed are narrowed by the switching device, information is output only for the narrowed alarms.

■Data storage specifications of date and time

The date and time are respectively stored in two word devices.
The following describes the case in which the time of occurrence is written into D254 (2 points) and the date of occurrence is written into D256 (2 points).

Item	Data storage specifications
Date	Store the year, month, and day with BCD code. D254: b15 to b8 = Month (1 to 12), b7 to b0 = Day (1 to 31) D255: b15 to b8 = Two upper digits of year, b7 to b0 = Two lower digits of year
Time	Stores the hour, minute, and second with BCD code. D256: b15 to b8 = Minute (0 to 59), b7 to b0 = Second (0 to 59) D257: b15 to b8 = 00, b7 to b0 = Hour (0 to 23)

Ex.

Jun. 1, 2024 12:24:56

D254: b15 to b8 = 06 (Month), b7 to b0 = 01 (Day)

D255: b15 to b8 = 20, b7 to b0 = 24 (Year)

D256: b15 to b8 = 24 (Minute), b7 to b0 = 56 (Second)

D257: b15 to b8 = 00, b7 to b0 = 12 (Hour)

62.6 Relevant settings

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Set the relevant settings other than the specific settings for the alarm popup display as required.
The following shows the functions that are available by configuring the relevant settings.

62.6.1 Alarm monitoring setting dialog

The following shows the functions to be set in the alarm monitoring setting dialog.
After configuring the alarm monitoring settings, configure the settings to display the alarms in the popup display.

Popup display target	Required setting
User alarm	Select [Pop up alarms] in the [Basic] tab in the [User Alarm Observation] dialog.
System alarm	Select [Target] in the [Basic] tab in the [User Alarm Observation] dialog.

62.6.2 Property of screens

The following shows the functions to be set for each screen (screen property).
Select the screen where the alarm popup display will be displayed, then select [Screen] → [Screen Property] from the menu to display the screen properties dialog.
☞ Page 313 Changing screen property

Function	Setting item
Setting whether to display the alarm popup display or not for each screen Selecting the display position of the alarm popup display from among three positions: the top row, the center row, or the lower row	Set this function with the following items of the [Basic] tab. • [Use Alarm Popup Display] • [Display Position]

62.6.3 GOT environmental settings (System information)

Select [Common] → [GOT Environmental Setting] → [System Information] from the menu to display the [Environmental Setting] dialog.
☞ Page 576 Setting a device which controls the GOT operations or notifies the GOT status ([System Information])

Function	Setting item
Turning off the Key Input signal (System signal 1-1.b3)	[System Signal 1-1]
Disabling all the key inputs (System signal 1-1.b9)	[System Signal 1-1]
Resetting system alarms and system information (GOT error code, GOT Error Detection signal) (System signal 1-1.b13)	[System Signal 1-1]
Notifying a key input (System signal 2-1.b3)	[System Signal 2-1]

62.6.4 GOT internal devices

☞ Page 3577 GOT internal devices

Function	Setting item
Storing the channel No. that has been assigned to the channel where a system alarm (GOT error) occurs	GS262
Storing the channel No. that has been assigned to the channel where a system alarm (CPU error) occurs	GS263
Storing the channel No. that has been assigned to the channel where a system alarm (network error) occurs	GS264

63 Viewing alarm events (Alarm display)

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☞ Page 2133 Overview of the alarm display
☞ Page 2134 How to use the alarm display
☞ Page 2139 Specifications of the alarm display
☞ Page 2140 Configuring the settings for an alarm display
☞ Page 2141 Key code switches for operating alarm displays
☞ Page 2144 [Alarm Display(User)] dialog
☞ Page 2164 [Alarm Display(System)] dialog
☞ Page 2178 Relevant settings

63.1 Overview of the alarm display

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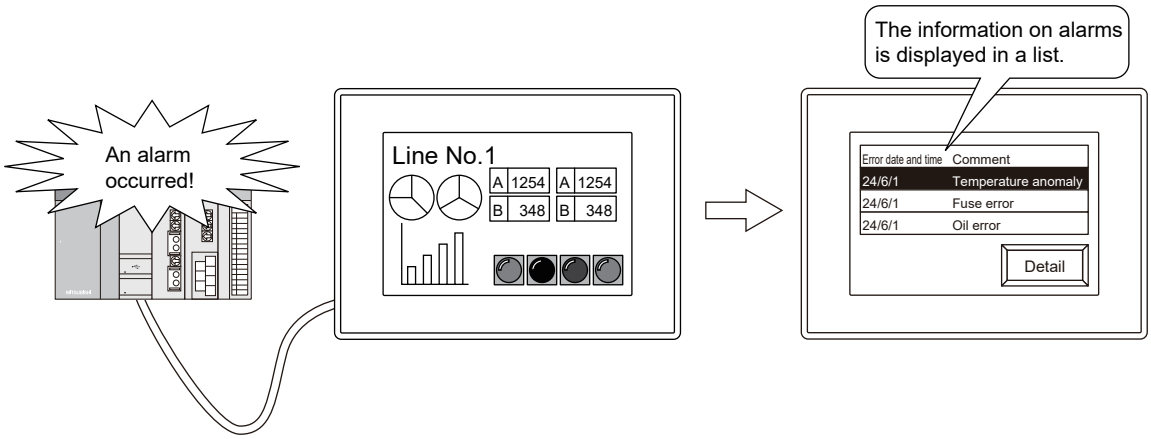
The alarm display object lists the collected user or system alarm events.
Alarms can be checked or deleted using touch operations or key code switches.



This chapter explains the alarm display, which is an object to display the collected alarms on the GOT screens.
For collecting user or system alarm events, refer to the following.

☞ Page 1896 Placing a hyperlink on a mobile screen
☞ Page 1896 Placing a hyperlink on a mobile screen

63.2 How to use the alarm display

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The object to be used differs depending on the displayed alarms.

Displayed alarms	Object to be used	Reference for setting
Alarms collected by the user alarm monitoring	Alarm display (user)	☞ Page 2144 [Alarm Display(User)] dialog
Alarms collected by the system alarm monitoring	Alarm display (system)	☞ Page 2164 [Alarm Display(System)] dialog

The function differs depending on the object.

○: Supported

—: Unsupported

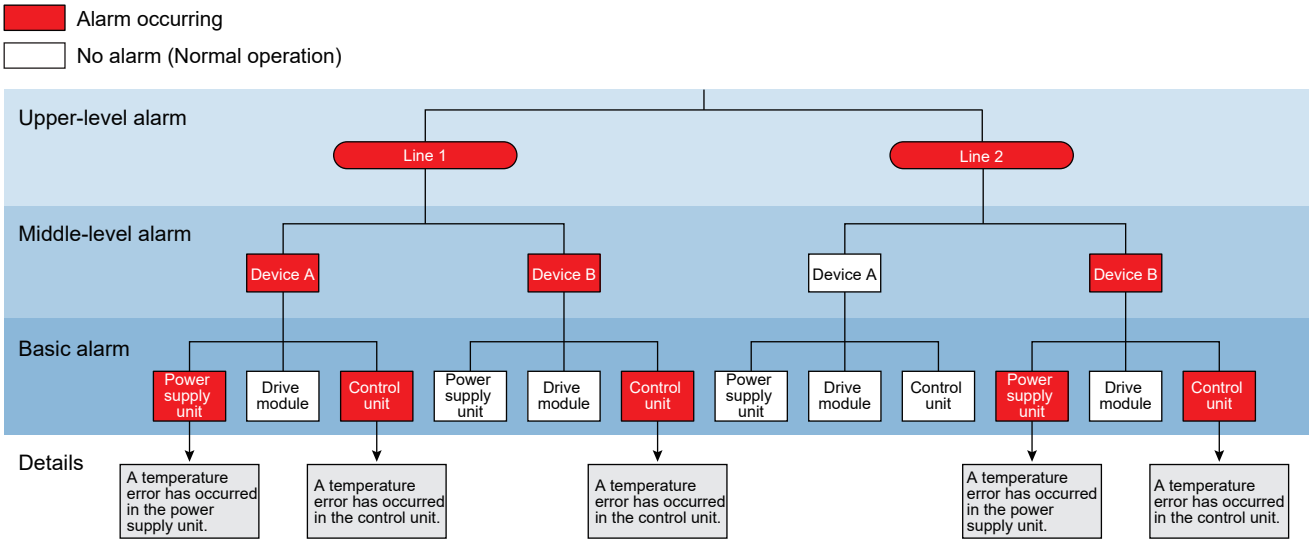
Function		Support by object	
		Alarm display (user)	Alarm display (system)
Scrolling display	Long messages that cannot be fully displayed in the object can be checked by scrolling them. Set the scrolling display in the [Alarm Setting] tab.	○	○
Sort order specification	The sort order of the displayed alarms can be specified. By using the priority display attribute switching device, the sort order can be switched dynamically. Set the sort order in the [Style] tab. Set the priority display attribute switching device in the [Extended] tab. Example) Sort condition: Date and time of occurrence (reverse chronological) Error date and time / Comment / Restored / Checked / Frequency 24/06/01 20:00 / Power supply unit error / - / - / 1 24/06/01 18:30 / Hydraulic pressure failure / - / 18:50 / 2 24/06/01 16:10 / Drive module error / 16:30 / 16:20 / 5 24/06/01 14:00 / Motor error / 15:00 / 14:10 / 4 24/06/01 13:30 / Light error / 14:30 / 13:50 / 1 Example) Sort condition: Frequency (descending order) Error date and time / Comment / Restored / Checked / Frequency 24/06/01 16:10 / Drive module error / 16:30 / 16:20 / 5 24/06/01 14:00 / Motor error / 15:00 / 14:10 / 4 24/06/01 18:30 / Hydraulic pressure failure / - / 18:50 / 2 24/06/01 20:00 / Power supply unit error / - / - / 1 24/06/01 13:30 / Light error / 14:30 / 13:50 / 1	○	○
Text color/style specification by condition	Setting text colors and styles for each condition such as the alarm status facilitates visual identification of alarm events. Set the text color and style in the [Text] tab.	○	○
Comment language switching	The following features of the alarm display support comment switching using the language switching device. • Title • Alarm comment (alarm display (user) only) For the language switching, refer to the following. ☞ Page 546 Setting for switching the language displayed on the GOT ([Language Switching])	○	○
Switching the hierarchy level	The hierarchy levels to be displayed can be switched, and the alarms to be displayed can be narrowed down. ☞ Page 2135 Switching the alarm hierarchy level (user alarms only)	○	—
Switching the displayed contents (narrow)	The displayed content can be switched according to the value of the switching device. Set a switching device for each item to be switched. ☞ Page 2138 Switching the displayed contents according to the device values	○	○
External output	The information of the selected alarm can be output to external output devices. Set the external output devices in the [External Output] tab.	○	○

63.2.1 Switching the alarm hierarchy level (user alarms only)

You can configure the settings to switch the hierarchy level of the currently occurring user alarm to another level.
The following two methods are available for switching the hierarchy level.

Switching method	Description
☞ Page 2136 Switching the hierarchy level using touch operation	Touching the alarm display (user) switches the hierarchy level down. The following operations switch hierarchy level down. • Touching the alarm display (user) • Touching the key code switch for switching the hierarchy level while the cursor is displayed on the alarm display (user)
☞ Page 2137 Switching the hierarchy level using a device	Switches the hierarchy level of the alarm displayed on the alarm display (user) depending on the value stored in the device.

The display range differs depending on the switching method.
The following system examples show differences in display ranges according to the switching methods.



Point

To display hierarchized comments, it is recommended to set upper-level alarms to be displayed at the initial display hierarchy level.
Set the initial display hierarchy level in the [Alarm Setting] tab in the [Alarm Display(User)] dialog.
☞ Page 2144 [Alarm Setting] tab
When you perform any of the following operations using a device, all the alarms set at the initial display hierarchy level are displayed regardless of the hierarchy levels displayed.

- Switching between alarm IDs
- Switching between languages

Switching the hierarchy level using touch operation

The following shows an example of switching the hierarchy level by touching the alarm display (user).
You can configure the settings so that touching the alarm display (user) will switch the hierarchy level of the touched alarm down.
Only the level below the touched alarm is displayed.
If no comment is set in the switching destination level or the comment could not be obtained, [No message] is displayed.

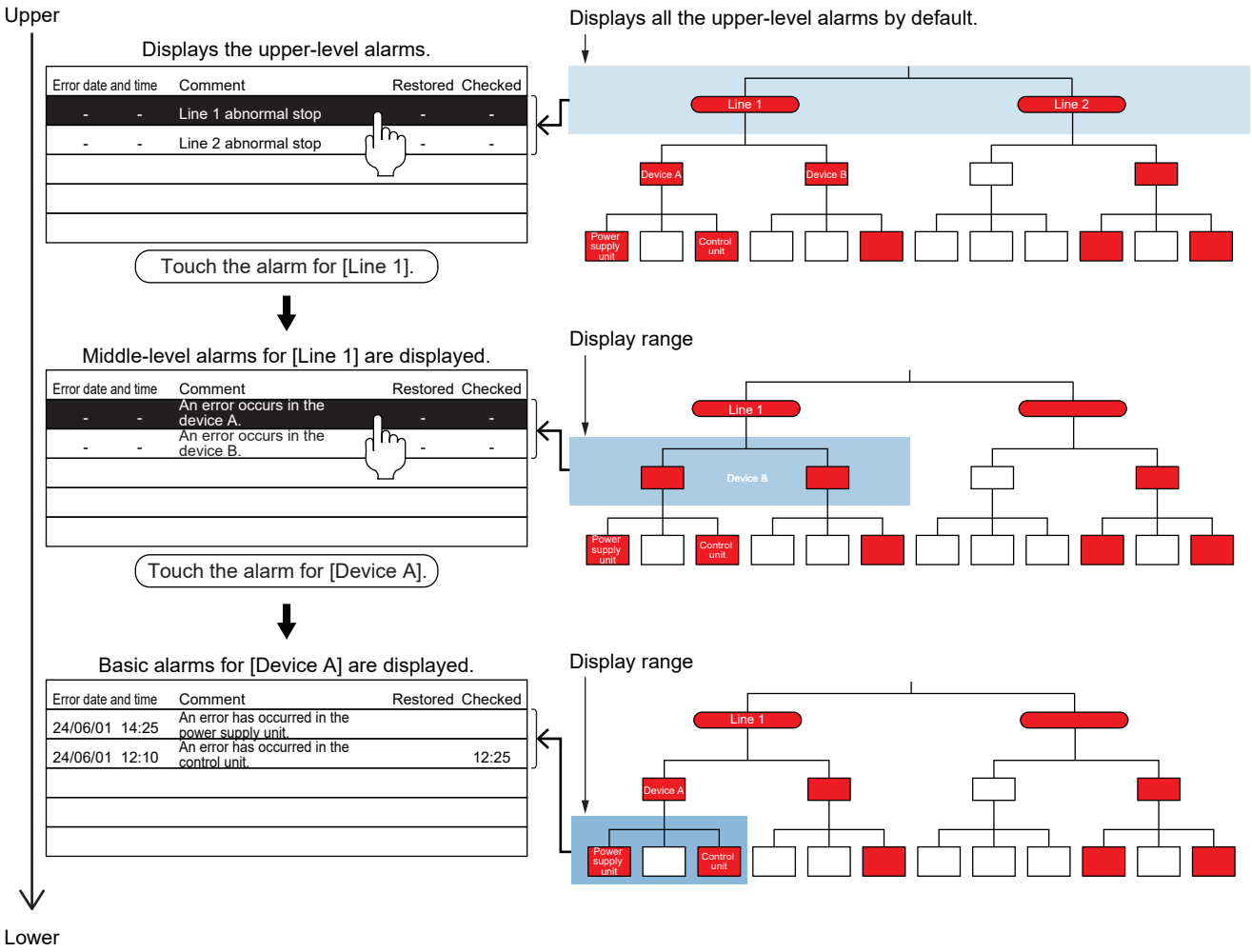
Precautions

If an alarm at the lower level in a tree of the hierarchy occurs while alarms at the lower level in another tree of the hierarchy are displayed, the new alarm is not displayed.
To display the new alarm, display all the alarms of the specified hierarchy level using the hierarchy switching device.
Alternatively, specify an upper hierarchy level using the hierarchy switching device and change the hierarchy level of the new alarm.

■Target of the alarm hierarchy change

The alarm hierarchy change applies to the touched alarm.

Ex.
When [Initial Display Hierarchy] is set to upper-level alarms in the [Alarm Setting] tab in the [Alarm Display(User)] dialog



■How to switch the hierarchy level up

Perform either of the following operations to switch the hierarchy level up.

Method	Description
Switching with the key code switch	Touch the key code switch for which the key code FFC2 has been set. ☞ Page 2141 Key code switches for operating alarm displays
Switching using the screen switching device	☞ Page 2137 Switching the hierarchy level using a device

Switching the hierarchy level using a device

The alarm hierarchy of the alarm to be displayed can be specified using a device.

When levels are switched by using a device, the comments of all the current alarms at the level specified by the device are displayed unlike the level switching by touch operation.

Set the hierarchy switching device by selecting [Hierarchy] under [Switching Device] in the [Alarm Display(User)] dialog ([Extended] tab).

☞ Page 2155 [Extended] tab

If no comment is set in the switching destination level, [No message] is displayed.

Ex.

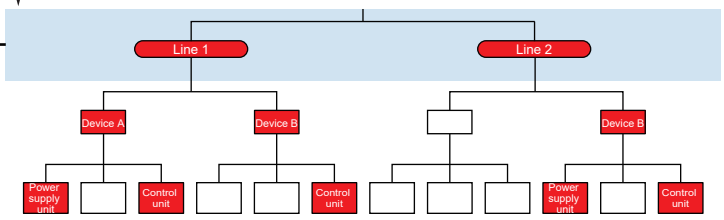
When the hierarchy switching device is set to GD110

Displays the upper-level alarms.

GD110 2

Error date and time	Comment	Restored	Checked
- -	Line 1 abnormal stop	-	-
- -	Line 2 abnormal stop	-	-

Displays all the upper-level alarms.

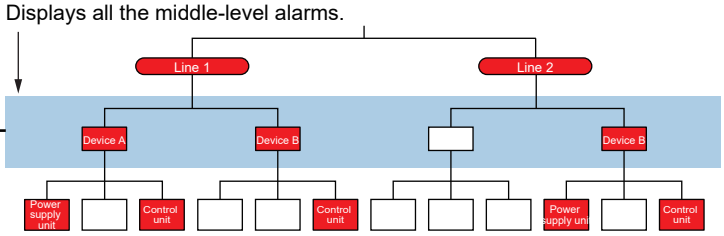


Displays the middle-level alarms.

GD110 1

Error date and time	Comment	Restored	Checked
- -	An error occurs in the device A.	-	-
- -	An error occurs in the device B.	-	-
- -	An error occurs in the device B.	-	-

Displays all the middle-level alarms.

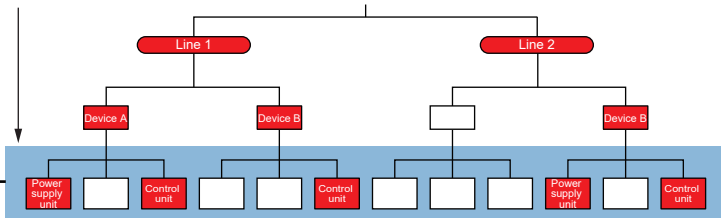


Displays the basic alarms.

GD110 0

Error date and time	Comment	Restored	Checked
24/06/01 14:25	An error has occurred in the power supply unit.		
24/06/01 12:10	An error has occurred in the control unit.		12:25
24/06/01 10:00	An error has occurred in the control unit.		11:00
24/06/01 09:15	An error has occurred in the power supply unit.	10:10	09:55
24/06/01 08:35	An error has occurred in the control unit.	10:20	09:40

Displays all the basic alarms.



63.2.2 Switching the displayed contents according to the device values

The alarm events can be switched according to the value of the specified device.

Set [Switching Device] on the [Extended] tab.

Object	Reference
Alarm display (user)	☞ Page 2155 [Extended] tab
Alarm display (system)	☞ Page 2172 [Extended] tab

The following table lists the items that can be switched according to the device values.

Items that can be switched for the alarm display (user)

Item that can be switched by using devices	Description
Hierarchy*1	The comments of all the current alarms at the specified level are displayed.
Level*1	The alarm events in the specified level are displayed.
Group*1	The alarm events in the specified group are displayed.
Priority display attribute	The display order is switched between the ascending order and descending order. For the relationship between the sort criteria and device value, refer to the following. ☞ Page 2157 Details of [Switching Device]
Basic alarm comment group	The alarm events are displayed using the comments of the specified comment group. You can change the comments according to your purpose.
Middle comment group	
Upper comment group	

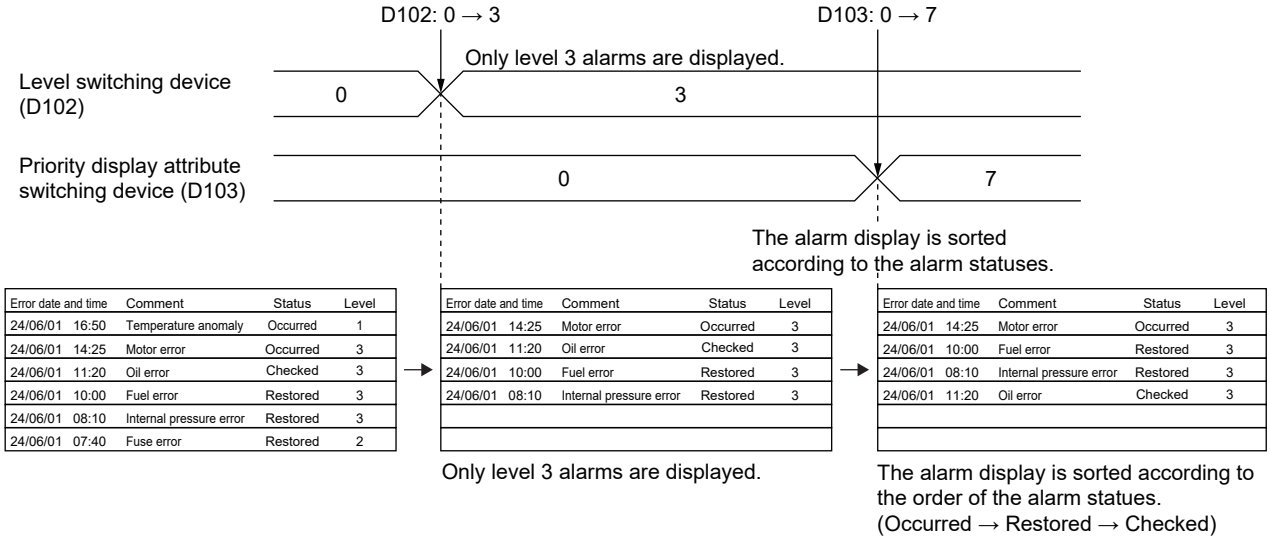
*1 To set the hierarchy level, level number, and group for alarms, use the user alarm monitoring dialog.
☞ Page 2048 [Device] tab

Ex.

Example in which the following devices are set and the device values are changed

Level switching device: GD102

Display attribute switching device: GD103



Error date and time	Comment	Status	Level
24/06/01 16:50	Temperature anomaly	Occurred	1
24/06/01 14:25	Motor error	Occurred	3
24/06/01 11:20	Oil error	Checked	3
24/06/01 10:00	Fuel error	Restored	3
24/06/01 08:10	Internal pressure error	Restored	3
24/06/01 07:40	Fuse error	Restored	2

Error date and time	Comment	Status	Level
24/06/01 14:25	Motor error	Occurred	3
24/06/01 11:20	Oil error	Checked	3
24/06/01 10:00	Fuel error	Restored	3
24/06/01 08:10	Internal pressure error	Restored	3

Error date and time	Comment	Status	Level
24/06/01 14:25	Motor error	Occurred	3
24/06/01 10:00	Fuel error	Restored	3
24/06/01 08:10	Internal pressure error	Restored	3
24/06/01 11:20	Oil error	Checked	3

Item that can be switched for the alarm display (system)

Item that can be switched by using devices	Description
Priority display attribute	The display order is switched between the ascending order and descending order. For the relationship between the sort criteria and device value, refer to the following. ☞ Page 2173 Details of [Priority Display Attribute]

63.3 Specifications of the alarm display

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63.3.1 Maximum number of objects that can be placed on one screen

The following table lists the maximum numbers of objects that can be placed on one screen.

Object	Maximum number of objects on one screen
Alarm display (user)	25 33 (total number of alarm displays (user) and simple alarm displays)
Alarm display (system)	8

Precautions

By using the set overlay screen function, another screen (called screen) can be called and displayed on the basic screen.
The basic screen and called screen are handled as one screen.
Therefore, make sure that the total number of objects placed on the basic screen and the called screen does not exceed the maximum number of objects that can be placed on a screen.
For the set overlay screen function, refer to the following.
☞ Page 1865 Placing a screen on another screen

63.4 Configuring the settings for an alarm display

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To display alarms in the alarm display, configure the settings described in this section.

Configuring the settings in multiple dialogs is required.

☞ Page 2140 Configuring the settings for collecting alarms

☞ Page 2140 Placing an alarm display object

63.4.1 Configuring the settings for collecting alarms

After configuring settings for monitoring alarms in the relevant dialogs, configure the settings to display the alarms.

Display target	Required setting
User alarm	Configure the settings for the user alarm monitoring. ☞ Page 1896 Placing a hyperlink on a mobile screen
System alarm	Configure the settings for the system alarm monitoring. Select [Target] in the [Basic] tab in the [User Alarm Observation] dialog. ☞ Page 1896 Placing a hyperlink on a mobile screen

63.4.2 Placing an alarm display object

Use the following procedure to place an alarm display object and configure the operation settings.

1. Perform the following operations according to the object to be placed.

Object	Operation
Alarm display (user)	Select [Object] → [Alarm Display] → [Alarm Display (User)] from the menu.
Alarm display (system)	Select [Object] → [Alarm Display] → [Alarm Display (System)] from the menu.

2. Click the position where you place the alarm display. Placing the alarm display is complete.

☞ Page 1001 Placing figures and objects

The relevant key code switches are placed together.

For key code switches for operating alarm displays, refer to the following.

☞ Page 2141 Key code switches for operating alarm displays

3. Double-click the alarm display which has been placed to display the setting dialog.

4. Configure the operation settings in each tab of the setting dialog.

☞ Page 2144 [Alarm Display(User)] dialog

☞ Page 2164 [Alarm Display(System)] dialog

For the operations common to all objects or editing operations except operation settings, refer to the following.

☞ Page 988 Color settings

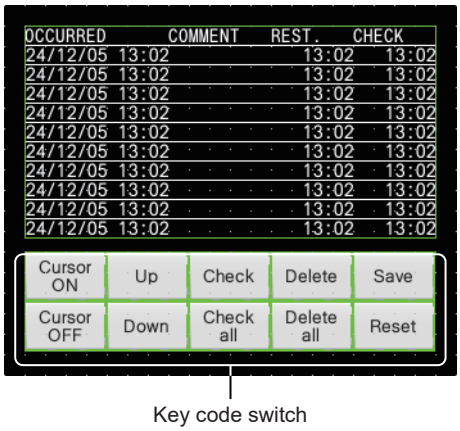
63.5 Key code switches for operating alarm displays

By touching a key code switch, the operation corresponding to the key code can be performed for the alarm display.

☞ Page 2141 Key code switches placed together with the alarm display
☞ Page 2141 Key code switches registered in the library
☞ Page 2142 Key codes for operating alarm displays

63.5.1 Key code switches placed together with the alarm display

Placing an alarm display on the screen places the relevant key code switches together.



Precautions

The user ID of the alarm display object is automatically assigned to the key code switches placed together with the alarm display ([User ID for a key input]).

If you change the user ID of the alarm display object, also change the set value of [User ID for a key input] for each switch. Otherwise, the alarm display object is inoperable using the switches.

63.5.2 Key code switches registered in the library

The key code switches for operating alarm displays are also registered in the library.

☞ Page 1002 Placing from the library or parts

63.5.3 Key codes for operating alarm displays

The following table lists the key codes for operating alarm displays.

For the key code setting with the key code switches, refer to the following.

☞ Page 1251 [Key Code Switch] dialog

○: Supported

—: Unsupported

Key code (HEX)	Operation	Description	Operation target	
			Alarm display (user)	Alarm display (system)
00F2*1	Scroll up by one line	Scrolls up the display by one row.	○	○
00F3*1	Scroll down by one line	Scrolls down the display by one row.	○	○
FFB0*2	Show the cursor	Displays the cursor.	○	○
FFB1*2	Hide the cursor	Hides the cursor.	○	○
FFB2*2	Move the cursor up	• While the cursor is displayed: Moves the cursor up by row. • While the cursor is hidden: Moves the view to the previous page.	○	○
FFB3*2	Move the cursor down	• While the cursor is displayed: Moves the cursor down by row. • While the cursor is hidden: Moves the view to the next page.	○	○
FFB4*2	Change the selected alarm status to "Checked" (Check)	Changes the status of the selected alarm to "Checked".	○	○
FFB5*2	Change all the alarm statuses to "Checked" (Check all)	Changes all the alarm statuses to "Checked".	○	○
FFB6*2	Delete the selected restored alarm (Delete)	Deletes the selected alarm (restored). The following operations are performed depending on the method for collecting user alarm monitoring history. • In historical mode: Target alarms are deleted from the history. • In cumulative mode (only available for user alarm monitoring): The down time, number of occurrences, and cumulative time are reset.	○	○
FFB7*2	Delete all the restored alarms (Delete all)	Deletes all the restored alarms. The following operations are performed depending on the method for collecting user alarm monitoring history. • In historical mode: Target alarms are deleted from the history. • In cumulative mode (only available for user alarm monitoring): The down time, number of occurrences, and cumulative time are reset.	○	○
FFB8	Display detail	Displays the detail screen of a selected alarm when this cursor is touched with basic alarms displayed.	○	—
	Move to the lower hierarchy	Displays the alarms at lower hierarchy level when this cursor is touched when upper- or middle-level alarms are displayed.	○	—
FFB9*2	Reset the selected alarm data	Resets the selected alarm. To use this key code switch for the alarm display (user), satisfy both the following conditions. • [Reset] is set on the [Device] tab in the [User Alarm Observation] dialog. • Basic-level alarm events are displayed on the object.	○	○
FFBB*2	Saves the alarm details to the data storage	Saves alarm events to an alarm log file in the data storage.	○	○
FFBA	Display ladder (sequence program monitor (iQ-R/iQ-L ladder))	Searches for the device assigned to the alarm and displays the ladder (sequence program monitor (iQ-R/iQ-L ladder)).	○	○
FFC3	Display ladder (sequence program monitor (iQ-F ladder))	Searches for the device assigned to the alarm and displays the ladder (sequence program monitor (iQ-F ladder)).	○	○
FFBD	Display ladder (sequence program monitor (Q/L ladder))	Searches for the device assigned to the alarm and displays the ladder (sequence program monitor (Q/L ladder)).	○	○
FFBC	Display ladder	Searches for the device assigned to the alarm and displays the ladder.	○	○
FFBE	Move display position to the specified time	Displays the data obtained at the time stored in the display position time specification device. (Time specification jump function) Set [Display Position Time Device] on the [Extended] tab. ☞ Page 2155 [Extended] tab ☞ Page 2172 [Extended] tab	○	○

Key code (HEX)	Operation	Description	Operation target	
			Alarm display (user)	Alarm display (system)
FFBF[*1]	Display first alarm	Returns to the top of the list. The cursor becomes invisible. Returns to the top of the list sorted in the specified order.	○	○
FFC2	Move to the upper hierarchy	Switches the middle or basic level to the upper level in the alarm hierarchy.	○	—

*1 The touch switches set together with FFB5 are invalid.

*2 Placing an alarm display on the screen places the relevant key code switches together.

63.6 [Alarm Display(User)] dialog

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☞ Page 2144 [Alarm Setting] tab
☞ Page 2147 [Display] tab
☞ Page 2149 [Text] tab
☞ Page 2154 [Style] tab
☞ Page 2155 [Extended] tab
☞ Page 2159 [Trigger] tab
☞ Page 2160 [External Output] tab

63.6.1 [Alarm Setting] tab

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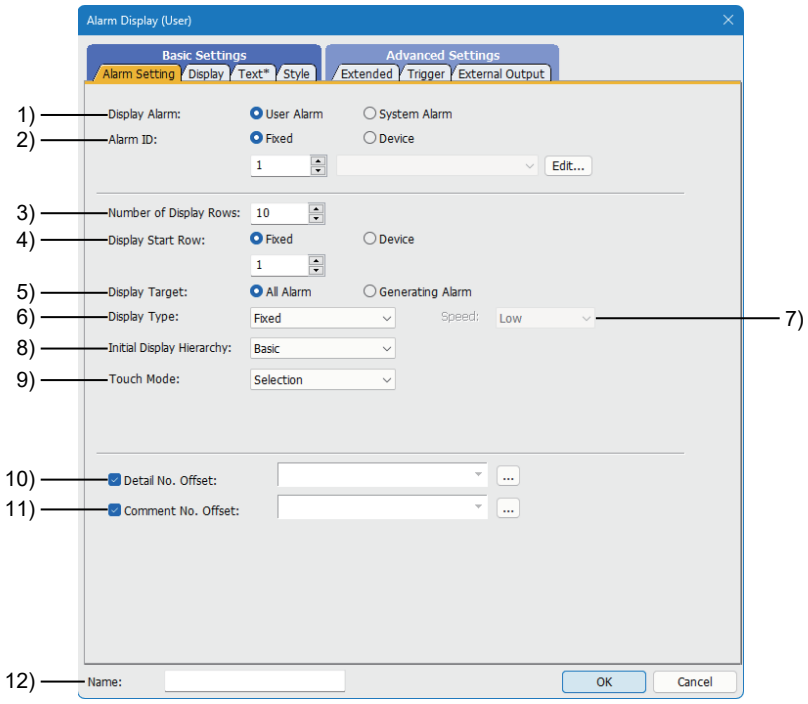
For mobile screens, some setting items are not available.

☞ Page 2742 Usable functions

Configure the settings such as the alarm monitoring type to be displayed, message display method, and touch operations.



Item			Description
1)	[Display Alarm]		The alarm type to be displayed in the alarm display. Select [User Alarm].
2)	[Alarm ID]	—	Set the alarm ID of the user alarm to be displayed.
		[Fixed]	Enter the alarm ID directly. The setting range is [1] to [32767]. Click the [Edit] button to display the [User Alarm Observation] dialog. ☞ Page 2045 [User Alarm Observation] dialog
		[Device]	Set the device that specifies the alarm ID. ☞ Page 834 How to set devices, labels, and tags When 0 is stored in the set device, the alarm monitoring setting for alarm ID 1 is displayed. If an alarm ID outside the range or a nonexistent alarm ID is stored in the set device, the alarm ID is not switched.

Item			Description	
3)	[Number of Display Rows]		Set the number of rows displayed in a screen. The setting range is [1] row to [64] rows. The title row is not counted in the number of rows. Select the display setting of the title row for [Specification] in the [Display] tab. ☞ Page 2147 [Display] tab	
4)	[Display Start Row]	—	Select a row to be displayed in the top row when the number of alarms exceeds the number of rows set in [Number of Display Rows].	
		[Fixed]	Specify the start row number directly. The setting range is [1] to [32767].	
		[Device]	Set the word device that specifies the start row. ☞ Page 834 How to set devices, labels, and tags For the display examples according to the number of displayed alarms, refer to the following. ☞ Page 2146 Settings of [Display Start Row] and operation examples Even if the number of alarms exceeds the value set in [Display Start Row] when alarms are displayed on the GOT, the setting for [Display Start Row] does not become enabled. To enable the setting for [Display Start Row], switch the screen to another one, then switch back the screen to the one in which the alarm is displayed.	
5)	[Display Target]		Select the alarm to be displayed from the collected alarms.	
6)	[Display Type]		Select the display method of the comments from the display items of the alarm display. Up to 16 alarm display objects (alarm display (user) objects and alarm display (system) objects with scrolling display enabled) can be placed on one screen. The comment displayed for the 17th and the subsequent alarms is fixed. The following shows the selectable display methods.	
			[Fixed]	Does not scroll a comment displayed at an alarm occurrence. When a comment extends off the display area, the part outside the area and the second and subsequent rows are not displayed.
			[Flow all]	Scrolls a full comment displayed at an alarm occurrence from right to left.
			[Flow as required]	Does not scroll a comment fully displayed within the display area. Scrolls a comment extending off the display area and a multiple-row comment from right to left.
			[Flow the selected row]	Scrolls only the comment selected among the comments displayed at an alarm occurrence from right to left.
7)	[Speed]		This item is settable when [Display Type] is set to [Flow all], [Flow as required], or [Flow the selected row]. Select the speed at which the display is scrolled.	
8)	[Initial Display Hierarchy]		Select a level in the alarm hierarchy to be displayed first when a user alarm occurs.	
9)	[Touch Mode]		Select the operation performed when the alarm display (user) is touched.	
			[None]	Select this item to disable touch operations.
			[Selection]	Selects a touched alarm.
			[Operation]	Selects a touched alarm. Switches between levels in the alarm hierarchy with each touch of the selected alarm. Touching a selected upper alarm displays the middle alarm. Touching a selected middle alarm displays the basic alarm. Touching a selected basic alarm displays the detail screen. While GS450.b15 is on, even when a basic alarm is not selected, a single touch of the basic alarm displays the detail screen.
10)	[Detail No. Offset]		Set the offset device for the detail No. ☞ Page 834 How to set devices, labels, and tags The offset target differs depending on the setting of the detail display.	
			Comment window	The offset device value is added to the comment No. to switch the comments to be displayed in the comment window.
			Base screens and window screens	The offset device value is added to the screen No. to switch the screens to be displayed.
11)	[Comment No. Offset]		Set the offset device for the comment No. The offset device value is added to the comment No. to switch the comments to be displayed in the alarm display (user). ☞ Page 834 How to set devices, labels, and tags	
12)	[Name]		Set the object name. The name is displayed in places such as the data browser and property sheet. The name can also be changed in other tabs. Up to 100 characters can be set.	

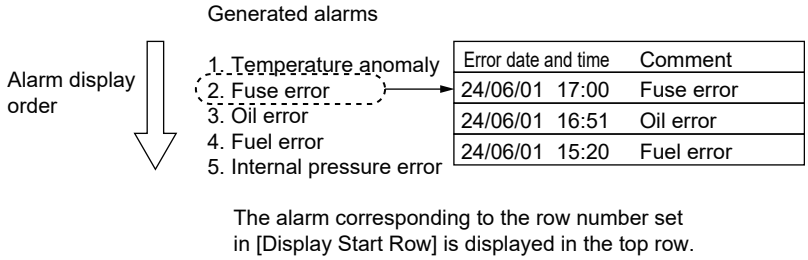
Settings of [Display Start Row] and operation examples

■When the number of alarms is larger than the value set in [Display Start Row]

The alarm corresponding to the row number set in [Display Start Row] is displayed in the top row.

Ex.

When [Number of Display Rows] is set to 3, [Display Start Row] is set to 2, and the number of alarms is 5



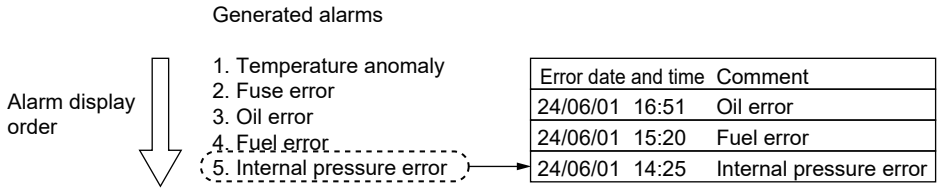
The alarm corresponding to the row number set in [Display Start Row] is displayed in the top row.

■When the number of alarms is smaller than the value set in [Display Start Row]

The last alarm is displayed in the bottom row.

Ex.

When [Number of Display Rows] is set to 3, [Display Start Row] is set to 10, and the number of alarms is 5



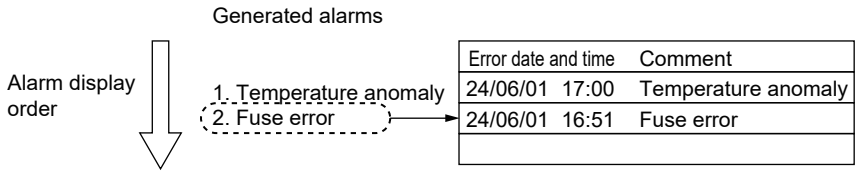
The last alarm is displayed in the bottom row.

■When the number of alarms is smaller than the value set in [Number of Display Rows]

The setting for [Display Start Row] becomes disabled, and all the alarms that have occurred are displayed.

Ex.

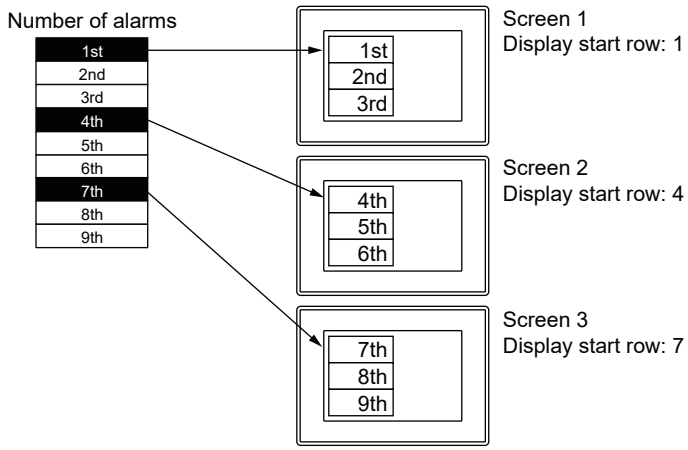
When [Number of Display Rows] is set to 3, [Display Start Row] is set to 3, and the number of alarms is 2



All the alarms that have occurred are displayed.

■Using the setting for multiple screens

When different values of [Display Start Row] are set for each screen, the alarm displays differ depending on the screens.



63.6.2 [Display] tab

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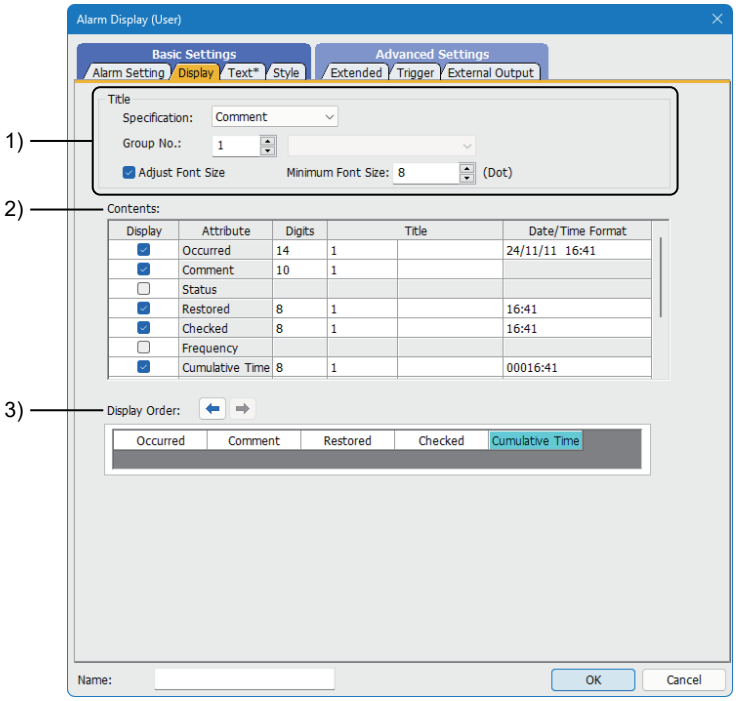
For mobile screens, some setting items are not available.

☞ Page 2742 Usable functions

Set the items to be displayed in the user alarm and the display order.



Item			Description
1)	[Title]	[Specification]	Select the method of specifying the text to be displayed in the title.
		[Group No.]	Only when [Comment] is selected for [Specification], this item can be set. Set the comment group in which the text to be displayed in the title is registered.
		[Adjust Font Size]	Only when [Comment] is selected for [Specification], this item can be set. The font size is adjusted according to the width of the title. When [Adjust Font Size] is not selected, the text size is adjusted by inserting a line feed.
		[Minimum Font Size]	Only when [Comment] is selected for [Specification] and [Adjust Font Size] is selected, this item can be set. Set the minimum font size for adjustment. The setting range is [8] dots to [540] dots.
2)	[Contents]	—	Set the attributes to be displayed as the columns in the alarm display (user). For details on contents displayed for each attribute, refer to the following. ☞ Page 2148 Details of [Contents] (alarm display (user))
		[Display]	Select whether to display each attribute. Select the attributes to be displayed.
		[Attribute]	Attributes to be displayed in the alarm display (user)
		[Digits]	Set the number of the digits displayed in each item. Set a one-byte character as one digit and a two-byte character as two digits. The setting range differs depending on the attribute. ☞ Page 2148 Details of [Contents] (alarm display (user))
		[Title]	Set the title of each column. The setting depends on the value selected for [Specification]. When [Direct] is selected, input characters within the number of digits set in [Digits]. When [Comment] is selected, the comment No. and the comment to be displayed in the title are displayed. If [0] is set in the comment No., the comment is hidden. When [None] is selected, the title cannot be set.
		[Date/Time Format]	Set the date and time format for each attribute item. The setting method differs depending on the attribute. ☞ Page 2148 Details of [Contents] (alarm display (user))

Item		Description
3)	[Display Order]	Set the order in which the items set for [Attribute] in [Contents] are displayed. The items of [Attribute] which are set in [Display] are displayed. Move the display position of the selected item sideways by using the right button and the left button.

Details of [Contents] (alarm display (user))

[Attribute]	Description	Setting range of [Digits]	Setting range of [Date/Time Format]
[Occurred]	Displays the date and time of occurrence of an alarm.	[5] digits to [128] digits Set the number of digits equal to or greater than the one required to display the date and time. The number of required digits differs depending on the setting of [Date/Time Format].	Click the [...] button, and set the date/time formats in the [Date/Time Setting] dialog. ☞ Page 3684 [Date/Time Setting] dialog (screen)
[Comment]	Displays the date and time of occurrence of an alarm.	[10] digits to [128] digits	—
[Status]	Displays the alarm status.	[6] digits to [128] digits	—
[Restored]	Displays the date and time when an alarm is restored.	[5] digits to [128] digits Set the number of digits equal to or greater than the one required to display the date and time. The number of required digits differs depending on the setting of [Date/Time Format].	Click the [...] button, and set the date/time formats in the [Date/Time Setting] dialog. ☞ Page 3684 [Date/Time Setting] dialog (screen)
[Checked]	Displays the date and time when an alarm occurrence has been checked.		
[Frequency]*1	Displays the number of past occurrences for each alarm.	[5] digits to [128] digits	—
[Cumulative Time]*1	Displays the total time during which each alarm has occurred.	[8] digits to [128] digits	Select a time format of hours:minutes or hours:minutes:seconds.
[Down Time]*1	Displays the time from the alarm occurrence to the alarm restoration.		
[Level]	Displays the levels set for alarms.	[3] digits to [128] digits	—
[Group]	Displays the groups set for alarms.		
[Log on Occurrence]	Comment in which the value of the log collection device collected when an alarm event occurs is embedded For the log collection, refer to the following. ☞ Page 2065 Log collection and embedding display in the comment	[1] digit to [128] digits	—

*1 Information accumulated only when [Cumulative] is selected for [Collection Mode] in the [User Alarm Observation] dialog ([Basic] tab)
When the above condition is not met, no content is displayed even if the corresponding attribute is set.

63.6.3 [Text] tab

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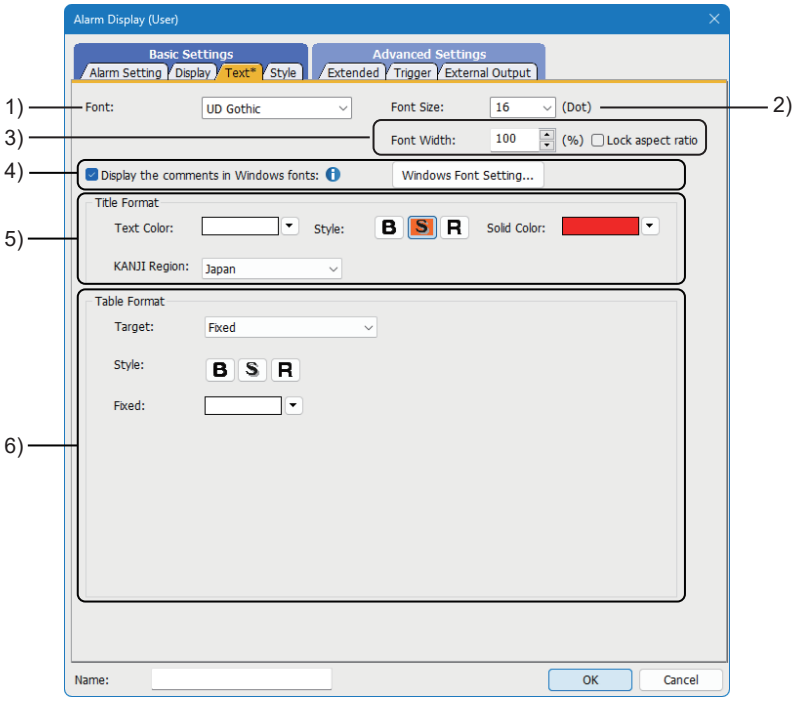
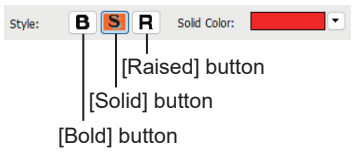
For mobile screens, some setting items are not available.

☞ Page 2742 Usable functions

Set the font of displayed alarms.



Item			Description
1)	[Font]		Select a font for the text to be displayed.
2)	[Font Size]		Set the size of the text to be displayed. The setting range is [8] dots to [540] dots.
3)	[Font Width]		Set a horizontal text size. The horizontal size is specified with the magnification relative to [Font Size] (vertical text size). The setting range is [6]% to [1600]%.
	[Lock aspect ratio]		The aspect ratio of the text is retained when you resize the text by manipulating a handle on the screen editor.
4)	[Display the comments in Windows fonts]	—	Displays the following registered comments in Windows fonts. • Comments set in the user alarm monitoring settings (basic alarm comment, upper comment, middle comment, and detail display) • Comments set for the titles in the [Display] tab (when [Comment] is selected for [Specification])
			This setting is deleted when one of the following settings is made. • [Device] is selected for [Alarm ID] in the [Alarm Setting] tab. • An item other than [Fixed] is selected for [Display Type] in the [Alarm Setting] tab. • [Basic Alarm Comment Group], [Middle Comment Group], or [Upper Comment Group] is selected in the [Extended] tab.
		[Windows Font Setting] button	Opens the [Comment Group Property] dialog, which displays the properties of the comment group set for the basic alarm comment. Set Windows fonts to display comments. ☞ Page 797 [Comment Group Property] dialog

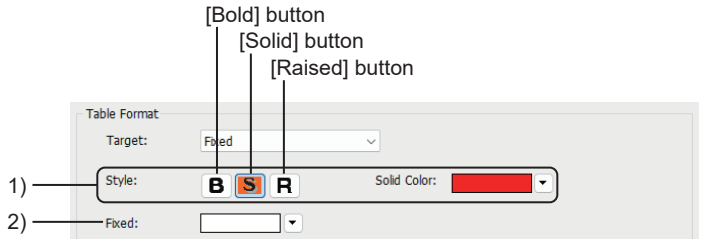
Item			Description
5)	[Title Format]	—	Set the format of the text displayed in the title of the alarm display (user).
		[Text Color]	Set the text color. ☞ Page 988 Color settings
		[Style]	Set the style of the text to be displayed. One style ([Bold], [Solid], or [Raised]) is settable only.  • [Bold] button: Displays the text in bold. • [Solid] button: Displays the text with a shadow. • [Raised] button: Displays the text embossed. • [Solid Color]: When [Solid] or [Raised] is selected as the text style, set the color of the shadow.
		[KANJI Region]	Select the KANJI region. ☞ Page 76 KANJI region This item is enabled when either of the following conditions is met. • [Direct] is selected for [Specification] on the [Display] tab. • [Comment] is selected for [Specification] on the [Display] tab, and [Display the comments in Windows fonts] is deselected on the [Text] tab.
6)	[Table Format]	—	Set the format of the text displayed in the alarm display (user). The format can be changed according to the content to be displayed.
		[Target]	Select the target of the text format switching. Displayed items differ depending on the item set for [Target]. ☞ Page 2151 Details of [Table Format] (alarm display (user))

Details of [Table Format] (alarm display (user))

☞ Page 2151 When [Fixed] is selected
☞ Page 2151 When [Status] is selected
☞ Page 2152 When [Level] or [Group] is selected
☞ Page 2153 When [Level + Status] or [Group + Status] is selected
☞ Page 2153 When [Comment Attribute] is selected

■When [Fixed] is selected

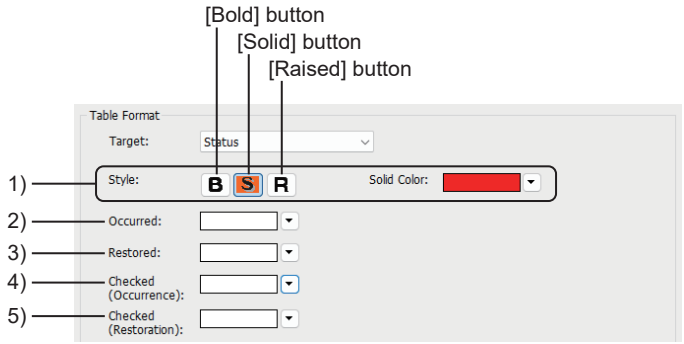
Text is always displayed in the same format without the formats being switched.



Item		Description
1)	[Style]	Set the style of the text to be displayed. One style ([Bold], [Solid], or [Raised]) is settable only. • [Bold] button: Displays the text in bold. • [Solid] button: Displays the text with a shadow. • [Raised] button: Displays the text embossed. • [Solid Color]: When [Solid] or [Raised] is selected as the text style, set the color of the shadow.
2)	[Fixed]	Set the text color. ☞ Page 988 Color settings

■When [Status] is selected

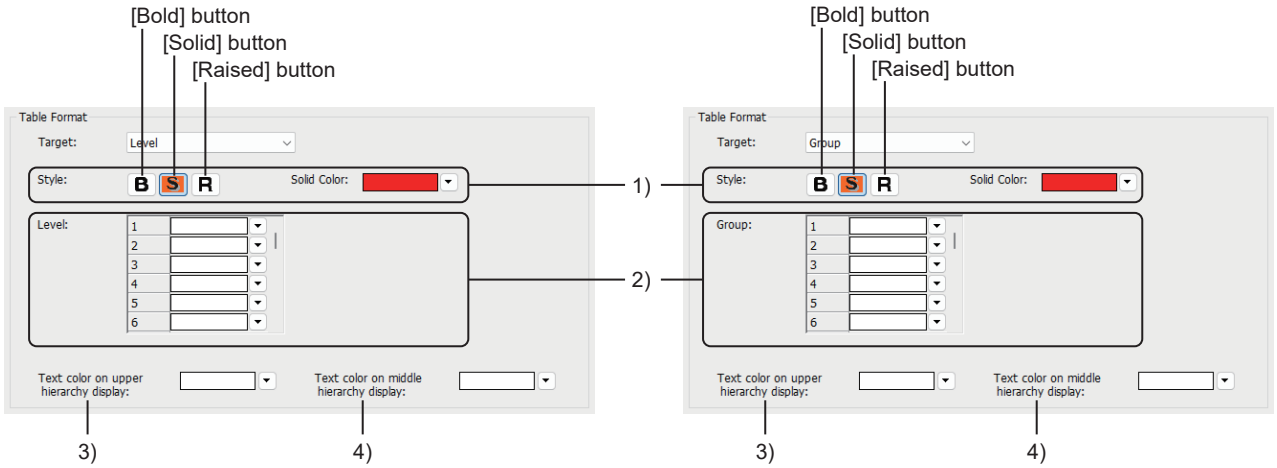
The formats are switched for each alarm status.



Item		Description
1)	[Style]	Set the style of the text to be displayed. One style ([Bold], [Solid], or [Raised]) is settable only. • [Bold] button: Displays the text in bold. • [Solid] button: Displays the text with a shadow. • [Raised] button: Displays the text embossed. • [Solid Color]: When [Solid] or [Raised] is selected as the text style, set the color of the shadow.
2)	[Occurred]	Set the text color when the alarm status is "Occurred". ☞ Page 988 Color settings
3)	[Restored]	Set the text color when the alarm status is "Restored". ☞ Page 988 Color settings
4)	[Checked (Occurrence)]	Set the text color when the alarm status is "Checked (Occurrence)". ☞ Page 988 Color settings
5)	[Checked (Restoration)]	Set the text color when the alarm status is "Checked (Restoration)". ☞ Page 988 Color settings

■When [Level] or [Group] is selected

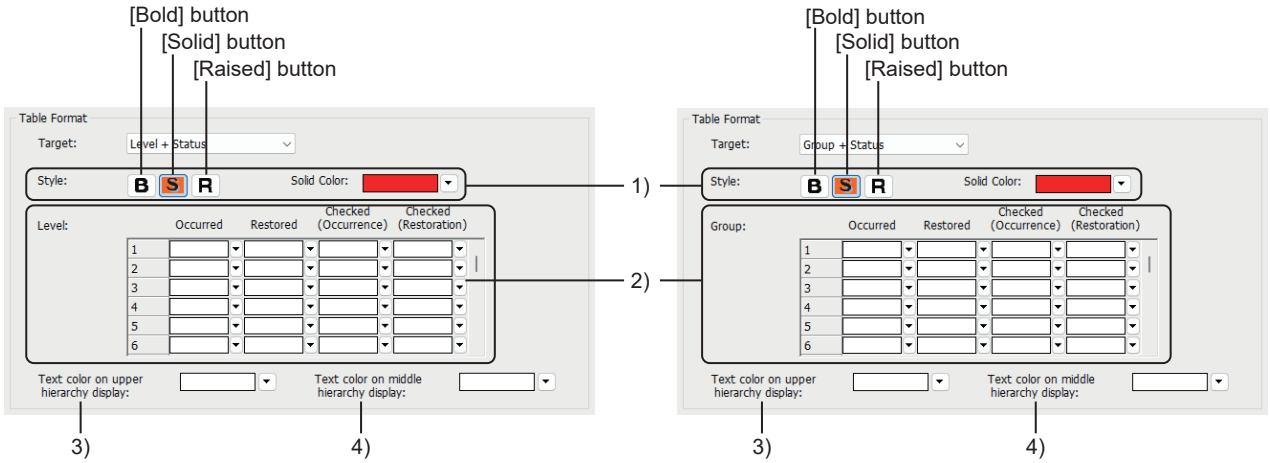
The formats are switched for each level or group.



Item		Description
1)	[Style]	Set the style of the text to be displayed. One style ([Bold], [Solid], or [Raised]) is settable only. • [Bold] button: Displays the text in bold. • [Solid] button: Displays the text with a shadow. • [Raised] button: Displays the text embossed. • [Solid Color]: When [Solid] or [Raised] is selected as the text style, set the color of the shadow.
2)	[Level] [Group]	Set the text color for each level or group. ☞ Page 988 Color settings
3)	[Text color on upper hierarchy display]	Set the text color of the upper-level alarms to be displayed. ☞ Page 988 Color settings
4)	[Text color on middle hierarchy display]	Set the text color of the middle-level alarms to be displayed. ☞ Page 988 Color settings

■When [Level + Status] or [Group + Status] is selected

The formats are switched according to the combination of the level and alarm status or group and alarm status.



Item		Description
1)	[Style]	Set the style of the text to be displayed. One style ([Bold], [Solid], or [Raised]) is settable only. • [Bold] button: Displays the text in bold. • [Solid] button: Displays the text with a shadow. • [Raised] button: Displays the text embossed. • [Solid Color]: When [Solid] or [Raised] is selected as the text style, set the color of the shadow.
2)	[Level] [Group]	Set the text color for each combination of the level or group value and alarm status. ☞ Page 988 Color settings
3)	[Text color on upper hierarchy display]	Set the text color of the upper-level alarms to be displayed. ☞ Page 988 Color settings
4)	[Text color on middle hierarchy display]	Set the text color of the middle-level alarms to be displayed. ☞ Page 988 Color settings

■When [Comment Attribute] is selected

The character property of each comment is applied.

☞ Page 791 [Comment List] window

63.6.4 [Style] tab

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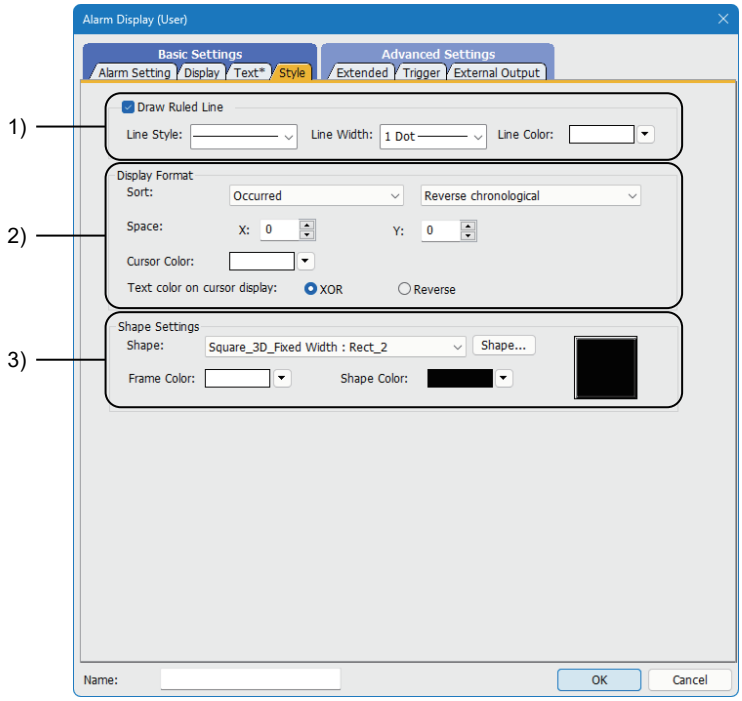
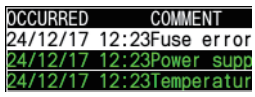
For mobile screens, some setting items are not available.

☞ Page 2742 Usable functions

Set the ruled line and shape of the alarm display (user).



Item			Description
1)	[Draw Ruled Line]	[Line Style]	Select the type of the ruled line of the alarm display (user).
		[Line Width]	Select the width of the ruled line of the alarm display (user).
		[Color]	Select the color of the ruled line of the alarm display (user). ☞ Page 988 Color settings
2)	[Display Format]	[Sort]	Select the sort target and sort order. The selectable items for the sort order differ depending on the sort target.
		[Space]	Set the space between the text to be displayed and the line. Set the space in 1 dot unit. The setting range is [0] to [32].
		[Cursor Color]	Set the cursor color for selecting an alarm. ☞ Page 988 Color settings
		[Text color on cursor display]	Method to set the color of text on the cursor. • [XOR]: Displays the text in the synthesized color with XOR specification. • [Reverse]: Inverts the text. Example) When the text color is green and the cursor color is white [XOR]  [Reverse]
3)	[Shape Settings]	[Shape]	Set a shape for the alarm display (user). To select a shape other than those in the list box, click the [Shape] button.
		[Frame Color]	Set the frame color of the shape. ☞ Page 988 Color settings
		[Shape Color]	Set the color of the shape. ☞ Page 988 Color settings

63.6.5 [Extended] tab

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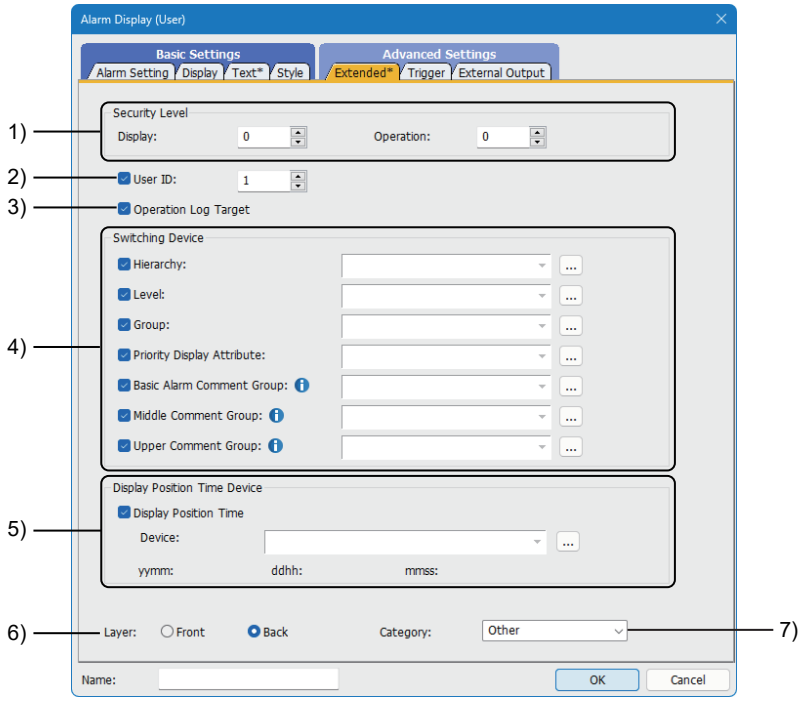
For mobile screens, some setting items are not available.

☞ Page 2742 Usable functions

Set the operation of switching displays for the alarm display (user) by devices.



Item			Description
1)	Security level		Set the security level. The setting range is [0] to [15]. If you do not use the security function of the GOT, select [0]. ☞ Page 3038 Restricting display and operation on the GOT (Screen security) The set value of [Operation] must be greater than that of [Display].
2)	[User ID]		Set the user ID. If an alarm display (user) and another alarm display are set on a screen, touch switches for the alarm display (user) may not function. For secure operations of the touch switches for alarm displays (user), set user ID for the alarm displays (user).
3)	[Operation Log Target]		Select this item to record the operation log of the set object. ☞ Page 1896 Placing a hyperlink on a mobile screen
4)	[Switching Device]		Controls the contents displayed in the alarm display (user) with the switching devices. Select the items to be controlled and set the switching devices. ☞ Page 2156 Details of [Switching Device]
			When there are many monitored devices in user alarm monitoring, if the number of alarms is narrowed down using a switching device, displaying the alarms may require a few seconds.
5)	[Display Position Time Device]	[Display Position Time]	Displays the data of a specified time. (Time specification jump function) Set a device in which a specified time is stored. ☞ Page 834 How to set devices, labels, and tags The successive devices from a set device are set to store the data of year and month, day and hour, and minute and second. For details on the time specification jump function, refer to the following. ☞ Page 2158 Details of [Display Position Time Device] (time specification jump function)
6)	[Layer]		Select the layer to place the object. ☞ Page 65 Layer
7)	[Category]		Set the category to assign the object. ☞ Page 1092 Efficient Drawing with Templates

Details of [Switching Device]

☞ Page 2156 [Hierarchy]
☞ Page 2156 [Level]
☞ Page 2157 [Group]
☞ Page 2157 [Priority Display Attribute]
☞ Page 2157 [Basic Alarm Comment Group], [Middle Comment Group], [Upper Comment Group]

■[Hierarchy]

Set the hierarchy switching device to switch the hierarchy level to be displayed.

The hierarchy switching device has the following functions.

- Switching the hierarchy level to be displayed
- Notifying the switching method and display target hierarchy level when the hierarchy level is switched

To switch the hierarchy level, write one of the following values to the hierarchy switching device.

- 0: Basic alarm
- 1: Middle-level alarm
- 2: Upper-level alarm

The following shows the function of each bit of the hierarchy switching device.

Bit	Description
b0 to b7	Switches the hierarchy level to be displayed by changing the device value. In addition, the displayed hierarchy level is notified when the level is switched using a key code switch or touch operation. The following shows the relationship between the device value and the hierarchy level to be displayed. • 0: Basic alarm • 1: Middle-level alarm • 2: Upper-level alarm
b8 to b14	Use prohibited
b15	Notifies the switching method when the hierarchy level is switched. This bit turns on when the hierarchy level is switched using a key code switch or touch operation. It does not turn off automatically. While this bit is on, hierarchy level switching using b0 to b7 of the hierarchy switching device is not applied.

The value of the hierarchy switching device is updated to the initial display hierarchy level at the following timings.

- When the screen is switched
- When the alarm display (user) is displayed for the first time
- When the alarm ID to be displayed in the alarm display (user) is switched with the device

Set the initial display hierarchy level in [Initial Display Hierarchy] in the [Alarm Display(User)] dialog ([Alarm Setting] tab).

☞ Page 2144 [Alarm Setting] tab

■[Level]

Set the level switching device to switch the levels to be displayed.

Only the alarms having the same level as the value stored in the level switching device (1 to 255) are displayed.

If a nonexistent level is stored, alarms are not displayed.

To display all levels, store 0 or a number equal to or greater than 256.

■[Group]

Set the group switching device to switch the groups to be displayed.

Only the alarms belonging to the same group as the value stored in the group switching device (1 to 255) are displayed.

If a nonexistent group is stored, alarms are not displayed.

To display all groups, store 0 or 256 or more.

■[Priority Display Attribute]

Set the priority display attribute switching device to switch the sort criteria.

The following lists the function of each bit of the priority display attribute switching device.

Bit	Description
b0 to b3	Specify the sort criteria. • □000h: Normal (date and time of occurrence) • □001h: Date and time of occurrence • □002h: Restored date and time • □003h: Checked date and time • □004h: Comment No. • □005h: Level • □006h: Group • □007h: Alarm status • □009h: Frequency • □00Ah: Cumulative time • □00Bh: Down time • □00Ch: Monitored alarm No. Occurrence frequency, cumulative time, and down time can be set only when collection mode is [Cumulative] in the user alarm monitoring dialog. If a value other than the above is stored, alarms are displayed in the order of the date and time of occurrence.
b4 to b14	Use prohibited
b15	Specify the ascending or descending order. • 000□h: Descending • 800□h: Ascending

■[Basic Alarm Comment Group], [Middle Comment Group], [Upper Comment Group]

Set the comment group switching device for each hierarchy level to switch the comment group of the comment to be displayed.

If 0 is stored to the device, alarms are displayed with the comment group which is set for the user alarm monitoring.

When a nonexistent comment group number is specified, [No message] is displayed.

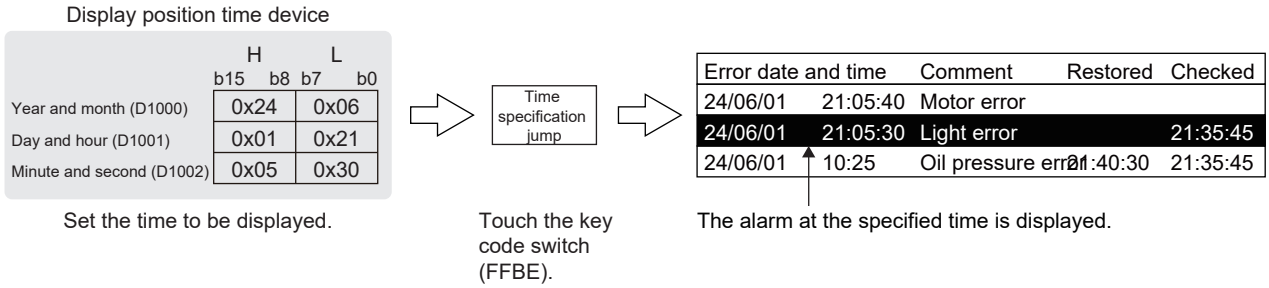
Details of [Display Position Time Device] (time specification jump function)

The time specification jump function allows you to display the basic alarms at the specified time by specifying the time with the display position time specification device and touching the key code switch (key code: FFBE).

If alarm data are not obtained at a specified time, the data obtained at the nearest time is displayed.

Ex.

When setting D1000 as the display position time specification device and displaying the data as of Jun. 1, 2024 21:05:30



■Specifications of display position time specification device

The data type is BCD16 (binary coded decimal).

The specification range is January 1, 2000 to December 31, 2099.

Specify the year with the lower two digits.

■Required setting

Place the following objects on the screen and set them.

Object	Setting
Key code switch	Read an applicable object from the library of GT Designer3, or create it. ☞ Page 2141 Key code switches for operating alarm displays When creating the objects, set [Action] of [Code Setting] to [Display Position Time Device] for each object. ☞ Page 1251 [Key Code Switch] dialog
Alarm display (user)	This object is required to be set for using the time specification jump function for the alarm display (user). Select [Display Position Time] in the [Extended] tab and set a device. ☞ Page 2155 [Extended] tab
Alarm display (system)	This object is required to be set for using the time specification jump function for the alarm display (system). Select [Display Position Time] in the [Extended] tab and set a device. ☞ Page 2172 [Extended] tab

■Operation when [Priority Display Attribute] is set

Alarms are displayed in the order set in [Priority Display Attribute].

The display order is "Restored", "Checked", and "Occurred".

When [Priority Display Attribute] is not set, alarms in a specified time are displayed regardless of the above order.

■Precautions

Precaution	Description
When carrying out another operation while a time specification jump is performed	While the data obtained at a specified time is searched with the time specification jump function, the operations with functions other than the alarm display cannot be performed.
When multiple values of alarm data are obtained around a specified time	If alarm data are not obtained at a specified time, the data obtained at the nearest time is searched. When the multiple values are obtained at the nearest time, the first detected value is displayed.
When displaying the alarm data obtained at the start of collecting the data and the data obtained around the time when the latest data is obtained	When the alarm data obtained at a specified time is the one obtained at the start of the collecting the data or the data obtained around the time when the latest data is obtained, the data to be displayed may not be displayed in the center of the alarm display.
When there is no alarm data that can be displayed in alarm displays	When there is no alarm data that can be displayed in an alarm display, no time specification jump is performed.
Levels in the alarm hierarchy available for the time specification jump function	Only the basic alarm is available for the time specification jump function. The middle alarm and upper alarm are unavailable for the time specification jump function.

63.6.6 [Trigger] tab

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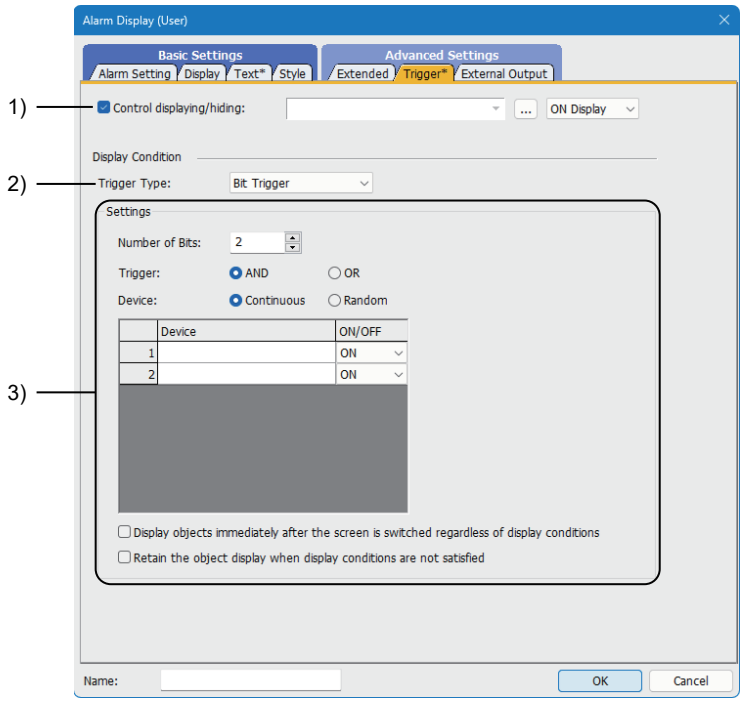
Set the trigger condition to display the object.



Item		Description
1)	[Control displaying/hiding]	Enables the setting to display the object only when requirements are met. Set the following as requirements. • Bit device for control • Whether to display the object when the bit device for control is on or off
2)	[Trigger Type]	Select a trigger condition to display the object. For details on the trigger types, refer to the following. ☞ Page 969 Trigger types settable for the object display condition
3)	[Settings]	For the settings of each item, refer to the following. ☞ Page 969 Trigger types settable for the object display condition

63.6.7 [External Output] tab

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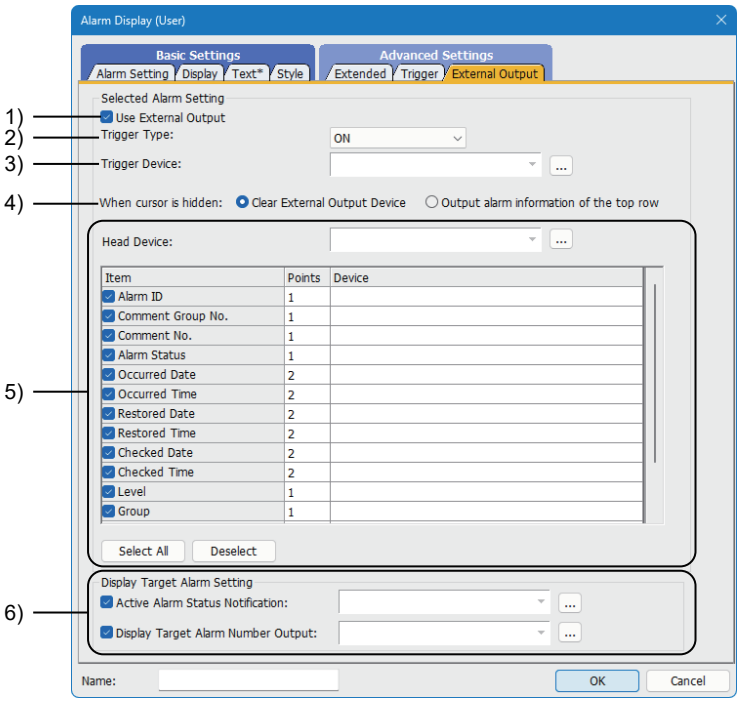
Configure the setting for writing the information of the alarm selected in the alarm display (user) into devices.



Item			Description
1)	[Use External Output]		Writes the information of the selected alarm into devices. ☞ Page 2134 How to use the alarm display
2)	[Trigger Type]		Select the timing to write the alarm information into a device. The following shows the timing to write each trigger.
		[Ordinary]	When an alarm is selected
		[ON]	When an alarm is selected with the trigger device ON
		[OFF]	When an alarm is selected with the trigger device OFF
3)	[Trigger Device]		When selecting [ON] or [OFF] in [Trigger Type], set the device to be a trigger. A bit device or a bit-specified word device is settable. ☞ Page 834 How to set devices, labels, and tags
4)	[When cursor is hidden]		Set the operation when no alarm is selected.
5)	[Head Device]	—	Set the start device (word device) to which the information of the alarm is written. The bit device cannot be specified as the word device. ☞ Page 834 How to set devices, labels, and tags Selecting the items to be output externally sets consecutive devices starting from the head device as the external output devices for each item. For the targets and output specifications of external output, refer to the following. ☞ Page 2162 Targets and output specifications of external output (alarm display (user))
		[Select All] button	Selects all the output target items.
		[Deselect] button	Deselects all the output target items.

Item			Description	
6)	[Display Target Alarm Setting]	[Active Alarm Status Notification]	Set the device that notifies the status of the displayed alarms. ☞ Page 834 How to set devices, labels, and tags The following bits of the word device are used to notify the alarm status.	
			b0 to b13	Use prohibited
			b14	Notifies that the specified display start row is out of the range. This bit turns on when a value greater than the number of alarms is input to the device set for [Display Start Row] on the [Alarm Setting] tab.
			b15	Use prohibited
		[Display Target Alarm Number Output]	Set the device that stores the number of displayed alarms. You can specify a word device or word-specified bit device. ☞ Page 834 How to set devices, labels, and tags	

Targets and output specifications of external output (alarm display (user))

The following shows the target items and output specifications of external output.

The output target items differ depending on the history collecting method set in the user alarm monitoring setting.

○: Items to be output

×: Items not to be output

Item	[Collection Mode]			Output specifications	
	[Historical]	[Cumulative]	[Only current alarm]		
[Alarm ID]	○	○	○	—	
[Comment Group No.]	○	○	○	—	
[Comment No.]	○	○	○	—	
[Alarm Status]*1	○	○	○	The following bits of the word device are used to output the alarm status.	
				b0	• Occurring: ON • Restored: OFF
				b1	• Checked: ON • Unchecked: OFF
				b2	• When external output of the alarm status is enabled: ON • When external output of the alarm status is disabled: OFF
				b3 to b15	Use prohibited
[Occurred Date]	○	○	○	For the data storage specifications of date and time, refer to the following. ☞ Page 2163 Data storage specifications of date and time	
[Occurred Time]*1	○	○	○		
[Restored Date]	○	○	×		
[Restored Time]*1	○	○	×		
[Checked Date]	○	○	×		
[Checked Time]*1	○	○	×		
[Level]	○	○	○	—	
[Group]	○	○	○	—	
[Frequency of Occurrences]	×	○	×	—	
[Cumulative Time]	×	○	×	The cumulative time (in hours and minutes) is stored in BCD code in two word devices. Example) When the cumulative time is 12 hours and 35 minutes Device value: 1235	
[Down Time]	×	○	×	The downtime (in hours and minutes) is stored in BCD code in two word devices. Example) When the downtime is 2 hours and 10 minutes Device value: 210	

*1 For the output specifications when upper- or middle-level alarms are displayed, refer to the following.
☞ Page 2163 Output specifications when upper- or middle-level alarms are displayed

■Output specifications when upper- or middle-level alarms are displayed

The following lists the time to be output.

Item	Output specifications
[Occurred Time]	The time of occurrence of the latest alarm in the alarms included under the currently displayed one is output.
[Restored Time]	Most recent time when an alarm was restored in the alarms under the currently displayed one is output.
[Checked Time]	Most recent time when an alarm was checked in the alarms under the currently displayed one is output.

If any unchecked or unrestored alarm is included under the alarm currently displayed, the entire hierarchy becomes unchecked or unrestored, and thus 0 is output to the external output device.

If the levels or groups to be displayed are narrowed by the switching device, information is output only for the narrowed alarms.

■Data storage specifications of date and time

The date and time are respectively stored in two word devices.

The following describes the case in which the time of occurrence is written into D254 (2 points) and the date of occurrence is written into D256 (2 points).

Item	Data storage specifications
Date	Store the year, month, and day with BCD code. D254: b15 to b8 = Month (1 to 12), b7 to b0 = Day (1 to 31) D255: b15 to b8 = The first two digits of the year, b7 to b0 = The last two digits of the year
Time	Stores the hour, minute, and second with BCD code. D256: b15 to b8 = Minute (0 to 59), b7 to b0 = Second (0 to 59) D257: b15 to b8 = 00, b7 to b0 = Hour (0 to 23)

Ex.

Jun. 1, 2024 12:24:56

	b15 to b8	b7 to b0
D254	06 (Month)	01 (Day)
D255	20 (Year)	24
D256	24 (Minute)	56 (Second)
D257	00	12 (Hour)

63.7 [Alarm Display(System)] dialog

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☞ Page 2164 [Alarm Setting] tab
☞ Page 2167 [Display] tab
☞ Page 2168 [Text] tab
☞ Page 2171 [Style] tab
☞ Page 2172 [Extended] tab
☞ Page 2173 [Trigger] tab
☞ Page 2174 [External Output] tab

63.7.1 [Alarm Setting] tab

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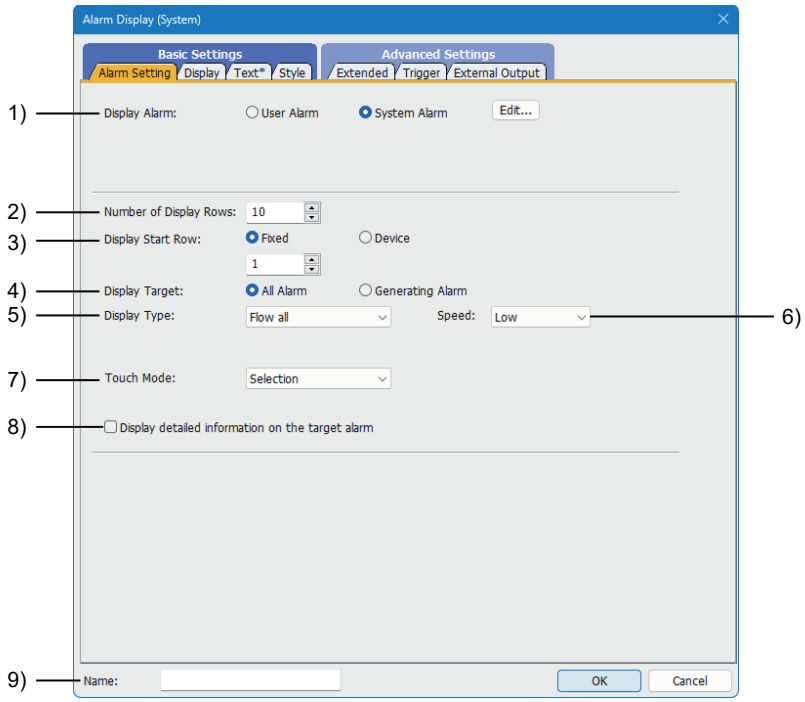
Configure the settings such as the alarm monitoring type to be displayed, message display method, and touch operations.



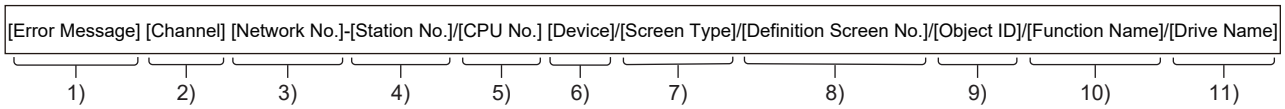
Item		Description
1)	[Display Alarm]	The alarm type to be displayed in the alarm display. Select [System Alarm]. Click the [Edit] button to display the [System Alarm Observation] dialog. ☞ Page 2097 [System Alarm Observation] dialog
2)	[Number of Display Rows]	Set the number of rows displayed in a screen. The setting range is [1] row to [64] rows. The title row is not counted in the number of rows. Select the display setting of the title row for [Specification] in the [Display] tab. ☞ Page 2167 [Display] tab

Item			Description	
3)	[Display Start Row]	[Fixed]	Select a row to be displayed in the top row when the number of alarms exceeds the number of rows set in [Number of Display Rows]. Specify the start row number directly. The setting range is [1] to [32767].	
		[Device]	Set the word device that specifies the start row. ☞ Page 834 How to set devices, labels, and tags For the display examples according to the number of displayed alarms, refer to the following. ☞ Page 2146 Settings of [Display Start Row] and operation examples Even if the number of alarms exceeds the value set in [Display Start Row] when alarms are displayed on the GOT, the setting for [Display Start Row] does not become enabled. To enable the setting for [Display Start Row], switch the screen to another one, then switch back the screen to the one in which the alarm is displayed.	
4)	[Display Target]		Select the alarm to be displayed from the collected alarms.	
5)	[Display Type]		Select the display method of the comments from the display items of the alarm display. Up to 16 alarm display objects (alarm display (user) objects and alarm display (system) objects with scrolling display enabled) can be placed on one screen. The comment displayed for the 17th and the subsequent alarms is fixed. The following shows the selectable display methods.	
			[Fixed]	Does not scroll a comment displayed at an alarm occurrence. When a comment extends off the display area, the part outside the area and the second and subsequent rows are not displayed.
			[Flow all]	Scrolls a full comment displayed at an alarm occurrence from right to left.
			[Flow as required]	Does not scroll a comment fully displayed within the display area. Scrolls a comment extending off the display area and a multiple-row comment from right to left.
			[Flow the selected row]	Scrolls only the comment selected among the comments displayed at an alarm occurrence from right to left.
6)	[Speed]		This item is settable when [Display Type] is set to [Flow all], [Flow as required], or [Flow the selected row]. Select the speed at which the display is scrolled.	
7)	[Touch Mode]		Select the operation performed when the alarm display (system) is touched.	
			[None]	Select this item to disable touch operations.
			[Selection]	Selects a touched alarm.
8)	[Display detailed information on the target alarm]		Displays detailed information added to system alarms. Select [Get detailed alarm information] in the [System Alarm Observation] dialog ([Basic] tab) in advance. ☞ Page 2098 [Basic] tab For the contents to be displayed when this item is selected, refer to the following. ☞ Page 2165 Displaying the detailed information	
9)	[Name]		Set the object name. The name is displayed in places such as the data browser and property sheet. The name can also be changed in other tabs. Up to 100 characters can be set.	

Displaying the detailed information

The following shows the contents displayed when [Display detailed information on the target alarm] is selected.

The information collected for each system alarm differs. Unrelated or undetectable information is not displayed.



Information		Description	Format, display example
1)	Error message	Displays the error code of a system error and the error message.	—
2)	Channel	Displays the channel No.	DEV:Ch (Channel) (Network No.)-(Station No.)/(CPU No.) (Device)
3)	Network No.	Displays the network No.	
4)	Station No.	Displays the station No.	
5)	CPU No.	Displays the CPU No.	
6)	Device	Displays the device. For the device to which offset is specified, the device name and device No. after the offset are displayed. If the device No. after the offset is out of the range, ?? is displayed.	

<table>
<tr><th colspan="2">Information</th><th>Description</th><th colspan="2">Format, display example</th></tr>
<tr><td>7)</td><td>Screen No.</td><td>Displays the screen type and the screen No.</td><td colspan="2">Screen type:(Screen No.)
The screen No. is displayed with five digits.
When the number of digits in the displayed No. is less than five, the No. is displayed with zero(s) added.
The following table lists the format of the screen type.</td></tr>
<tr><td colspan="3"></td><td>Base screen</td><td>BASE</td></tr>
<tr><td colspan="3"></td><td>Overlap window</td><td>Example) Overlap window 1
OVL1</td></tr>
<tr><td colspan="3"></td><td>Superimpose window</td><td>Example) Superimpose window 1
SPI1</td></tr>
<tr><td colspan="3"></td><td>User customize dialog</td><td>DLG</td></tr>
<tr><td colspan="3"></td><td>Key window</td><td>KEY</td></tr>
<tr><td colspan="3"></td><td>Base screen (GOT Mobile)</td><td>MBL-BASE</td></tr>
<tr><td colspan="3"></td><td>Overlap window (GOT Mobile)</td><td>Example) Overlap window 1
MBL-OVL1</td></tr>
<tr><td colspan="3"></td><td>Superimpose window (GOT Mobile)</td><td>Example) Superimpose window 1
MBL-SPI1</td></tr>
<tr><td>8)</td><td>Definition screen No.</td><td>Displays the definition screen type and the screen No.</td><td colspan="2">Definition screen type:(Screen No.)
The screen No. is displayed with five digits.
When the number of digits in the displayed No. is less than five, the No. is displayed with zero(s) added.
The following table lists the format of the definition screen type.</td></tr>
<tr><td colspan="3"></td><td>Base screen</td><td>B</td></tr>
<tr><td colspan="3"></td><td>Window screen</td><td>W</td></tr>
<tr><td colspan="3"></td><td>Mobile screen</td><td>MB</td></tr>
<tr><td>9)</td><td>Object ID</td><td>Displays the object ID.</td><td colspan="2">ID:(Object ID)
The object ID is displayed with five digits.
When the number of digits in the displayed No. is less than five, the No. is displayed with zero(s) added.</td></tr>
<tr><td>10)</td><td>Function name</td><td>Displays the function name.
Languages are switched along with the language switching.</td><td colspan="2">—</td></tr>
<tr><td>11)</td><td>Drive name</td><td>Displays the drive name.</td><td colspan="2">DRV:(Drive name)</td></tr>
</table>

If detailed information is displayed, the message becomes longer.

When all information is not be displayed, select scrolling (flow) as the display type.

Ex.

Channel (1), device (X1000), screen No. (overlap window 3, screen No. 251), definition screen No. (window screen, screen No. 251), object ID (10000), function name (shape display)

G01-322 The specified device No. is out of the range. Check the available range. DEV:Ch1 X1000/OVL3:00251/W:00251/ID:10000/Shape display

63.7.2 [Display] tab

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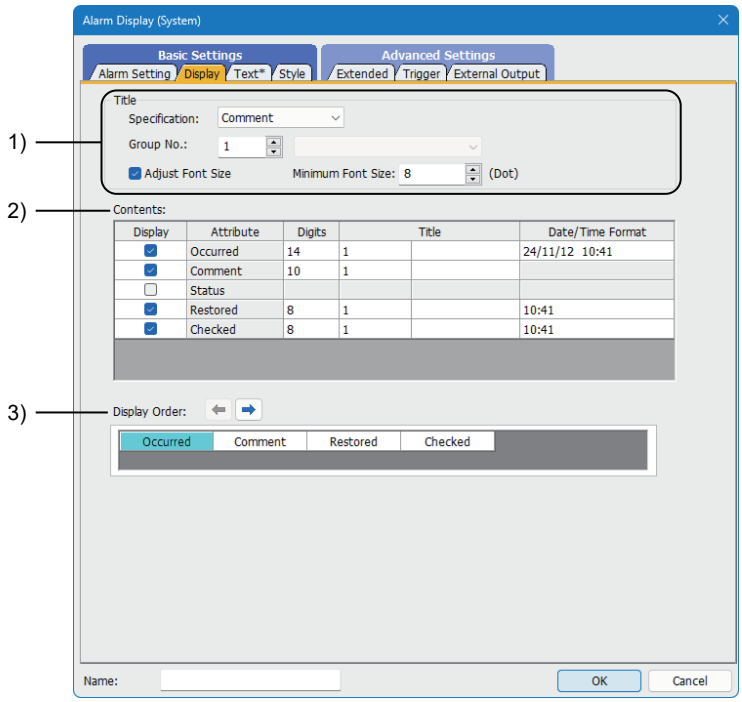
Set the items to be displayed in the system alarm and the display order.



Item			Description
1)	[Title]	[Specification]	Select the method of specifying the text to be displayed in the title.
		[Group No.]	Only when [Comment] is selected for [Specification], this item can be set. Set the comment group in which the text to be displayed in the title is registered.
		[Adjust Font Size]	Only when [Comment] is selected for [Specification], this item can be set. The font size is adjusted according to the width of the title. When [Adjust Font Size] is not selected, the text size is adjusted by inserting a line feed.
		[Minimum Font Size]	Only when [Comment] is selected for [Specification] and [Adjust Font Size] is selected, this item can be set. Set the minimum font size for adjustment. The setting range is [8] dots to [540] dots.
2)	[Contents]	—	Set the attributes to be displayed as the columns in the alarm display (system). For details on contents displayed for each attribute, refer to the following. ☞ Page 2168 Details of [Contents] (alarm display (system))
		[Display]	Select whether to display each attribute. Select the attributes to be displayed.
		[Attribute]	Attributes to be displayed in the alarm display (system)
		[Digits]	Set the number of the digits displayed in each item. Set a one-byte character as one digit and a two-byte character as two digits. The setting range differs depending on the attribute. ☞ Page 2168 Details of [Contents] (alarm display (system))
		[Title]	Set a title of the alarm display (system). The setting depends on the value selected for [Specification]. When [Direct] is selected, input characters within the number of digits set in [Digits]. When [Comment] is selected, the comment No. and the comment to be displayed in the title are displayed. If [0] is set in the comment No., the comment is hidden. When [None] is selected, the title cannot be set.
		[Date/Time Format]	Set the date and time format for each attribute item. The setting method differs depending on the attribute. ☞ Page 2168 Details of [Contents] (alarm display (system))

Item		Description
3)	[Display Order]	Set the order in which the items set for [Attribute] in [Contents] are displayed. The items of [Attribute] which are set in [Display] are displayed. Move the display position of the selected item sideways by using the right button and the left button.

Details of [Contents] (alarm display (system))

[Attribute]	Description	Setting range of [Digits]	Setting range of [Date/Time Format]
[Occurred]	Displays the date and time of occurrence of an alarm.	[5] digits to [128] digits Set the number of digits equal to or greater than the one required to display the date and time. The number of required digits differs depending on the setting of [Date/Time Format].	Click the [...] button, and set the date/time formats in the [Date/Time Setting] dialog. ☞ Page 3684 [Date/Time Setting] dialog (screen)
[Comment]	Displays the date and time of occurrence of an alarm.	[10] digits to [128] digits	—
[Status]	Displays the alarm status.	[6] digits to [128] digits	—
[Restored]	Displays the date and time when an alarm is restored.	[5] digits to [128] digits Set the number of digits equal to or greater than the one required to display the date and time. The number of required digits differs depending on the setting of [Date/Time Format].	Click the [...] button, and set the date/time formats in the [Date/Time Setting] dialog. ☞ Page 3684 [Date/Time Setting] dialog (screen)
[Checked]	Displays the date and time when an alarm occurrence has been checked.		

63.7.3 [Text] tab

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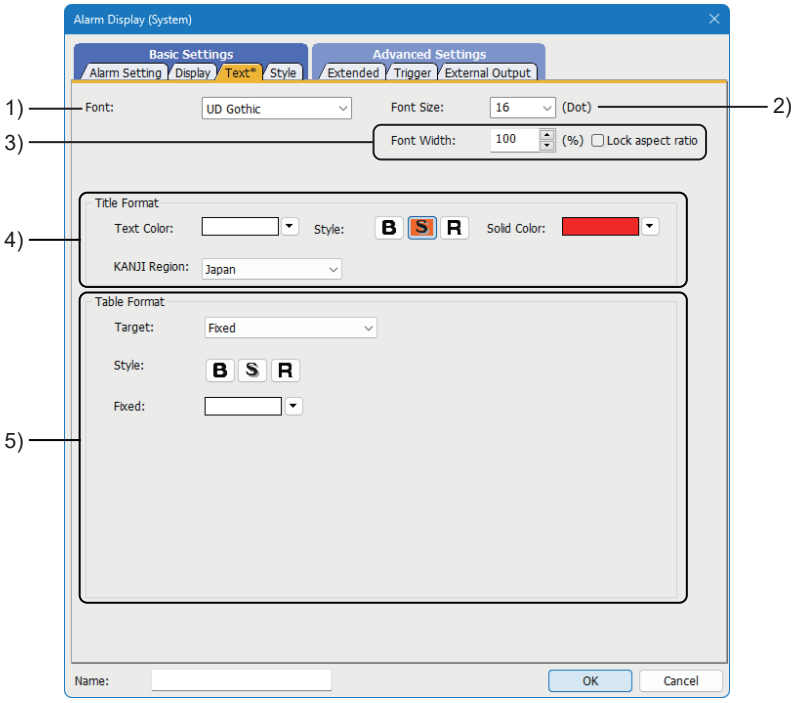
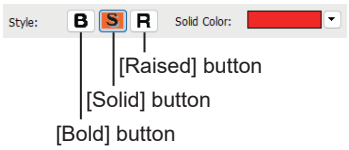
For mobile screens, some setting items are not available.

☞ Page 2742 Usable functions

Set the font of displayed alarms.



Item		Description
1)	[Font]	Select a font for the text to be displayed.
2)	[Font Size]	Set the size of the text to be displayed. The setting range is [8] dots to [540] dots.

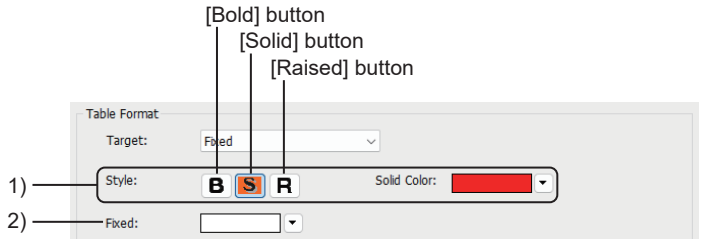
Item			Description
3)	[Font Width]		Set a horizontal text size. The horizontal size is specified with the magnification relative to [Font Size] (vertical text size). The setting range is [6]% to [1600]%.
	[Lock aspect ratio]		The aspect ratio of the text is retained when you resize the text by manipulating a handle on the screen editor.
4)	[Title Format]	—	Set the format of the text displayed in the title of the alarm display (system).
		[Text Color]	Set the text color. ☞ Page 988 Color settings
		[Style]	Set the style of the text to be displayed. One style ([Bold], [Solid], or [Raised]) is settable only.  • [Bold] button: Displays the text in bold. • [Solid] button: Displays the text with a shadow. • [Raised] button: Displays the text embossed. • [Solid Color]: When [Solid] or [Raised] is selected as the text style, set the color of the shadow.
		[KANJI Region]	Select the KANJI region. ☞ Page 76 KANJI region This item is enabled when [Direct] is selected for [Specification] on the [Display] tab.
5)	[Table Format]	—	Set the format of the text displayed in the alarm display (system). The format can be changed according to the content to be displayed.
		[Target]	Select the target of the text format switching. Displayed items differ depending on the item set for [Target]. ☞ Page 2170 Details of [Table Format] (alarm display (system))

Details of [Table Format] (alarm display (system))

☞ Page 2170 When [Fixed] is selected
☞ Page 2170 When [Status] is selected

■When [Fixed] is selected

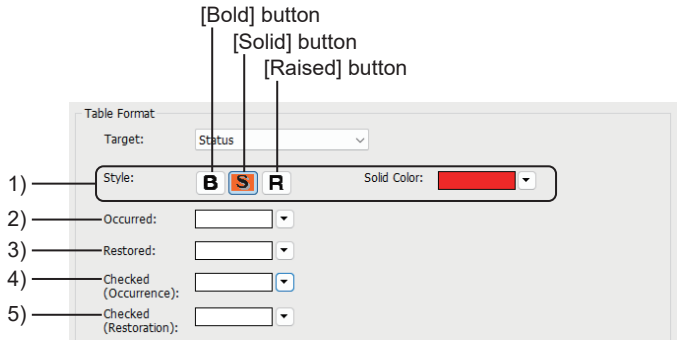
Text is always displayed in the same format without the formats being switched.



Item		Description
1)	[Style]	Set the style of the text to be displayed. One style ([Bold], [Solid], or [Raised]) is settable only. • [Bold] button: Displays the text in bold. • [Solid] button: Displays the text with a shadow. • [Raised] button: Displays the text embossed. • [Solid Color]: When [Solid] or [Raised] is selected as the text style, set the color of the shadow.
2)	[Fixed]	Set the text color. ☞ Page 988 Color settings

■When [Status] is selected

The formats are switched for each alarm status.



Item		Description
1)	[Style]	Set the style of the text to be displayed. One style ([Bold], [Solid], or [Raised]) is settable only. • [Bold] button: Displays the text in bold. • [Solid] button: Displays the text with a shadow. • [Raised] button: Displays the text embossed. • [Solid Color]: When [Solid] or [Raised] is selected as the text style, set the color of the shadow.
2)	[Occurred]	Set the text color when the alarm status is "Occurred". ☞ Page 988 Color settings
3)	[Restored]	Set the text color when the alarm status is "Restored". ☞ Page 988 Color settings
4)	[Checked (Occurrence)]	Set the text color when the alarm status is "Checked (Occurrence)". ☞ Page 988 Color settings
5)	[Checked (Restoration)]	Set the text color when the alarm status is "Checked (Restoration)". ☞ Page 988 Color settings

63.7.4 [Style] tab

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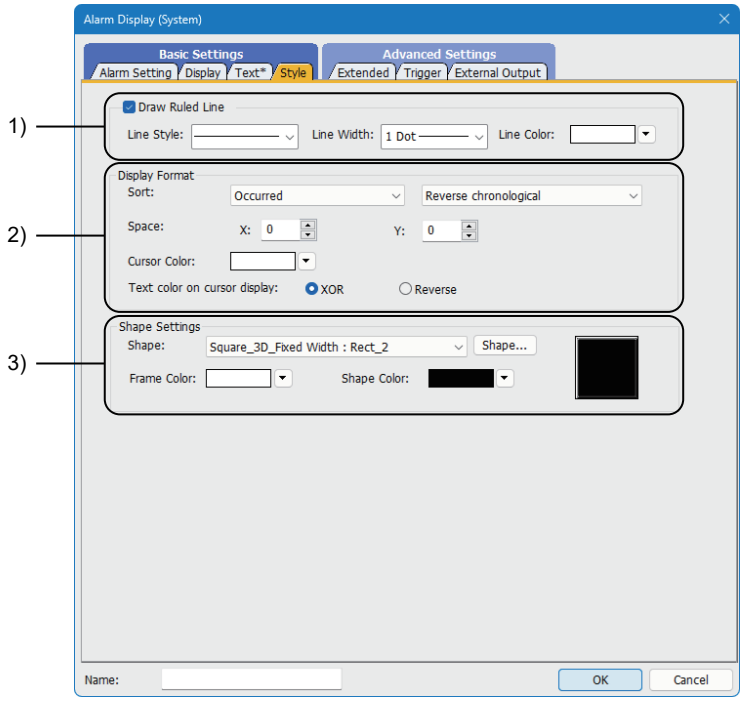
For mobile screens, some setting items are not available.

☞ Page 2742 Usable functions

Set the ruled line and shape of the alarm display (system).



Item			Description
1)	[Draw Ruled Line]	[Line Style]	Select the type of the ruled line of the alarm display (system).
		[Line Width]	Select the width of the ruled line of the alarm display (system).
		[Color]	Select the color of the ruled line of the alarm display (system). ☞ Page 988 Color settings
2)	[Display Format]	[Sort]	Select the sort target and sort order. The selectable items for the sort order differ depending on the sort target.
		[Space]	Set the space between the text to be displayed and the line. Set the space in 1 dot unit. The setting range is [0] to [32].
		[Cursor Color]	Set the cursor color for selecting an alarm. ☞ Page 988 Color settings
		[Text color on cursor display]	Method to set the color of text on the cursor. • [XOR]: Displays the text in the synthesized color with XOR specification. • [Reverse]: Inverts the text. Example) When the text color is green and the cursor color is white [XOR] [Reverse]
3)	[Shape Settings]	[Shape]	Set a shape for the alarm display (system). To select a shape other than those in the list box, click the [Shape] button.
		[Frame Color]	Set the frame color of the shape. ☞ Page 988 Color settings
		[Shape Color]	Set the color of the shape. ☞ Page 988 Color settings

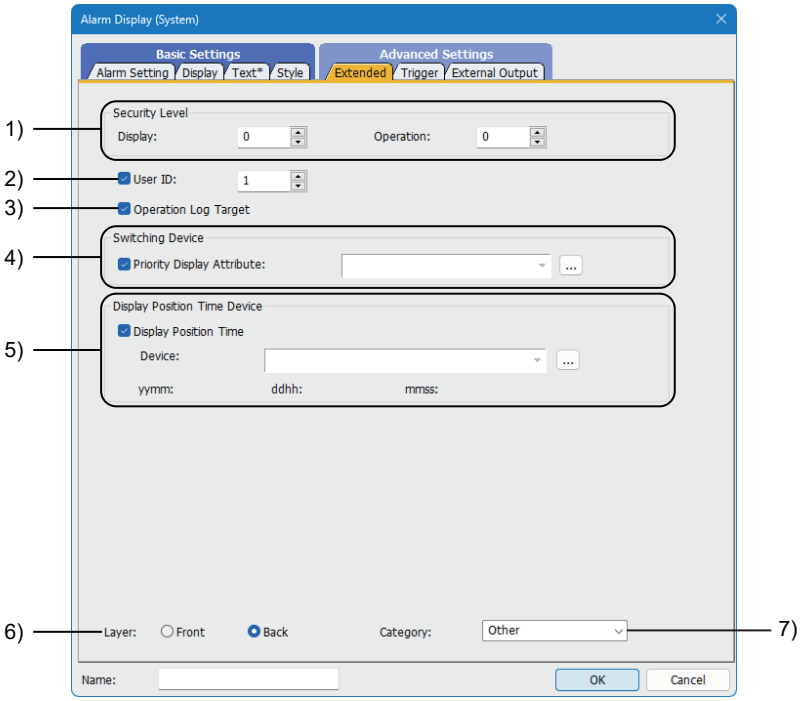
63.7.5 [Extended] tab

GT37 SoftGOT3000

For mobile screens, some setting items are not available.

☞ Page 2742 Usable functions

Set the operation of switching displays for the alarm display (system) by devices.



Item			Description
1)	[Security Level]		Set the security level. The setting range is [0] to [15]. If you do not use the security function of the GOT, select [0]. ☞ Page 3038 Restricting display and operation on the GOT (Screen security) The set value of [Operation] must be greater than that of [Display].
2)	[User ID]		Set the user ID. If an alarm display (system) and another alarm display are set on a screen, touch switches for the alarm display (system) may not function. For secure operations of the touch switches for alarm displays (system), set user ID for the alarm displays (system).
3)	[Operation Log Target]		Select this item to record the operation log of the set object. ☞ Page 1896 Placing a hyperlink on a mobile screen
4)	[Switching Device]	[Priority Display Attribute]	Controls the contents displayed in the alarm display (system) with the switching devices. Select the items to be controlled and set the switching devices. ☞ Page 2173 Details of [Priority Display Attribute]
5)	[Display Position Time Device]	[Display Position Time]	Displays the data of a specified time. (Time specification jump function) Set a device in which a specified time is stored. ☞ Page 834 How to set devices, labels, and tags The successive devices from a set device are set to store the data of year and month, day and hour, and minute and second. For details on the time specification jump function, refer to the following. ☞ Page 2158 Details of [Display Position Time Device] (time specification jump function)
6)	[Layer]		Select the layer to place the object. ☞ Page 65 Layer
7)	[Category]		Set the category to assign the object. ☞ Page 1092 Efficient Drawing with Templates

Details of [Priority Display Attribute]

Set the priority display attribute switching device to switch the sort criteria.

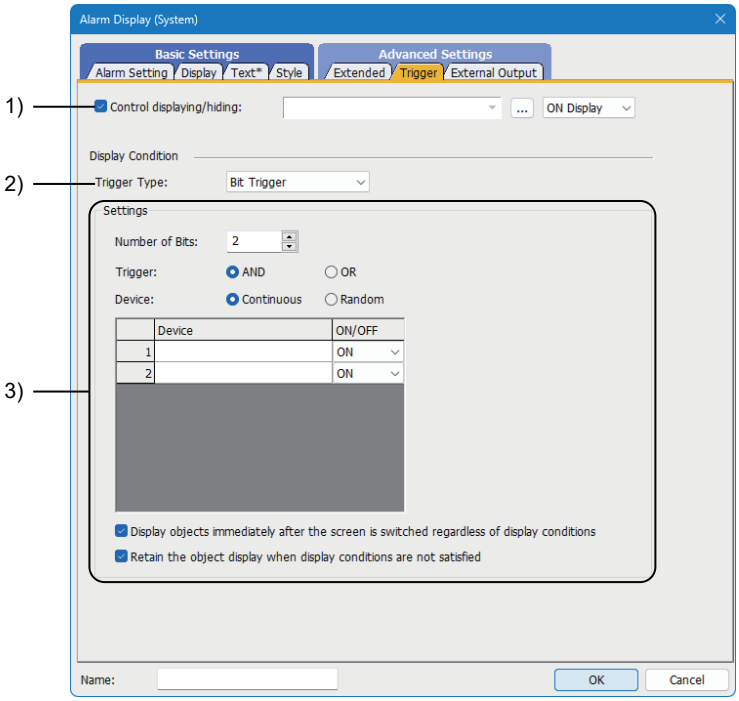
The following lists the function of each bit of the priority display attribute switching device.

Bit	Description
b0 to b3	Specify the sort criteria. • □000h: Normal (date and time of occurrence) • □001h: Date and time of occurrence • □002h: Restored date and time • □003h: Checked date and time • □007h: Alarm status If a value other than the above is stored, alarms are displayed in the order of the date and time of occurrence.
b4 to b14	Use prohibited
b15	Specify the ascending or descending order. • 000□h: Descending • 800□h: Ascending

63.7.6 [Trigger] tab

GT37 SoftGOT3000

Set the trigger condition to display the object.

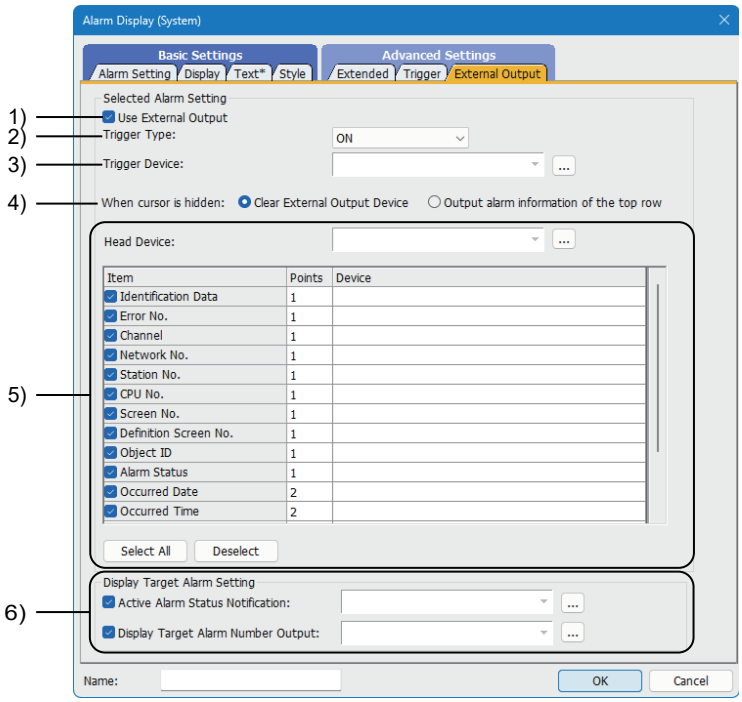


Item		Description
1)	[Control displaying/hiding]	Enables the setting to display the object only when requirements are met. Set the following as requirements. • Bit device for control • Whether to display the object when the bit device for control is on or off
2)	[Trigger Type]	Select a trigger condition to display the object. For details on the trigger types, refer to the following. ☞ Page 969 Trigger types settable for the object display condition
3)	[Settings]	For the settings of each item, refer to the following. ☞ Page 969 Trigger types settable for the object display condition

63.7.7 [External Output] tab

GT37 SoftGOT3000

Configure the setting for writing the information of the alarm selected in the alarm display (system) into devices.



Item			Description
1)	[Use External Output]		Writes the information of the selected alarm into devices. ☞ Page 2134 How to use the alarm display
2)	[Trigger Type]		Select the timing to write the alarm information into a device. The following shows the timing to write each trigger.
		[Ordinary]	When an alarm is selected
		[ON]	When an alarm is selected with the trigger device ON
		[OFF]	When an alarm is selected with the trigger device OFF
3)	[Trigger Device]		When selecting [ON] or [OFF] in [Trigger Type], set the device to be a trigger. A bit device or a bit-specified word device is settable. ☞ Page 834 How to set devices, labels, and tags
4)	[When cursor is hidden]		Set the operation when no alarm is selected.
5)	[Head Device]	—	Set the start device (word device) to which the information of the alarm is written. The bit device cannot be specified as the word device. ☞ Page 834 How to set devices, labels, and tags Selecting the items to be output externally sets consecutive devices starting from the head device as the external output devices for each item. For the targets and output specifications of external output, refer to the following. ☞ Page 2175 Targets and output specifications of external output (alarm display (system))
		[Select All] button	Selects all the output target items.
		[Deselect] button	Deselects all the output target items.

Item			Description	
6)	[Display Target Alarm Setting]	[Active Alarm Status Notification]	Set the device that notifies the status of the displayed alarms. ☞ Page 834 How to set devices, labels, and tags The following bits of the word device are used to notify the alarm status.	
			b0 to b13	Use prohibited
			b14	Notifies that the specified display start row is out of the range. This bit turns on when a value greater than the number of alarms is input to the device set for [Display Start Row] on the [Alarm Setting] tab.
			b15	Use prohibited
		[Display Target Alarm Number Output]	Set the device that stores the number of displayed alarms. You can specify a word device or word-specified bit device. ☞ Page 834 How to set devices, labels, and tags	

Targets and output specifications of external output (alarm display (system))

The following shows the target items and output specifications of external output.

The output target items differ depending on the history collecting method set in the system alarm monitoring setting.

○: Items to be output

×: Items not to be output

Item	[Collection Mode]		Output specifications	
	[Historical]	[Only current alarm]		
[Identification Data]	○	○	The identification information is output as shown below. • Upper: Identification symbol (ASCII) • Lower: Classification code or manufacturer code Identification symbol, classification code, and manufacturer code differ depending on the system alarm type. For details, refer to the following. 📖GOT3000 Series User's Manual (Utility & Maintenance Functions)	
			CPU error	The identification symbol and error code are output.
			GOT error	The identification symbol (fixed to G) and classification code are output.
			Network error	The identification symbol (fixed to N) and classification code are output.
			GOT Mobile error	The identification symbol (fixed to W) and classification code are output.
[Error No.]	○	○	—	
[Channel]*1	○	○	—	
[Network No.]*1	○	○	For the host station, the value is 0x0000.	
[Station No.]*1	○	○	For the host station, the value is 0x00FF.	
[CPU No.]*1	○	○	—	
[Screen No.]*1 [Definition Screen No.]*1	○	○	The output specifications differ depending on the screen type.	
			Base screen	The uppermost bit is 0. The range of the value to be stored in the device is 0x0001 to 0x7FFF.
			Window screen	The uppermost bit is 1. The range of the value to be stored in the device is 0x8001 to 0xFFFF.
			Mobile screen	The uppermost bit is 0. The range of the value to be stored in the device is 0x0001 to 0x7FFF. Check that the screen is a mobile screen in [Identification Data].
[Object ID]*1	○	○	—	
[Alarm Status]	○	○	The following bits of the word device are used to output the alarm status.	
			b0	• Occurring: ON • Restored: OFF
			b1	• Checked: ON • Unchecked: OFF
			b2	• When external output of the alarm status is enabled: ON • When external output of the alarm status is disabled: OFF
			b3 to b15	Use prohibited

Item	[Collection Mode]		Output specifications
	[Historical]	[Only current alarm]	
[Occurred Date]	○	○	For the data storage specifications of date and time, refer to the following. ☞ Page 2163 Data storage specifications of date and time
[Occurred Time]	○	○	
[Restored Date]	○	×	
[Restored Time]	○	×	
[Checked Date]	○	○	
[Checked Time]	○	○	

*1 Select [Get detailed alarm information] in the [System Alarm Observation] dialog ([Basic] tab) in advance.
☞ Page 2098 [Basic] tab

■Data storage specifications of date and time

The date and time are respectively stored in two word devices.

The following describes the case in which the time of occurrence is written into D254 (2 points) and the date of occurrence is written into D256 (2 points).

Item	Data storage specifications
Date	Store the year, month, and day with BCD code. D254: b15 to b8 = Month (1 to 12), b7 to b0 = Day (1 to 31) D255: b15 to b8 = The first two digits of the year, b7 to b0 = The last two digits of the year
Time	Stores the hour, minute, and second with BCD code. D256: b15 to b8 = Minute (0 to 59), b7 to b0 = Second (0 to 59) D257: b15 to b8 = 00, b7 to b0 = Hour (0 to 23)

Ex.

Jun. 1, 2024 12:24:56

	b15 to b8	b7 to b0
D254	06 (Month)	01 (Day)
D255	20 (Year)	24
D256	24 (Minute)	56 (Second)
D257	00	12 (Hour)

63.8 Relevant settings

GT37 SoftGOT3000

Set the relevant settings other than the specific settings for the alarm display as required.
The following shows the functions that are available by configuring the relevant settings.

63.8.1 GOT internal device

☞ Page 3581 GOT special register (GS)

Function	Setting item
Displaying the detail screen with a single touch of a basic alarm even when the alarm is not selected in the alarm display (user)	GS450.b15
Moving the cursor to a different alarm on the alarm display (user) when the alarm under the cursor is deleted	GS467.b0

64 Sending an e-mail from the GOT when an alarm occurs (mail send function)

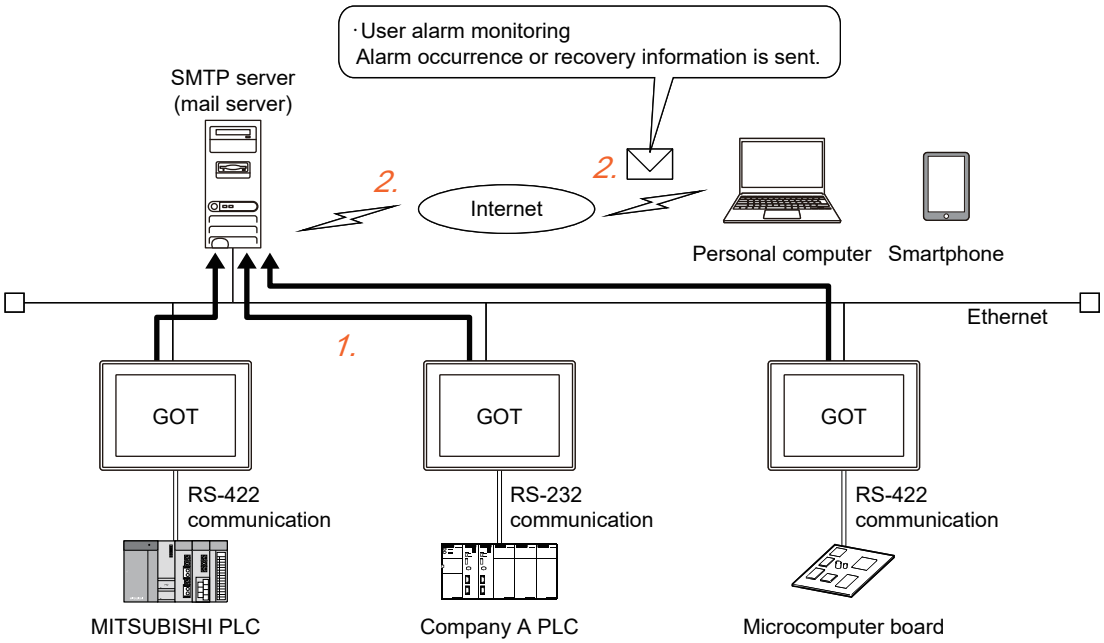
GT37 SoftGOT3000

☞ Page 2179 Overview of the mail send function
☞ Page 2180 Specifications of the mail send function
☞ Page 2183 How to use the mail send function
☞ Page 2186 [Mailing]
☞ Page 2188 Mail send function application example
☞ Page 2189 Relevant settings
☞ Page 2190 Troubleshooting

64.1 Overview of the mail send function

GT37 SoftGOT3000

The mail send function sends information about alarms generated in the GOT to a personal computer or smartphone via e-mail, in conjunction with the user alarm monitoring function.
An e-mail is sent when an alarm occurs and when it recovers.
When an alarm occurs in the GOT, the information is immediately sent to the production site and the administrative office, preventing missed alarms and enabling quick recovery actions.
For details on the user alarm monitoring, refer to the following.
☞ Page 2022 Collecting alarms by monitoring devices



1. When an alarm occurs in the GOT, the GOT alarm display issues an e-mail sending request to the SMTP server.

2. The SMTP server sends an e-mail in response to the request from the GOT.

64.2 Specifications of the mail send function

GT37 SoftGOT3000

☞ Page 2180 System application (add-on function)
☞ Page 2180 Number of mail send function settings for one project
☞ Page 2180 Specifications of mail sending
☞ Page 2180 DNS server setting
☞ Page 2181 Validated mail software
☞ Page 2181 Number of e-mails that can be sent at one time
☞ Page 2181 Applicable languages for mail sending
☞ Page 2181 Mail content
☞ Page 2182 Clock setting of the GOT
☞ Page 2182 Date/Time of mail sending

64.2.1 System application (add-on function)

To use the mail send function, [Mail Send] must be selected from the system applications (add-on functions).
Selecting [Use the function of Mail] and configuring the settings for [Mailing] in the [Controller Setting] window incorporate the application into the package data automatically.
☞ Page 2186 [Mailing]

64.2.2 Number of mail send function settings for one project

One setting can be configured per project.

64.2.3 Specifications of mail sending

- If the internet service provider allows direct specification of the IP address to access the server, e-mails can be sent via a router.
- Use the DNS client function to specify the host name to connect to the service provider and send e-mails.
- When using a mail server provided by the service provider, be sure to check connectivity in advance.
- You can encrypt communication with the mail server.

TLS1.2 and TLS1.3 are supported.

- SMTP authentication and POP before SMTP authentication are available, and the user name and password for authentication can be specified.
- You can specify the following items for e-mails.

◇Sender information (FROM)
◇Receiver (To), carbon copy (Cc), blind carbon copy (Bcc)
◇Subject

64.2.4 DNS server setting

To specify a mail server with the host name, the DNS server settings of the GOT must be configured.
☞ Page 717 [GOT Ethernet Common Setting]
For GT SoftGOT3000, configure the DNS settings in the personal computer.

64.2.5 Validated mail software

The following shows mail software whose operations have been validated by Mitsubishi Electric Corporation.
The GOT (mail sender) does not require the mail software.

Name	Manufacturer
Outlook	Microsoft Corporation
Yahoo! JAPAN Mail	LY Corporation
Gmail	Google LLC
iCloud Mail	Apple Inc.

64.2.6 Number of e-mails that can be sent at one time

The maximum number of e-mails that can be sent at one time is 16.
If 17 or more alarms occur or are recovered simultaneously, the details of first 16 alarms are sent.

64.2.7 Applicable languages for mail sending

Only Japanese and English are applicable.
For the other languages, the mail is sent as [?].

64.2.8 Mail content

The following information is output to e-mails.

Mail client information shown in the header of the e-mail sent from the GOT

When a target device receives an e-mail from the GOT, the header of the received e-mail has a line showing that the GOT has sent the e-mail as shown below.
The display format and details of the received mail differ depending on the specifications of the mail software installed in the target device.

Ex.
Display example of the header of the received mail

```
From: **********************
To: ************************
Cc: ************************
Subject:Module VI - Line A
                :
X-Mailer:GOT
```

Mail body content

The body of the e-mail includes the title, date and time, alarm information, detailed information, and word log in order.
The mail content differs depending on whether an alarm occurs or recovers.

At alarm occurrence

```
[Alarm notice]
[Date/Time of occurrence]
2025/4/20 10:38:15
[Alarm information]
Equipment A feed conveyor stopped
[Details]
Equipment A feed conveyor has been stopped.
Check the power supply.
[Log on Occurrence]
The motor speed at the time of error occurrence was ***
r/min, and the weight of the transported product was *** kg.
```

At alarm recovery

```
[Recovery notice]
[Date/Time of recovery]
2025/4/20 11:35:10
[Recovery information]
Equipment A feed conveyor stopped
[Details]
Equipment A feed conveyor has been stopped.
Check the power supply.
[Log on Occurrence]
The motor speed at the time of error occurrence was ***
r/min, and the weight of the transported product was *** kg.
```

Item	Content	
	At alarm occurrence	**At alarm recovery**
Title	[Alarm notice]	[Recovery notice]
Date and time (GOT local time)	[Date/Time of occurrence] The date and time of occurrence is displayed.	[Date/Time of recovery] The date and time of recovery is displayed.
Alarm information	[Alarm information] A basic alarm comment is displayed.	[Recovery information] A basic alarm comment is displayed.
Detailed information	[Details] The same information is output regardless of the alarm status. The contents of the detail display ([Detail Display No.]) set for the alarm display are displayed. Select [Comment Window] for [Display Destination] for the alarm display. [Details] is not displayed if [Not Display], [Base Screen], or [Window Screen] is selected.	
Word log	[Log on Occurrence] The comment specified for the word log is displayed.	

64.2.9 Clock setting of the GOT

Depending on the clock setting (time setting and time notification) of the GOT, a problem may occur, such as the clock data set in the GOT or the controller is not reflected.
For the clock setting of the GOT, refer to the following.
☞ Page 635 Setting the GOT time setting method ([Time Setting])

64.2.10 Date/Time of mail sending

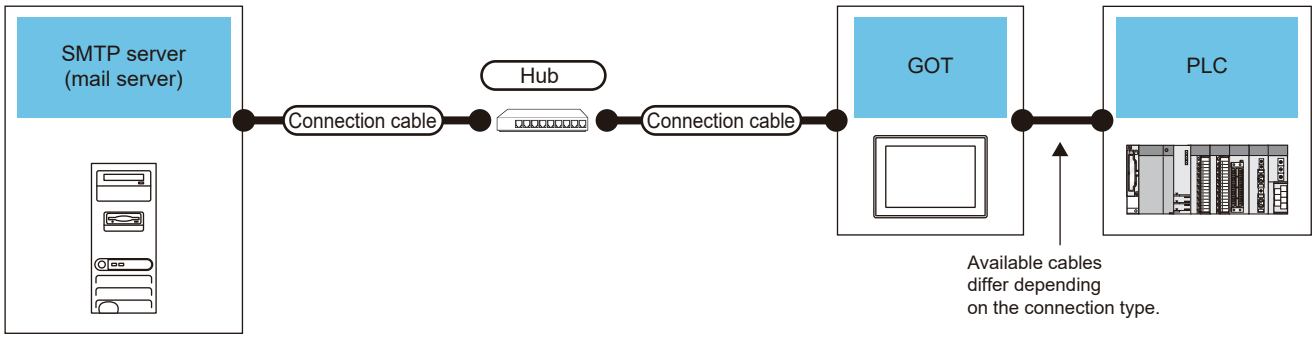
The date and time of the SMTP server at mail sending is attached to the mail.

64.3 How to use the mail send function

GT37 SoftGOT3000

☞ Page 2183 System configuration
☞ Page 2185 Setting procedure

64.3.1 System configuration



SMTP server	Connection cable	GOT		PLC
		Interface	Model	
Personal computer or others	Shielded twisted pair cable	Built-in Ethernet interface of the GOT	GT37 SoftGOT3000	For information on the system configuration between the GOT and PLC, refer to the following. GOT3000 Series User's Manual (Connection)
		Ethernet interface of personal computer	GT37 SoftGOT3000	

Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

A straight cable is usable.

When the GOT is directly connected to the personal computer via Ethernet cable, a cross cable is applicable.

The destination device connected with the twisted pair cable varies with the configuration of the Ethernet network system used.

Connect the cable to the Ethernet module, hub, or other system equipment corresponding to the Ethernet network system used.

Use cables, connectors, and hubs that meet the IEEE802.3 10BASE-T/100BASE-TX/1000BASE-T standards.

Maximum segment length

The maximum segment length (length between a hub and a node) is 100 m.
The maximum length depends on the Ethernet equipment used.
The following shows the number of connectable hubs when a repeater hub is used.

- 10BASE-T: Up to 4 cascade-connected hubs (within 500 m)
- 100BASE-TX: Up to 2 for a cascade connection (within 205 m)
- 1000BASE-T: The number differs depending on the hub to be used.

When switching hubs are used, there is no theoretical limit to the number of cascade connections between switching hubs. For the limit, contact the switching hub manufacturer.

Precautions

■Countermeasures against access delay

When multiple network devices (including GOTs) are connected in the same segment, the network load increases and the transmission speed between the GOT and PLC may be reduced.
The following actions may improve the communication performance.

- Use a switching hub compatible with 1000BASE-T (1 Gbps) or more.
- Reduce the number of devices monitored by the GOT.

■Connection to the intranet

If the system needs keeping secure against unauthorized access to the intranet, consult a network service provider or a network administrator (a person who does network planning, IP address management, and others), and include your own countermeasures.
Mitsubishi Electric Corporation assumes no responsibility for any consequences that may arise from system troubles due to the intranet connection.

■When a firewall is used

If a firewall disconnects the communication of the gateway function, take countermeasures such as changing the port No. to be protected behind the firewall.
If the system needs keeping secure against unauthorized access in changing the port No. to be protected behind the firewall, consult the network administrator (a person who does network planning, IP address management, and others), and develop your own countermeasures.
Mitsubishi Electric Corporation assumes no responsibility for consequences that may arise from system troubles due to the change of the port No.

64.3.2 Setting procedure

The following shows the setting procedure to send e-mails.

1. Consider the configuration of the whole system.

- Configuration of the whole system including controllers and GOTs
- Controller settings (including device assignment)
- GOT settings (including IP address, network number, and station number)

2. Connect the GOT and the controllers.

☞ Page 2183 System configuration

3. In the [User Alarm Observation] dialog, click [Additional Setting] and select [Mail Send], and configure the other settings as required.

☞ Page 2045 [User Alarm Observation] dialog

4. Select [Common] → [Controller Setting] from the GT Designer3 menu to display the [Controller Setting] window. Select [Mailing] and configure the required settings.

☞ Page 2186 [Mailing]

5. Write package data to the GOT.

For the communication method between the personal computer and the GOT, refer to the following.

☞ Page 408 Transferring data to the GOT

6. Check the GOT operation.

☞ Page 2188 Mail send function application example

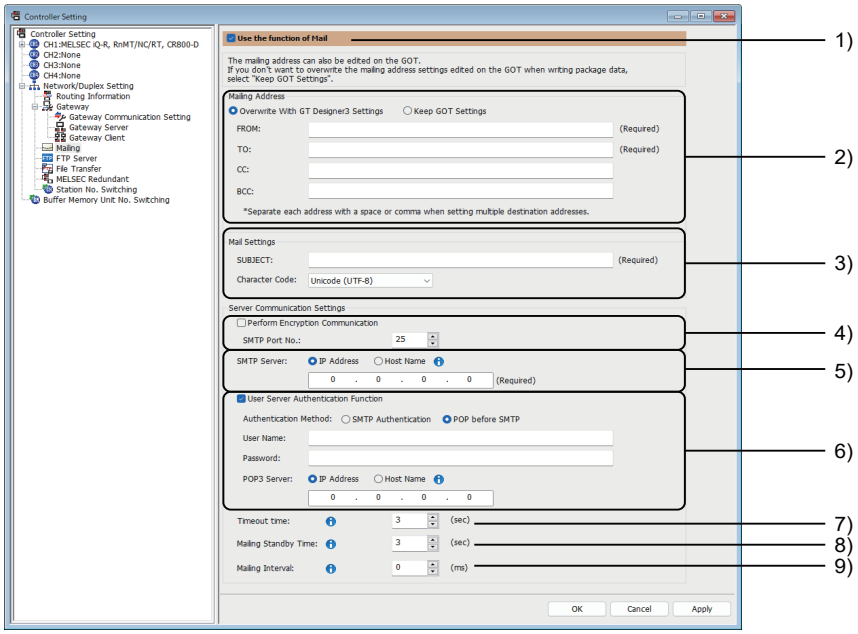
64.4 [Mailing]

GT37 SoftGOT3000

In the [Mailing] setting screen, configure the settings including mailing addresses, whether to enable encrypted communication, and the server authentication method.

Window

1. Select [Common] → [Controller Setting] from the menu to display the [Controller Setting] window.
2. Select [Mailing] in the [Controller Setting] window.



Item			Description
1)	[Use the function of Mail]		Select this option when using the mail send function.
2)	[Mailing Address]	—	The settings in this section can also be configured in the GOT utility. Select [Keep GOT Settings] if you do not want to overwrite the mail receiver settings set on the GOT with those on this screen when writing the package data. If you select [Overwrite With GT Designer3 Settings], configure the following settings. One-byte alphanumeric characters (uppercase or lowercase) and the following symbols can be used for these settings. ! " # $ % & ' ( ) * + , ` - . / : ; < = > ? @ [\ ] ^ _ { | } ~
		[FROM]	Set the mail sender address within 64 characters. One address can be set. Set one of the following addresses since the GOT does not have its own address. • Address set to [TO] • Address you want to use as the return address
		[TO] [CC] [BCC]	Set the mail receiver addresses within 2141 characters (including delimiters). Up to 32 addresses can be set for each item. Specify each address within 64 characters. When setting addresses of multiple mail receivers, separate the addresses by commas or spaces. Commas are not allowed in the address.
3)	[Mail Settings]	[SUBJECT]	Set the mail title within 128 characters. When receiving e-mails from multiple GOTs, set a different subject for each GOT to identify the sender. One-byte alphanumeric characters (uppercase or lowercase), one-byte spaces, and the following symbols can be used. ! " # $ % & ' ( ) * + , ` - . / : ; < = > ? @ [\ ] ^ _ { | } ~
		[Character Code]	Set the character code for the mail body.

Item			Description
4)	[Perform Encryption Communication]	—	Select this item to enable encrypted communication.
		[SMTP Port No.]	When [Perform Encryption Communication] is not selected, set the port number of an SMTP server. The setting range is [0] to [65535].
		[Encryption Communication Port No.]	When [Perform Encryption Communication] is selected, set the port number for encrypted communication. The setting range is [0] to [65535].
5)	[SMTP Server]	—	Set the address of an SMTP server.
		[IP Address]	Specify the IP address. The setting range is [0.0.0.0] to [255.255.255.255].
		[Host Name]	Specify the host name. To specify the server with the host name, configure the DNS server settings in [GOT Ethernet Common Setting]. Set the full computer name (the computer name + . (period) + domain name) for the host name. Up to 253 one-byte alphanumeric characters (uppercase or lowercase) and the following symbols can be used. - . When using e-mail service, set the specified SMTP server. For the e-mail service providers whose operations have been validated by Mitsubishi Electric Corporation, refer to the following. ☞ Page 2180 Specifications of the mail send function
6)	[User Server Authentication Function]	—	Select this item to use server authentication, and configure the following settings.
		[Authentication Method]	Select a server authentication method.
		[User Name]	Set the user name for server authentication within 256 characters. One-byte alphanumeric characters (uppercase or lowercase), one-byte spaces, and the following symbols can be used. ! " # $ % & ' ( ) * + , ` - . / : ; < = > ? @ [\ ] ^ _ { | } ~
		[Password]	Set the password for server authentication within 256 characters. One-byte alphanumeric characters (uppercase or lowercase), one-byte spaces, and the following symbols can be used. ! " # $ % & ' ( ) * + , ` - . / : ; < = > ? @ [\ ] ^ _ { | } ~
		[POP3 Server]	Set the POP3 server address when [POP before SMTP] is selected for [Authentication Method]. On the POP3 server, port 995 is designated for encrypted communication, and port 110 is designated for unencrypted communication. Connection to a POP3 server is not possible if these ports are unavailable. • [IP Address] Specify the IP address. The setting range is [0.0.0.0] to [255.255.255.255]. • [Host Name] Specify the host name. Set the full computer name (the computer name + . (period) + domain name) for the host name. Up to 253 one-byte alphanumeric characters (uppercase or lowercase) and the following symbols can be used. - . When using e-mail service, set the specified POP3 server.
7)	[Timeout time]		Set the time for communication timeout when there is no response from the mail server due to the load condition of the server.
8)	[Mailing Standby Time]		Set the wait time between the establishment of the mail sending trigger and the actual sending of the e-mail.
9)	[Mailing Interval]		When multiple mail sending triggers are established at the same time, e-mails are sent one by one at the set interval. Configure this setting when e-mail sending fails due to server restrictions triggered by sending a large number of e-mails simultaneously.

Precautions

If you change the GOT type to GT SoftGOT3000 with [Keep GOT Settings] selected for [Mailing Address], [FROM], [TO], [CC], and [BCC] settings will be blank.

64.5 Mail send function application example

GT37 SoftGOT3000

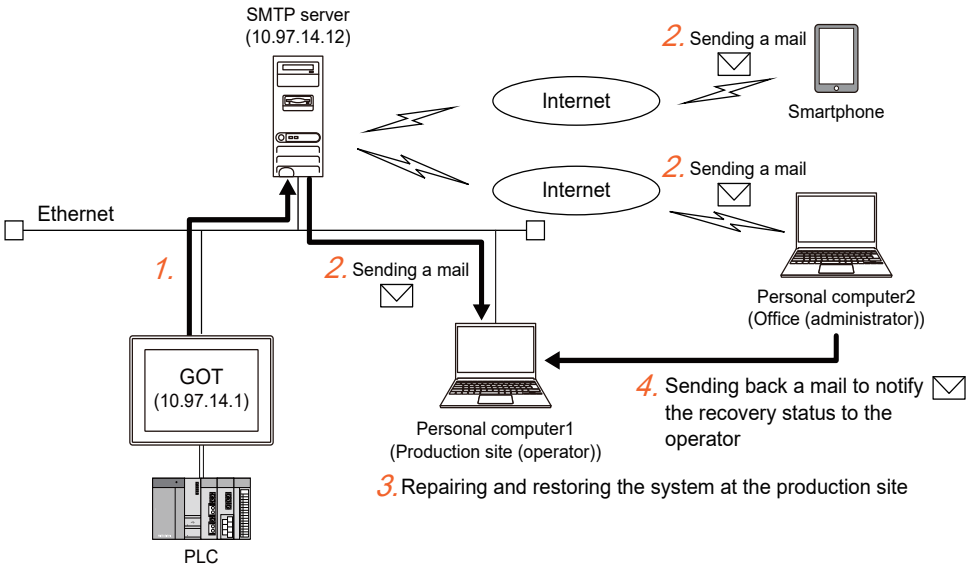
The following shows an application example of the mail send function.

Ex.

The following shows an example of sending e-mails to notify the production site and office of the details of an alarm occurring in the GOT.

GOTs cannot receive mails. Thus, set the mail address of the personal computer at the production site for FROM.

If the mail address of the personal computer at the production site is set for FROM, the office (administrator) can send back an e-mail to the production site to obtain the information about the latest recovery status.



1. When an alarm occurs in the GOT, the GOT issues an e-mail sending request to the SMTP server.

2. Upon the request, the SMTP server sends an e-mail to personal computer 1 (production site (operator)), smartphones, and personal computer 2 (office (administrator)).

3. The production site receives the e-mail, and repairs and recovers the system.

4. The office sends an e-mail to the production site to request a report about the latest recovery status.

The following shows an example of the settings in GT Designer3.

Set the comments displayed in the alarm display in advance.

Item		Description
Controller setting	GOT IP address	10.97.14.1
	Send delay time	0 (ms)
	Communication timeout time	3 seconds
	Startup time	3 seconds
Mail setting	SMTP	10.97.14.12
	FROM	Mail address of personal computer 1 (production site (operator))
	TO	Mail address of personal computer 1 (production site (operator))
	CC	Mail addresses of personal computer 2 (office (administrator)) and smartphones
	SUBJECT	Module VI - Line A
Alarm display (Alarm display screen)	Device	Controller device to be monitored
	Mail sending	When an error occurs and recovery is completed

64.6 Relevant settings

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Configure the relevant settings in addition to the specific settings for the mail send function as required.
The following shows the functions that are available by configuring the relevant settings.

64.6.1 GOT internal device

Function	Setting item
Holding the on status while the mail send function can be used.	GS200.b0
Turning on when the error has occurred in the mail send function.	GS200.b11
Storing the number of the errors that have occurred in the mail send function.	GS201
Storing the codes of the errors that have occurred in the mail send function.	GS202
Storing the year (upper byte, two lower digits of year) and the month (lower byte) of the error occurrence date/time when the error has occurred in the mail send function in BCD code.	GS203
Storing the day (upper byte) and the hour (lower byte) of the error occurrence date/time when the error has occurred in the mail send function in BCD code.	GS204
Storing the minute (upper byte) and the second (lower byte) of the error occurrence date/time when the error has occurred in the mail send function in BCD code.	GS205
Notifying the type of the function that has caused the error in the mail sending process of the mail send function.	GS206
Clearing the errors (GS200.b11, GS201 to GS206) of the mail send function.	GS400.b11

64.7 Troubleshooting

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☞ Page 2190 Troubleshooting for the mail send function
☞ Page 2191 Error information of the mail send function
☞ Page 2191 Error code and error message of the mail send function

64.7.1 Troubleshooting for the mail send function

The following shows the troubleshooting for the mail send function.

Symptom		Details of error and cause	Corrective action
The mail send function does not work.	When all the bits of GS200 are off and the GOT does not respond to Ping *1*2	The system application (extended function) for the mail send function is not installed on the GOT.	Write the package data, which contains the system application (extended function) for the mail send function, to the GOT. ☞ Page 408 Transferring data to the GOT
		No IP address has been set for the GOT.	Set the IP address for the GOT in the utility of the GOT.
		The port number of the personal computer (MX Component) is different from that of the GOT (5011).	Set the same port number for the personal computer (MX Component) as that of the GOT (5011).
	If any bit of GS200 is on and the GOT responds to Ping *1*2	—	Refer to the troubleshooting for the functions corresponding to the bits that are on, and take corrective actions.
Mail cannot be sent.		The SMTP server is not working properly.	Check with the network administrator that the SMTP server is working properly.
		Mail sender address is not properly set for FROM.	Set the proper sender address for FROM
		The GOT attempted to send 17 or more mails at a time.	Send 16 or less mails at a time.
The time when the mail has been sent is not correct.		The time on the SMTP server is incorrect. (The GOT refers to this time when sending mails.)	Set the correct time for the SMTP server.
The whole text of the e-mail is not displayed on the smartphone.		The number of characters that the smartphone can send (receive) has been exceeded.	Reduce the number of characters in the e-mail so that the smartphone can send (receive) the e-mail.
One-byte katakana is converted to two-byte katakana.		One-byte katakana cannot be used in the body of the mail. One-byte katakana is sent after converted to two-byte katakana.	This symptom is not an error.

*1 For the details of the Gateway Common Information (GS200), refer to the following.
☞ Page 3581 GOT special register (GS)

*2 To check if the GOT responds to Ping, give the ping command through the personal computer to the GOT.

64.7.2 Error information of the mail send function

The error information of the mail send function is stored in the GOT special register (GS).
Monitor the following GOT special registers to check the error information of the mail send function.
For the details of the GOT special register, refer to the following.
☞ Page 3581 GOT special register (GS)

Device	Function		Description
GS201	Mail send function	Error counter	Stores the number of errors that have occurred.
GS202		Error code	Stores the error code. ☞ Page 2191 Error code and error message of the mail send function
GS203		Error date and time	Stores the year (upper byte, two lower digits of year) and the month (lower byte) of the error occurrence date/time in BCD code.
GS204			Stores the day (upper byte) and the hour (lower byte) of the error occurrence date/time in BCD code.
GS205			Stores the minute (upper byte) and the second (lower byte) of the error occurrence date/time in BCD code.
GS206		Mail sender	Notifies the type of the function that has caused the error in the mail sending process. • 0: No error • 1: User alarm monitoring

64.7.3 Error code and error message of the mail send function

The following lists the error codes that are stored in the GOT special register GS202 (Mail Send Function Error Code).

Error code	Description	Corrective action
2	No sender address is set for FROM.	Set the sender address for FROM. ☞ Page 2186 [Mailing]
3	The SMTP server is not set.	Set the SMTP server. ☞ Page 2186 [Mailing]
4	No receiver address is set for TO.	Set the receiver address for TO. ☞ Page 2186 [Mailing]
5	Mail address is incorrect.	Check that the mail addresses for FROM, TO, CC, and BCC are correct. ☞ Page 2186 [Mailing]
6	Alarms may occur in excess of the number of e-mails that can be sent.	Check the number of alarms that have occurred. Up to 16 e-mails can be sent at a time to notify the alarm.
10	The connection with the SMTP server has been failed.	• Check if the SMTP server is functioning normally. • Check if the IP address or host name of the SMTP server is properly set. • Contact the network administrator to check the router address and the subnet mask, and then setup the GOT. • When the network is protected by a firewall, contact the network administrator to check that the specified port number of the SMTP server is allowed to pass through the firewall.
11	A timeout has occurred in the connection with the SMTP server.	• Check if the SMTP server is functioning normally. • Specify a longer communication timeout period. ☞ Page 729 [Controller Setting]
12	The SMTP server notifies the error.	• Check if the SMTP server is functioning normally. • Contact the network administrator to check that e-mails can be sent without the authentication including POP3.
13	The SMTP authentication has failed.	• Check that the user name and password for the SMTP authentication are set correctly. ☞ Page 2186 [Mailing]
32	The POP3 server address is not set.	• Set the IP address or host name of the POP3 server. ☞ Page 2186 [Mailing]
34	The connection to the POP3 server has failed.	• Check that the IP address or host name of the POP3 server is set correctly. ☞ Page 2186 [Mailing] • Check that the POP3 server is not down.
37	Authentication of the POP3 server has failed.	• Check that the user name and password for the POP3 server are set correctly. ☞ Page 2186 [Mailing]
40	A DNS server is not set.	Set a DNS server. ☞ Page 2186 [Mailing]

Error code	Description	Corrective action
42	The host name of the server cannot be resolved.	• Check that the address of the DNS server is set correctly. • Check that the DNS server is not down. • Check that the host name of the SMTP server and POP3 server are set correctly.

PART 10 Logging

65 Collecting device data ([Logging])

65 Collecting device data ([Logging])

☞ Page 2195 Overview of the logging function
☞ Page 2197 Useful information
☞ Page 2198 Basic flow of data collection and storage
☞ Page 2200 How to save logging data (logging mode)
☞ Page 2210 Specifications of the logging
☞ Page 2214 Control triggers used for logging
☞ Page 2217 Notification devices used for logging
☞ Page 2221 How to use the logging
☞ Page 2227 [Logging List] dialog
☞ Page 2228 [Logging] dialog
☞ Page 2240 [Logging File Conversion] dialog
☞ Page 2241 Relevant settings

65.1 Overview of the logging function

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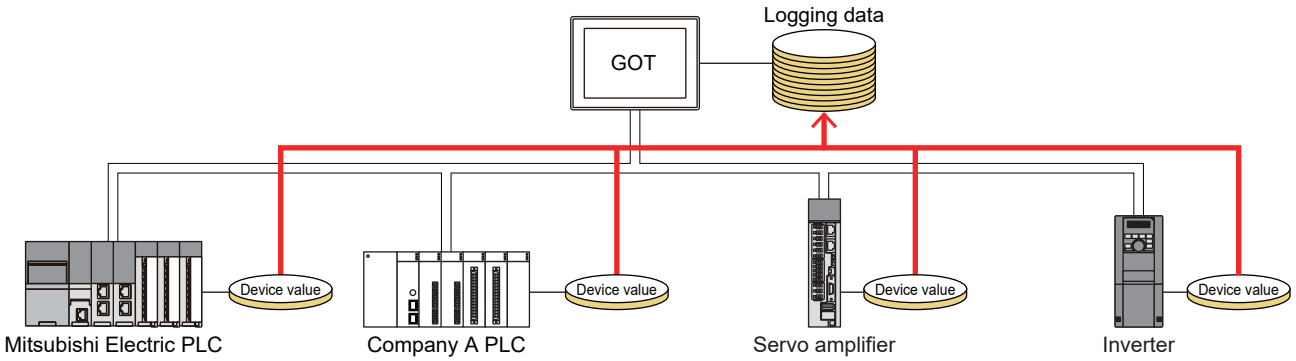
Logging is a function that collects and accumulates device values from the controller connected to the GOT at user-specified timings or at regular intervals.

The collected and accumulated device values (hereafter, logging data) can be used for data analysis and error analysis.



Logging has four main functions:

Data collection

The logging function of the GOT can collect device values from the controller without using the logging function of the controller.

This eliminates the need for the controller to perform logging and reduces load on the controller.

The conditions for starting device value collection from the controller are referred to as logging triggers. Available trigger types include rising, falling, and sampling.

Logging triggers enable data acquisition at the required timings.

☞ Page 2214 Logging trigger

Data storage

Two modes are available. File save mode stores large volumes of data as logging files (*.G3L), and buffer historical mode retains logging data only in the buffering area of the GOT and enables high-speed data collection.

Select the mode according to the intended application.

☞ Page 2201 File save mode

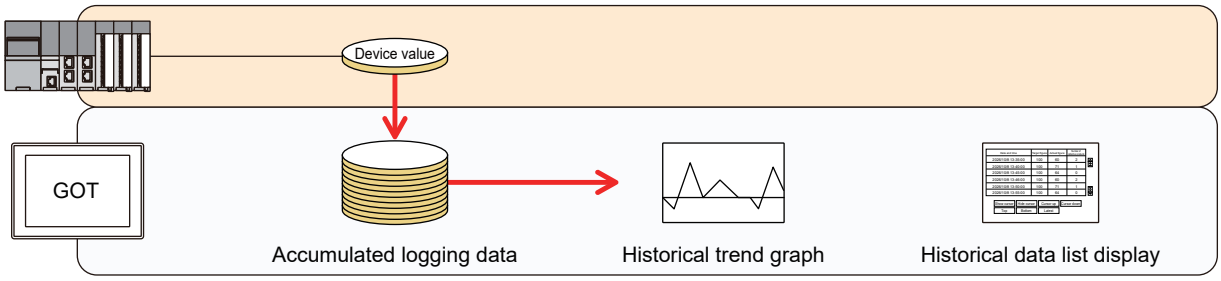
☞ Page 2205 Buffer historical mode

Data visualization

Linking logging data with [Historical Trend Graph] or [Historical Data List Display] object visualizes the changes in device values in real time on the GOT screen without using a personal computer.

This enables immediate on-site data checking and a quick response to errors.

Object type	Description
Historical trend graph ☞ Page 1693 Placing a historical trend graph	Displays the device values collected by logging as a time-series graph. Changes in the data values can be checked visually.
Historical data list display ☞ Page 1495 Placing a historical data list display	Displays the device values collected by logging in a chronological table format. Actual values and any anomalies can be checked.



Data output

Logging data can be saved as a logging file (.G3L), a CSV file, or a Unicode text file.

When saved, the data is always output first as a logging file (.G3L).

Depending on the settings, a CSV file or a Unicode text file can be saved in addition to the logging file (.G3L). Saving the data as a CSV file or a Unicode text file enables its use for aggregation, graphing, and detailed analysis on a personal computer.

Even without additional file saving, the logging file (.G3L) can later be converted to a CSV file or a Unicode text file.

For information on the conversion method, refer to the following.

☞ Page 2223 Converting a logging file to a CSV file or a Unicode text file

For information on the format of the output file, refer to the following.

☞ Page 2225 Logging data format

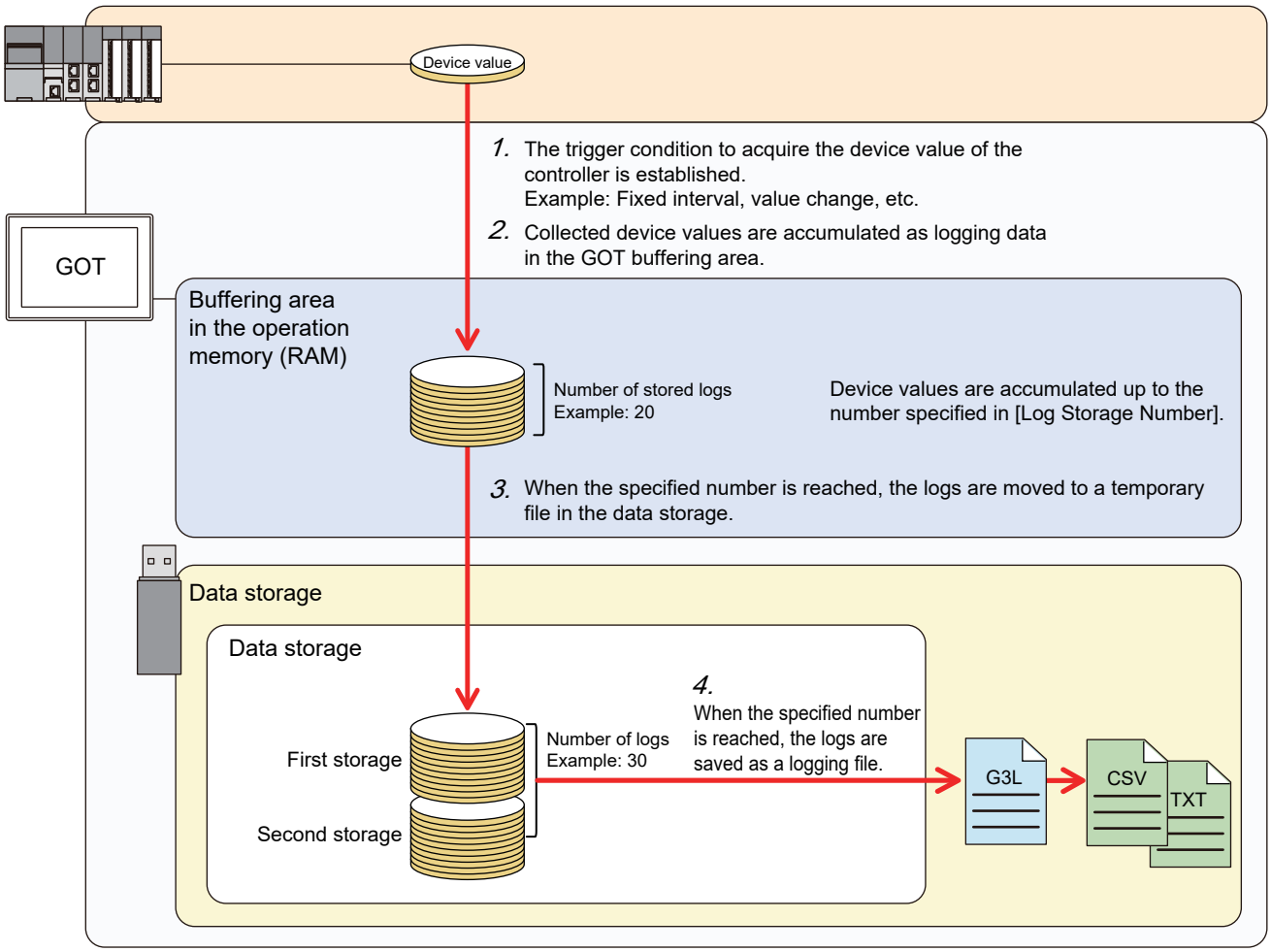
65.2 Useful information

This section provides information on the relevant manual sections for logging operations and management by purpose.

Purpose	Location of description
Checking past logging data	☞ Page 2201 File save mode
Saving past logging data	
Checking real-time data only	☞ Page 2205 Buffer historical mode
Setting high-speed logging	
Checking the differences between logging modes	☞ Page 2209 Guidelines for logging mode selection
Checking the collected data on the GOT	File save mode ☞ Page 2196 Data visualization ☞ Page 2204 Data used by the historical trend graph and the historical data list display
	Buffer historical mode ☞ Page 2196 Data visualization ☞ Page 2206 Data used by the historical trend graph and the historical data list display
Retaining logging data during a power failure	• File save mode ☞ Page 2204 Using the nonvolatile RAM power-failure backup function
	• Buffer historical mode ☞ Page 2206 Using the nonvolatile RAM power-failure backup function ☞ Page 2207 Saving to the data storage
Restoring data after a power failure	• File save mode ☞ Page 2204 Using the nonvolatile RAM power-failure backup function
	• Buffer historical mode ☞ Page 2206 Using the nonvolatile RAM power-failure backup function ☞ Page 2207 Saving to the data storage
Checking the collected data on the GOT	☞ Page 2196 Data visualization ☞ Page 2204 Data used by the historical trend graph and the historical data list display
Checking the conditions for starting data collection	☞ Page 2214 Logging trigger
Checking whether logging is executed normally	☞ Page 2217 Device Value Collection Number Count Device
Checking whether device values are being collected	☞ Page 2217 Logging Notification Device
Receiving a notification when the buffering area becomes full	☞ Page 2219 Buffering Area Full Notification Device
Clearing the buffering area	☞ Page 2216 Buffer historical data clear trigger
Receiving a notification when the logging data in the buffer is cleared	☞ Page 2219 Buffer Historical Data Cleared Device
Specifying the timing for saving logging data	☞ Page 2216 Storage trigger
Receiving a notification if an error occurs while saving logging data	☞ Page 2220 File Save Error Notification Device
Specifying the timing for saving data as a logging file	• File save mode ☞ Page 2217 File creation trigger
	• Buffer historical mode ☞ Page 2216 Storage trigger
Checking whether a logging file is being saved	• File save mode ☞ Page 2220 File Creation Notification Device
	• Buffer historical mode ☞ Page 2219 File Saving Notification Device
Configuring the logging settings	☞ Page 2221 Output settings for logging data ☞ Page 2227 [Logging List] dialog
Deleting a logging file	☞ Page 2222 Operations on logging files
Converting logging data to a CSV file	☞ Page 2223 Converting a logging file to a CSV file or a Unicode text file
Checking the current logging settings	☞ Page 2227 [Logging List] dialog
Detecting and handling missing logging data	☞ Page 2232 Missing logging data detection function

65.3 Basic flow of data collection and storage

This section explains the basic flow of collecting device values from the controller and saving the collected data as a logging file.



1. Start of device value collection

When the condition for device value collection (trigger condition) is satisfied, the GOT starts collecting device values from the controller.

2. Temporary storage to the buffering area

The collected device values are accumulated as logging data in the buffering area in the operation memory (RAM) of the GOT.

3. Move to the temporary file

When the number of logs in the buffering area reaches the set [Log Storage Number] (full state), they are moved to the temporary file in the data storage installed on the GOT.

At this time, the logs are deleted from the buffering area.

4. Saving as a logging file

When the number of logs accumulated in the temporary file reaches the set [Number of logs to be stored in 1 logging file], the data is saved as a single logging file.

At this time, an additional CSV file or Unicode text file can also be created and saved.

Repeating the steps 1 to 4 accumulates logging files and text data (CSV, Unicode text) in the data storage.

Point

The figure in this section shows the behavior when detailed settings are configured.
In the default settings, [Log Storage Number] and [Number of logs to be stored in 1 logging file] are set to the same values. Therefore, one logging file is created each time the buffering area becomes full.
In the detailed settings, you can individually set [Log Storage Number] and [Number of logs to be stored in 1 logging file], and specify various triggers and devices described later to enable flexible data saving.

65.4 How to save logging data (logging mode)

The GOT provides the following two logging modes for saving logging data.
Since up to 60 logging settings can be configured per project, you can specify the logging mode for each logging setting according to your application.

Logging mode	Description
☞ Page 2201 File save mode	This mode saves the collected logging data as a logging file in the data storage installed on the GOT. Long-term storage of large volumes of logging data is possible. Both real-time and previously accumulated logging data are displayed in the trend graph and the historical data list display. When using file save mode, a data storage is required.
☞ Page 2205 Buffer historical mode	This mode stores logging data only in the buffering area. This mode is useful to save large volumes of logging data, or to perform high-speed logging of device values from the controller and check them in real time on the historical trend graph or historical data list display on the GOT screen.

Specify the logging mode for [How to store logging data] in the [Logging] dialog.
☞ Page 2228 [Logging] dialog

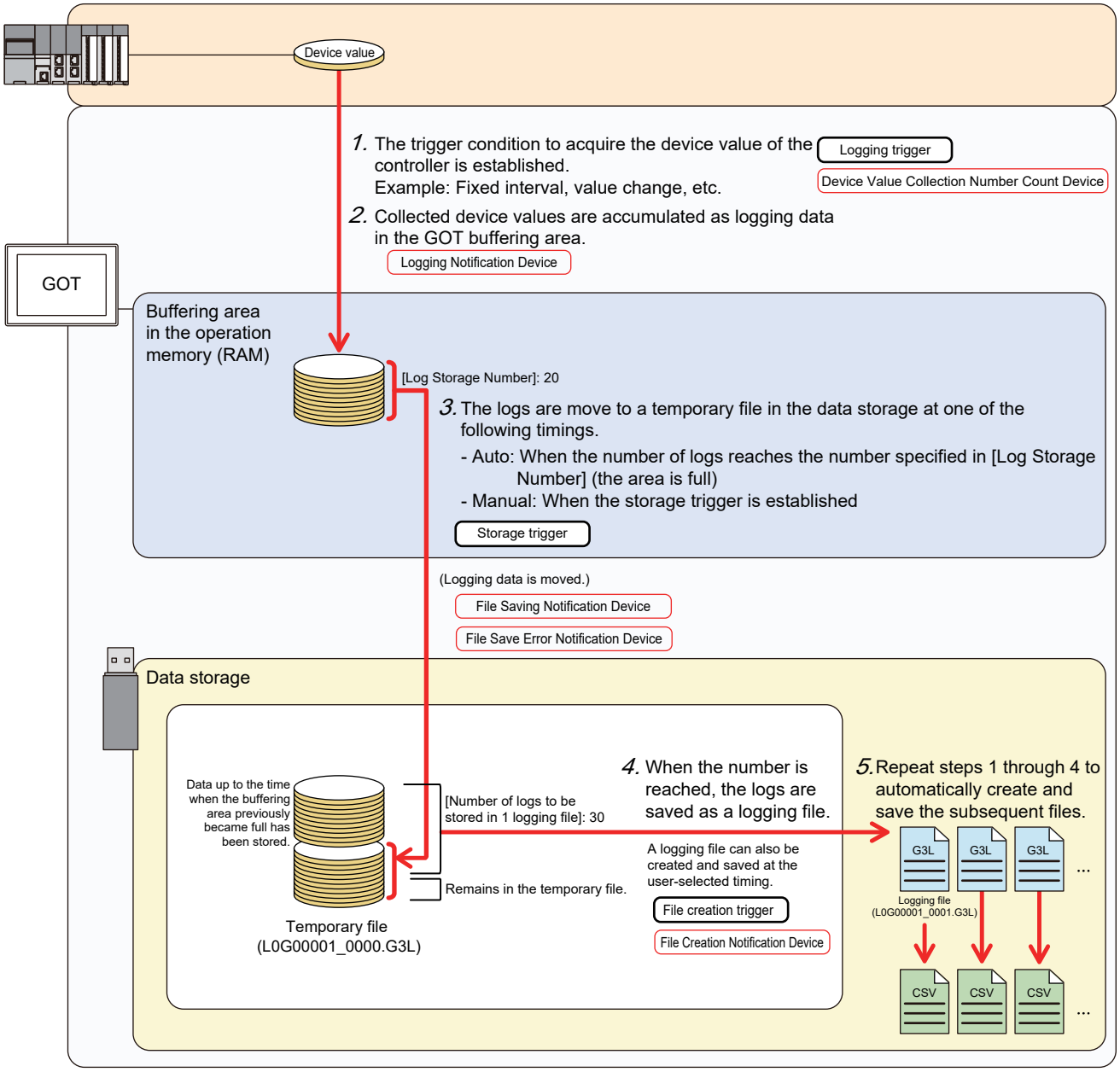
65.4.1 File save mode

The following example shows the operation of file save mode.

Ex.

When [Log Storage Number] is 20

When [Number of logs to be stored in 1 logging file] is 30



1. Start of device value collection

When the device value collection condition (logging trigger) is satisfied, the GOT starts collecting device values from the controller.

Trigger and device	Description	Setting item in the [Logging] dialog ☞ Page 2228 [Logging] dialog
Logging trigger	Condition for starting device value collection from the controller ☞ Page 2214 Logging trigger	[When to collect device values]
Device Value Collection Number Count Device	You can check the device value collection count since the GOT started. ☞ Page 2217 Device Value Collection Number Count Device	[Device Value Collection Number Count Device]

2. Temporary storage to the buffer area

The collected device values are accumulated as logging data in the buffering area in the operation memory (RAM) of the GOT.

Device	Description	Setting item in the [Logging] dialog ☞ Page 2228 [Logging] dialog
Logging Notification Device	You can check that device data is being collected in the buffering area. ☞ Page 2217 Logging Notification Device	[Logging Notification Device]

3. Move to the temporary file

When one of the following requirements is satisfied, the logging data in the buffering ring area is moved to the temporary file in the data storage installed on the GOT and deleted from the buffering area.

Requirements	Description
The number of logs in the buffering area reaches [Log Storage Number] (full state).	When the number of logs collected in the buffering area reaches [20] set to [Log Storage Number] in the [Logging] dialog, the logs are moved to the temporary file (file number 0000) in the data storage. If the buffering area is full and 20 logs are already in the temporary file, the new logs are added to the existing ones.
The storage trigger is established.	When the storage trigger is established, the logging data in the buffering area is moved to the temporary file (file number 0000) in the data storage. Regardless of [Log Storage Number], the data can be moved to the temporary file at use-specified timings.

The following trigger and devices can be used.

Trigger and device	Description	Setting item in the [Logging] dialog ☞ Page 2228 [Logging] dialog
Storage trigger	☞ Page 2216 Storage trigger	[When to store logs to the temporary file]
File Saving Notification Device	You can check that the logging data stored in the buffering area is being written to the temporary file. ☞ Page 2219 File Saving Notification Device	[File Saving Notification Device]
File Save Error Notification Device	You can check for errors while writing to the temporary file. ☞ Page 2220 File Save Error Notification Device	[File Save Error Notification Device]

Precautions

- Powering off, restarting, or resetting the GOT will delete the logging data in the buffering area.

If the data needs to be retained, use the storage trigger to store the logging data.

- If no data storage is installed, logging is paused when the number of logs reaches [Log Storage Number].

4. Saving as a logging file

Set the number of logs stored in one logging file by [Number of logs to be stored in 1 logging file] in the [Logging] dialog.

When the logging data accumulated in the temporary file reaches [30] set to [Number of logs to be stored in 1 logging file], the data is saved to a logging file.

When the settings for creating a CSV file or a Unicode text file are configured, the corresponding file is created at the time a logging file is created.

While the logging data is being saved to a file (including a text file), logging is paused.

Trigger and device	Description	Setting item in the [Logging] dialog ☞ Page 2228 [Logging] dialog
File creation trigger	Use this to create and save a logging file even though the number of logs in the temporary file is below the specified value. When the file creation trigger is used, the logging data in the buffering area is also saved to the file in addition to the logging data in the temporary file (the data is deleted from the buffering area). ☞ Page 2217 File creation trigger	[Create a logging file at any desired time]
File Creation Notification Device	When this device is used with the file creation trigger, you can check whether the logging data in the temporary file is being saved to a file (whether logging is paused). ☞ Page 2220 File Creation Notification Device	[File Creation Notification Device]

After the logging file is saved, the logging data stored in the temporary file is automatically deleted, and logging resumes.

Any logging data not saved to a logging file remains in the temporary file.

5. Automatic logging file creation

By repeating the operations in steps 1 to 4, the next logging file is automatically created and saved.

When the number of logging files exceeds the maximum number specified in the settings, the oldest logging file is overwritten.

Even when the file creation trigger is used, logging data is automatically saved to a logging file once [Number of logs to be stored in 1 logging file] is satisfied.

When the settings for creating a CSV file or a Unicode text file are configured, the corresponding file is created at the time one logging file is created.

Precautions

■When a data storage is not installed

If no data storage is installed, writing of the logging data stored in the buffer area to the temporary file fails, and the [File Save Error Notification Device] turns on.

Logging is performed up to the specified log storage count. After that, logging is paused and device values are not collected until writing to the temporary file succeeds.

When a data storage is installed, writing to the temporary file and logging resume.

■Data storage size

Use a data storage with a capacity larger than the size of the logging files to be saved.

If the data storage becomes full before the specified number of saved files is reached, the logging file is not overwritten, and the logging is paused.

For information on the logging file size, refer to the following.

☞ Page 3673 Logging

To receive a notification when the data storage becomes full, use system signal 2-2 or system signal 2-3.

■To maintain file access performance

It is recommended to format the data storage before using it.

The number of files stored in the data storage must be less than 500, including logging files, CSV files, and Unicode text files.

If 500 or more files are stored, file access performance may be lowered.

Repeated writing or deleting of data may degrade access performance, regardless of the number of files.

In such a case, format the data storage.

■Clearing logging data in the buffering area

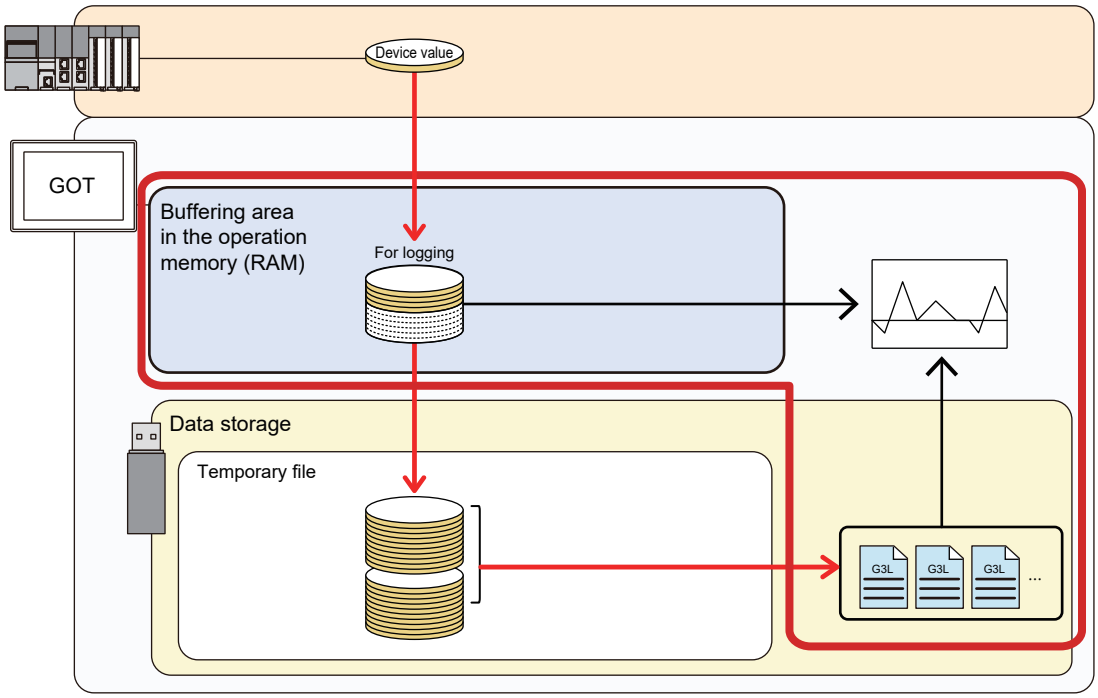
In file save mode, no device is provided for deleting logging data from the buffering area.

To delete target logging data from the buffering area, use [Data mng.] - [NVRAM management] in the utility.

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

Data used by the historical trend graph and the historical data list display

When linking data with the historical trend graph and the historical data list display, these objects display the logging data in the buffering area and the data in the logging file.



Using the nonvolatile RAM power-failure backup function

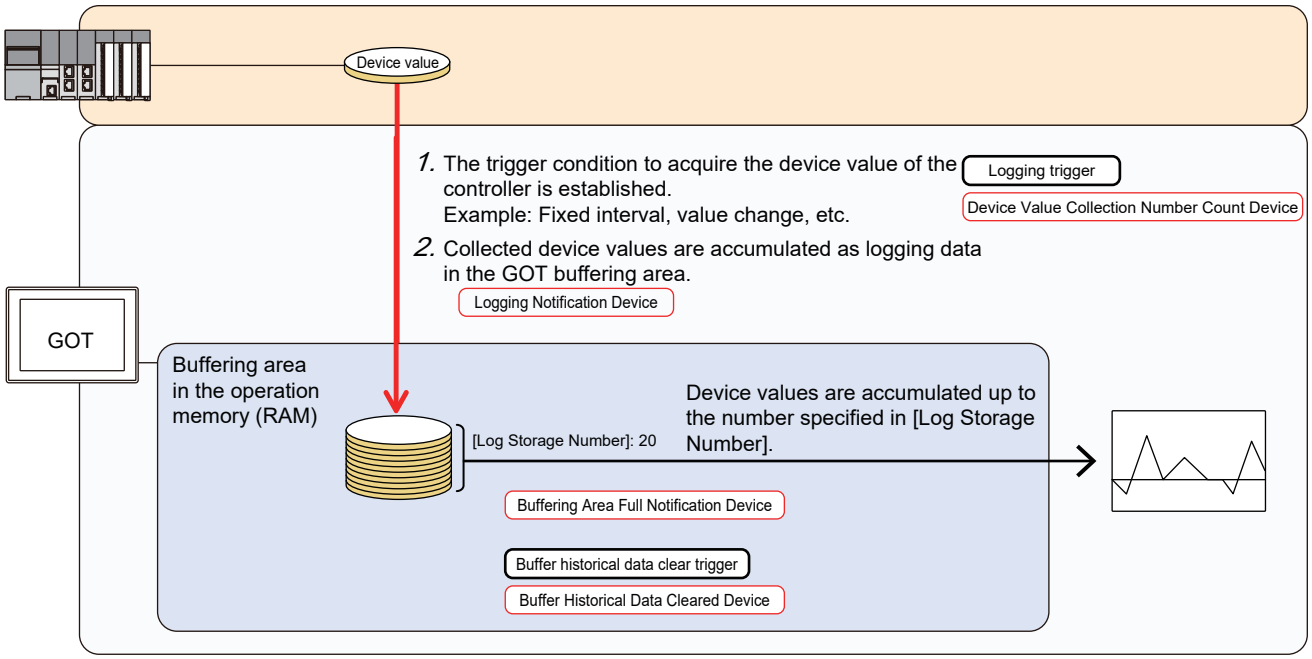
GT37 SoftGOT3000

Powering off, restarting, or resetting the GOT will delete the logging data in the buffering area.
To retain the logging data in the buffering area, enable the setting to save it to the nonvolatile RAM user area.
The data saved in the nonvolatile RAM user area is retained even if the GOT is powered off (power-failure backup).
If logging data exists in the nonvolatile RAM user area, it is automatically restored when the GOT is powered on.
Up to 20 logging settings with nonvolatile RAM power-failure backup enabled can be set per project.
The timing for saving data to the nonvolatile RAM user area cannot be set.

For the specifications of the nonvolatile RAM user area and operations performed on it, refer to the following.
☞ Page 3679 Specifications and operations of the nonvolatile RAM user area

65.4.2 Buffer historical mode

The flow of data in buffer historical mode is as follows:



1. Start of device value collection

When the device value collection condition (logging trigger) is satisfied, the GOT starts collecting device values from the controller.

Trigger and device	Description	Setting item in the [Logging] dialog ☞ Page 2228 [Logging] dialog
Logging trigger	Condition for starting device value collection from the controller ☞ Page 2214 Logging trigger	[When to collect device values]
Device Value Collection Number Count Device	You can check the device value collection count since the GOT started. ☞ Page 2217 Device Value Collection Number Count Device	[Device Value Collection Number Count Device]

2. Temporary storage to the buffer area

The collected device values are accumulated as logging data in the buffering area in the operation memory (RAM) of the GOT.

Device	Description	Setting item in the [Logging] dialog ☞ Page 2228 [Logging] dialog
Logging Notification Device	You can check that device data is being collected in the buffering area. ☞ Page 2217 Logging Notification Device	[Logging Notification Device]

The number of logs that can be accumulated in the buffering area is the number specified in [Log Storage Number] in the [Logging] dialog.

Select one of the two operations below for adding data when [Log Storage Number] is reached (the buffering area is full).

- Delete the oldest data in sequence and store the new data.
- Do not add new data.

Buffering area full notification

When the logging data in the buffering area reaches [Log Storage Number] set in the [Logging] dialog, you can use [Buffering Area Full Notification Device] to receive a notification.

Device	Description	Setting item in the [Logging] dialog ☞ Page 2228 [Logging] dialog
Buffering Area Full Notification Device	Notifies that the buffering area becomes full. Specify the number of logs before full to receive an advance notification. ☞ Page 2219 Buffering Area Full Notification Device	[Buffering Area Full Notification Device]

Complete deletion of logging data in the buffering area

By specifying the buffer historical data clear trigger, all logging data accumulated in the buffering area can be deleted.
After all historical data is deleted, a notification can be issued using the Buffer Historical Data Cleared device.
☞ Page 2219 When the logging trigger type is [Rise/Fall], [Sampling], [ON Sampling], or [OFF Sampling]
While the buffering area is being cleared, the historical trend graph and the historical data list display are not updated.

Device	Description	Setting item in the [Logging] dialog ☞ Page 2228 [Logging] dialog
Buffer historical data clear trigger	☞ Page 2216 Buffer historical data clear trigger	[Delete all the histories]
Buffer Historical Data Cleared Device	Notifies that the clearing of the buffering area is completed. ☞ Page 2219 Buffer Historical Data Cleared Device	[Notify when all the histories are deleted]

Data used by the historical trend graph and the historical data list display

In buffer historical mode, only the logging data in the buffering area can be displayed on the historical trend graph and in the historical data list display.
Even if a logging file is created in the data storage, the data in the logging file cannot be displayed on the historical trend graph and in the historical data list display.
To display past logging data, use file save mode.

Using the nonvolatile RAM power-failure backup function

GT37 SoftGOT3000

Powering off, restarting, or resetting the GOT will delete the logging data in the buffering area.
To retain the logging data in the buffering area, enable the setting to save it to the nonvolatile RAM user area.
The data saved in the nonvolatile RAM user area is retained even if the GOT is powered off (power-failure backup).
If logging data exists in the nonvolatile RAM user area, it is automatically restored when the GOT is powered on.
Up to 20 logging settings with nonvolatile RAM power-failure backup enabled can be set per project.
The timing for saving data to the nonvolatile RAM user area cannot be set.

For the specifications of the nonvolatile RAM user area and operations performed on it, refer to the following.
☞ Page 3679 Specifications and operations of the nonvolatile RAM user area

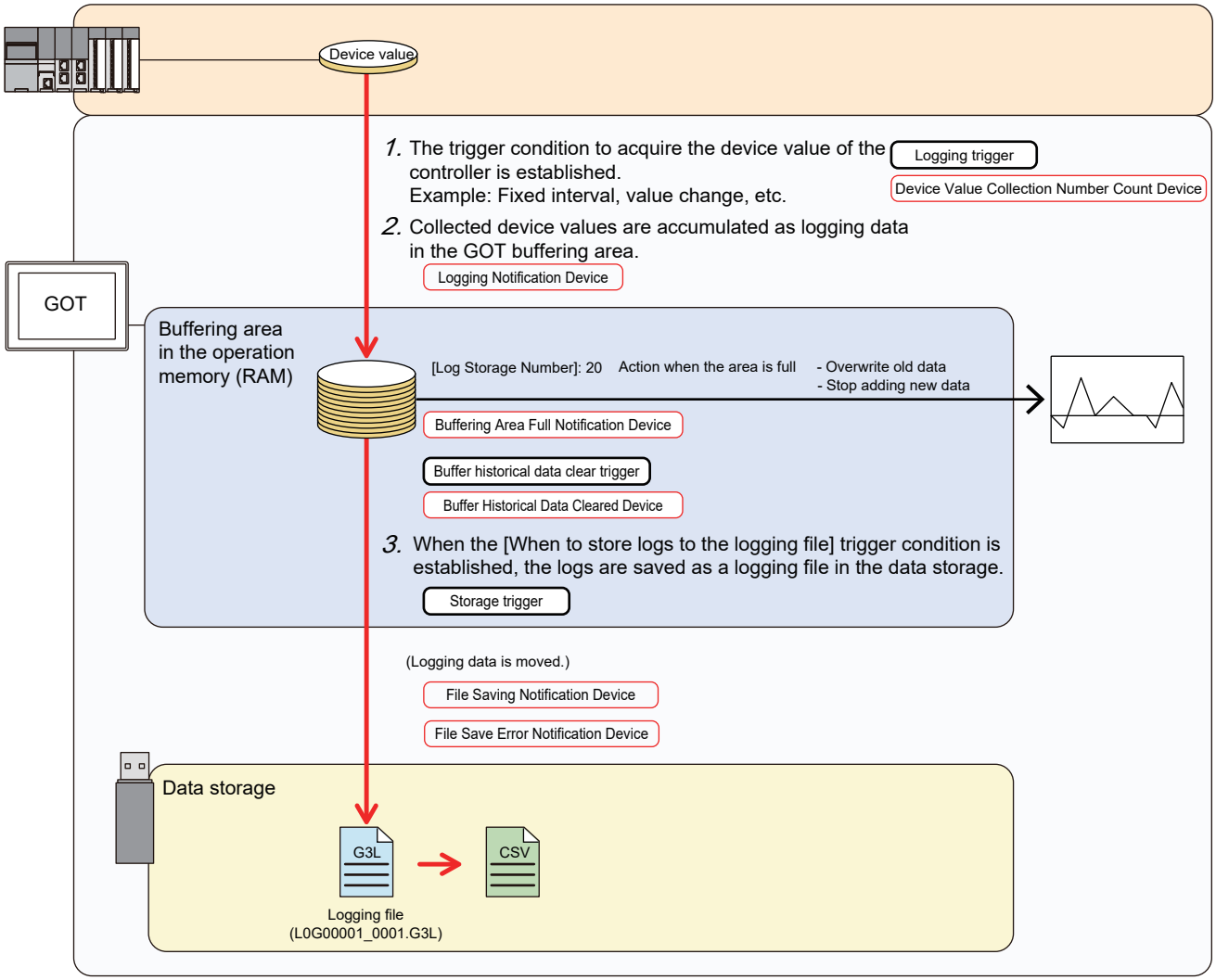
Saving to the data storage

Saving the logging data in the buffering area to the data storage as a logging file is also possible.
Use this function in the following cases.

- When checking past logging data
- When retaining data in preparation for a power failure

When logging data is saved in the data storage, the GOT reads the data from the data storage into the buffering area and restores it automatically at power-on.

The operation flow for saving to the data storage is as follows:



1. Start of device value collection

☞ Page 2205 Buffer historical mode

2. Temporary storage to the buffer area

☞ Page 2205 Buffer historical mode

3. Saving as a logging file

When the [When to store logs to the logging file] condition (storage trigger) in the [Logging] dialog is satisfied, the logging data in the buffering area is saved to the data storage as a logging file.
At this time, the logs are deleted from the buffering area.

Trigger and device	Description	Setting item in the [Logging] dialog ☞ Page 2228 [Logging] dialog
Storage trigger	☞ Page 2216 Storage trigger	[When to store logs to the logging file]

Trigger and device	Description	Setting item in the [Logging] dialog ☞ Page 2228 [Logging] dialog
File Saving Notification Device	You can check that the logging data saved in the buffering area is being written to the logging file. ☞ Page 2219 File Saving Notification Device	[File Saving Notification Device]
File Save Error Notification Device	You can check for errors while writing to the logging file. ☞ Page 2220 File Save Error Notification Device	[File Save Error Notification Device]

In buffer historical mode, only one logging file can be created, and it is overwritten each time the storage trigger is established. To prevent overwriting, move the logging file regularly.

When the settings for creating a CSV file or a Unicode text file are configured, the corresponding text data is created at the time a logging file is created.

Each time the logging file is overwritten, the CSV or Unicode text file is also overwritten.

■Restoring logging data from a data storage

When using the logging file saved in the data storage for restoration, install a data storage on the GOT before powering on the GOT.

If you install the data storage after powering on the GOT, the data in the data storage cannot be restored.

If you install the data storage after powering on the GOT and save logging data, the logging data in the data storage is overwritten.

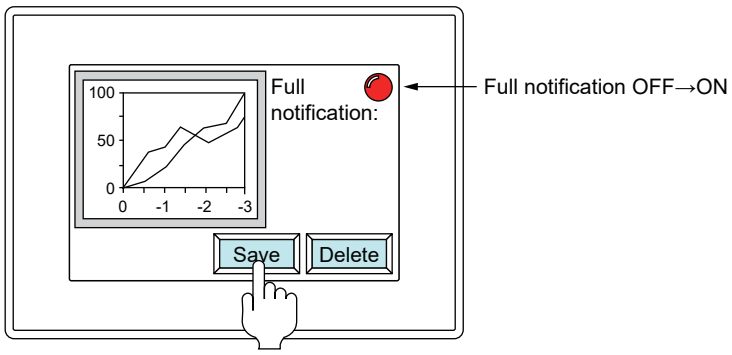
When saving to the data storage and power-failure backup of the nonvolatile RAM user area are both enabled, the data in the nonvolatile RAM user area takes priority during restoration. Only when the data is unavailable, the logging data in the data storage is restored.

Usage examples for devices and triggers

The following device and triggers can be used together to implement the example below.

- Buffering Area Full Notification Device
- Storage trigger
- Buffer historical data clear trigger

Set [Remaining Number to Notify that Buffering Area is Full] to receive a notification before the buffering area becomes full. When the full notification turns on, operate the switch to either save the logging data in the buffering area to the data storage or delete it.



65.4.3 Guidelines for logging mode selection

The following differences exist between file save mode and buffer historical mode.

Use the logging mode that suits your purpose.

Item	Logging mode	
	File save mode	Buffer historical mode
Application	To save large amount of logging data Displaying data from the past up to the present	High-speed logging High-speed display of the historical trend graph and the historical data list display Real-time monitoring
Location where the collected data is saved	Saves data temporarily in the buffering area, then saves it to the data storage.	Saves data only temporarily in the buffering area, in principle. Depending on the settings, saving to data storage is also possible.
Operation when the buffering area becomes full	Moves the logging data in the buffering area to the data storage and saves it as a logging file.	Select either of the following. • Do not add the new data. • Delete the old data.
Saved-file format	Binary file (*.G3L) (Depending on the settings) Unicode text file or CSV file	Binary file (*.G3L) (Depending on the settings) Unicode text file or CSV file
Number of log files that can be created	Multiple (max. 9999)	One
Timing of logging file creation	• When the logging data in the buffering area reaches the log storage count • When the file creation trigger is established	• When the storage trigger is established
Uses of the logging data in a data storage	To display the collected data	Power-failure backup for the buffering area
Data displayed on the historical trend graph and in the historical data list display	Logging data in the buffering area (real-time data) and in the logging file (past data)	Logging data in the buffering area (real-time data)

65.5 Specifications of the logging

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The following shows the specifications of the logging.

☞ Page 2210 Management of logging setting
☞ Page 2212 Size of the buffering area
☞ Page 2212 Logging file name
☞ Page 2213 Control triggers and notification devices used for logging

65.5.1 Management of logging setting

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The logging settings consist of the target devices for data collection, triggers for collection and storage, logging mode, data storage destination, and other related settings.

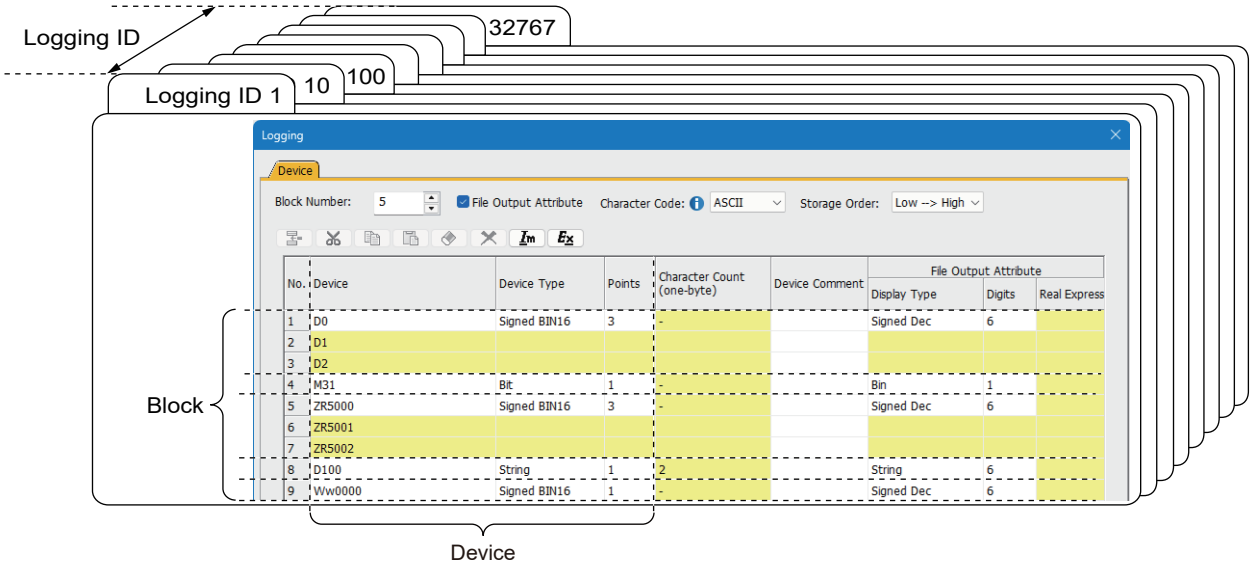
Each logging setting is assigned an ID (logging ID) for identification, which is used to specify the logging data to display in objects such as the historical data list display.

The following shows the setting ranges for the logging settings.

Item	Setting range
Number of logging settings per project	Max. 60
Configurable range for logging ID	1 to 32767

Configure the logging settings in the [Logging] dialog.

☞ Page 2228 [Logging] dialog



For details on blocks and devices that constitute one logging setting, refer to the following.

Item	Upper limit	Reference
Block	Up to 250 per logging setting	☞ Page 2211 Blocks and devices
Device	• Total of 250 points per logging setting • Up to 250 points per block	

Precautions

■Setting value of logging setting

The set size of an object cannot exceed the user area of the GOT.

Depending on the combination of the settings, not all the setting values (such as the number of devices) can be set to their maximum values.

Set the setting values within the capacity of the available user area for the GOT.

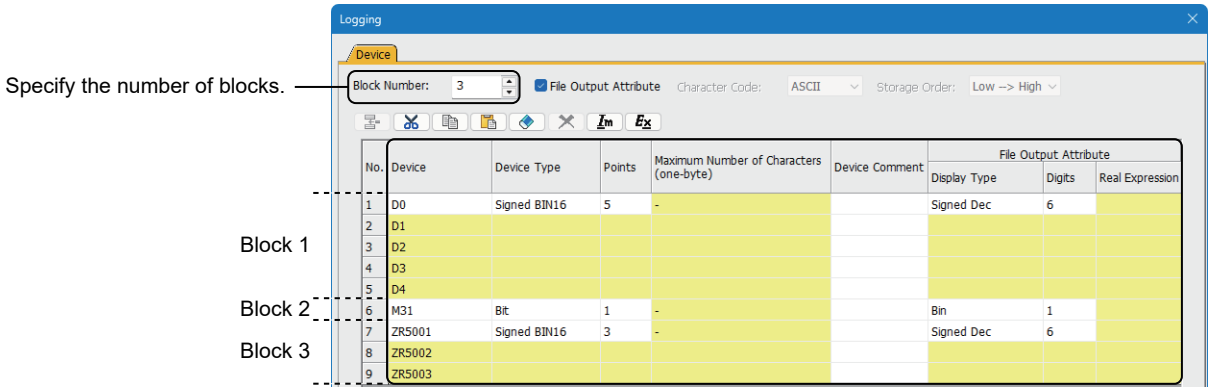
Blocks and devices

A block is a unit for specifying the target devices for logging data collection. Configure the target devices for logging data collection, device type, points, and other settings for each block. To set consecutive devices, specify the start device and set the number of consecutive devices from the start device to [Points]. The set number of devices starting from the start device are the target devices for logging data collection. To set non-consecutive devices, delimit them by blocks and specify only one device per block. Set the number of delimiters to [Block Number], and set the device for each block.

Mixing blocks of consecutive and non-consecutive devices enables the use of both word and bit devices.

Ex.

Example settings for mixing bit devices, word devices (signed BIN16 and signed BIN32), and strings



Block	[Device]	[Device Type]	[Points]
Block 1	Five consecutive devices (D0 to D4, starting from [D0]) are the target devices for collection.	[Signed BIN16]	5
Block 2	Only [M31] is the target device for collection.	[Bit]	1
Block 3	Three consecutive devices (ZR5001 to ZR5003, starting from [ZR5001]) are the target devices for collection.	[String]	3

■How to calculate the number of device points

For bit devices, each device is counted as one point.

Only one device (fixed) can be set in a block.

For word devices, the calculation varies depending on the device length.

When the device length is 8-bit or 16-bit, one device counts as one point. When the device length is 32-bit, one device counts as two points. When the device length is 64-bit, one device counts as four points.

When multiple blocks exist, the number of devices that can be set is the total number of devices in all blocks.

Ex.

Block 1: 30 devices, Block 2: 70 devices, Block 3: 120 devices

The number of devices that can be set is 30 + 70 + 120 = 220 devices.

Precautions

■When setting a string-type label or tag for the logging device

Set [Device Type] to [String].

■Character code when a string-type label or tag is set for the device whose [Device Type] is set to [String]

If you set a string-type label or tag for the device whose [Device Type] is set to [String], set the character code according to the type of the label or tag.

- Global label: ASCII code, Unicode, or Shift JIS code
- AB native tag: ASCII code
- OMRON NJ/NX tag: Unicode
- OPC UA tag: Unicode

■Relation between device comments and their setting sizes

Device comments affect the size of the logging settings and the file size.

If device comments are set for each device, the setting size and file size will increase.

65.5.2 Size of the buffering area

The size of the buffering area used for logging data varies depending on [Log Storage Number] in the [Logging] dialog (up to 32767).

Increasing the set value of [Log Storage Number] decreases the available space in the user area.

Set [Log Storage Number] according to the capacity of the user area.

☞ Page 2228 [Logging] dialog

65.5.3 Logging file name

In file save mode, the logging file name is the specified file name with an appended number.

When the number of logging files exceeds the value set in [Number of logs to be stored in 1 logging file], the file numbering returns to 0001 and the existing file is overwritten.

To prevent overwriting, move the files in the data storage to another location.

In buffer historical mode, the file name consists only of the specified file name. No number is appended.

Precautions

In file save mode, the management file is saved in the background when the logging file is saved.

Do not delete the management file and the temporary file.

If either of the following is deleted, logging is not executed normally.

Ex.

For the logging file [LOG00001_****.G3L] (* indicates a number)

- Management file

File without a number in its name

Example: [LOG00001.G3L]

- Temporary file

File with the number 0000 in its name

Example: [LOG00001_0000.G3L]

65.5.4 Control triggers and notification devices used for logging

The following shows the control triggers and notification devices used for logging.

Available types vary depending on the logging mode.

○ Available, —: Unavailable

Trigger and device	Logging mode	
	File save mode	Buffer historical mode
Logging trigger	○ Applies to the trigger set for [When to collect device values].	
Device Value Collection Number Count device	○ The device set for [Device Value Collection Number Count Device]	
Logging Notification device	○ The device set for [Logging Notification Device]	
Buffering Area Full Notification device	—	○ The device set for [Buffering Area Full Notification Device]
Buffer historical data clear trigger	—	○ Applies to the trigger set for [Delete all the histories].
Buffer Historical Data Cleared device	—	○ The device set for [Notify when all the histories are deleted]
Storage trigger	○ Applies to the trigger set for [When to store logs to the temporary file].	○ Applies to the trigger set for [When to store logs to the logging file]
File Saving Notification device	○ The device set for [File Saving Notification Device]	
File Save Error Notification device	○ The device set for [File Save Error Notification Device]	
File creation trigger	○ Applies to the trigger set for [Create a logging file at any desired time].	—
File Creation Notification device	○ [File Creation Notification Device]	—

For the specifications of each trigger and device, refer to the following.

☞ Page 2214 Control triggers used for logging

☞ Page 2217 Notification devices used for logging

For information on trigger and device operation and their timing of use in each logging mode, refer to the following.

☞ Page 2201 File save mode

☞ Page 2205 Buffer historical mode

65.6 Control triggers used for logging

This section explains the control triggers used for logging.

☞ Page 2214 Logging trigger
☞ Page 2216 Buffer historical data clear trigger
☞ Page 2216 Storage trigger
☞ Page 2217 File creation trigger

65.6.1 Logging trigger

A logging trigger is a condition for starting device value collection from the controller.
The configurable trigger types include bit-rise and sampling.

☞ Page 980 Trigger types of the functions running in the background

Basic operations

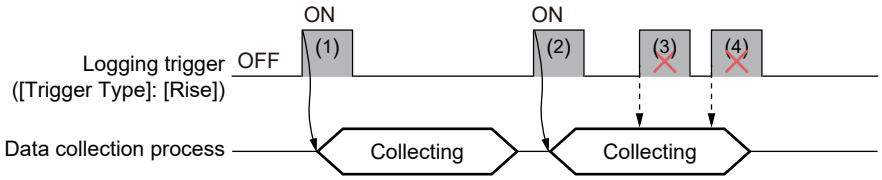
When the configured trigger condition is satisfied, data collection starts. Even if the logging trigger is established again during data collection, a new collection is not performed. After the current data collection is completed, data collection starts again when the logging trigger is next established.

Ex.

When the trigger type is set to [Rise]

After the data collection triggered by logging trigger (1) is completed, logging trigger (2) is established, and thus data collection is executed.

However, because triggers (3) and (4) are established during data collection for (2), data collection for (3) and (4) is not executed.



To ensure data collection reliably through logging, use [Logging Notification Device].

When the trigger type is [Rise] or [Fall], establish a handshaking between the [Logging Notification Device] and the logging trigger to ensure data collection by logging.

☞ Page 2217 Related devices

■If device values cannot be collected as configured

In the following cases, device values may not be collected at the configured cycle or when the logging trigger is established.

• There are a large number of collection target devices.

Communication between the GOT and the controller may take too long, causing data collection to fail to complete within the cycle.

• The logging trigger cycle is short.

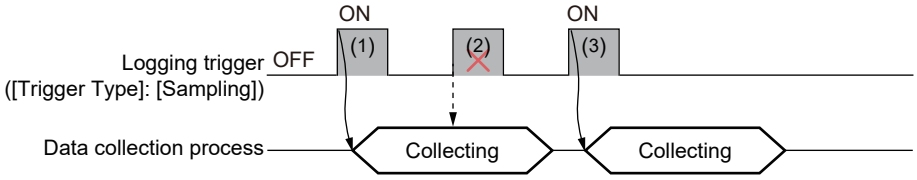
After the previous logging operation, communication processing may not finish before the next logging operation (the trigger is established during device value collection).

Ex.

The logging trigger cycle is short.

Because the logging trigger cycle is too short, device values cannot be collected when logging trigger (2) is established.

Device values are collected when logging trigger (3) is next established.

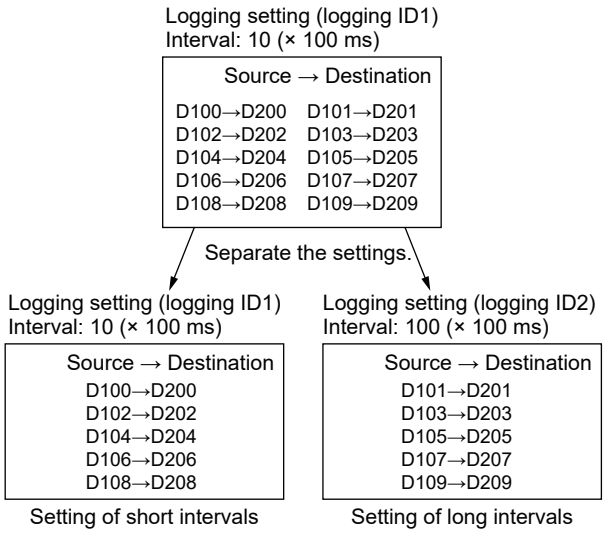


Take one of the following countermeasures against the above situations.

- If the baud rate can be changed, increase the baud rate in the detailed settings of the controller.
- Split the logging settings to reduce the number of device points per setting.
- If the trigger type is [Sampling], set a longer cycle.

For example, split one logging setting into items that require logging at a short cycle and items that accept logging at a longer cycle, as shown below.

By splitting the setting, the trigger condition can be satisfied when logging is not being performed.



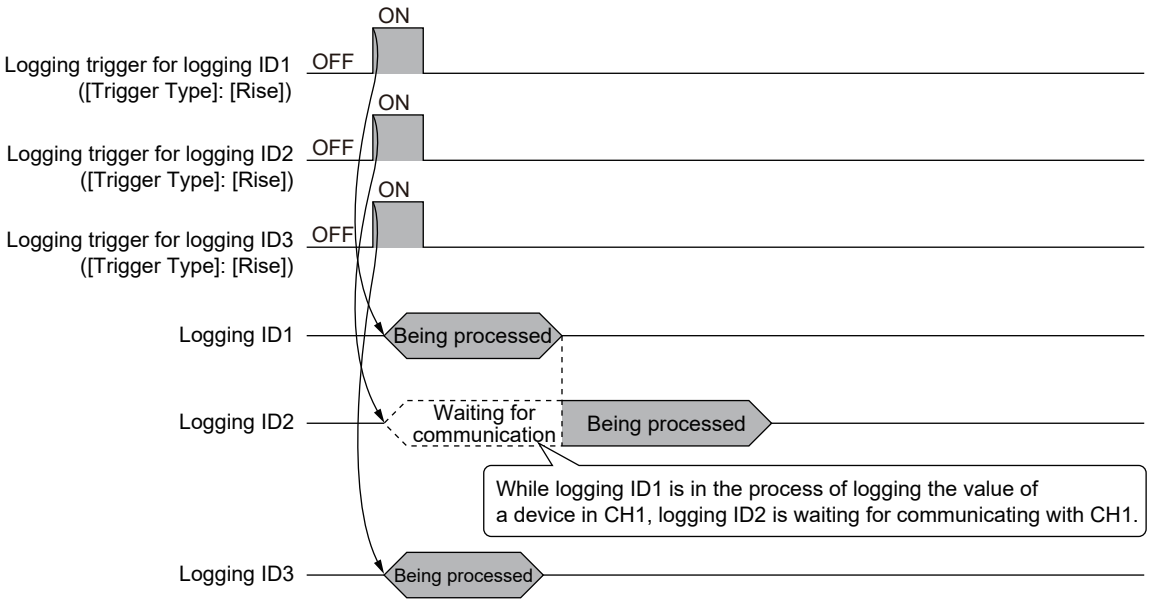
Operation when multiple logging triggers are established

If the conditions of multiple logging triggers are satisfied simultaneously, device data logs are taken in parallel.

Ex.

When the logging trigger conditions of logging ID No. 1 to 3 are satisfied simultaneously

- Logging ID No. 1 and 2: A device of channel No. 1 is set as the logging target.
- Logging ID No. 3: A device of channel No. 2 is set as the logging target.



The device data logs of the same channel are taken one by one, and therefore a waiting time occurs, causing a longer logging time.

Setting procedure

Set the logging trigger for [When to collect device values] in the [Logging] dialog.

☞ Page 2228 [Logging] dialog

Related devices

The following devices are related to the logging trigger.

☞ Page 2217 Device Value Collection Number Count Device

☞ Page 2217 Logging Notification Device

65.6.2 Buffer historical data clear trigger

The buffer historical data clear trigger can be used only in buffer historical mode.

For each logging setting, this trigger clears the logging data in the buffering area used by the corresponding logging.

Use this trigger to delete the logging data in the buffering area before it becomes full.

When the buffer historical data clear trigger turns on, the number of logs counted in the buffering area is cleared.

Setting procedure

To specify the buffer historical data clear trigger, set [Delete all the histories] in the [Logging] dialog.

☞ Page 2228 [Logging] dialog

Related devices

The following devices are related to the logging trigger.

☞ Page 2219 Buffering Area Full Notification Device

☞ Page 2219 Buffer Historical Data Cleared Device

65.6.3 Storage trigger

The storage trigger can be used in file save mode and buffer historical mode.

This function specifies the timing for saving the logging data in the buffering area.

The save destination of the logging data varies depending on the logging mode.

• In file save mode

When the storage trigger is established, the logging data in the buffering area is moved to the temporary file.

☞ Page 2201 File save mode

• In buffer historical mode

When the storage trigger is established, the data in the buffering area is saved to a logging file.

☞ Page 2207 Saving to the data storage

Precautions

While the logging data is being saved as a result of the storage trigger, logging is paused.

When configuring the storage trigger settings, consider the logging trigger cycle and the log storage count.

Setting procedure

Set the storage trigger using the following items in the [Logging] dialog.

☞ Page 2228 [Logging] dialog

• In file save mode

[When to store logs to the temporary file]

• In buffer historical mode

[When to store logs to the logging file]

Related devices

The following devices are related to the storage trigger.

☞ Page 2219 File Saving Notification Device

☞ Page 2220 File Save Error Notification Device

65.6.4 File creation trigger

The file creation trigger can be used only in file save mode.

This function specifies the timing for saving the logging data stored in the temporary file as a logging file.

☞ Page 2201 File save mode

Precautions

While the logging data is being saved after the file creation trigger is established, logging is paused.

When configuring the file creation trigger settings, consider the logging trigger cycle and the log storage count.

Setting procedure

To specify the file creation trigger, select [Create a logging file at any desired time] in the [Logging] dialog.

☞ Page 2228 [Logging] dialog

Related devices

The following devices are related to the file creation trigger.

☞ Page 2220 File Creation Notification Device

65.7 Notification devices used for logging

Processing statuses such as logging data collection and file saving can be output to the specified device.

Configure each notification device for each logging setting.

☞ Page 2217 Device Value Collection Number Count Device
☞ Page 2217 Logging Notification Device
☞ Page 2219 Buffering Area Full Notification Device
☞ Page 2219 Buffer Historical Data Cleared Device
☞ Page 2219 File Saving Notification Device
☞ Page 2220 File Save Error Notification Device
☞ Page 2220 File Creation Notification Device

65.7.1 Device Value Collection Number Count Device

This device notifies the device value collection count since the GOT started for each logging ID.

You can check that device values are collected normally by checking that the logging counter value is updated.

The count cycles through 0 to 65535 (for unsigned 16-bit binary).

The count is cleared when the GOT is powered off, reset, or restarted.

65.7.2 Logging Notification Device

This device notifies that one device data item is being collected in the buffering area.

The operation varies depending on the logging trigger type. When the trigger type is [Rise] or [Fall], establish a handshake between the Logging Notification device and the logging trigger to ensure data collection by logging.

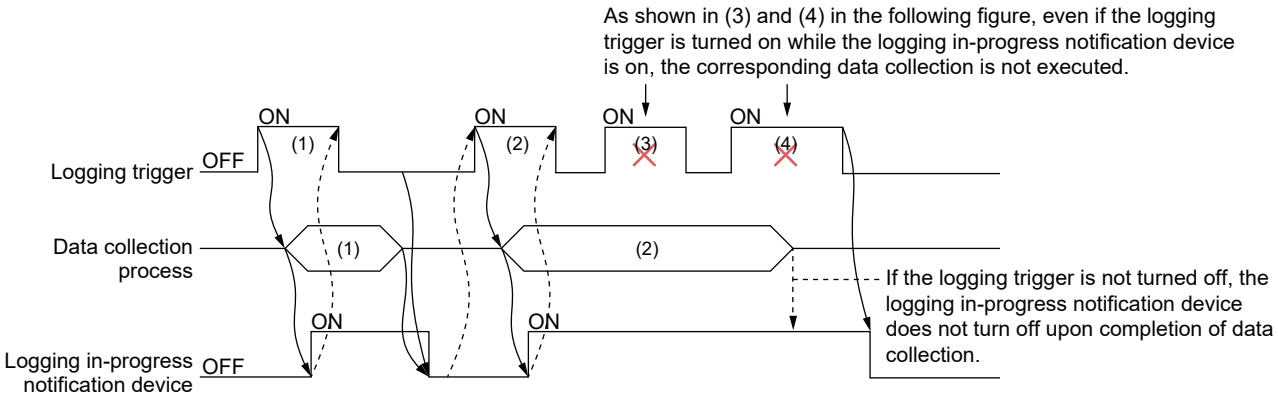
☞ Page 2218 When the logging trigger type is [Rise] or [Fall]
☞ Page 2218 When the logging trigger type is [Rise/Fall], [Sampling], [ON Sampling], or [OFF Sampling]

When the logging trigger type is [Rise] or [Fall]

When the logging trigger turns on and device data collection starts, the Logging Notification device turns on.
When the logging trigger turns off and the processing is completed, the Logging Notification device turns off.
To ensure data collection by establishing a handshake, the following operations are required.

- Check that the Logging Notification device turns on, and then turn off the logging trigger.
- While the Logging Notification device is off, turn on the next logging trigger.

Ex.
When the trigger type is set to [Rise]

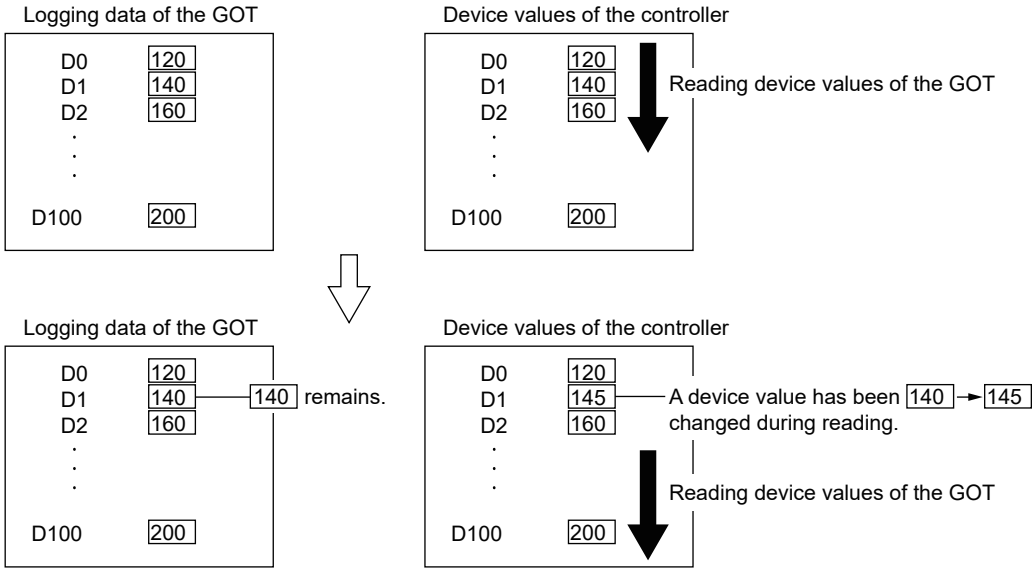


When the logging trigger type is [Rise/Fall], [Sampling], [ON Sampling], or [OFF Sampling]

When the logging trigger turns on and device data collection starts, the Logging Notification device turns on.
When the processing is completed, the Logging Notification device turns off.
If the trigger interval is set to a high speed (for example, 100 msec), the Logging Notification device may not provide notification at each logging depending on the communication performance.

Precautions

If the number of target devices of logging is large, the device values in the controller may be inconsistent with the collected device values.



In this case, set an interlock to prevent the device values in the controller from being changed until logging by the GOT is completed.
The logging status can be check by [Logging Notification Device].
☞ Page 2228 [Logging] dialog

65.7.3 Buffering Area Full Notification Device

Use this device in the buffer historical mode.
This device notifies that the buffering area becomes full.

65.7.4 Buffer Historical Data Cleared Device

Use this device in the buffer historical mode.
Turning on the buffer historical data clear trigger starts clearing the logging data in the buffering area. The Buffer Historical Data Cleared device notifies the completion of clearing the data.
To specify the Buffer Historical Data Cleared device, set [Notify when all the histories are deleted] in the [Logging] dialog.

65.7.5 File Saving Notification Device

This device notifies that the logging data in the buffering area is being written to a file.
The save destination varies depending on the logging mode.
In file save mode, the device notifies that the logging data in the buffering area is being written to the temporary file.
In buffer historical mode, the device notifies that the logging data in the buffering area is being written to a logging file.
This device is used together with the storage trigger and operates differently depending on the storage trigger type.
When the storage trigger type is [Rise] or [Fall], establish a handshake between the File Saving Notification device and the storage trigger to ensure writing.
☞ Page 2219 When the storage trigger type is set to [Rise] or [Fall]
☞ Page 2219 When the storage trigger type is set to [Rise/Fall], [Sampling], [ON Sampling], or [OFF Sampling]

When the storage trigger type is set to [Rise] or [Fall]

When the storage trigger turns on and writing starts, the File Saving Notification device turns on.
When the storage trigger turns off and the writing is completed, the File Saving Notification device turns off.
To ensure data collection by establishing a handshake, the following operations are required.

- Check that the File Saving Notification device turns on, then turn off the storage trigger.
- Turn on the storage trigger when the File Saving Notification device is off.

When the File Saving Notification device is on, writing does not occur even when the storage trigger is turned on.
The relationship among the storage trigger, writing, and the File Saving Notification device is the same as that among the storage trigger, writing, and the Logging Notification device.
For details, refer to the following.
☞ Page 2217 Logging Notification Device

When the storage trigger type is set to [Rise/Fall], [Sampling], [ON Sampling], or [OFF Sampling]

When the storage trigger turns on and writing starts, the File Saving Notification device turns on.
When the processing is completed, the File Saving Notification device turns off.

65.7.6 File Save Error Notification Device

This device notifies that an error has occurred while the logging data stored in the buffering area is being saved to the temporary file or a logging file.
If this device is turned on, check the following.

- The SD card cover of the GOT is closed.
- The SD card access switch of the GOT is turned on.
- The data storage works normally.

The user needs to turn off this device.

Precautions

When you open the SD card cover or turn off the SD card access switch, the files are saved automatically.
Before removing the SD card, make sure that the file saving is complete by checking one of the following conditions.

- The Drive Status Notification signal (system signal 2-2.b0, b1) is turned off.
- The SD card access LED is turned off.

☞ Page 2228 [Logging] dialog
The save process may take a few minutes to complete.

65.7.7 File Creation Notification Device

This device is used in combination with the file creation trigger in file save mode.
This device notifies that the logging data in the temporary file and in the buffering area is being saved to a file.
When the file creation trigger turns on and logging file saving starts, the File Creation Notification device turns on.
When the file creation trigger is off and the logging file saving is completed, the File Creation Notification device turns off.
In the following cases, data is not saved to a logging file when the file creation trigger turns on.

- When the device data is being read: The File Creation Notification device does not turn on until one logging cycle's worth of device data has been collected.
- When the File Creation Notification device is on

For the file save operation when the file creation trigger is used, refer to the following.
☞ Page 2217 Logging Notification Device
Note that when the File Creation Notification device is on, data collection does not occur even when the trigger device turns on.

65.8 How to use the logging

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☞ Page 2221 Output settings for logging data
☞ Page 2222 Operations on logging files
☞ Page 2223 Converting a logging file to a CSV file or a Unicode text file

65.8.1 Output settings for logging data

Configure the output settings for logging data using the following steps.

1. Select [Common] → [Logging] from the GT Designer3 menu.

The [Logging List] dialog appears.

2. Create, edit, or delete logging output settings in the [Logging List] dialog.

For details, refer to the following.

☞ Page 2227 [Logging List] dialog

65.8.2 Operations on logging files

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You can manipulate the logging files in the GOT using the utility.

GOT3000 Series User's Manual (Utility & Maintenance Functions)

Operation	Description
Creating a folder	Creates a folder where logging files are stored. You can manage folders by production line or product type.
Deleting a folder	Deletes a folder where logging files are stored.
Copying a file	Copies a logging file. Perform this operation to back up a logging file.
Deleting a file	Deletes a logging file.
Renaming a file	Renames a logging file.
Moving a file	Moves a logging file to another folder. Perform this operation to back up a logging file.
Converting a binary file (*.G3L) into a Unicode text file or CSV file	Converts the binary file (*.G3L) into a Unicode text file or CSV file.

65.8.3 Converting a logging file to a CSV file or a Unicode text file

Converting a logging file to a CSV file or a Unicode text file enables its use on a personal computer.

Conversion method	Description
Additional output when outputting to a logging file (.G3L)	Depending on the logging settings, additional output to a CSV file or a Unicode text file is possible when outputting the logging data from the buffer area to a logging file (*.G3L). Configure the [Output additional file] settings in the [Logging] dialog. ☞ Page 2228 [Logging] dialog
In the utility	Convert the file format on the GOT using the [Logging Information] screen. Convert files one by one. ☞ Page 2223 Conversion in the utility
On a personal computer (GT Designer3)	Convert a file on a personal computer. Multiple files can be converted at a time. Since the file is converted with GT Designer3, no processing load is put on the GOT. ☞ Page 2223 Conversion in GT Designer3

Point

While file saving is in progress according to the logging settings, logging is paused.
To reduce the duration of paused logging, do not perform additional output to a CSV or Unicode text file when outputting a logging file (*.G3L); instead, convert the file later.

Conversion in the utility

Using the utility to perform conversion will delete the logging data in the buffering area.
If the logging data needs to be retained, use the file creation trigger or storage trigger to store the data beforehand.

1. Start the GOT utility and touch the [Data mng.] tab.

2. Touch [Logging information] to display the [Logging information] screen.

3. Select the file to be converted and click either of the following buttons.

• [G3L→CSV] button

Converts the logging file (.G3L) to a CSV file.

• [G3L→TXT] button

Converts the logging file (.G3L) to a Unicode text file.

4. Select the output destination folder and click the [OK] button.

The converted file is stored in the specified folder.

5. Store the converted Unicode text file or CSV file on a personal computer using either of the following methods.

• Transferring with GT Designer3

Select [Communication] → [Read from GOT] from the menu to transfer a file to the personal computer.

• Storing in the data storage

Save the logging file to the data storage and read the data on the personal computer.

Conversion in GT Designer3

The following shows the conversion procedure in GT Designer3.

1. Transfer the logging file (*.G3L) to the personal computer using either of the following methods.

• Transferring with GT Designer3

Select [Communication] → [Read from GOT] from the menu to transfer a file to the personal computer.

☞ Page 441 Reading the data from the GOT

• Storing in the data storage

Save the logging file to the data storage and read the data on the personal computer.

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2. Select [Tools] → [Resource Data Conversion] → [Logging File] from the GT Designer3 menu.

The [Logging File Conversion] dialog appears.

3. Configure each setting and click the [Convert] button.

☞ Page 2240 [Logging File Conversion] dialog

When the logging file is output with the information protection function enabled, the [Encryption Password Entry] dialog appears. Enter the encryption password accordingly.

☞ Page 3068 [File Protection]

Precautions for conversion

■Character code and conversion destination file

If a device comment or logging name contains any character other than ASCII and Shift JIS characters, convert the relevant file as shown below.

- Convert the file to Unicode text format.
- Turn on the Character Code for CSV Conversion signal (GS522.b2), and convert the file to CSV format.

■Editing a CSV file or Unicode text file

For the precautions for using a CSV file or Unicode text file, refer to the following.

☞ Page 3668 Precautions for using CSV file

☞ Page 3669 Precautions for using Unicode text file

■Opening a CSV file with Microsoft Excel

When you open a Unicode text file or CSV file created through the logging function with Microsoft Excel, the standard style of Microsoft Excel is applied.

Depending on the setting, data of logging date and others may be displayed in a style different from the actual setting.

If the displayed data is different from the actual style, open the Unicode text file or CSV file with a text editor to check the style output by the GOT.

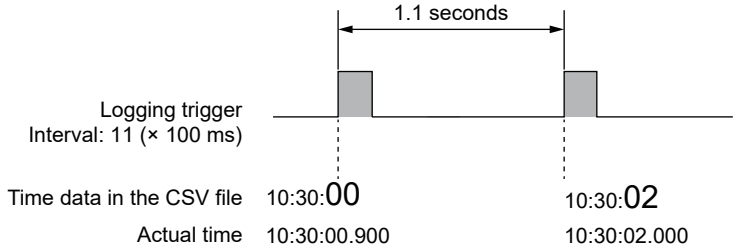
■Time data in a CSV file and the interval for a logging trigger

After a logging file (*.G3L) is converted to a CSV file, the time data will be displayed with an accuracy of seconds.

If the logging trigger interval is not set to less than 10 (× 100 ms), a time lag may occur between the collection interval and the time data in the CSV file.

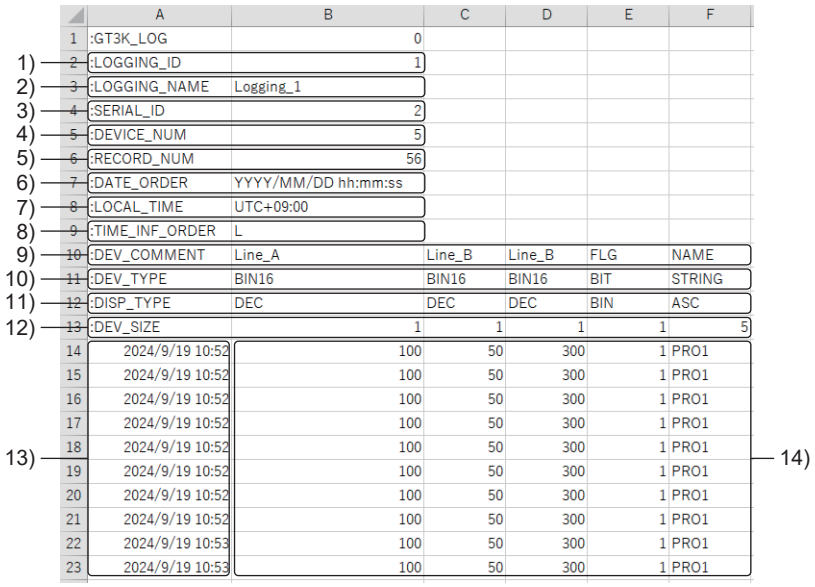
Ex.

When the interval for the logging trigger is set to 11 (× 100 ms)



Logging data format

The following shows the format used when converting logging data from a binary file (*.G3L) to a Unicode text file or a CSV file.



	A	B	C	D	E	F
1	:GT3K_LOG	0				
2	:LOGGING_ID	1				
3	:LOGGING_NAME	Logging_1				
4	:SERIAL_ID	2				
5	:DEVICE_NUM	5				
6	:RECORD_NUM	56				
7	:DATE_ORDER	YYYY/MM/DD hh:mm:ss				
8	:LOCAL_TIME	UTC+09:00				
9	:TIME_INF_ORDER	L				
10	:DEV_COMMENT	Line_A	Line_B	Line_B	FLG	NAME
11	:DISP_TYPE	BIN16	BIN16	BIN16	BIT	STRING
12	:DEV_SIZE	1	1	1	1	5
13	2024/9/19 10:52	100	50	300	1	PRO1
14	2024/9/19 10:52	100	50	300	1	PRO1
15	2024/9/19 10:52	100	50	300	1	PRO1
16	2024/9/19 10:52	100	50	300	1	PRO1
17	2024/9/19 10:52	100	50	300	1	PRO1
18	2024/9/19 10:52	100	50	300	1	PRO1
19	2024/9/19 10:52	100	50	300	1	PRO1
20	2024/9/19 10:52	100	50	300	1	PRO1
21	2024/9/19 10:52	100	50	300	1	PRO1
22	2024/9/19 10:53	100	50	300	1	PRO1
23	2024/9/19 10:53	100	50	300	1	PRO1

Item		Description
1)	Logging ID	Displays the logging ID.
2)	Logging name	Displays the logging name.
3)	Serial number	Displays a number 0001 to 9999 attached to the end of the file name.
4)	Number of set devices	Displays the number of collection target devices.
5)	Number of logs	Displays the number of logs.
6)	Order of date and time	Displays the order of dates.
7)	Time zone	Displays the difference from UTC.
8)	Time information	Displays the information on the time data. • L: Local time
9)	Device comment	Displays device comments.
10)	Device type	Displays device types. • [BIT]: Bit • [BIN8]: Signed 8-bit binary • [BIN8_Unsigned]: Unsigned 8-bit binary • [BIN16]: Signed 16-bit binary • [BIN16_Unsigned]: Unsigned 16-bit binary • [BIN32]: Signed 32-bit binary • [BIN32_Unsigned]: Unsigned 32-bit binary • [BIN64]: Signed 64-bit binary • [BIN64_Unsigned]: Unsigned 64-bit binary • [BCD16]: BCD16 • [BCD32]: BCD32 • [BCD64]: BCD64 • [REAL]: Real numbers (32 bits) • [REAL64]: Real numbers (64 bits) • [STRING]: Character string

Item		Description
11)	Display type	Displays the display formats. • [BIT]: Bit • [DEC]: Signed decimal • [UNSIGNED_DEC]: Unsigned decimal • [REAL_FLOAT]: Real number (exponential expression) • [REAL_FIX]: Real number (fixed-point number) • [ASC]: ASCII • [UNI]: Unicode • [SJIS]: Shift JIS • [KS]: KS (Korean) • [GB]: GB (Simplified Chinese) • [BIG5]: BIG5 (Traditional Chinese) • [BIN]: Binary number • [OCT]: Octal number • [HEX]: Hexadecimal number
12)	Device size	Displays the device size (unit: byte). • 1: Bit device or word device (16 bits) • 2: Word device (32 bits) • 4: Word device (64 bits) • 1 to 250: Character string
13)	Time data	Displays the time when the device value is collected.
14)	Logging data	Displays the collected device values. It will be blank if a communication timeout occurs or the values are outside the device range. If the device values cannot be collected when the logging trigger condition is satisfied, the display depends on whether the missing logging data detection function is enabled or disabled. • Disabled: Previously collected values • Enabled: [-] (Hyphen) For the missing information, refer to the following. ☞ Page 2232 Missing logging data detection function

65.9 [Logging List] dialog

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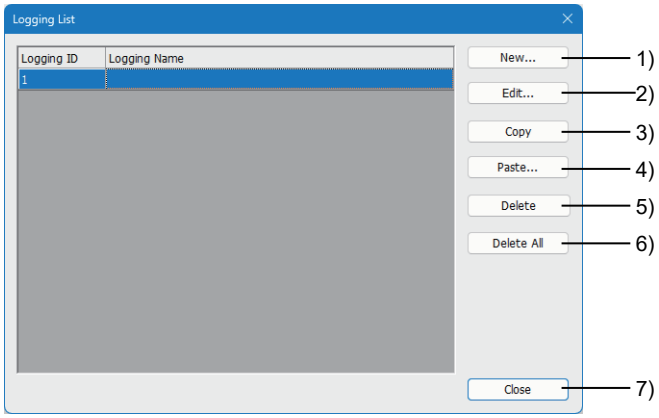
The [Logging List] dialog lists the currently created logging settings.
Create, edit, or delete logging settings in this dialog.
This dialog is displayed by selecting [Common] → [Logging] from menu.



Item		Description
1)	[New] button	Creates a logging setting. Clicking this button displays the [Logging] dialog. ☞ Page 2228 [Logging] dialog
2)	[Edit] button	Changes a selected logging setting. Clicking this button displays the [Logging] dialog. ☞ Page 2228 [Logging] dialog
3)	[Copy] button	Copies a selected logging setting.
4)	[Paste] button	Pastes the copied logging setting to the list. Click to display the [Copy Logging Setting] dialog and set [Destination ID].
5)	[Delete] button	Deletes a selected logging setting.
6)	[Delete All] button	Deletes all the logging settings.
7)	[Close] button	Closes the [Logging List] dialog.

65.10 [Logging] dialog

In the [Logging] dialog, you will configure the settings such as the logging mode, logging trigger, processing in the buffering area, and processing in data storage.

The [Logging] dialog provides default and detailed settings. In the default settings, [Log Storage Number] is fixed at [100], allowing you to configure the settings without considering the temporary file.

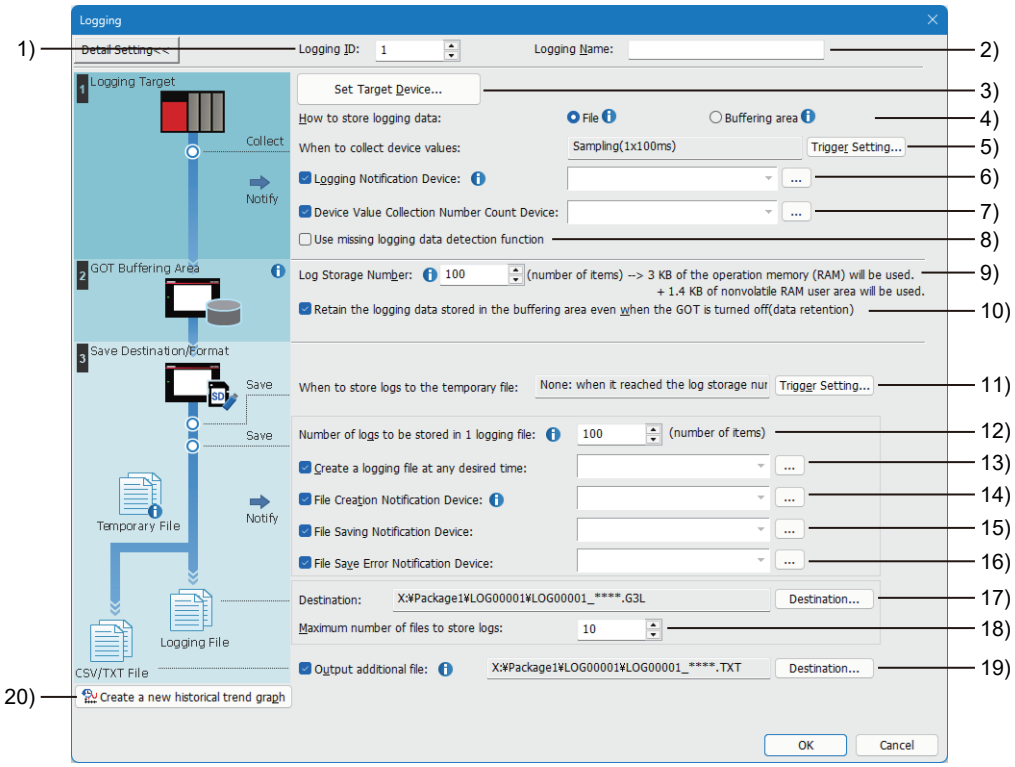
In the detailed settings, flexible data saving is enabled using various triggers and devices.

Click the [Detail Setting] button in the upper left of the dialog to display the detailed setting items.

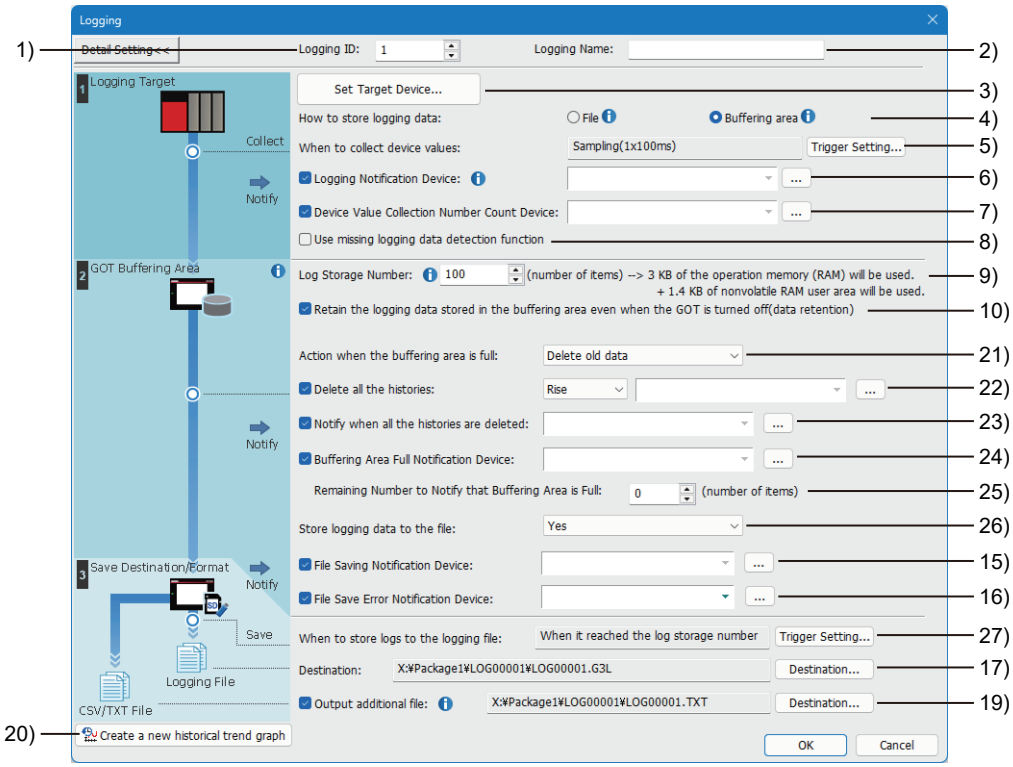
This section uses the detailed settings screen.

The setting items vary depending on the logging mode specified for [How to store logging data].

- When [How to store logging data] is set to [File]



• When [How to store logging data] is set to [Buffering area]



Item		Description
1)	[Logging ID]	Set the number to identify the logging setting. The setting range is [1] to [32767]. The logging ID is also used to specify display targets in the graph when a historical trend graph or historical data list display is used. ☞ Page 2210 Management of logging setting
2)	[Logging Name]	Set a logging name. Up to 32 characters can be set. The set logging name is displayed in a Unicode text file and CSV file.
3)	[Set Target Device] button	Set the device to be collected. ☞ Page 2234 [Device] tab
4)	[How to store logging data]	Select the logging mode. For details on the logging mode, refer to the following. • [File] ☞ Page 2201 File save mode • [Buffering area] ☞ Page 2205 Buffer historical mode
5)	[When to collect device values]	When setting the conditions for device value collection, select this item and click the [Trigger Setting] button to display the [Trigger Setting] dialog and set the trigger conditions. ☞ Page 980 Trigger types of the functions running in the background
6)	[Logging Notification Device]	Set the device to notify that device values from the controller are being collected in the buffering area. ☞ Page 2217 Logging Notification Device
7)	[Device Value Collection Number Count Device]	Set the device to notify the device value collection count since the GOT started. ☞ Page 2217 Device Value Collection Number Count Device
8)	[Use missing logging data detection function]	Select this item when using the missing logging data detection function. ☞ Page 2232 Missing logging data detection function
9)	[Log Storage Number]	Set the number of logging data points temporarily saved in the buffering area. The setting range is [1] to [32767]. The [Log Storage Number] setting greatly affects the logging file saving frequency and the time required to save the file. For details, refer to the following. ☞ Page 2233 Logging file saving and save processing time
10)	[Retain the logging data stored in the buffering area even when the GOT is turned off(data retention)]	Select this item to store the logging data in the buffering area in the nonvolatile RAM user area. Up to 20 logging settings with nonvolatile RAM power-failure backup enabled can be configured per project. For file save mode, refer to the following. ☞ Page 2204 Using the nonvolatile RAM power-failure backup function For buffer historical mode, refer to the following. ☞ Page 2206 Using the nonvolatile RAM power-failure backup function
11)	[When to store logs to the temporary file]	Specify the timing (storage trigger condition) for saving the data in the buffering area to the temporary file. Click the [Trigger Setting] button to display the [Trigger Setting] dialog and specify the trigger. If you select any item other than [When it reached the log storage number], set the trigger. ☞ Page 980 Trigger types of the functions running in the background
12)	[Number of logs to be stored in 1 logging file]	Set the number of logs to be stored in a single logging file. The setting range is [1] to [65500]. This item must be equal to or larger than [Log Storage Number].
13)	[Create a logging file at any desired time]	Set the file creation trigger to start saving logging data to a file at an intended timing. ☞ Page 2217 File creation trigger
14)	[File Creation Notification Device]	Set this item when [Create a logging file at any desired time] is selected. Set the device to notify that the data in the buffering area is being saved to a logging file. ☞ Page 2220 File Creation Notification Device
15)	[File Saving Notification Device]	Set the device to notify that the logging data stored in the buffering area is being written to the temporary file or a logging file. ☞ Page 2219 File Saving Notification Device
16)	[File Save Error Notification Device]	Set the device to notify that an error has occurred while the logging data stored in the buffering area is being written to the temporary file or a logging file. ☞ Page 2220 File Save Error Notification Device
17)	[Destination]	Click the [Destination] button to display the [Destination] dialog and set the save destination for the logging file (*.G3L). ☞ Page 2238 [Destination] dialog (for saving a logging file)
18)	[Maximum number of files to store logs]	This item appears only when [File] is selected. Set the maximum number of logging files (*.G3L) to be saved (up to 9999). The number of files stored in one data storage must be less than 500, including logging files, CSV files, and Unicode text files. If 500 or more files are stored, file access performance may be lowered.

Item		Description
19)	[Output additional file]	Select this item to output a Unicode text file or a CSV file when saving the logging file. When this item is selected, click the [Destination] button to display the [Destination] dialog and set the output file type and the save destination. ☞ Page 2239 [Destination] dialog (for saving a CSV or TXT file) If you select this item and use any characters other than ASCII and Shift JIS characters in device comments or logging names, output the file as shown below. • Output to a Unicode text file. • Turn on the Character Code for CSV Conversion signal (GS522.b2), then output to a CSV file.
20)	[Create a new historical trend graph] button	Create a new historical trend graph on which the collected logging data is to be displayed. ☞ Page 2196 Data visualization Click to display the [Screen Selection] dialog and set the screen on which to place the historical trend graph. ☞ Page 2239 [Screen Selection] dialog
21)	[Action when the buffering area is full]	Appears when [Buffering area] is selected. Select an action when the number of logging data points stored in the buffering area reaches [Log Storage Number]. • [Delete old data] Deletes the oldest logging data and adds new logging data. • [Add no item] Device values are not collected even if a new logging trigger condition is satisfied.
22)	[Delete all the histories]	Appears when [Buffering area] is selected. Set the trigger device to delete the logging data stored in the buffering area. ☞ Page 2205 Buffer historical mode
23)	[Notify when all the histories are deleted]	Appears when [Buffering area] is selected. Set the device to notify that all logging data in the buffering area has been deleted by the [Delete all the histories] setting. ☞ Page 2219 Buffer Historical Data Cleared Device
24)	[Buffering Area Full Notification Device]	Appears when [Buffering area] is selected. Set the device to notify that the available space in the buffering area for saving logging data falls below the setting of [Remaining Number to Notify that Buffering Area is Full]. In [Remaining Number to Notify that Buffering Area is Full], set the timing (the number of currently available logging data points that can be saved: 0 to 255) to notify that the available space in the buffering area is low. If the number of currently available logging data points falls below this setting, [Buffering Area Full Notification Device] turns on. ☞ Page 2205 Buffer historical mode
25)	[Remaining Number to Notify that Buffering Area is Full]	Set the number of remaining data points to notify that the buffering area is full before it becomes full.
26)	[Store logging data to the file]	Appears when [Buffering area] is selected. Set whether to save the logging data in the buffering area as a logging file. • [No] The logging data in the buffering area is not saved as a logging file. The data is not saved to a file, and the logging does not pause. Select [No] for the high-speed logging. • [Yes] Saves the logging data in the buffering area as a logging file at user-specified timings. The logging data stored in the logging file can be read and restored when the GOT is powered on. • [Yes (auto backup when saving)] Saves the logging data in the buffering area as a logging file at user-specified timings. At that time, the logging file before overwriting is automatically saved as a backup file. If the logging file becomes corrupted and a backup file is available, the backup file is read when GOT is powered on. The automatically saved backup file is the original file with its filename extension changed to [.bak]. Example) LOG00001.G3L → LOG00001.bak
27)	[When to store logs to the logging file]	Appears when [Buffering area] is selected. Click the [Trigger Setting] button to display the [Trigger Setting] dialog specify the conditions for saving the logging data in the buffering area to a logging file (storage trigger). For details, refer to the following. ☞ Page 980 Trigger types of the functions running in the background

Missing logging data detection function

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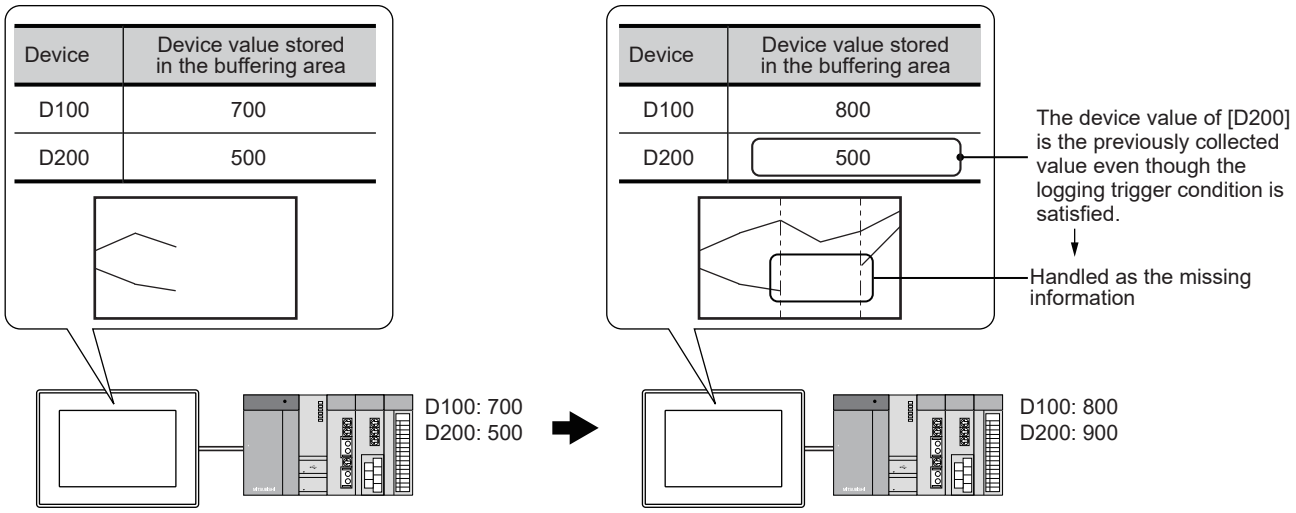
After the previous logging operation, if communication processing with the controller does not finish before the next logging operation, device values may not be collected even if the logging trigger is established.
In this state, communication is normal, but the device values cannot be updated in time because the logging trigger cycle is too short (e.g. 0.1 s).
In this case, the previously collected device values are stored in the buffering area and output to a logging file.
When the missing logging data detection function is enabled, device values that cannot be collected due to unfinished communication processing are treated as missing, and hyphens (-) are output to the logging file.
The missing information is not displayed on the historical trend graph.

Ex.
When [500] is previously collected in device D200, and the device value cannot be collected when the logging trigger condition is satisfied

Missing logging data detection function	Device value stored in the buffering area		Value output to a logging file
	Previously collected	Uncollected when the logging trigger condition is satisfied	
Disabled	500	500 (Previously collected value)	500 (Previously collected value)
Enabled	500	500 (Previously collected value)	- (Hyphen)

The following shows an example of processing when the missing logging data detection function is enabled.



If the device values cannot be collected when the logging trigger condition is satisfied, refer to the following.
☞ Page 2214 Basic operations
You can enable or disable the missing logging data detection function for each logging setting.
For the setting method, refer to the following.
☞ Page 2228 [Logging] dialog

Precautions

Regardless of whether the missing logging data detection function is used, device values are not recorded when a communication timeout has occurred.
This also applies if a single logging setting (a single logging ID) is used for logging the device values of multiple connected controllers.
Device values of the controllers communicating with the GOT are recorded. When a communication timeout (timeout error) occurs, device values of the relevant controller are not recorded.
When a logging file (*.G3L) is converted to a CSV file, the unrecorded values are left blank.

Logging file saving and save processing time

The setting of [Log Storage Number] determines the frequency and time required for saving data to a file.
When the set value of [Log Storage Number] is large, data saving occurs infrequently, requiring a long time.
When the set value of [Log Storage Number] is small, data saving occurs frequently, requiring a short time.
The following shows the relationship between the logging trigger, log storage count, and file saving frequency.

Logging trigger ([When to collect device values])	[Log Storage Number]		
	1	100	10000
Time interval: 10 (× 100 ms)	Saving every 1 sec	Saving every 100 sec	Saving every 10000 sec
Time interval: 1000 (× 100 ms)	Saving every 100 sec	Saving every 10000 sec	Saving every 1000000 sec

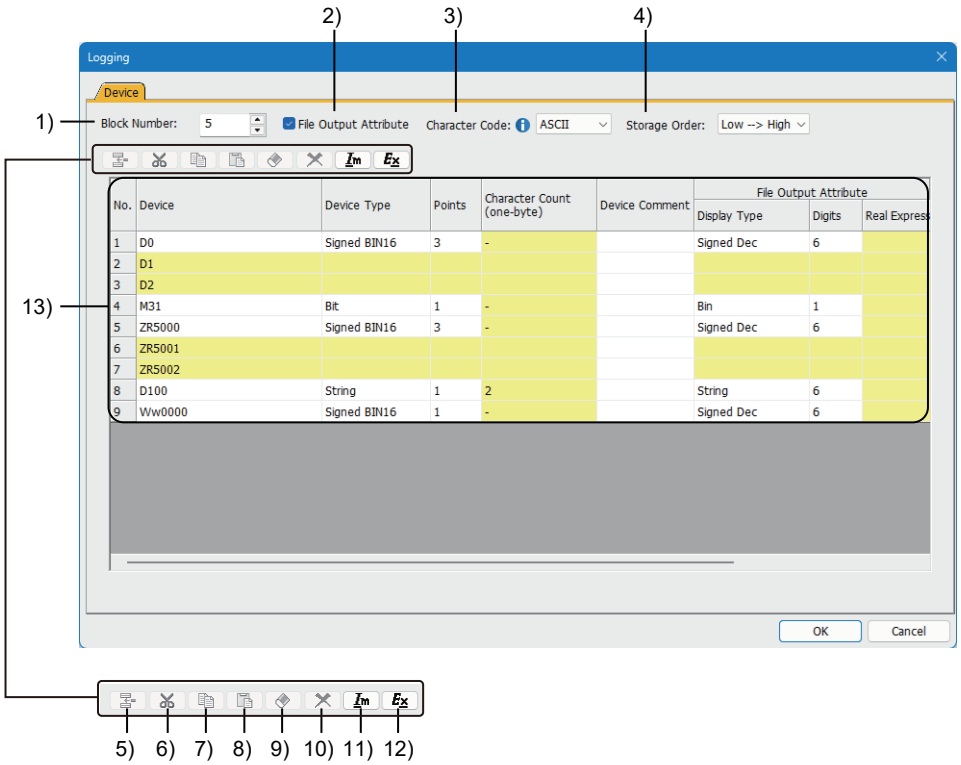
Since device value collection is paused while the logging file is being saved, device values may not be collected normally.
Depending on the settings such as the logging trigger, [Log Storage Number] needs to be adjusted.

Point

To collect device values in short intervals, set a larger number in [Log Storage Number].

65.10.1 [Device] tab

Set the device to be collected.



Item		Description
1)	[Block Number]	Set the number of blocks of the logging setting. ☞ Page 2210 Management of logging setting The setting range is [1] to [250].
2)	[File Output Attribute]	This item can be set only when [File] is selected for [How to store logging data] in the [Logging] dialog. Select this item to change the style of the device value that is to be output to a Unicode text file or CSV file. Select this item to add [File Output Attribute] setting columns to the device list. This setting is available only when [How to store logging data] is set to [File].
3)	[Character Code]	Select a character code. For precautions when selecting [Unicode] for [Character Code], refer to the following. ☞ Page 2236 Selecting Unicode for the character code of the device to be collected
4)	[Storage Order]	Select the order in which character codes are stored.
5)	[Insert Block] button	Inserts a block. Select a column when inserting a block.
6)	[Cut] button	Cuts a selected item. This operation can also be performed from the right-click menu.
7)	[Copy] button	Copies a selected item. This operation can also be performed from the right-click menu.
8)	[Paste] button	Pastes a selected item. This operation can also be performed from the right-click menu.
9)	[Clear] button	Clears the device comment when [Device Comment] is being selected. Returns the number of displayed digits to the initial value when [Digits] is being selected.
10)	[Delete] button	Deletes a selected line setting.
11)	[Import] button	Imports the setting edited in a Unicode text file or CSV file to GT Designer3.
12)	[Export] button	Saves the setting in the [Device] tab with a Unicode text or CSV file. You can edit the exported file in spreadsheet software and others. The edited file can be imported with GT Designer3. When importing or exporting files in the multiple-language input environment, use Unicode text files. The characters of multiple languages can be imported or exported normally by using Unicode text files.

Item			Description
13)	Device list	[Device]	Set the devices from which data is collected by the logging trigger. ☞ Page 834 How to set devices, labels, and tags
		[Device Type]	Select the data type of the device.
		[Points]	Set the number of devices to be collected in block units. Devices starting from the start device are set sequentially for the set number. The maximum number of devices that can be set depends on the setting of [Device Type]. • [Bit]: [1] • [Signed BIN16], [Unsigned BIN16], [Signed BIN8], [Unsigned BIN8] [BCD16], or [String]: [1] to [250] • [Signed BIN32], [Unsigned BIN32], [BCD32], or [Real(32bit)]: [1] to [125] • [Signed BIN64], [Unsigned BIN64], [BCD64], or [Real(64bit)]: [1] to [62]
		[Character Count (one-byte)] ([Character Count] when [Unicode] is selected for [Character Code])	Maximum number of characters to be collected. This item is displayed when [String] is selected for [Device Type]. The settings of [Points] and [Character Code] determine the setting value. • When [Unicode] is selected for [Character Code] The maximum number of characters equals the value in [Points]. • When an item other than [Unicode] is selected The maximum number of characters equals the value in [Points] multiplied by 2. A two-byte character is counted as two characters.
		[Device Comment]	Set a device comment. Up to 32 characters can be set. A set device comment is displayed in a Unicode text file and CSV file. Adjust the column width to display the entire device comment.
		[File Output Attribute]	Set the style of the device value that is to be output to a Unicode text file or CSV file. When [File Output Attribute] to the right of [Block Number] is selected, the corresponding setting items are displayed. For details, refer to the next page.

Settings for [File Output Attribute]

When [File Output Attribute] is selected, also configure the following settings.

Item	Description
[Display Type]	Select the data display type. The setting range depends on the setting of [Device Type]. ☞ Page 2236 Relationship between the settings of [Device Type], [Display Type], and [Digits]
[Display Digits]	Set the number of the digits displayed. The setting range differs depending on the setting of [Display Type]. If the number of the digits of a collected value exceeds the number of set digits, the value is output intact. When [Display Type] is set to [String], if a collected character string contains a null character in the range of the set number of digits, the characters preceding the null character are displayed. When the number of characters collected is less than that of the set digits, spaces are added. ☞ Page 2236 Relationship between the settings of [Device Type], [Display Type], and [Digits]
[Real Expression]	Select the expression type of the real number. Set this item when [Real] is selected for [Display Type]. Example) When the device stores 123.4567 and [Decimal Point] is set to 3 Display using [Exponential Expression]: 1.235E+002 (The value in the exponential expression is rounded off to the third decimal place.) Display using [Fixed Decimal]: 123.457 (The value is rounded off to the third decimal place.) When [Device Type] is set to an item other than [Real], [Real Expression] is fixed to [Fixed Decimal]. The value set for [Decimal Point] is handled as the number of decimal places. Example) When the device stores 12345 and [Decimal Point] is set to 2 Device value output to a file: 123.45 (The last two digits of the value are handled as the decimal places.)
[Decimal Point]	Set the number of digits of decimal numbers. Set this item when [Real] is selected for [Display Type]. The setting range is [0] digits to [30] digits.
[Fill with 0]	Select this item to display 0 before the device value. When the collected device value is 125 and [Digits] is 6, 000125 is displayed with this item selected.

Selecting Unicode for the character code of the device to be collected

When [Character Code] is set to [Unicode] for a target device, if you specify the device for a text display, text input, or text print object, configure the settings in the object setting dialog as shown below.

■When [Storage Order] is set to [Low→High] in the [Logging] dialog

1. Select [Unicode] for [Character Code] in the [Device/Style] tab or in the [Text Print] dialog.
2. Select [High→Low] in the [Extended] tab or in the [Text Print] dialog.

■When [Storage Order] is set to [High→Low] in the [Logging] dialog

1. Select [Unicode] for [Character Code] in the [Device/Style] tab or in the [Text Print] dialog.
2. Deselect [Display in order of High→Low] in the [Extended] tab or in the [Text Print] dialog.

Relationship between the settings of [Device Type], [Display Type], and [Digits]

The selectable items for [Display Type] vary depending on the setting of [Device Type].
The setting range of [Digits] also varies depending on the setting of [Display Type].

[Device Type]	[Display Type]	Setting range for [Digits][*1]
[Bit]	[Bin]	[1]
	[Bit]	[3]
[Signed BIN16]	[Signed Dec]	[1] to [21]
	[Hex]	[4]
	[Octal]	[6]
	[Bin]	[16]
	[Real]	[1] to [32]
[Unsigned BIN16]	[Unsigned Dec]	[1] to [21]
	[Hex]	[4]
	[Octal]	[6]
	[Bin]	[16]
	[Real]	[1] to [32]
[Signed BIN32]	[Signed Dec]	[1] to [21]
	[Hex]	[8]
	[Octal]	[11]
	[Bin]	[32]
	[Real]	[1] to [32]
[Unsigned BIN32]	[Unsigned Dec]	[1] to [21]
	[Hex]	[8]
	[Octal]	[11]
	[Bin]	[32]
	[Real]	[1] to [32]
[Signed BIN64]	[Signed Dec]	[1] to [21]
	[Hex]	[16]
	[Real]	[1] to [32]
[Unsigned BIN64]	[Unsigned Dec]	[1] to [21]
	[Hex]	[16]
	[Real]	[1] to [32]
[Signed BIN8]	[Signed Dec]	[1] to [21]
	[Hex]	[2]
	[Octal]	[3]
	[Bin]	[8]
	[Real]	[1] to [32]

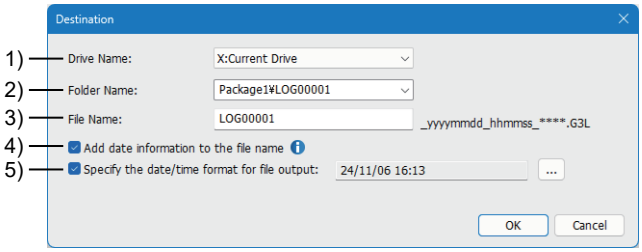
[Device Type]	[Display Type]	Setting range for [Digits]*1
[Unsigned BIN8]	[Unsigned Dec]	[1] to [21]
	[Hex]	[2]
	[Octal]	[3]
	[Bin]	[8]
	[Real]	[1] to [32]
[BCD16]	[Unsigned Dec]	[1] to [21]
	[Real]	[1] to [32]
[BCD32]	[Unsigned Dec]	[1] to [21]
	[Real]	[1] to [32]
[BCD64]	[Unsigned Dec]	[1] to [21]
	[Real]	[1] to [32]
[Real(32bit)]	[Real]	[1] to [32]
[Real(64bit)]	[Real]	[1] to [32]
[String]	[String]	[1] to [500]

*1 When [Real Expression] is set to [Fixed Decimal], the value set for [Digits] is handled as the number of digits of the integer portion. The sum of the values set for [Digits] and [Decimal Point] must be 30 or less.

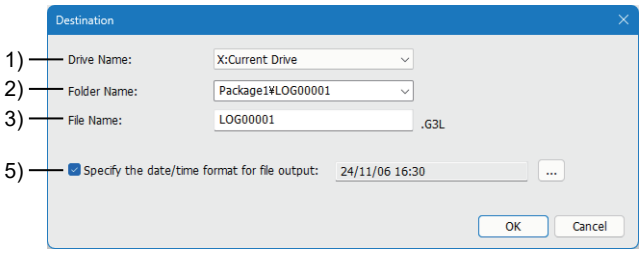
65.10.2 [Destination] dialog (for saving a logging file)

Set the save destination for logging files (*.G3L).

- When [How to store logging data] is set to [File]



- When [How to store logging data] is set to [Buffering area]



Item		Description
1)	[Drive Name]	Select a destination drive. For the available drives by GOT model, refer to the following. ☞ Page 81 Drive configuration and capacity of the GOT
2)	[Folder Name]	Set the name of the folder where files are stored. In the default setting, [Package Folder Name] selected from [Common] → [GOT Type Setting] is set as the folder name. ☞ Page 84 Restrictions for folder names and file names used in GOT
3)	[File Name]	Set the name of the files to be saved. In the default setting, LOG☐ is set for the file name (☐ indicates the logging ID). ☞ Page 84 Restrictions for folder names and file names used in GOT
4)	[Add date information to the file name]	Adds the date (year, month, and day) and time (hour, minute, and second) to the file name when the file is saved. The date and time information of the first event in the logging file is used.
5)	[Specify the date/time format for file output]	Set the format of the date and time displayed in a Unicode text file or CSV file. Click the [...] button to specify the date and time format in the [Date/Time Setting] dialog. ☞ Page 3684 [Date/Time Setting] dialog (screen)

Precautions

When configuring multiple logging settings, do not set the same name for both folders and files.

If the same name is used, logging is not executed normally.

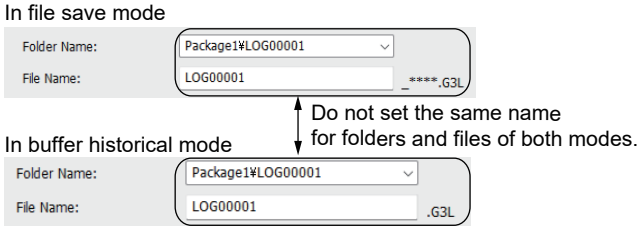
Special care is required when file save mode and buffer historical mode are used together.

In file save mode, the management file is saved in the background when the logging file is saved.

For example, when the logging file [LOG00001_****.G3L] (* indicates a number) is saved, the management file [LOG00001.G3L] is saved simultaneously.

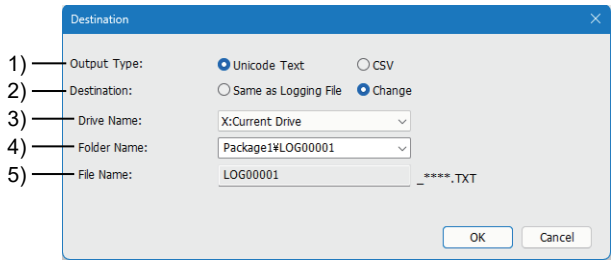
If the file name in buffer historical mode is [LOG00001.G3L], logging is not executed normally due to the duplicated file name.

To check duplication, select [Debug/Check] → [Data Check] from the menu.



65.10.3 [Destination] dialog (for saving a CSV or TXT file)

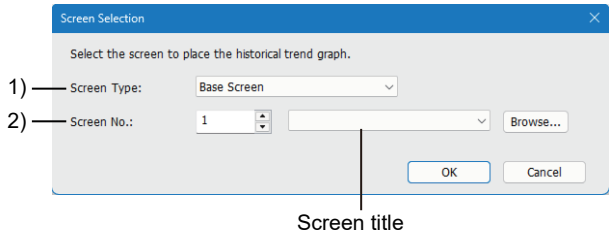
Set the save destination for the Unicode text file or CSV file.



Item		Description
1)	[Output Type]	Select the file format to be additionally output. When an additional file is output, the duration of logging interruption may be longer.
2)	[Destination]	Select the save destination folder for the additionally output file. If you select [Change], set the [Drive Name] and [Folder Name] for the save destination.
3)	[Drive Name]	Select a destination drive. For the available drives by GOT model, refer to the following. ☞ Page 81 Drive configuration and capacity of the GOT
4)	[Folder Name]	Set the name of the folder where files are stored. In the default setting, [Package Folder Name] selected from [Common] → [GOT Type Setting] is set as the folder name. ☞ Page 84 Restrictions for folder names and file names used in GOT
5)	[File Name]	Displays the name of the logging file.

65.10.4 [Screen Selection] dialog

Select the screen in which a historical trend graph is placed.

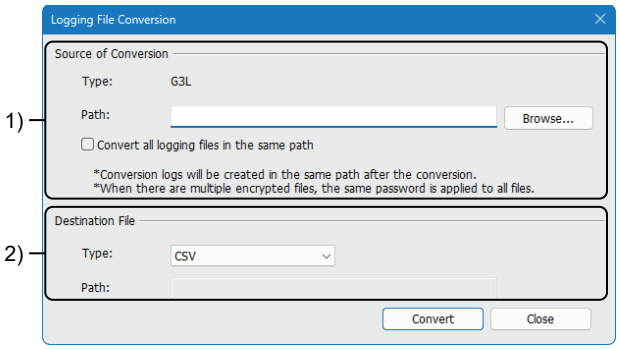


Item		Description
1)	[Screen Type]	Select the type of the screen in which a historical trend graph is placed.
2)	[Screen No.]	Set the number of the screen in which a historical trend graph is placed. The setting range is [0] to [32767]. A target screen is selectable from among screen titles as well. To place a historical trend graph on a new screen, select [A new screen will be created.] for the screen title. Clicking the [Browse] button allows you to check the screen image to be selected in the [Screen Image List] dialog. ☞ Page 3683 [Image List] dialog (screen)

65.11 [Logging File Conversion] dialog

This dialog is used to convert a logging file (*.G3L) to a Unicode text file or a CSV file.

Select [Tools] → [Resource Data Conversion] → [Logging File] from the GT Designer3 menu to display the dialog.



Item			Description
1)	[Source of Conversion]	[Type]	Displays the file type of the conversion source file.
		[Path]	Specify a path of the conversion source file.
		[Convert all logging files in the same path]	Select this item to set all logging files (*.G3L) in the same path as conversion targets. When conversion is executed with this item selected, a conversion log (.log) containing the conversion results is automatically created in the specified path. File name example) G3LtoCSV_20260113103901.log You can check the full path of the converted files, the conversion results (OK, NG), or the creation date of files in the conversion log.
2)	[Destination File]	[Type]	Select a file type of a file to be created after the conversion.
		[Path]	Displays the path of a file to be saved at the destination, which is the same path as the one of the conversion source file.

65.12 Relevant settings

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Configure the relevant settings in addition to the specific settings for the logging function as required. The following shows the functions that are available by configuring the relevant settings.

65.12.1 GOT internal devices

☞ Page 3581 GOT special register (GS)

Function	Setting item
Saving the data in the buffering area to data storage (Forcefully Save Buffered Data signal)*1	GS520.b0
Changing the character code to Unicode when a binary file is converted to CSV format	GS522.b2

*1 If the setting for saving the logging data in the buffering area to the data storage is not configured (if [Store logging data to the file] in the logging setting is set to [No]), the data cannot be saved to the data storage.

PART 11 Recipe

66 Writing or reading values to multiple devices ([Recipe])

66 Writing or reading values to multiple devices ([Recipe])

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☞ Page 2244 Overview of the recipe function
☞ Page 2246 Specifications of the recipe
☞ Page 2255 How to use the recipe
☞ Page 2301 Control and notification with devices
☞ Page 2309 [Recipe Common Setting] dialog
☞ Page 2310 [Recipe List] dialog
☞ Page 2311 [Recipe] dialog
☞ Page 2321 [Recipe File Conversion] dialog
☞ Page 2322 Relevant settings

66.1 Overview of the recipe function

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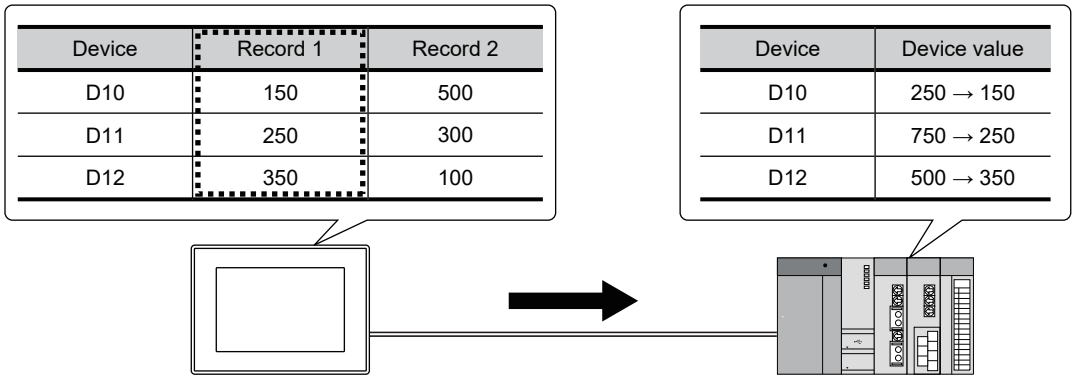
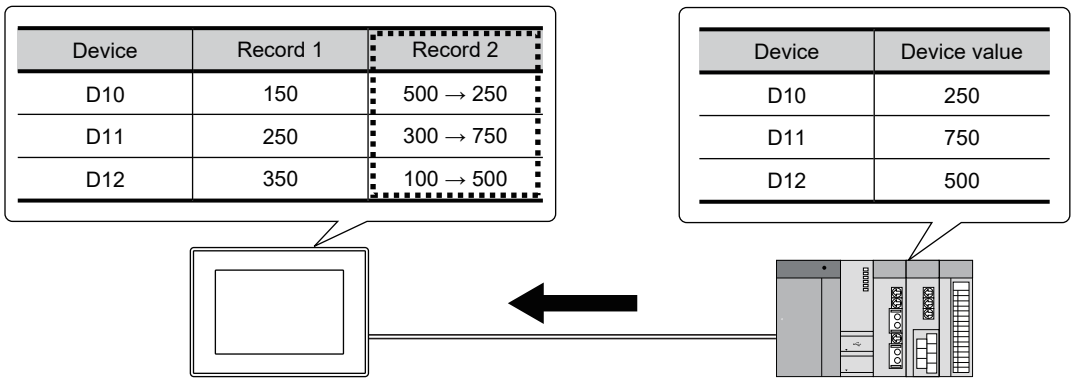
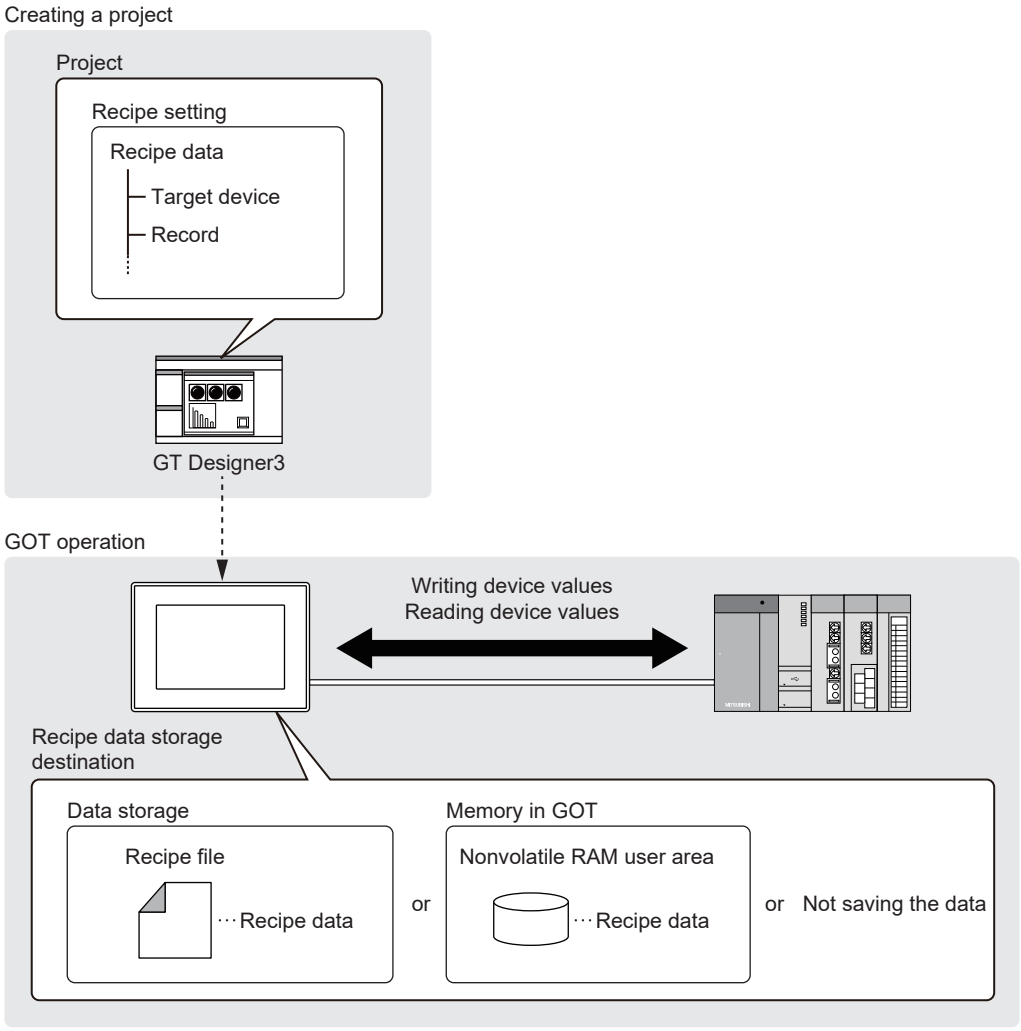
The recipe function collectively writes or reads values to or from multiple devices.

Function	Operation
Writing device values	Preset values are written to multiple devices. You can set multiple combinations of device values (records) to be written. Example) Writing the values of record 1
Reading device values	Values are read from multiple devices. The read values are saved as the values of a record in a data storage or the nonvolatile RAM user area. Example) Saving the read device values in record 2





The following shows the outline of operation from creating project with GT Designer3 to operating the GOT, and the terms of the recipe function.



Term	Description
Recipe setting	Setting configured with GT Designer3 for the recipe function. A recipe setting consists of target devices, combinations of values to be written (records), trigger devices, and other fields. ☞ Page 2246 Contents of a recipe setting
Recipe data	Data such as target devices, records, and device comments based on a recipe setting. The records in the recipe data are subjected to reading and writing. You can save the recipe data into a data storage or the nonvolatile RAM user area. ☞ Page 2249 Recipe data
Recipe file	A recipe file contains recipe data. A recipe file is created when the recipe data is stored in the GOT data storage. The records in the recipe file are subjected to reading and writing, and the contents of the file are editable. Set whether to use the recipe file per recipe setting. ☞ Page 2250 Specifications of the recipe file

66.2 Specifications of the recipe

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☞ Page 2246 Contents of a recipe setting
☞ Page 2249 Recipe data
☞ Page 2250 Specifications of the recipe file
☞ Page 2254 Specifications of saving recipe data into the nonvolatile RAM user area

66.2.1 Contents of a recipe setting

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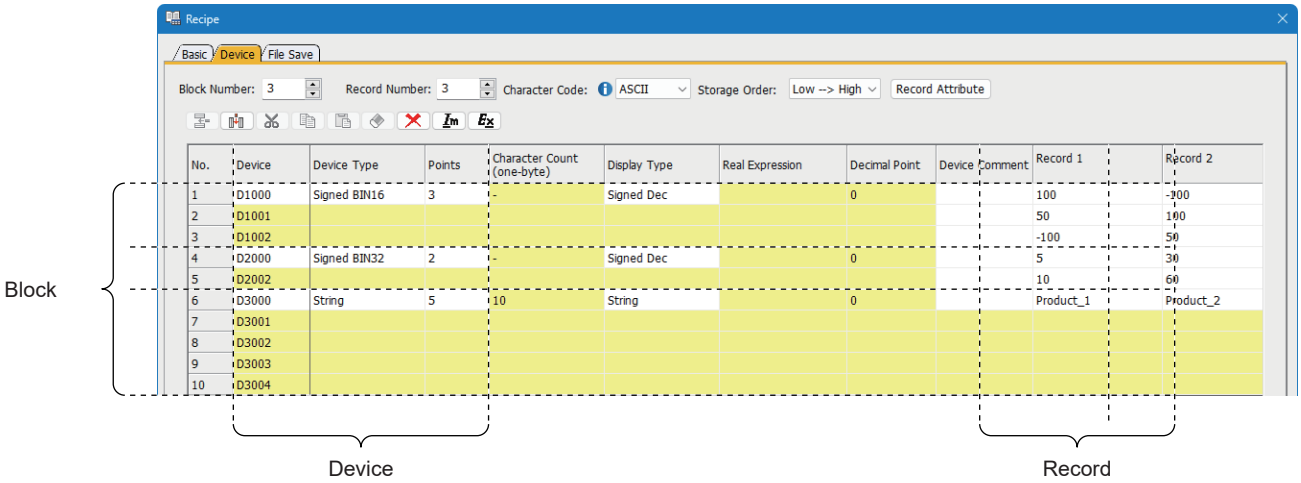
A recipe setting consists of target devices, combinations of values to be written (records), trigger devices, and other fields.
Device values are read or written in units of recipe settings.
Each recipe setting has a recipe number used to specify the recipe data to be written or read.
The following shows the setting range of recipe setting.

Item	Setting range
Number of recipe settings per project	Up to 2500 settings
Setting range of recipe No.	1 to 32767

Set recipe settings in the [Recipe] dialog.
☞ Page 2311 [Recipe] dialog



For details on blocks, devices, and records that configure a recipe setting, refer to the following.

Item		Upper limit	Reference
Block		Up to 2048 per recipe setting	☞ Page 2247 Block
Device	256 records or less	• 65536 per recipe setting • 32768 per block (up to 2048 when [Device Type] is [Text])	
	257 records or more	• 8192 per recipe setting • 8192 per block (up to 2048 when [Device Type] is [Text])	
Record		Up to 2000 per recipe setting	☞ Page 2248 Record

Precautions

■Project size and recipe setting

The project size (ROM or RAM) must be equal to or smaller than the capacity of the GOT storage memory (ROM) or operation memory (RAM).

Depending on the recipe setting (including the number of records, number of target devices, and record initial values) and other function settings, setting items may not be set up to each upper limit due to the project size.

Block

Target devices are set in units of blocks.

Set target devices, device types, and number of devices by block.

To set consecutive devices, specify the start device and set the number of consecutive devices from the start device to [Points].

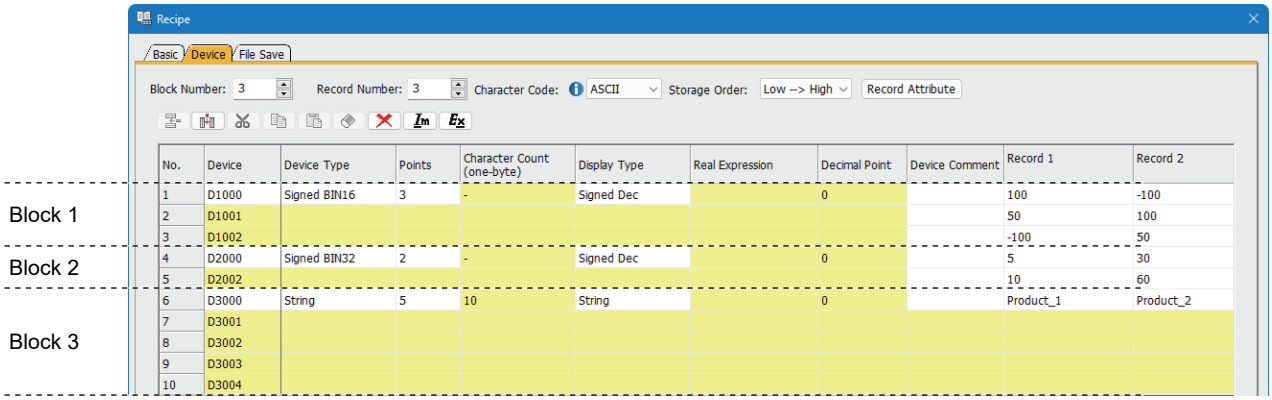
The set number of devices starting from the start device are the recipe target devices.

To set non-consecutive devices, delimit devices by blocks.

Set the number of delimiters to [Block Number], and set devices for each block.

Ex.

Example of block settings



No.	Device	Device Type	Points	Character Count (one-byte)	Display Type	Real Expression	Decimal Point	Device Comment	Record 1	Record 2
1	D1000	Signed BIN16	3	-	Signed Dec		0		100	-100
2	D1001								50	100
3	D1002								-100	50
4	D2000	Signed BIN32	2	-	Signed Dec		0		5	30
5	D2002								10	60
6	D3000	String	5	10	String		0		Product_1	Product_2
7	D3001									
8	D3002									
9	D3003									
10	D3004									

Block	[Device]	[Device Type]	[Points]
Block 1	[D1000] Three consecutive devices (D1000 to D1002) are set as target devices.	[Signed BIN16]	3
Block 2	[D2000] Two consecutive devices (D2000 to D2003) are set as target devices.	[Signed BIN32]	2
Block 3	[D3000] Five consecutive devices (D3000 to D3004) are set as target devices.	[String]	5

Record

Values of target devices are managed in units of records.

Each record has a record number used to specify the record to be written or read.

Record number is indicated as record n (n = 1, 2...).

Ex.

Record 1 = Record number 1

Record 2 = Record number 2

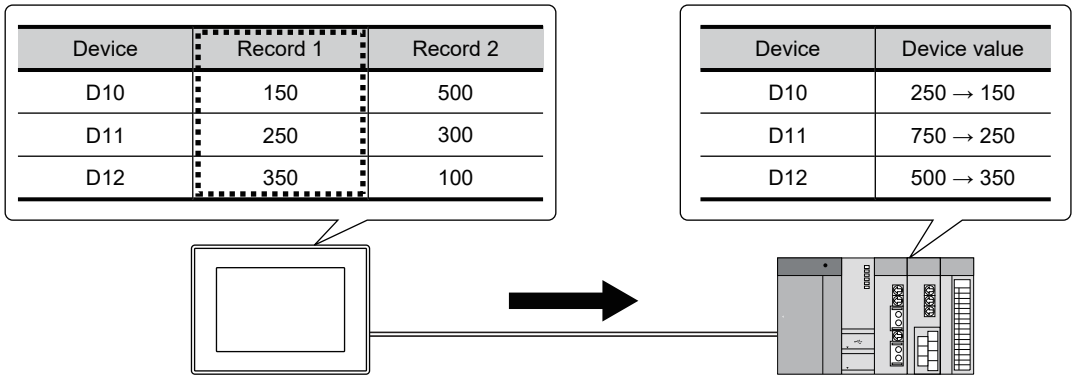
■When writing device values

Specify values to be written to devices in units of records.

One record can be specified for one write.

Ex.

Writing the values of record 1



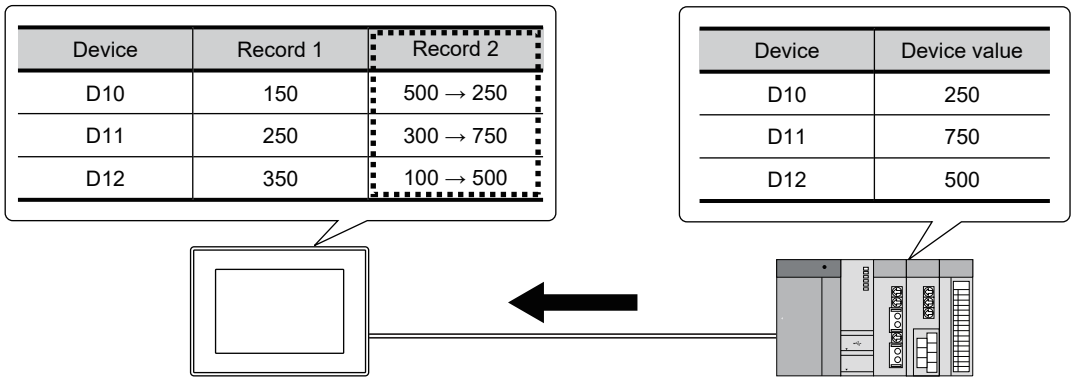
■When reading device values

The values read from devices are saved as one record.

One record can be specified for one read.

Ex.

Saving the read device values in record 2



66.2.2 Recipe data

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The recipe data includes the target devices, records, and device comments of a recipe setting.

The records in the recipe data are subjected to reading and writing.

You can save the recipe data into a data storage or the nonvolatile RAM user area.

Set the save destination in the [Recipe] dialog ([Basic] tab).

☞ Page 2311 [Basic] tab

The recipe data is handled differently depending on the save destination setting.

[Recipe Data Save Location] setting	Handling of recipe data
[Data Storage (Recipe File)(read and write)]	The recipe data is saved to a recipe file in the data storage of the GOT. The records in the recipe file are subjected to reading and writing. To edit the recipe data, transfer the recipe file to a personal computer. For the specifications of the recipe file, refer to the following. ☞ Page 2250 Specifications of the recipe file For the available drives by GOT model, refer to the following. ☞ Page 81 Drive configuration and capacity of the GOT
[Embedded Memory in GOT (read and write)]	The recipe data is saved to the nonvolatile RAM user area of the GOT. No recipe file is created. The records of the recipe data in the nonvolatile RAM user area are subjected to reading and writing. The nonvolatile RAM user area space is limited. Only the following fields are saved accordingly. For the other fields, the recipe settings in the project are used. • Record name • Record attribute • Values of the record To use device comments or other fields, or large amounts of recipe data, save the recipe data to a recipe file in the data storage. For details on the nonvolatile RAM user area, refer to the following. ☞ Page 2254 Specifications of saving recipe data into the nonvolatile RAM user area
[Not save (record value write only)]	The recipe data is not saved. No recipe file is created. The records in a recipe setting in the project are subjected to writing. Reading of device values is not available. Select not to save the recipe data for write operations only.

PART 11

66.2.3 Specifications of the recipe file

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☞ Page 2250 Recipe file
☞ Page 2251 Recipe file format
☞ Page 2252 Configuration of the recipe file

Recipe file

A recipe file contains recipe data.
The records in the recipe file are subjected to reading and writing, and the contents of the file are editable.
Set whether to use the recipe file per recipe setting.
To use a recipe file, set [Recipe Data Save Location] to [Data Storage (Recipe File)(read and write)] in the [Recipe] dialog ([Basic] tab).
☞ Page 2311 [Basic] tab
A recipe file is automatically created when all of the following conditions are satisfied at writing or reading.

- [Recipe Data Save Location] is set to [Data Storage (Recipe File)(read and write)] in the [Recipe] dialog.
- Writing or reading is caused by the trigger device (external control device or trigger device per recipe setting).
- No recipe file exists.

Precautions

■Influence by recipe file size

A large recipe file requires more space in a data storage, takes a long writing or reading time, and influences others.
The following shows methods to reduce the size of a recipe file.

- Reduce the number of characters in device comments.
- Reduce the number of digits of the record initial values.
- Exclude device comments from the conversion target.

■Changing the recipe setting after its recipe file is created

When a recipe file is used, device values are written to or read from the recipe file.
In the save destination, if another recipe file already exists, changes made in GT Designer3 are not applied to the recipe file and the writing or reading of device values.
Remove the recipe file from the save destination, and then write or read device values.

■Recipe file created when a recipe process error occurs

Even if a recipe process error occurs, a recipe file may still be created.
Change the setting in GT Designer3 to remove error causes, and then create a recipe file again.

■Changing the save destination or file name of a recipe file

If you change the save destination or name of a recipe file used, also change the save destination and file name of the corresponding recipe setting.

■To maintain file access performance

It is recommended to format the data storage before using it.
The number of files to be stored in a folder should be less than 500.
If 500 or more files are stored in a folder, file access performance may be lowered.
Repeated writing or deleting of data may lower access performance, regardless of the number of files.
In such a case, format the data storage.

Recipe file format

The following file formats are available for recipe files.

Select a file format in the [Basic] tab in the [Recipe] dialog.

☞ Page 2311 [Basic] tab

File format	Extension	Description
Binary format	*.G3P	A binary file (*.G3P) is used as a recipe file. One file is created for one recipe setting. To edit such a recipe file on a personal computer, convert it to CSV or Unicode text format. In this case, unlike a recipe file originally in CSV or Unicode text format, the file still contains multiple records after its format is converted.
CSV format	*.CSV	A recipe file created in CSV format (*.CSV) is used intact. To edit such a file on a personal computer, the file format conversion is not required. One recipe file contains one record only. Recipe files are created for each record. The record number is added to the end of the file name. Example) Recipe file with record number 3: ARP00001_0003.CSV
Unicode text format	*.TXT	A recipe file in Unicode text format (*.TXT) is used intact. To edit such a file on a personal computer, the file format conversion is not required. One recipe file contains one record only. Recipe files are created for each record. The record number is added to the end of the file name. Example) Recipe file with record number 3: ARP00001_0003.TXT

Point

For the precautions for editing a CSV file or Unicode text file on a personal computer, refer to the following.

☞ Page 3668 Precautions for using CSV file

☞ Page 3669 Precautions for using Unicode text file

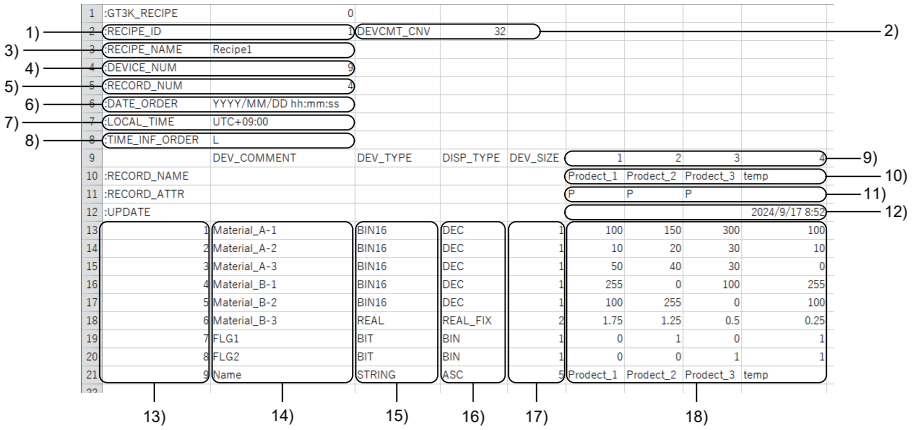
Configuration of the recipe file

The following shows the configuration of a recipe file in CSV or Unicode text format.

To edit a binary recipe file (*.G3P) on a personal computer, convert the format to CSV or Unicode text format.

Only the following items can be edited.

- Record name
- Record attribute
- Record
- Device comment (when edit is allowed in the recipe setting)



Item		Description
1)	Recipe No.	Recipe number of a source recipe setting
2)	Number of characters in the device comment to be converted	Number of characters in a target device comment when the recipe file is converted from CSV or Unicode text format to binary format (*.G3P). This item is output when [Include device comments in conversion target] is selected in the [Basic] tab in the [Recipe] dialog.
3)	Recipe name	Name of a source recipe setting
4)	Total number of devices	Total number of devices in a source recipe setting
5)	Number of records	Number of records in a source recipe setting
6)	Order of date and time	Order of date and time output when the records are updated
7)	Time zone	Difference between Greenwich Mean Time and local time
8)	Time information	Information on time data • L: Local time
9)	Record No.	Record number of each record
10)	Record name	Each record name Up to 32 characters can be set.
11)	Record attribute	Record attribute of each record. The following shows selectable items. • Blank column: Device values can be changed. • P: Device values cannot be changed. • N: No device value
12)	Record update time	Time when the device values of a read record are updated
13)	Line number	Line number of each line
14)	Device comment	Comment for the device in each line. Up to 32 characters can be set. For a binary recipe file (*.G3P), set the number of characters that is applied when the file format is converted to the CSV or Unicode text format, the file is edited, and the file format is converted back to the binary format (*.G3P) to [Maximum number of characters] in the [Recipe] dialog ([Basic] tab). Characters exceeding the maximum number of characters cannot be applied to a reverse-converted recipe file.

Item		Description
15)	Device type	Type of the device in each line • [BIT]: Bit • [BIN8]: Signed 8-bit binary • [BIN8_Unsigned]: Unsigned 8-bit binary • [BIN16]: Signed 16-bit binary • [BIN16_Unsigned]: Unsigned 16-bit binary • [BIN32]: Signed 32-bit binary • [BIN32_Unsigned]: Unsigned 32-bit binary • [BIN64]: Signed 64-bit binary • [BIN64_Unsigned]: Unsigned 64-bit binary • [BCD16]: 16-bit binary-coded decimal • [BCD32]: 32-bit binary-coded decimal • [BCD64]: 64-bit binary-coded decimal • [REAL]: Real number (32-bit) • [REAL64]: Real number (64-bit) • [STRING]: Character string
16)	Display type	Display format of the device in each line • [BIT]: Bit • [DEC]: Signed decimal • [REAL_FLOAT]: Real number (exponential expression) • [REAL_FIX]: Real number (fixed-point number) • [ASC]: ASCII • [UNI]: Unicode • [SJIS]: Shift JIS code • [KS]: KS (Korean) • [GB]: GB (Simplified Chinese) • [BIG5]: Big5 (Traditional Chinese) • [BIN]: Binary number • [OCT]: Octal number • [HEX]: Hexadecimal number
17)	Number of devices	Number of devices in each line
18)	Record	Device values of each record. Edit the value according to the device type. Multiple records are managed in a recipe file, which is converted from binary format (*.G3P). Only one record is managed in a recipe file, which is originally created in CSV or Unicode text format.

66.2.4 Specifications of saving recipe data into the nonvolatile RAM user area

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You can save recipe data into the nonvolatile RAM user area.
Values are readable from the target devices of a controller into the RAM user area instead of a data storage.
For the specifications of the nonvolatile RAM user area and operations performed on it, refer to the following.
☞ Page 3679 Specifications and operations of the nonvolatile RAM user area

Although a recipe file is not created, data can be imported and exported between the recipe data stored in the non-volatile RAM user area and the recipe file stored in the data storage.
☞ Page 2273 Exporting/importing recipe data

Precautions

■Fields to be imported

If you import data from a recipe file using a special function switch (Recipe Data Operation) or external control device, only the following items are imported.

- Record name
- Record attribute
- Values of the record

To use device comments or other fields, save the recipe data to a recipe file in the data storage.

66.3 How to use the recipe

GT37 SoftGOT3000

☞ Page 2256 Recipe setting procedure
☞ Page 2257 Recipe data save destinations and lists of recipe operation methods
☞ Page 2259 Writing device values
☞ Page 2263 Reading device values
☞ Page 2267 Transferring recipe files to edit
☞ Page 2269 Converting a recipe file
☞ Page 2273 Exporting/importing recipe data
☞ Page 2278 Operations with the recipe display (record list)
☞ Page 2278 Operations with the utility
☞ Page 2279 Operations with GOT special registers (recipe special control)
☞ Page 2296 Link with the recipe display (record list) by using GOT special registers
☞ Page 2298 Using a GOT2000 recipe file (*.G2P)

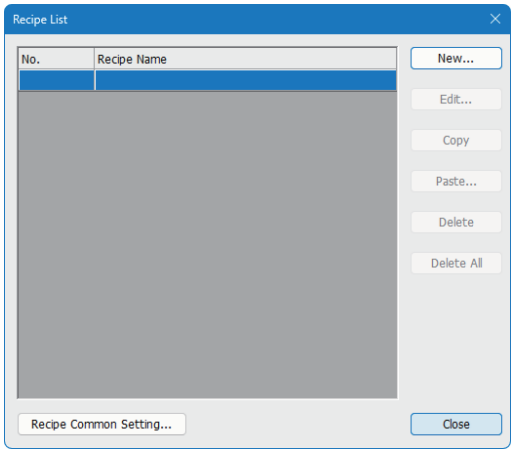
66.3.1 Recipe setting procedure

The following shows how to set a recipe setting.

GT37 SoftGOT3000

1. Select [Common] → [Recipe] → [Recipe] from the menu to display the [Recipe List] dialog.

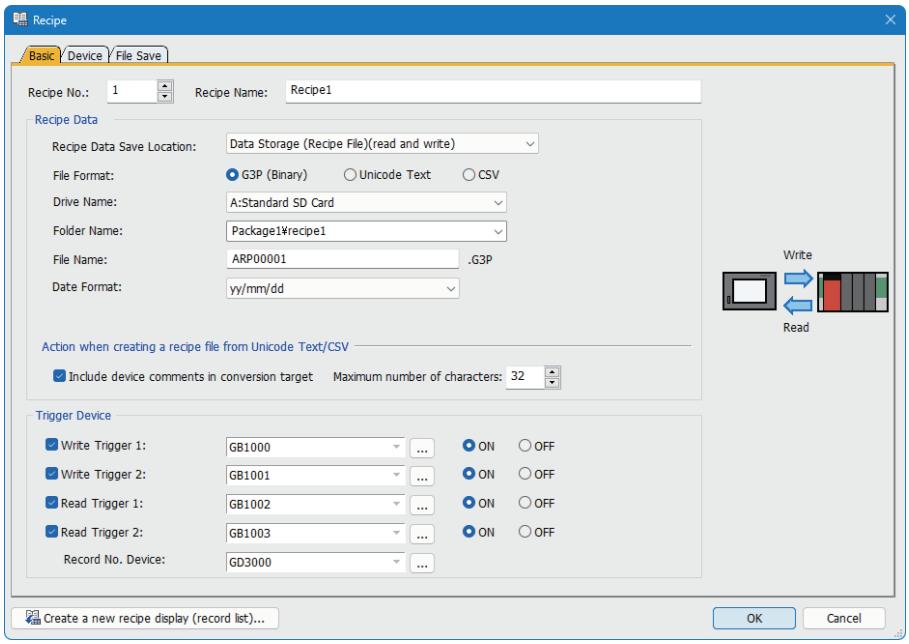
☞ Page 2310 [Recipe List] dialog



2. Perform either of the following operations to display the [Recipe] dialog.

- Click the [New] button.
- Select a recipe setting and click the [Edit] button.

☞ Page 2311 [Recipe] dialog



3. Set necessary items in each tab in the [Recipe] dialog, and click the [OK] button to complete the recipe setting.

Tab	Description
[Basic] tab	Set the recipe number and the write trigger device and read trigger device per recipe setting. ☞ Page 2311 [Basic] tab
[Device] tab	Set the target device and record. ☞ Page 2314 [Device] tab
[File Save] tab	Set the desired file format and save destination when converting a binary recipe file (*.G3P) with a trigger device. ☞ Page 2320 [File Save] tab

66.3.2 Recipe data save destinations and lists of recipe operation methods

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The following shows the recipe operation methods for each recipe data save destination.

☞ Page 2257 When [Data Storage (Recipe File)(read and write)] is set
☞ Page 2258 When [Embedded Memory in GOT (read and write)] is set
☞ Page 2258 When [Not save (record value write only)] is set

When [Data Storage (Recipe File)(read and write)] is set

Purpose		Operation method	Reference
Writing device values		With a device	☞ Page 2259 Writing device values
		With a recipe display (record list) object on the monitor screen	
Reading device values		With a device	☞ Page 2263 Reading device values
		With a recipe display (record list) object on the monitor screen	
Editing recipe files	File transfer between a personal computer and the GOT	Transfer using a data storage	☞ Page 2267 Transferring recipe files to edit
		Direct transfer between a personal computer and the GOT	
	File format conversion	With a device	☞ Page 2269 Converting a recipe file
		In the utility	
		On a personal computer (GT Designer3)	
	Export or import of data between recipe files	With a special function switch (Recipe data operation)	☞ Page 2273 Exporting/importing recipe data
Recipe data operation	Renaming a record	With a recipe display (record list) object on the monitor screen	☞ Page 1550 Placing a recipe display (record list)
	Verifying a record		
	Deleting a record		
	Reading a record (in whole)	With a GOT special register (GS) (Recipe special control)	☞ Page 2279 Operations with GOT special registers (recipe special control)
	Reading a record (in part)		
	Reading device comments		
	Writing a record (in whole)		
	Writing a record (in part)		
	Writing device comments		
	Outputting recipe information		
	Performing a search by record name		
File operation	Copying a file	In the utility	☞ GOT3000 Series User's Manual (Utility & Maintenance Functions)
	Moving a file		
	Renaming a file		
	Creating a folder		
Creating a GOT3000 recipe file (*.G3P) based on a GOT2000 recipe file (*.G2P)		—	☞ Page 2298 Using a GOT2000 recipe file (*.G2P)

When [Embedded Memory in GOT (read and write)] is set

Purpose		Operation method	Reference
Writing device values		With a device	☞ Page 2259 Writing device values
		With a recipe display (record list) object on the monitor screen	
Reading device values		With a device	☞ Page 2263 Reading device values
		With a recipe display (record list) object on the monitor screen	
Export or import of data between the nonvolatile RAM and recipe files		With a special function switch (Recipe data operation)	☞ Page 2273 Exporting/importing recipe data
		With a device	☞ Page 2269 Conversion with an external control device (trigger device common in a project)
Recipe data operation	Renaming a record	With a recipe display (record list) object on the monitor screen	☞ Page 1550 Placing a recipe display (record list)
	Verifying a record		
	Deleting a record		
	Reading a record (in whole)	With a GOT special register (GS) (Recipe special control)	☞ Page 2279 Operations with GOT special registers (recipe special control)
	Reading a record (in part)		
	Reading device comments		
	Writing a record (in whole)		
	Writing a record (in part)		
	Writing device comments		
	Outputting recipe information		
	Performing a search by record name		

When [Not save (record value write only)] is set

Purpose	Operation method	Reference
Writing device values	With a device	☞ Page 2259 Writing device values
	With a recipe display (record list) object on the monitor screen	

66.3.3 Writing device values

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The following writing methods are available when the GOT writes the values of a record into the target devices of a controller.

Writing methods		Description
With a device	External control device (trigger device common in a project)	Specify a recipe number and a record number with applicable devices to write the values of the record into the target devices of a controller. The trigger device is shared among all the recipe settings in one project. The trigger condition is satisfied only by turning on the trigger device. For the setting and operating procedures, refer to the following. ☞ Page 2259 Writing device values with an external control device (trigger device common in a project)
	Trigger device of each recipe setting	Specify a record number with an applicable device to write the values of the record into the target devices of a controller. When the recipe setting has only one record, the record number does not need to be specified. Up to two trigger devices can be set. The following setting can be configured: Device values are written only when both of the trigger conditions are satisfied. Each trigger condition is satisfied by turning on or off a trigger device. For the setting and operating procedures, refer to the following. ☞ Page 2261 Writing device values with a trigger device of each recipe setting
With a recipe display (record list) object on the monitor screen		Use a key code switch to write a record selected on the recipe display (record list). This method requires the applicable key code switch. For the setting and operating procedures, refer to the following. ☞ Page 1552 How to use the recipe display (record list)

For precautions for writing device values, refer to the following.

☞ Page 2262 Precautions for writing

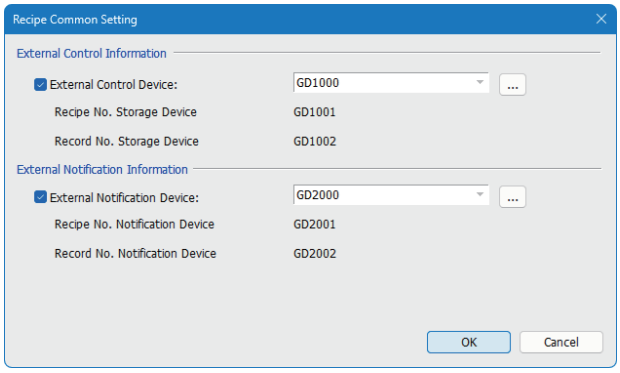
Writing device values with an external control device (trigger device common in a project)

GT37 SoftGOT3000

■Settings in GT Designer3

1. Select [Common] → [Recipe] → [Recipe Common Setting] from the menu to display the [Recipe Common Setting] dialog.

☞ Page 2309 [Recipe Common Setting] dialog



2. Select [External Control Device], set a device, and click the [OK] button.

Consecutive devices, starting from the device set in [External Control Device], are automatically set in [Recipe No. Storage Device] and [Record No. Storage Device].

Bit 0 of the device set in [External Control Device] is the write trigger device common in a project.

☞ Page 2302 Functions of the external control device

■Operation on the GOT

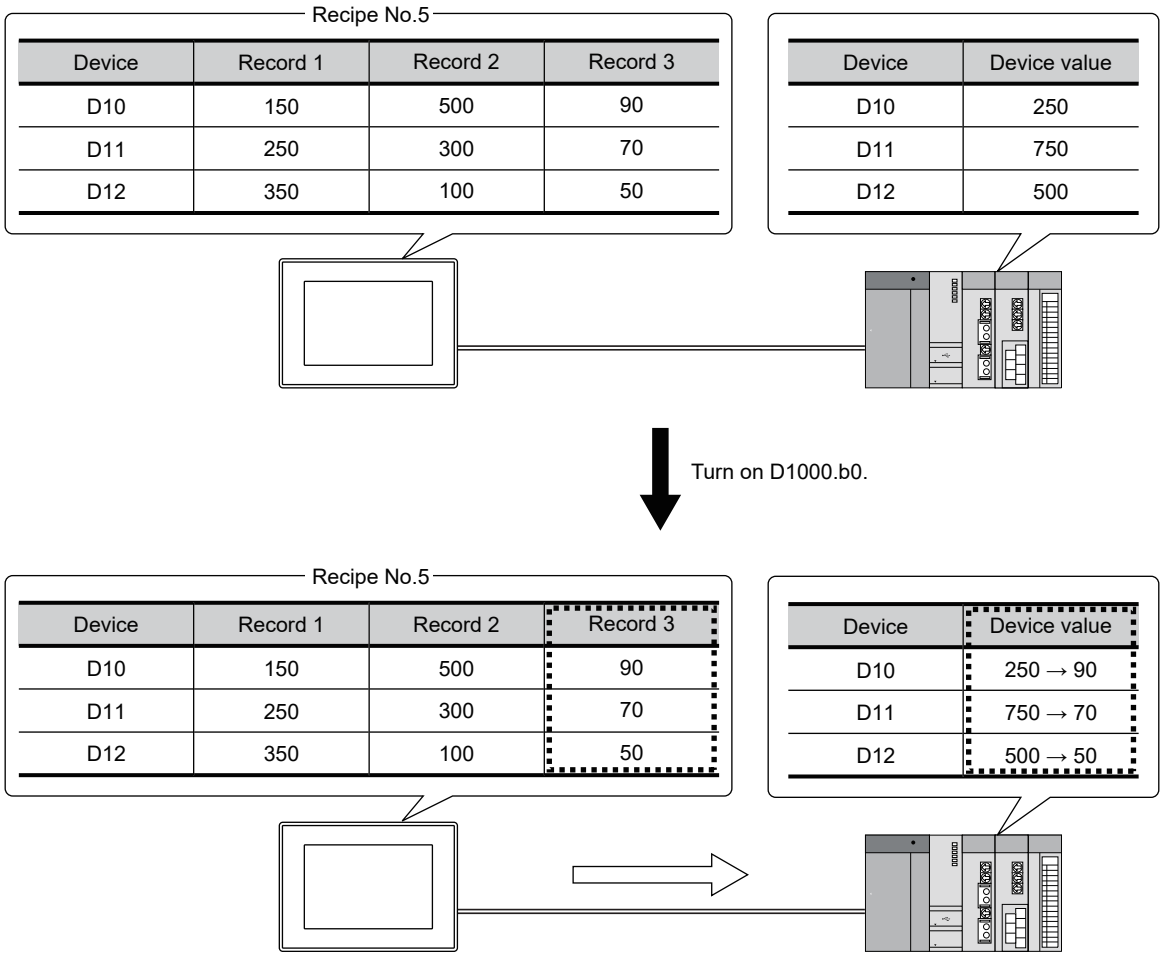
Input values into the Recipe No. Storage device and the Record No. Storage device respectively, and then satisfy the condition of the write trigger.

The values of the specified record will be written into the target devices.

Ex.

Writing record 3 on recipe No. 5

- [External Control Device]: D1000
- [Recipe No. Storage Device]: D1001 = 5
- [Record No. Storage Device]: D1002 = 3



Point

For the operating specifications of the devices to control the recipe function, refer to the following.

☞ Page 2301 Control devices

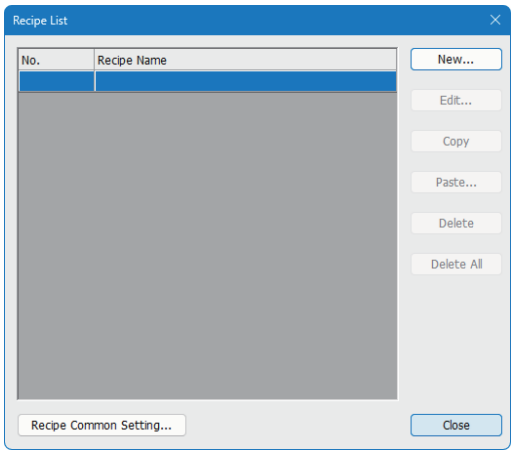
Writing device values with a trigger device of each recipe setting

GT37 SoftGOT3000

■Settings in GT Designer3

1. Select [Common] → [Recipe] → [Recipe] from the menu to display the [Recipe List] dialog.

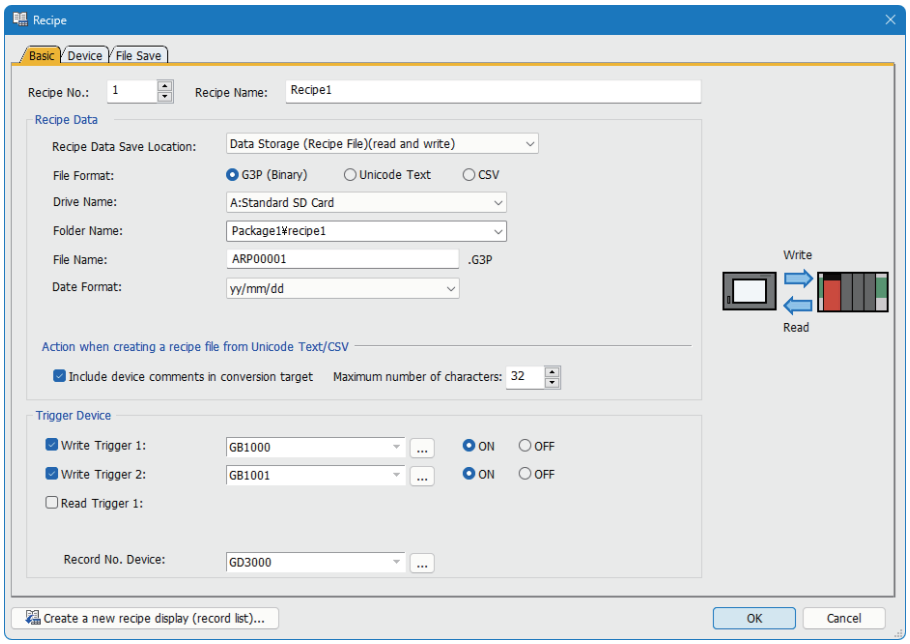
☞ Page 2310 [Recipe List] dialog



2. Perform either of the following operations to display the [Recipe] dialog.

- Click the [New] button.
- Select a recipe setting and click the [Edit] button.

☞ Page 2311 [Recipe] dialog



3. Set the following items in the [Basic] tab, and click the [OK] button.

Setting	Description
[Recipe Data Save Location]	Set the save destination of the recipe data. ☞ Page 2249 Recipe data
[Write Trigger 1]	Select this item to set a device and its trigger condition (ON or OFF).
[Write Trigger 2]	Set this item as required.
[Record No. Device]	Set a device. When the number of records is one, record 1 is always specified, and thus no setting is required.

■Operation on the GOT

Input a value into the Record No. device, and then satisfy the condition of the write trigger.
The values of the specified record will be written into the target devices.

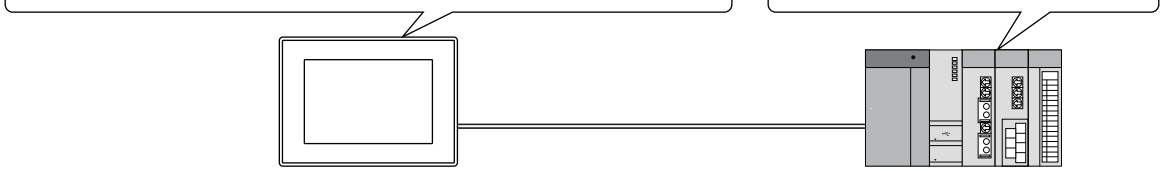
Ex.
Writing record 2 on recipe No. 3

- [Write Trigger 1] of recipe No. 3: X1000 (Trigger condition: ON)
- [Record No. Device] of recipe No. 3: D1100 = 2

Recipe No.3

Device	Record 1	Record 2	Record 3
D10	150	500	90
D11	250	300	70
D12	350	100	50

Device	Device value
D10	250
D11	750
D12	500

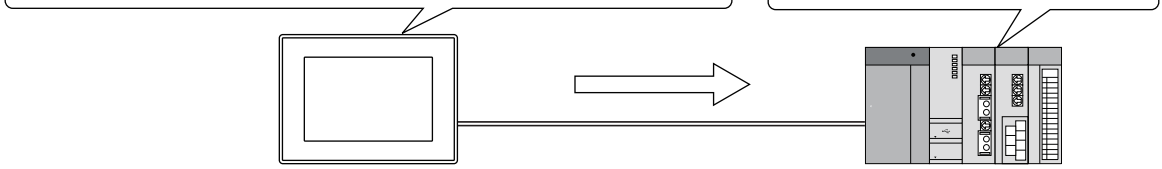


Turn on X1000.

Recipe No.3

Device	Record 1	Record 2	Record 3
D10	150	500	90
D11	250	300	70
D12	350	100	50

Device	Device value
D10	250 → 500
D11	750 → 300
D12	500 → 100



Point

For the operating specifications of the devices to control the recipe function, refer to the following.
☞ Page 2301 Control devices

Precautions for writing

■When writing cannot be executed

In the save destination, if a recipe file with the same name is already created for another recipe setting, writing device values cannot be executed.
Delete the recipe file from the save destination, and then write device values.

66.3.4 Reading device values

GT37 SoftGOT3000

The following reading methods are available when the GOT reads values from the target devices of a controller into a record.

Reading methods		Description
With a device	External control device (trigger device common in a project)	Specify a recipe number and a record number with applicable devices to read values from the target devices of a controller into the record. The trigger device is shared among all the recipe settings in one project. The trigger condition is satisfied only by turning on the trigger device. For the setting and operating procedures, refer to the following. ☞ Page 2263 Reading with an external control device (trigger device common in a project)
	Trigger device of each recipe setting	Specify a record number with an applicable device to read values from the target devices of a controller into the record. When the recipe setting has only one record, the record number does not need to be specified. Up to two trigger devices can be set. The following setting can be configured: Device values are read only when both of the trigger conditions are satisfied. Each trigger condition is satisfied by turning on or off a trigger device. For the setting and operating procedures, refer to the following. ☞ Page 2265 Reading device values with a trigger device of each recipe setting
With a recipe display (record list) object on the monitor screen		Use a key code switch to read a record selected on the recipe display (record list). This method requires the applicable key code switch. For the setting and operating procedures, refer to the following. ☞ Page 1552 How to use the recipe display (record list)

For precautions for reading device values, refer to the following.

☞ Page 2267 Precautions for reading

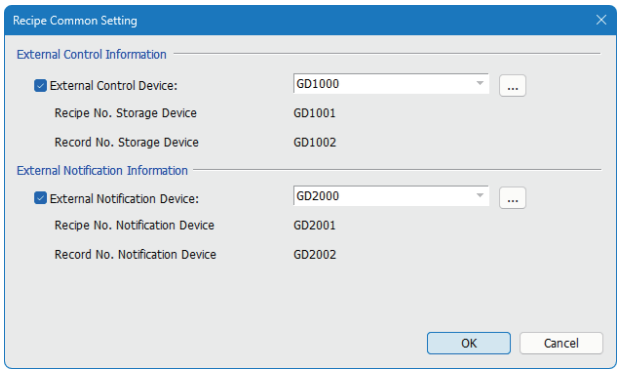
Reading with an external control device (trigger device common in a project)

GT37 SoftGOT3000

■Settings in GT Designer3

1. Select [Common] → [Recipe] → [Recipe Common Setting] from the menu to display the [Recipe Common Setting] dialog.

☞ Page 2309 [Recipe Common Setting] dialog



2. Select [External Control Device], set a device, and click the [OK] button.

Consecutive devices, starting from the device set in [External Control Device], are automatically set in [Recipe No. Storage Device] and [Record No. Storage Device].

Bit 1 of the device set in [External Control Device] is the read trigger device common in a project.

☞ Page 2302 Functions of the external control device

■Operation on the GOT

Input values into the Recipe No. Storage device and the Recipe No. Storage device respectively.

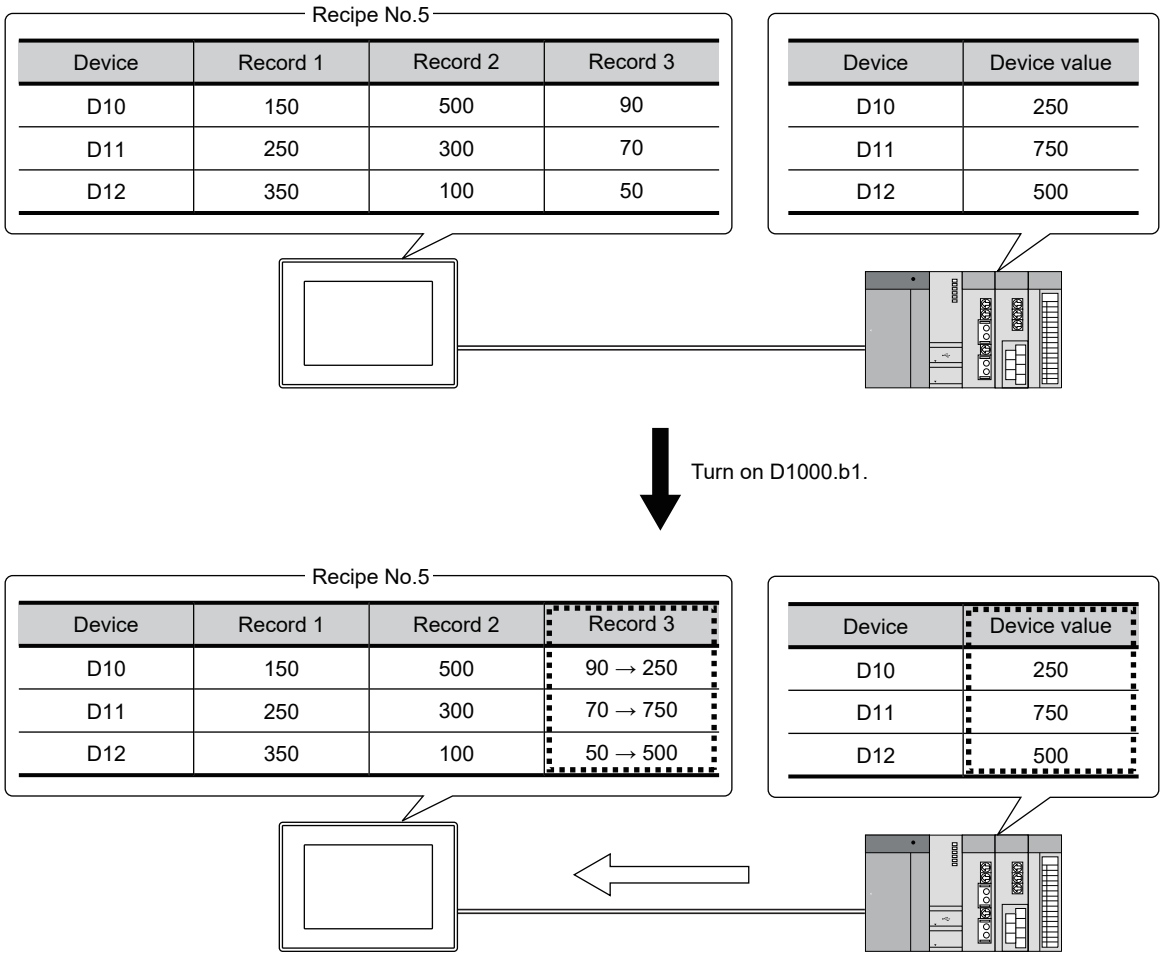
Then, satisfy the condition of the read trigger.

The values of the specified record will be overwritten with the values read from the target devices.

Ex.

Reading device values and overwriting record 3 on recipe No. 5

- [External Control Device]: D1000
- [Recipe No. Storage Device]: D1001 = 5
- [Record No. Storage Device]: D1002 = 3



Point

For the operating specifications of the devices to control the recipe function, refer to the following.

☞ Page 2301 Control devices

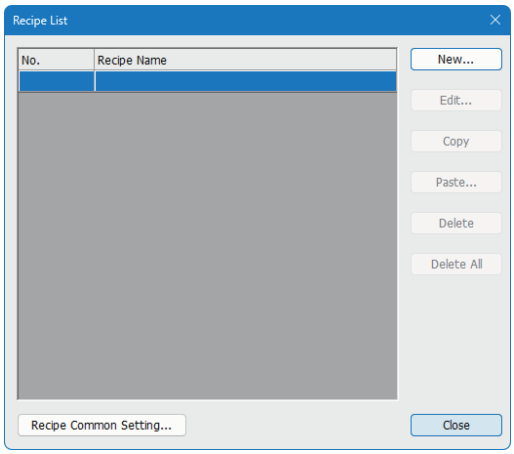
Reading device values with a trigger device of each recipe setting

GT37 SoftGOT3000

■Settings in GT Designer3

1. Select [Common] → [Recipe] → [Recipe] from the menu to display the [Recipe List] dialog.

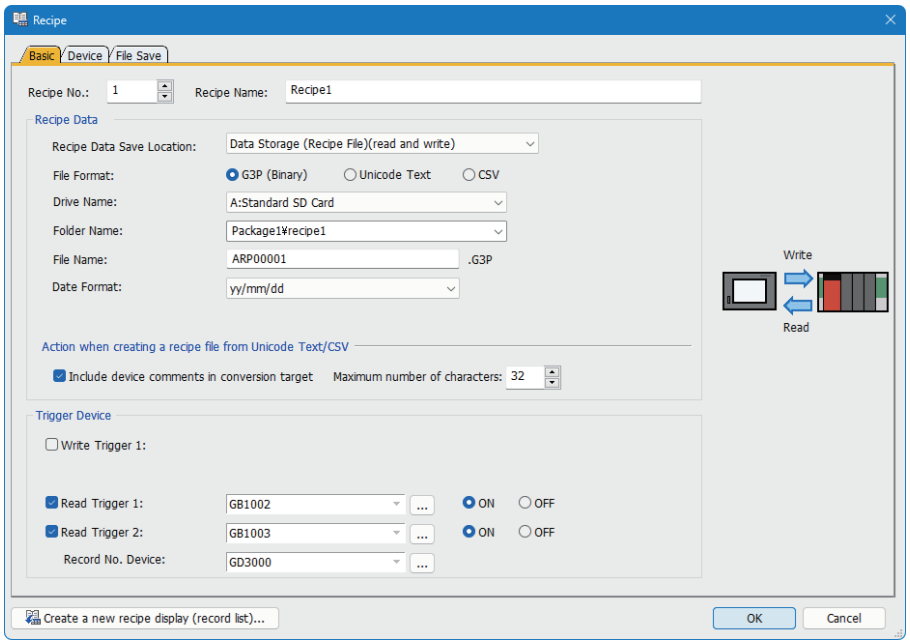
☞ Page 2310 [Recipe List] dialog



2. Perform either of the following operations to display the [Recipe] dialog.

- Click the [New] button.
- Select a recipe setting and click the [Edit] button.

☞ Page 2311 [Recipe] dialog



3. Set the following items in the [Basic] tab, and click the [OK] button.

Item	Description
[Recipe Data Save Location]	Set the save destination of the recipe data. ☞ Page 2249 Recipe data
[Read Trigger 1]	Select this item to set a device and its trigger condition (ON or OFF).
[Read Trigger 2]	Set this item as required.
[Record No. Device]	Set a device. When the number of records is one, record 1 is always specified, and thus no setting is required.

■Operation on the GOT

Input a value into the Record No. device.

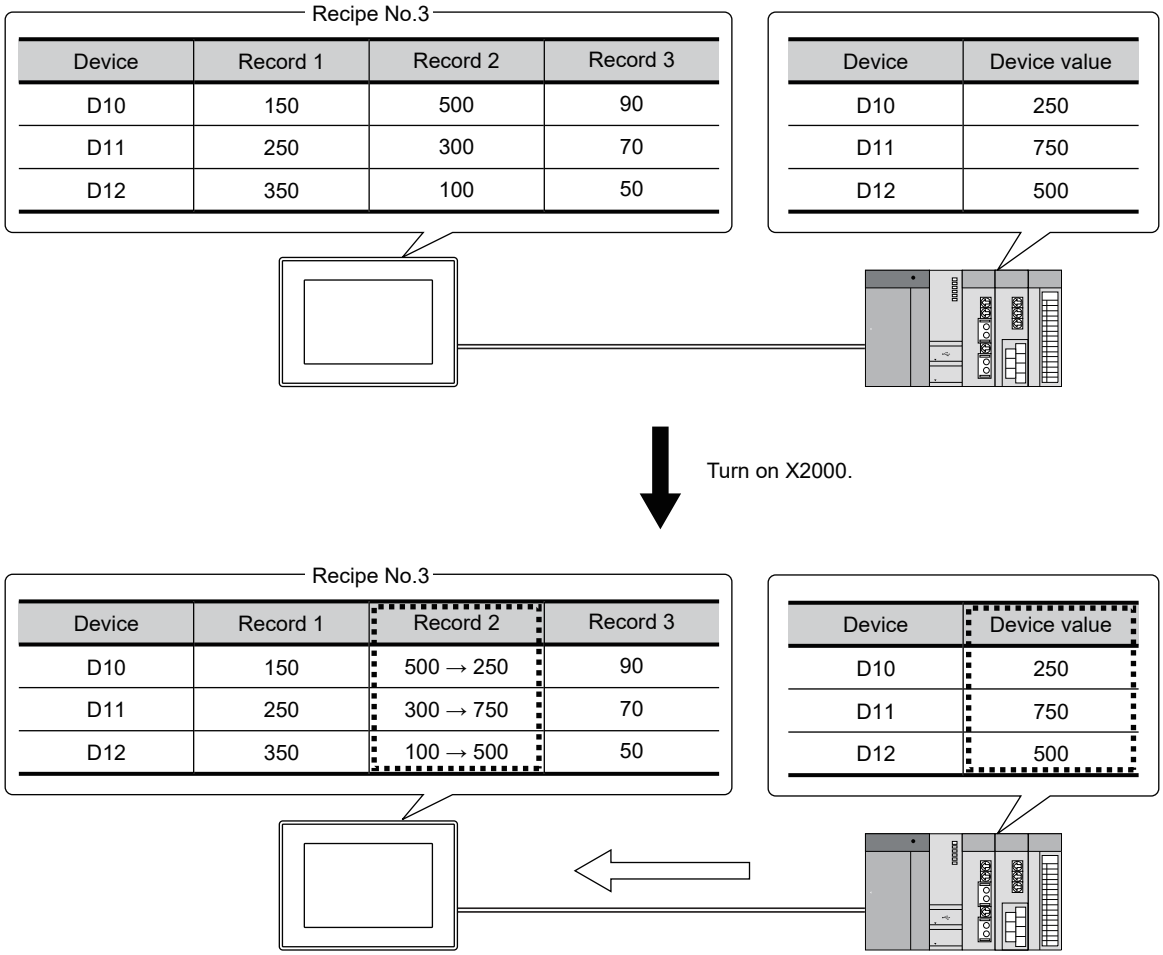
Then, satisfy the condition of the read trigger.

The values of the specified record will be overwritten with the values read from the target devices.

Ex.

Reading device values and overwriting record 2 on recipe No. 3

- [Read Trigger 1] of recipe No. 3: X2000 (Trigger condition: ON)
- [Record No. Device] of recipe No. 3: D1100 = 2



Point

For the operating specifications of the devices to control the recipe function, refer to the following.

☞ Page 2301 Control devices

Precautions for reading

■Reflecting the device values of a record to the project

The project holds the initial device values of records in a recipe setting.

Even if you change a device value of a record on the GOT, the change is not reflected to the project.

To reflect the value changed on the GOT to the project, use GT Designer3 to import the recipe file from the GOT to the project.

☞ Page 441 Reading the data from the GOT

☞ Page 2314 [Device] tab

■When reading cannot be executed

In the save destination, if a recipe file with the same name is already created for another recipe setting, reading device values cannot be executed.

Delete the recipe file from the save destination, then read device values.

66.3.5 Transferring recipe files to edit

GT37 SoftGOT3000

You can transfer recipe files to a personal computer to edit, and then transfer them back to the GOT to use.

The editing method depends on the recipe file format.

File format	Extension	Editing method
Binary format	*.G3P	To edit a recipe file on a personal computer, the file format needs to be converted to the CSV or Unicode text format. After editing the recipe file, convert the file format back to binary format (*.G3P) and use the file on the GOT. ☞ Page 2269 Converting a recipe file
CSV format	*.CSV	For a recipe file in CSV or Unicode text format, edit the file on a personal computer directly. For the precautions for using a CSV file or Unicode text file, refer to the following. ☞ Page 3668 Precautions for using CSV file ☞ Page 3669 Precautions for using Unicode text file
Unicode text format	*.TXT	

The following shows how to transfer a recipe file between the GOT and a personal computer.

☞ Page 2268 Transfer using a data storage

☞ Page 2268 Direct transfer between a personal computer and the GOT

For GT SoftGOT3000, you can manipulate the recipe files stored in virtual drives by using Windows Explorer or others.

For the structure of GT SoftGOT3000 virtual drives, refer to the following.

☞ Page 83 Drive configuration and capacity of GT SoftGOT3000

Point

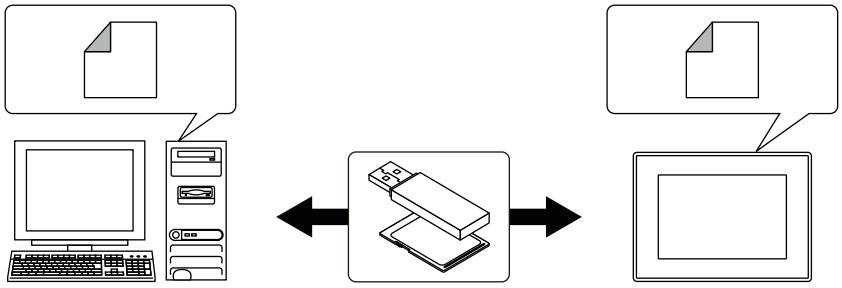
If the save destination of the recipe data is set to the nonvolatile RAM user area, no recipe file will be created. To edit the recipe data stored in the nonvolatile RAM user area on a personal computer, export the data to a recipe file.

☞ Page 2273 Exporting/importing recipe data

Transfer using a data storage

GT37 SoftGOT3000

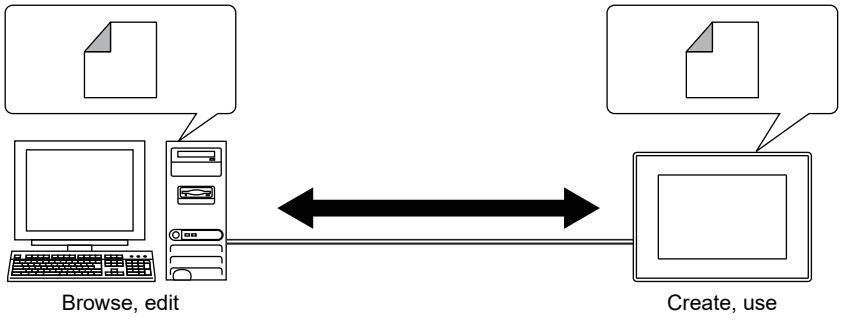
Install a data storage that contains a recipe file to a personal computer, and read the file.
Then, install the data storage that contains the edited recipe file to the GOT to use the file.



Direct transfer between a personal computer and the GOT

GT37 SoftGOT3000

Connect a personal computer and the GOT to transfer recipe files between them.



For information on how to connect the personal computer with the GOT, refer to the following.

☞ Page 420 Connecting a personal computer to the GOT

For the settings to write or read resource data, refer to the following.

☞ Page 465 [GOT Write] tab
☞ Page 472 [GOT Read] tab

66.3.6 Converting a recipe file

GT37 SoftGOT3000

The following methods are available for recipe file conversion.

Conversion method		Description
With a device	External control device (trigger device common in a project)	Use a trigger device to convert a recipe file on the GOT. Convert files one by one. The behavior when the trigger condition is satisfied varies depending on the recipe data save destination setting. ☞ Page 2269 Conversion with an external control device (trigger device common in a project)
In the utility		Convert a recipe file on the [Recipe information] screen on the GOT. Convert files one by one. The recipe data stored in the nonvolatile RAM user area cannot be converted. 📖GOT3000 Series User's Manual (Utility & Maintenance Functions)
On a personal computer (GT Designer3)		Convert a recipe file on a personal computer. Multiple files can be converted at a time. Since the file is converted with GT Designer3, no processing load is put on the GOT. ☞ Page 2272 Conversion in GT Designer3

For precautions for recipe file conversion, refer to the following.

☞ Page 2272 Precautions for conversion

Conversion with an external control device (trigger device common in a project)

GT37 SoftGOT3000

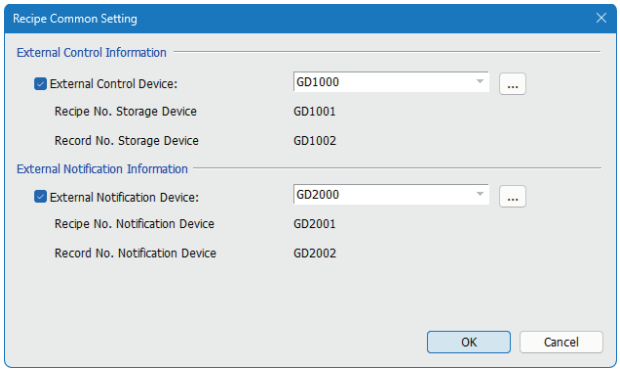
■Settings in GT Designer3

Set a trigger device used for conversion in the common setting.

Set the file format and save destination of conversion destination files for each recipe setting.

1. Select [Common] → [Recipe] → [Recipe Common Setting] from the menu to display the [Recipe Common Setting] dialog.

☞ Page 2309 [Recipe Common Setting] dialog



2. Select [External Control Device], set a device, and click the [OK] button.

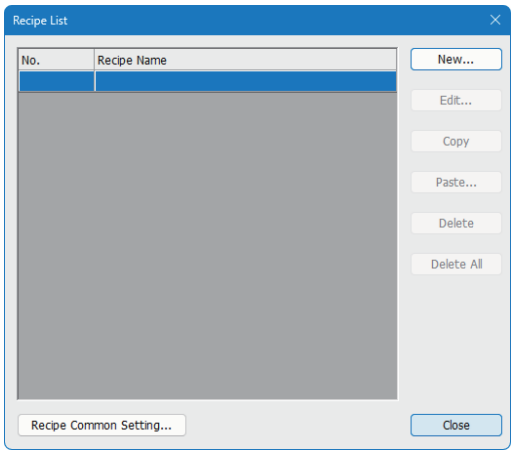
Consecutive devices, starting from the device set in [External Control Device], are automatically set in [Recipe No. Storage Device] and [Record No. Storage Device].

Bit 8 of the device set in [External Control Device] is set as the Convert Recipe File signal, and bit 9 is set as the Reverse-convert Recipe File signal.

☞ Page 2302 Functions of the external control device

3. Select [Common] → [Recipe] → [Recipe] from the menu to display the [Recipe List] dialog.

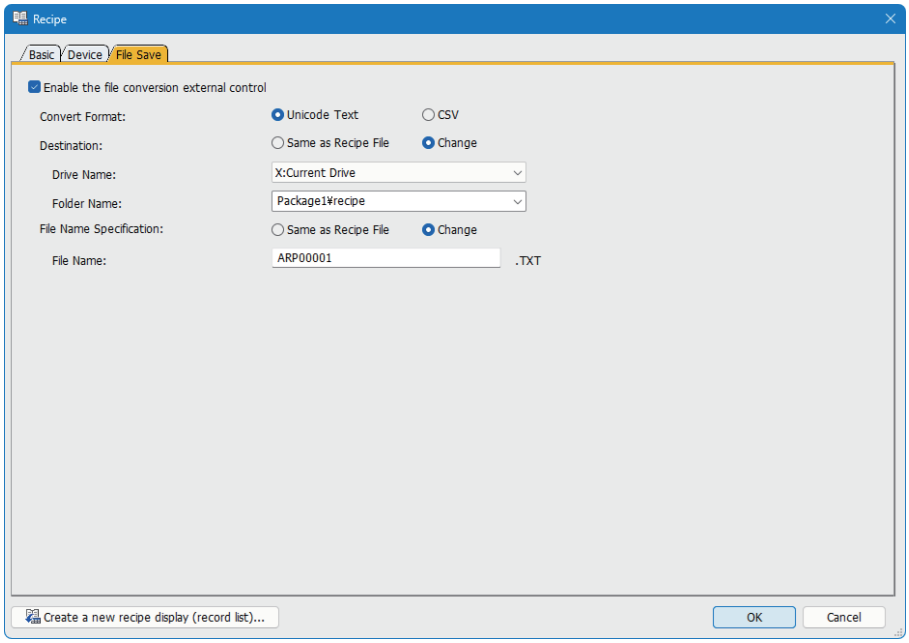
☞ Page 2310 [Recipe List] dialog



4. Perform either of the following operations to display the [Recipe] dialog.

- Click the [New] button.
- Select a recipe setting and click the [Edit] button.

☞ Page 2311 [Recipe] dialog



5. Set the following items in the [File Save] tab, and click the [OK] button.

Item	Description
[Enable the file conversion external control]	Select this item.
[Convert Format]	Select the file format to which a recipe file is converted.
[Destination]	Set this item as required.
[File Name Specification]	Set this item as required.

■Conversion operation (Recipe data save destination: data storage (recipe file))

Enter the recipe number of the recipe file to be converted in the Recipe No. Storage device.

When the trigger conditions are satisfied, the process is executed.

The trigger depends on the process to be executed.

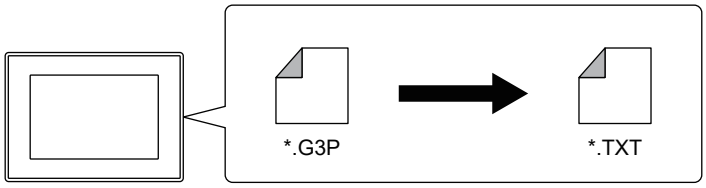
Process to be executed	Trigger
Conversion from the binary format (*.G3P) to the set file format	Turn on the Convert Recipe File signal (bit 8 of the external control device).
Conversion from the set file format to the binary format (*.G3P)	Turn on the Reverse-convert Recipe File signal (bit 9 of the external control device).

The conversion source file remains intact.

Ex.

Converting a recipe file (*.G3P) of recipe No. 5 to a Unicode text format file (*.TXT)

- [External Control Device]: D1000
- [Recipe No. Storage Device]: D1001 = 5



Turn on the Convert Recipe File signal (D1000.b8).

Point

For the operating specifications of the devices to control the recipe function, refer to the following.

☞ Page 2301 Control devices

■Conversion operation (Recipe data save destination: nonvolatile RAM user area)

Input the recipe number of the import or export source file into the Recipe No. Storage device.

When the trigger conditions are satisfied, the process is executed.

The trigger depends on the process to be executed.

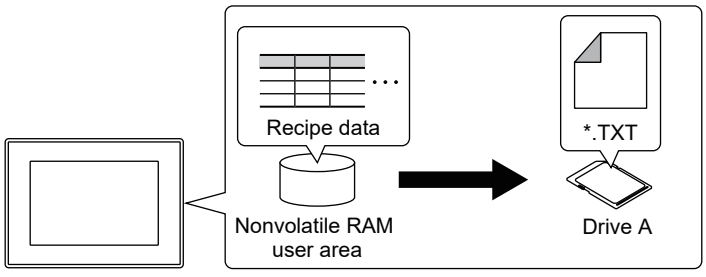
Process to be executed	Trigger
Export from the nonvolatile RAM user area to a recipe file	Turn on the Convert Recipe File signal (bit 8 of the external control device).
Import from a recipe file to the nonvolatile RAM user area	Turn on the Reverse-convert Recipe File signal (bit 9 of the external control device).

After an export operation, the source data remains in the Nonvolatile RAM user area.

Ex.

Exporting the data of recipe No. 5 from the nonvolatile RAM user area to a Unicode text file (*.TXT)

- [External Control Device]: D1000
- [Recipe No. Storage Device]: D1001 = 5



Turn on the Convert Recipe File signal (D1000.b8).

Point

For the operating specifications of the devices to control the recipe function, refer to the following.

☞ Page 2301 Control devices

Conversion in GT Designer3

GT37 SoftGOT3000

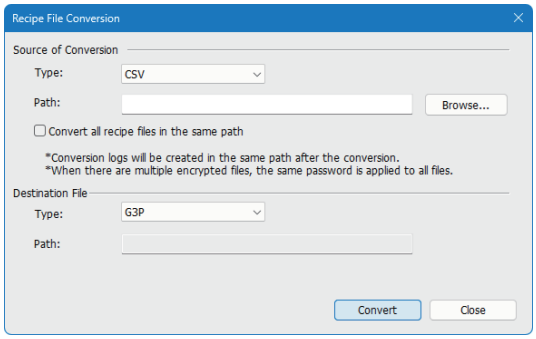
1. Transfer a recipe file to a personal computer from the GOT with one of the following methods.

- Transfer a recipe file with a data storage.
- Transfer a recipe file by connecting the personal computer with the GOT.

☞ Page 441 Reading the data from the GOT

2. Click [Tools] → [Resource Data Conversion] → [Recipe File] from the menu to display the [Recipe File Conversion] dialog.

☞ Page 2321 [Recipe File Conversion] dialog



3. Set the following items, and click the [Convert] button. The converted recipe file is stored in the destination set in [Path] of [Destination File].

The conversion source file remains intact.

Item		Description
[Source of Conversion]	[Type]	Select the file format of the conversion source file.
	[Path]	Set the storage location of the conversion source file.
[Destination File]	[Type]	Select the file format of the conversion destination file.
	[Path]	Set the storage location of the conversion destination file.

Precautions for conversion

■Character code and conversion destination file

If a device comment or record name contains any character other than ASCII and Shift JIS characters, convert the relevant file as shown below.

- Convert the file to Unicode text format.
- Convert the file to a CSV file by turning on GS522.b2.

When using GS522.b2, note the following.

☞ Page 3648 GOT special register (GS)

Precaution	Description
When using a CSV file as a recipe file	Use either of the following combinations. Otherwise, the relevant file is unreadable. • If a CSV file has been created while GS522.b2 is on, make sure that GS522.b2 is on when the file is used. • If a CSV file has been created while GS522.b2 is off, make sure that GS522.b2 is off when the file is used.
When converting a CSV file to a binary file	Use either of the following combinations for conversion. Otherwise, the relevant file cannot be converted. • If a binary file has been converted to a CSV file while GS522.b2 is on, make sure that GS522.b2 is on when the CSV file is converted to a binary file. • If a binary file has been converted to a CSV file while GS522.b2 is off, make sure that GS522.b2 is off when the CSV file is converted to a binary file.

66.3.7 Exporting/importing recipe data

GT37 SoftGOT3000

The recipe data stored in a recipe file or the nonvolatile RAM user area can be exported or imported.

Recipe data save destination	Export/import operation
[Data Storage (Recipe File)(read and write)]	The contents (recipe data) of a recipe file created in the data storage can be exported as a different recipe file. The exported recipe file can be edited and imported to reflect edits to the recipe file in the data storage.
[Embedded Memory in GOT (read and write)]	The recipe data saved in the nonvolatile RAM user area can be exported as a recipe file. The exported recipe file can be edited and imported to reflect edits to the recipe data in the nonvolatile RAM user area.

The following methods are available for exporting or importing recipe files.

Recipe data save destination	Operation method		Description
When [Data Storage (Recipe File)(read and write)] is set	With a special function switch (Recipe data operation)	Export	☞ Page 2274 When the save destination is set to the data storage (recipe file)
		Import	☞ Page 2276 When the save destination is set to the data storage (recipe file)
When [Embedded Memory in GOT (read and write)] is set	With a special function switch (Recipe data operation)	Export	☞ Page 2275 When the save destination is set to the nonvolatile RAM user area
		Import	☞ Page 2277 When the save destination is set to the nonvolatile RAM user area
	With a device	Export	☞ Page 2269 Conversion with an external control device (trigger device common in a project)
		Import	

For transfer or conversion of exported recipe files, refer to the following.

☞ Page 2267 Transferring recipe files to edit

☞ Page 2269 Converting a recipe file

Exporting a recipe file by using a special function switch (Recipe data operation)

GT37 SoftGOT3000

The behavior of the special function switch (Recipe data operation) varies depending on the recipe data save destination setting.

☞ Page 2274 When the save destination is set to the data storage (recipe file)
☞ Page 2275 When the save destination is set to the nonvolatile RAM user area

For the settings of the special function switch (Recipe data operation), refer to the following.

☞ Page 1246 Settings for [Recipe Data Operation]

■When the save destination is set to the data storage (recipe file)

This operation is available for a recipe file in the binary format (*.G3P) only.

When you touch a special function switch ([Switch Action]: [Recipe Data Operation]), the recipe data of the specified recipe number is saved to a specified folder as a recipe file.

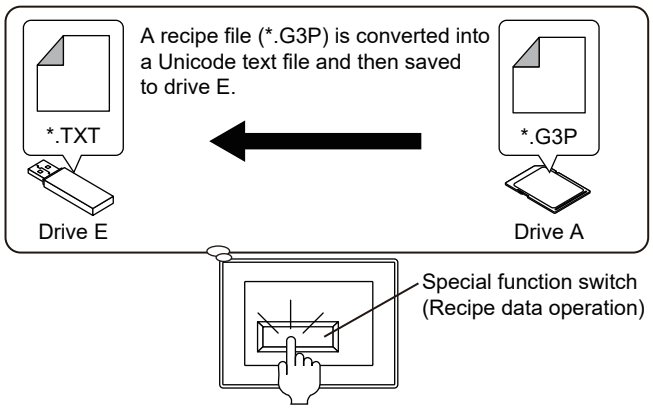
The export destination file must be in the binary format (*.G3P), CSV format (*.CSV), or Unicode text format (*.TXT).

When you specify the CSV format (*.CSV) or Unicode text format (*.TXT) for the export destination file, the export source file is converted to a specified file format and then saved on the GOT.

When you specify the binary format (*.G3P), the file is saved without conversion.

Ex.

When exporting a recipe file (*.G3P) in drive A to drive E



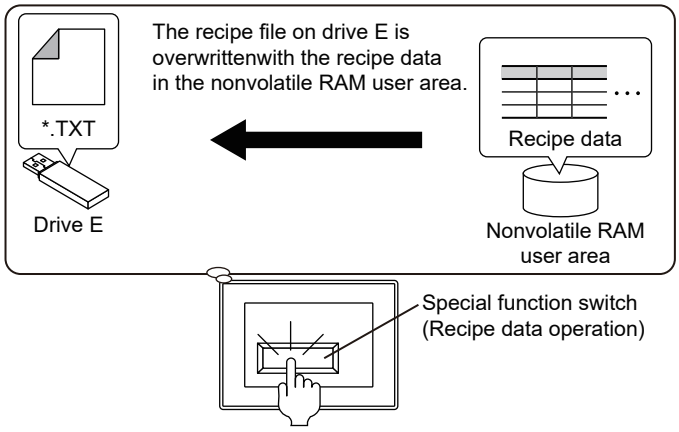
■When the save destination is set to the nonvolatile RAM user area

When you touch a special function switch ([Switch Action]: [Recipe Data Operation]), the recipe data in the nonvolatile RAM user area is saved to a recipe file in a specified folder.

The export destination file must be in the binary format (*.G3P), CSV format (*.CSV), or Unicode text format (*.TXT).

Ex.

When exporting the recipe data in the nonvolatile RAM user area to a recipe file (*.TXT) in drive E



Importing a recipe file by using a special function switch (Recipe data operation)

GT37 SoftGOT3000

The behavior of the special function switch (Recipe data operation) varies depending on the recipe data save destination setting.

☞ Page 2276 When the save destination is set to the data storage (recipe file)
☞ Page 2277 When the save destination is set to the nonvolatile RAM user area

For the settings of the special function switch (Recipe data operation), refer to the following.

☞ Page 1246 Settings for [Recipe Data Operation]

■When the save destination is set to the data storage (recipe file)

This operation is available for a recipe file in the binary format (*.G3P) only.

When you touch a special function switch ([Switch Action]: [Recipe Data Operation]), the recipe file (*.G3P) having the specified recipe number is overwritten with the data from the import source file.

The import source file must be in the binary format (*.G3P), CSV format (*.CSV), or Unicode text format (*.TXT).

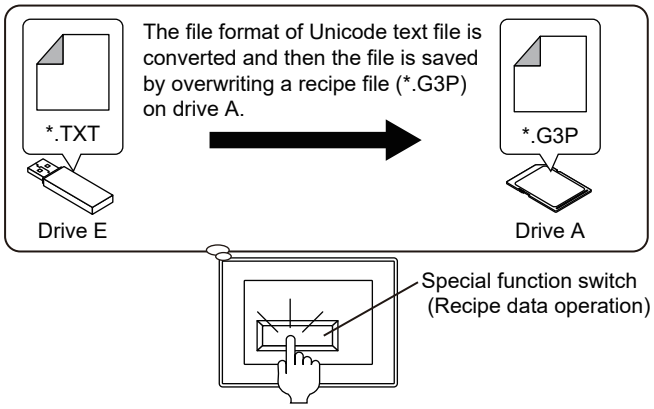
When you use an import source file in the CSV format (*.CSV) or Unicode text format (*.TXT), the file is converted to the binary format and then saved on the GOT.

(The conversion source file is not deleted.)

When you use an import source recipe file in the binary format (*.G3P), the file is saved without conversion.

Ex.

When importing a Unicode text file in drive E to a recipe file (*.G3P) in drive A



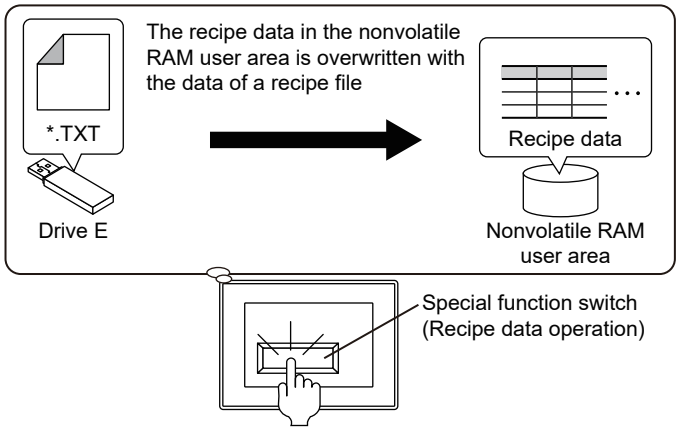
■When the save destination is set to the nonvolatile RAM user area

When you touch a special function switch ([Switch Action]: [Recipe Data Operation]), the recipe data in the nonvolatile RAM user area is overwritten with the data from the import source file.

The import source file must be in the binary format (*.G3P), CSV format (*.CSV), or Unicode text format (*.TXT).

Ex.

When importing a Unicode text file in drive E to the recipe data in the nonvolatile RAM user area



66.3.8 Operations with the recipe display (record list)

GT37 SoftGOT3000

The recipe display (record list) object lists the records of a recipe on the GOT.
The following operations are available on the object by using applicable key code switches.

Operation	Description
Renaming a record	Rename a record.
Read record	Read a record from the PLC.
Write record	Write a record to the PLC.
Verifying a record	Verify the device values of a record against those of the PLC.
Deleting a record	Delete a record.

For operating the recipe display (record list), refer to the following.
☞ Page 1550 Placing a recipe display (record list)
For information on how to link the recipe function with the recipe display (record list) by using GOT special registers, refer to the following.
☞ Page 2296 Link with the recipe display (record list) by using GOT special registers

66.3.9 Operations with the utility

GT37 SoftGOT3000

The following operations are available on the [Recipe information] screen in the utility.

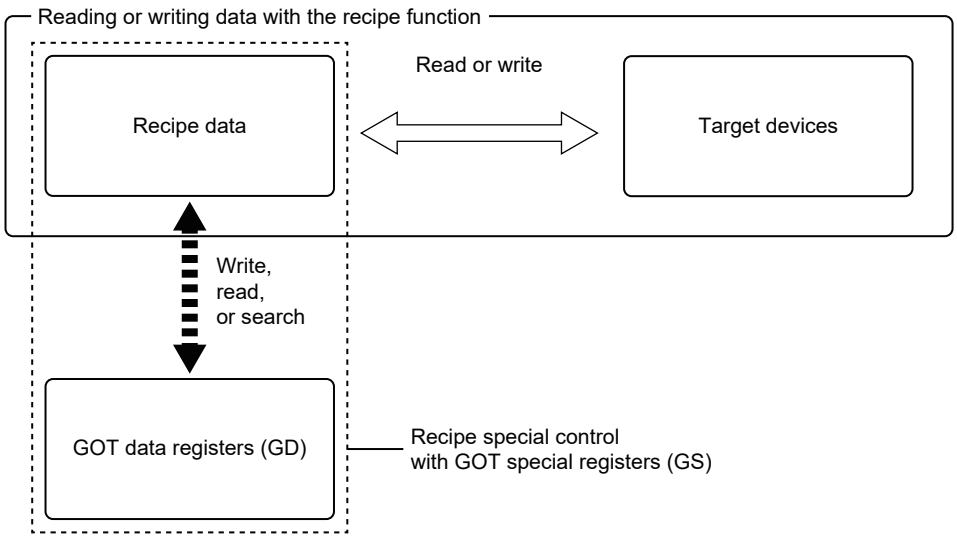
Operation	Description
Copying a file	Copies a recipe file.
Creating a folder	Creates a folder.
Renaming a file	Renames a recipe file.
Delete	Deletes a recipe file.
Moving a file	Moves a recipe file.

For operations on the [Recipe information] screen, refer to the following.
GOT3000 Series User's Manual (Utility & Maintenance Functions)

66.3.10 Operations with GOT special registers (recipe special control)

GT37 SoftGOT3000

With the specific GOT special registers (GS), you can read a record from recipe data into GOT data registers (GD) or overwrite the values of a record with those of GDs.
This function is referred to as the recipe special control.
The recipe special control also enables you to check or edit the recipe data without routing a PLC.



The following lists the actions of the recipe special control.

Action		Description
Resetting notification devices		Reset the Recipe Special Control Result device (GS1011) and the Recipe Special Control No. device (GS1012) to 0. ☞ Page 2283 Resetting notification devices
Reading	Reading a record (in whole)	Read a record from the recipe data by specifying a record number. The read record will be stored into the specified GOT data registers (GD). ☞ Page 2283 Reading a record (in whole)
	Reading a record (in part)	Read part of the data in a record from the recipe data by specifying a record number and row. The read record will be stored into the specified GOT data registers (GD). ☞ Page 2284 Reading a record (in part)
	Reading device comments	This action is available when the save destination of the recipe data is set to the data storage (recipe file). Read the device comments from the recipe data. The read device comments will be stored into the specified GOT data registers (GD). ☞ Page 2285 Reading device comments
Writing	Writing a record (in whole)	Overwrite a record in the recipe data with the values of GOT data registers (GD) by specifying a record number. ☞ Page 2286 Writing a record (in whole)
	Writing a record (in part)	Overwrite a record in the recipe data with the values of GOT data registers (GD) by specifying a record number and target rows. ☞ Page 2287 Writing a record (in part)
	Writing device comments	This action is available when the save destination of the recipe data is set to the data storage (recipe file). Overwrite the device comments in the recipe data with the values of GOT data registers (GD). ☞ Page 2288 Writing device comments
Outputting recipe information		Output the following recipe information of a specified recipe setting: recipe No., recipe file format, recipe name, numbers of records, blocks, and rows, and total number of devices. ☞ Page 2289 Outputting recipe information
Searching	Performing a search by record name	Search recipe data for a record by record name. The record number of the matching record is stored in the Recipe Special Control No. device (GS1012). ☞ Page 2290 Performing a search by record name

For the list of GOT special registers (GS) used for the recipe special control, refer to the following.
☞ Page 2281 GOT special registers (GS) used for the recipe special control

Recipe data targeted for the recipe special control

The recipe special control is usable only for the recipe data saved in a data storage or the nonvolatile RAM user area.
To use the function, select either of the following for [Recipe Data Save Location] in the [Recipe] dialog ([Basic] tab).
☞ Page 2311 [Basic] tab

- [Data Storage (Recipe File)(read and write)]
- [Embedded Memory in GOT (read and write)]

Execution timing of the recipe special control

Execute the recipe special control when no recipe process is performed by the recipe function.

Precautions when using a text display or text input object

Under the recipe special control, recipe names, record names, or device comments are stored in Unicode.
They are stored starting from the least significant bit.
When a device storing the above data is used in a text display or text input object, configure the following settings in the setting dialog of the object.

- Select [Unicode] for [Character Code] in the [Device/Style] tab.
- Select [Display in order of High → Low] in the [Extended] tab.

GOT special registers (GS) used for the recipe special control

You can use the Recipe Special Control Action device (GS1801) to specify the control action, and turn on the Execute Special Control signal (GS1800.b2) to execute the control.

For some actions, you must preset values in GS1802 to GS1808 and the GOT data registers (GD).

The following lists the GOT special registers (GS) used for the recipe special control.

☞ Page 2281 Read device list

☞ Page 2282 Write device list

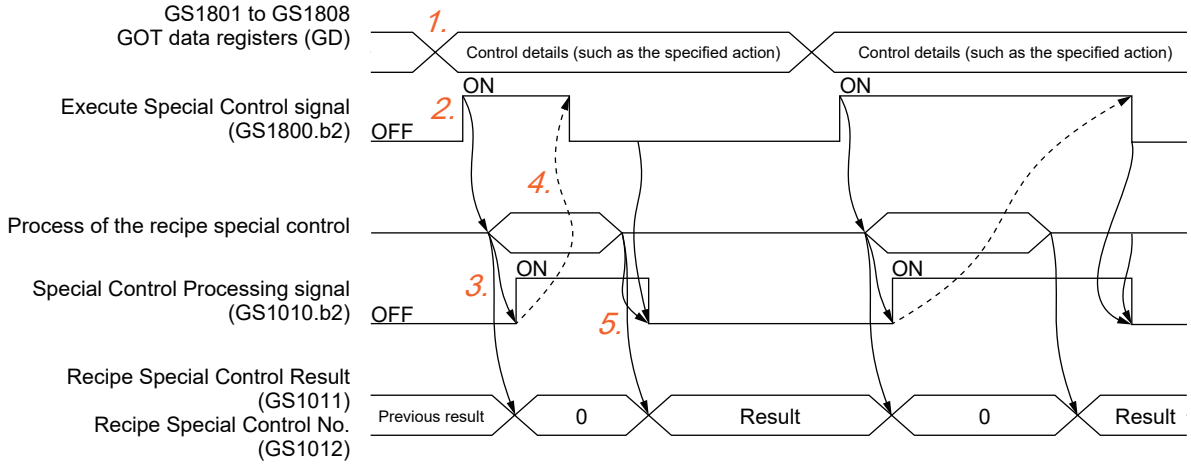
■Read device list

Device		Name	Function
GS1800	b0 to b1	Use prohibited	—
	b2	Execute Special Control Trigger signal	When this signal is turned on, the recipe special control is executed. Set the control details with GS1801 to GS1808. Execute the recipe special control when no recipe process is performed by the recipe function.
	b3 to b13	Use prohibited	—
	b14	Clear Touch Switch Operation Status Information signal	Not used
	b15	Use prohibited	—
GS1801		Recipe Special Control Action	Specify the control action. The action varies with the stored value. • 0: Resets the Recipe Special Control Result device (GS1011) and the Recipe Special Control No. device (GS1012) to 0. • 1: Reads a record from the target recipe data into GOT data registers (GD). • 2: Overwrites the values of a record in the target recipe data with the values of GOT data registers (GD). • 4: Outputs recipe information to GOT data registers (GD). • 5: Searches the target recipe data based on the values of GOT data registers (GD).
GS1802	b0	Control Record Information signal	When this signal is turned on, record information (record No., record attribute, and record name) is set as the control target.
	b1	Control Date of Update signal	When this signal is turned on, the update date and time of a record is set as the control target.
	b2	Control Record Data signal	When this signal is turned on, the device values of a record are set as the control target.
	b3	Control Device Comment signal	When this signal is turned on, device comments are set as the control target.
	b4 to b15	Use prohibited	—
GS1803		Recipe Special Control Start GD Device No.	Specify the start device number of the GOT internal devices (GD) to be used. The data type must be unsigned 16-bit binary.
GS1805		Recipe Special Control Recipe No.	Specify the recipe number of a target recipe setting.
GS1806		Recipe Special Control Record No.	Specify the record number of a target record.
GS1807		Recipe Special Control Row No.	Specify the start row of a record as necessary. Subtract 1 from a target row number, and then set the result. Example 1) To specify row number 1, set 0. Example 2) To specify row number 65536, set 65535.
GS1808		Recipe Special Control Points	Specify the number of target rows of a record as necessary. Starting from the row specified with GS1807, the specified number of rows are targeted for the recipe special control.

■Write device list

Device		Name	Function
GS1010	b0	Import-in-progress signal	Not used
	b1	Export-in-progress signal	Not used
	b2	Special Control Processing signal	Turns on when the recipe special control is executed. Turns off after the control is complete and the Execute Special Control signal (GS1800.b2) is turned off.
	b3 to b13	Use prohibited	—
	b14	Touch Switch Operation Completed signal	Not used
	b15	Touch Switch Operation Error signal	Not used
GS1011		Recipe Special Control Result	Stores the result of the recipe special control. • 0: Normal completion • Value other than 0: Error For details on errors, refer to the following. ☞ Page 2295 Error code list This device is reset to 0 upon turn-on of the Execute Special Control signal (GS1800.b2).
GS1012		Recipe Special Control No.	Stores a record number as the search result. This device is reset to 0 upon turn-on of the Execute Special Control signal (GS1800.b2).

To notify the completion of the recipe special control, check that the Special Control Processing signal (GS1010.b2) is on, and then turn off the Execute Special Control signal (GS1800.b2) to turn off GS1010.b2.



1. Preset values in GS1801 to GS1808 and the GOT data registers (GD) as necessary.

2. Turn on the Execute Special Control signal (GS1800.b2).

3. The recipe special control starts, and the Special Control Processing signal (GS1010.b2) turns on.

The Recipe Special Control Result device (GS1011) and the Recipe Special Control No. device (GS1012) are reset to 0.

4. Check that GS1010.b2 is on, and then turn off GS1800.b2 by using trigger actions or other methods.

5. Upon completion of the recipe special control, GS1010.b2 turns off.

GS1011 stores the result of the control.

If you execute the recipe special control to search for a record, GS1012 stores the search result.

Resetting notification devices

You can reset the Recipe Special Control Result device (GS1011) and the Recipe Special Control No. device (GS1012) to 0.
Set the Recipe Special Control Action device (GS1801) to 0, and then turn on the Execute Special Control signal (GS1800.b2).

Reading a record (in whole)

You can read the record information, date of update, and device values of a target record.
Set GS1801 to GS1808 as shown below, and then turn on the Execute Special Control signal (GS1800.b2).

Device		Set value	Function
GS1801		1	The device value must be set as shown on the left. to specify this action.
GS1802	b0	0, 1	When this bit is turned on, record information (record No., record attribute, and record name) is set to be read. (The record attribute refers to the settings of [Not to set the device value] and [Not to overwrite the device value in a recipe file].) Set this bit as necessary. You can set this bit together with GS1802.b1 and GS1802.b2.
	b1	0, 1	When this bit is turned on, the update date and time of a target record is set to be read. Set this bit as necessary. You can set this bit together with GS1802.b0 and GS1802.b2.
	b2	0, 1	When this bit is turned on, the device values of a target record are set to be read. Set this bit as necessary. You can set this bit together with GS1802.b0 and GS1802.b1.
	b3	0	The device value must be set as shown on the left.
GS1803		0 to 65535	Specify the start device number of the GOT internal devices (GD) that store the read data. Reserve the GOT internal devices (GD) according to the size of data to be read. • Record information: 34 word devices required • Date of update: 4 word devices required • Device values of a record: The required number of word devices varies with the device types and number of devices that are targeted for the control. For the specifications of storing data and each data size, refer to the following. ☞ Page 2291 Record information ☞ Page 2291 Date of update ☞ Page 2292 Device values of a record ☞ Page 2293 Reading record information, date of update, and device values of a target record simultaneously
GS1805		1 to 32767	Specify the recipe number of a target recipe setting.
GS1806		1 to 2000	Specify the record number of a target record.
GS1807		0	The device value must be set as shown on the left.
GS1808		0	The device value must be set as shown on the left. When this device stores 0, all the device values of a target record are read to the GOT data registers (GD).

When the save destination of the recipe data is set to the data storage (recipe file), the operation is as follows: if no recipe file exists in the data storage, a recipe file will be created automatically and the special recipe control will start.
If the recipe file format is set to [CSV] or [Unicode Text], the created file contains the specified record only.
After the control is complete, the Recipe Special Control Result device (GS1011) stores 0.
Stores a value other than 0 if an error occurs.
For the error codes and corrective actions, refer to the following.
☞ Page 2295 Error code list

Reading a record (in part)

You can read the record information, date of update, and device values of a target record.

The values in the specified rows of the record are read.

Set GS1801 to GS1808 as shown below, and then turn on the Execute Special Control signal (GS1800.b2).

Device		Set value	Function
GS1801		1	The device value must be set as shown on the left. to specify this action.
GS1802	b0	0, 1	When this bit is turned on, record information (record No., record attribute, and record name) is set to be read. (The record attribute refers to the settings of [Not to set the device value] and [Not to overwrite the device value in a recipe file].) Set this bit as necessary. You can set this bit together with GS1802.b1 and GS1802.b2.
	b1	0, 1	When this bit is turned on, the update date and time of a target record is set to be read. Set this bit as necessary. You can set this bit together with GS1802.b0 and GS1802.b2.
	b2	1	The device value must be set as shown on the left. When this bit is turned on, the device values of a target record are set to be read. You can set this bit together with GS1802.b0 and GS1802.b1.
	b3	0	The device value must be set as shown on the left.
GS1803		0 to 65535	Specify the start device number of the GOT internal devices (GD) that store the read data. Reserve the GOT internal devices (GD) according to the size of data to be read. • Record information: 34 word devices required • Date of update: 4 word devices required • Device values of a record: The required number of word devices varies with the device types and number of devices that are targeted for the control. For the specifications of storing data and each data size, refer to the following. ☞ Page 2291 Record information ☞ Page 2291 Date of update ☞ Page 2292 Device values of a record ☞ Page 2293 Reading record information, date of update, and device values of a target record simultaneously
GS1805		1 to 32767	Specify the recipe number of a target recipe setting.
GS1806		1 to 2000	Specify the record number of a target record.
GS1807		0 to 65535	Specify the start row to be read. Subtract 1 from a target row number, and then set the result.
GS1808		1 to 65535	Set the number of rows to be read.

When the save destination of the recipe data is set to the data storage (recipe file), the operation is as follows: if no recipe file exists in the data storage, a recipe file will be created automatically and the special recipe control will start.

If the recipe file format is set to [CSV] or [Unicode Text], the created file contains the specified record only.

After the control is complete, the Recipe Special Control Result device (GS1011) stores 0.

Stores a value other than 0 if an error occurs.

For the error codes and corrective actions, refer to the following.

☞ Page 2295 Error code list

Reading device comments

You can read device comments.

This operation is available when the save destination of the recipe data is set to the data storage (recipe file).

Note that device comments must be read independently of the other data (such as record information).

If the target recipe file is in the binary format (*.G3P), the device comments are read from the file.

If the target recipe file is in the CSV or Unicode text format (*.CSV or *.TXT), the device comments are read from the corresponding recipe setting in the project.

Set GS1801 to GS1808 as shown below, and then turn on the Execute Special Control signal (GS1800.b2).

Device		Set value	Function
GS1801		1	The device value must be set as shown on the left. to specify this action.
GS1802	b0	0	The device value must be set as shown on the left.
	b1	0	The device value must be set as shown on the left.
	b2	0	The device value must be set as shown on the left.
	b3	1	The device value must be set as shown on the left. When this bit is turned on, device comments are set to be read. You cannot set this bit together with GS1802.b0, GS1802.b1, and GS1802.b2.
GS1803		0 to 65535	Specify the start device number of the GOT internal devices (GD) that store the read data. Reserve the GOT internal devices (GD) according to the size of data to be read. • Device comment: 32 word devices × specified number of rows For the specifications of storing data and each data size, refer to the following. ☞ Page 2293 Device comment
GS1805		1 to 32767	Specify the recipe number of a target recipe setting.
GS1806		1 to 2000	Specify the record number of a target record.
GS1807		0 to 65535	Specify the start row to be read. Subtract 1 from a target row number, and then set the result.
GS1808		1 to 65535	Set the number of rows to be read.

If you execute the recipe special control for a recipe setting without the corresponding recipe file, a recipe file is created automatically and then the control starts. (Only when the recipe file format is set to [G3P (Binary)])

After the control is complete, the Recipe Special Control Result device (GS1011) stores 0.

Stores a value other than 0 if an error occurs.

For the error codes and corrective actions, refer to the following.

☞ Page 2295 Error code list

Writing a record (in whole)

You can overwrite record information (record name only) and device values of a target record.

Store the write source data in GOT data registers (GD).

Set GS1801 to GS1808 as shown below, and then turn on the Execute Special Control signal (GS1800.b2).

Device		Set value	Function
GS1801		2	The device value must be set as shown on the left. to specify this action.
GS1802	b0	0, 1	When this bit is turned on, record information (record name only) is set to be overwritten. Set this bit as necessary. You can set this bit together with GS1802.b1 and GS1802.b2.
	b1	0, 1	This bit is disabled because the date of update cannot be overwritten.
	b2	0, 1	When this bit is turned on, the device values of a target record are set to be overwritten. Set this bit as necessary. You can set this bit together with GS1802.b0 and GS1802.b1.
	b3	0	The device value must be set as shown on the left.
GS1803		0 to 65535	Specify the start device number of the GOT data registers (GD) that store the write source data. Store the write source data in the GOT data registers (GD) according to the specifications of storing data. • Record information: 34 word devices required • Date of update: 4 word devices required • Device values of a record: The required number of word devices varies with the device types and number of devices that are targeted for the control. For the specifications of storing data and each data size, refer to the following. ☞ Page 2291 Record information ☞ Page 2291 Date of update ☞ Page 2292 Device values of a record ☞ Page 2293 Reading record information, date of update, and device values of a target record simultaneously
GS1805		1 to 32767	Specify the recipe number of a target recipe setting.
GS1806		1 to 2000	Specify the record number of a target record.
GS1807		0	The device value must be set as shown on the left.
GS1808		0	The device value must be set as shown on the left. When this device stores 0, all the device values of a target record are overwritten.

When the save destination of the recipe data is set to the data storage (recipe file), the operation is as follows: if no recipe file exists in the data storage, a recipe file will be created automatically and the special recipe control will start.

If the recipe file format is set to [CSV] or [Unicode Text], the created file contains the specified record only.

The date and time at which the device values of a record are overwritten is stored as the update date and time of the record.

If [Not to overwrite the device value in a recipe file] is selected in the record attribute setting, overwriting the device values results in an error. (If both record information and device values are set to be overwritten, record information is also not overwritten.)

After the control is complete, the Recipe Special Control Result device (GS1011) stores 0.

Stores a value other than 0 if an error occurs.

For the error codes and corrective actions, refer to the following.

☞ Page 2295 Error code list

Writing a record (in part)

You can overwrite record information (record name only) and device values of a target record.
The values in the specified rows of the record are written.
Store the write source data in GOT data registers (GD).
Set GS1801 to GS1808 as shown below, and then turn on the Execute Special Control signal (GS1800.b2).

Device		Set value	Function
GS1801		2	The device value must be set as shown on the left. to specify this action.
GS1802	b0	0, 1	When this bit is turned on, record information (record name only) is set to be overwritten. Set this bit as necessary. You can set this bit together with GS1802.b1 and GS1802.b2.
	b1	0, 1	This bit is disabled because the date of update cannot be overwritten.
	b2	1	The device value must be set as shown on the left. When this bit is turned on, the device values of a target record are set to be overwritten. You can set this bit together with GS1802.b0 and GS1802.b1.
	b3	0	The device value must be set as shown on the left.
GS1803		0 to 65535	Specify the start device number of the GOT data registers (GD) that store the write source data. Store the write source data in the GOT data registers (GD) according to the specifications of storing data. • Record information: 34 word devices required • Date of update: 4 word devices required • Device values of a record: The required number of word devices varies with the device types and number of devices that are targeted for the control. For the specifications of storing data and each data size, refer to the following. ☞ Page 2291 Record information ☞ Page 2291 Date of update ☞ Page 2292 Device values of a record ☞ Page 2293 Reading record information, date of update, and device values of a target record simultaneously
GS1805		1 to 32767	Specify the recipe number of a target recipe setting.
GS1806		1 to 2000	Specify the record number of a target record.
GS1807		0 to 65535	Specify the start row to be written. Subtract 1 from a target row number, and then set the result.
GS1808		1 to 65535	Set the number of rows to be written.

When the save destination of the recipe data is set to the data storage (recipe file), the operation is as follows: if no recipe file exists in the data storage, a recipe file will be created automatically and the special recipe control will start.
If the recipe file format is set to [CSV] or [Unicode Text], the created file contains the specified record only.
The date and time at which the device values of a record are overwritten is stored as the update date and time of the record.
If [Not to set the device value] is selected in the record attribute setting, the device values in the unspecified rows are overwritten with 0.
If [Not to overwrite the device value in a recipe file] is selected in the record attribute setting, overwriting the device values results in an error. (If both record information and device values are set to be overwritten, record information is also not overwritten.)
After the control is complete, the Recipe Special Control Result device (GS1011) stores 0.
Stores a value other than 0 if an error occurs.
For the error codes and corrective actions, refer to the following.
☞ Page 2295 Error code list

Writing device comments

You can overwrite device comments.

This operation is available when the save destination of the recipe data is set to the data storage (recipe file).

Note that device comments must be overwritten independently of the other data (such as record information).

To overwrite device comments, satisfy all the following conditions.

- A binary recipe file (*.G3P) is used.
- [Include device comments in conversion target] is selected when a recipe file in the CSV or Unicode text format is converted back to the binary format.

Store the write source data in GOT data registers (GD).

Set GS1801 to GS1808 as shown below, and then turn on the Execute Special Control signal (GS1800.b2).

Device		Set value	Function
GS1801		2	The device value must be set as shown on the left. to specify this action.
GS1802	b0	0	The device value must be set as shown on the left.
	b1	0	The device value must be set as shown on the left.
	b2	0	The device value must be set as shown on the left.
	b3	1	The device value must be set as shown on the left. When this bit is turned on, device comments are set to be overwritten. You cannot set this bit together with GS1802.b0, GS1802.b1, and GS1802.b2.
GS1803		0 to 65535	Specify the start device number of the GOT data registers (GD) that store the write source data. Store the write source data in the GOT data registers (GD) according to the specifications of storing data. • Device comment: 32 word devices × specified number of rows For the specifications of storing data and each data size, refer to the following. ☞ Page 2293 Device comment
GS1805		1 to 32767	Specify the recipe number of a target recipe setting.
GS1806		1 to 2000	Specify the record number of a target record.
GS1807		0 to 65535	Specify the start row to be written. Subtract 1 from a target row number, and then set the result.
GS1808		1 to 65535	Set the number of rows to be written.

If you execute the recipe special control for a recipe setting without the corresponding recipe file, a recipe file is created automatically and then the control starts. (Only when the recipe file format is set to [G3P (Binary))

After the control is complete, the Recipe Special Control Result device (GS1011) stores 0.

Stores a value other than 0 if an error occurs.

For the error codes and corrective actions, refer to the following.

☞ Page 2295 Error code list

Outputting recipe information

You can output information on the specified recipe setting.

Set GS1801 to GS1808 as shown below, and then turn on the Execute Special Control signal (GS1800.b2).

Device	Set value	Function
GS1801	4	The device value must be set as shown on the left. to specify this action.
GS1803	0 to 65535	Specify the start device number of the GOT internal devices (GD) that store the read data. Reserve the GOT internal devices (GD) according to the size of data to be read. • Record information: 40 word devices required For the specifications of storing data and each data size, refer to the following. ☞ Page 2294 Recipe information
GS1805	1 to 32767	Specify the recipe number of a target recipe setting.
GS1806	0	The device value must be set as shown on the left.
GS1807	0	The device value must be set as shown on the left.
GS1808	0	The device value must be set as shown on the left.

After the control is complete, the Recipe Special Control Result device (GS1011) stores 0.

Stores a value other than 0 if an error occurs.

For the error codes and corrective actions, refer to the following.

☞ Page 2295 Error code list

Performing a search by record name

You can search for a record that has the specified record name.

When the target recipe files are in the CSV or Unicode text format (*.CSV or *.TXT), each file contains one record only. Each time the recipe file corresponding to a record is not found, the specified recipe setting in the project is searched.

Set GS1801 to GS1808 as shown below, and then turn on the Execute Special Control signal (GS1800.b2).

Device		Set value	Function
GS1801		5	The device value must be set as shown on the left. to specify this action.
GS1802	b0	1	The device value must be set as shown on the left. When this bit is turned on, a record having the specified record name is searched for.
	b1	0	The device value must be set as shown on the left.
	b2	0	The device value must be set as shown on the left.
	b3	0	The device value must be set as shown on the left.
GS1803		0 to 65535	Specify the start device number of the GOT data registers (GD) that store the record name for search. Store the name in the GOT data registers (GD) according to the specifications of storing data. • Record name for search: 32 word devices required For the specifications of storing data and each data size, refer to the following. ☞ Page 2294 Record name for search
GS1805		1 to 32767	Specify the recipe number of a target recipe setting.
GS1806		0 to 2000	Specify the record number of a record from which a search starts. The search is performed in ascending order of the record numbers. When this device stores 0, the search starts from record No.1.
GS1807		0	The device value must be set as shown on the left.
GS1808		0	The device value must be set as shown on the left.

When the save destination of the recipe data is set to the data storage (recipe file), the operation is as follows: if no recipe file exists in the data storage, a recipe file will be created automatically and the special recipe control will start.

(Only when the recipe file format is set to [G3P (Binary))

Upon completion of the control, the Recipe Special Control Result device (GS1011) and the Recipe Special Control No. device (GS1012) store a value according to the search result.

- If the matching record is found, GS1011 stores 1, and GS1012 stores the record number.
- If no matching record is found, GS1011 and GS1012 each store 0.

If an error occurs, GS1011 stores a value other than 0 and 1.

For the error codes and corrective actions, refer to the following.

☞ Page 2295 Error code list

If a recipe file in the CSV or Unicode text format (*.CSV or *.TXT) causes an error during a search, the Recipe Special Control No. device (GS1012) stores the record number of the recipe file.

If the error has been caused by any other reason, GS1012 stores 0.

Specifications of storing data in GOT data registers (GD)

When you execute the recipe special control to read data, the GOT data registers (GD) store the read data as shown below.
Store the write source data to the GOT data registers (GD) in the same manner.

☞ Page 2291 Record information
☞ Page 2291 Date of update
☞ Page 2292 Device values of a record
☞ Page 2293 Reading record information, date of update, and device values of a target record simultaneously
☞ Page 2293 Device comment
☞ Page 2294 Recipe information
☞ Page 2294 Record name for search

■Record information

To store record information, reserve 34 word devices.

Ex.
Start device: GD1000

GD1000	Record No.
GD1001	Record attribute
GD1002	Record name
⋮	
GD1033	

} 34 word devices

Order	Stored data	Details
Start device	Record No.	This device is disabled and skipped at the time of writing data.
2nd device	Record attribute	• b0: With or without initial device values (0: With, 1: Without) • b1: Writable or write-protect (0: Writable, 1: Write-protect) • b2 to b15: Use prohibited This device is disabled and skipped at the time of writing data.
3rd device to the 33rd device	Record name	The data is stored in Unicode. If a record name has less than 32 characters, the name is stored with a termination character (0) appended. If a record name has 32 characters, the name is stored with no termination character appended.

■Date of update

To store the date of update, reserve four word devices.

Ex.
Start device: GD1000

GD1000	Month and year
GD1001	Day and hour
GD1002	Minute and second
GD1003	Day of the week

} 4 word devices

Order	Stored data	Details
Start device	Month and year	• b8 to b15: Year (Data type: BCD) • b0 to b7: Month (Data type: BCD) This device is disabled and skipped at the time of writing data.
2nd device	Date and hour	• b8 to b15: Date (Data type: BCD) • b0 to b7: Hour (Data type: BCD) This device is disabled and skipped at the time of writing data.
3rd device	Minute and second	• b8 to b15: Minute (Data type: BCD) • b0 to b7: Second (Data type: BCD) This device is disabled and skipped at the time of writing data.
4th device	Day of the week	• b8 to b15: Use prohibited • b0 to b7: Day of the week (0: Sunday, 1: Monday, 2: Tuesday, 3: Wednesday, 4: Thursday, 5: Friday, 6: Saturday) This device is disabled and skipped at the time of writing data.

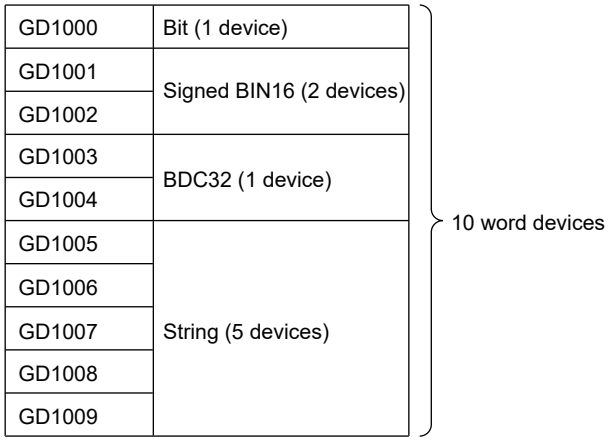
■Device values of a record

For storing the device values of a record, the required number of word devices varies with the device types and number of devices in the record.

The device values of a record are stored in the order specified in the recipe setting.

Ex.

Start device: GD1000, Bit: 1 device, Signed BIN16: 2 devices, BCD32: 1 device, String: 5 devices



Device type	Required number of word devices	Details
Bit	1	Only the value of bit 0 is applied.
Signed 8-bit binary	1	—
Unsigned 8-bit binary	1	—
Signed 16-bit binary	1	—
Unsigned 16-bit binary	1	—
Signed 32-bit binary	2	—
Unsigned 32-bit binary	2	—
Signed 64-bit binary	4	—
Unsigned 64-bit binary	4	—
16-bit binary-coded decimal	1	—
32-bit binary-coded decimal	2	—
64-bit binary-coded decimal	4	—
Real number (32-bit)	2	—
Real number (64-bit)	4	—
String	Specified number of devices	The specified number of word devices are used. Data is stored in the specified character code.

■Reading record information, date of update, and device values of a target record simultaneously

The record information, date of update, and device values are stored in that order.

Ex.

Reading record information, date of update, and device values of a record with the start device GD1000

Record information	GD1000	Record No.	34 word devices
	GD1001	Record attribute	
	GD1002	Record name	
	⋮		
	GD1033		
Date of update	GD1034	Month and year	4 word devices
	GD1035	Day and hour	
	GD1036	Minute and second	
	GD1037	Day of the week	
Device values of a record	GD1038	Bit (1 device)	10 word devices
	GD1039	Signed BIN16 (2 devices)	
	GD1040		
	GD1041	BDC32 (1 device)	
	GD1042		
	GD1043	String (5 devices)	
	GD1044		
	GD1045		
	GD1046		
	GD1047		

■Device comment

To store one device comment, reserve 32 word devices. For two or more device comments, multiply 32 word devices by the specified number of rows.

Ex.

Start device: GD1000, specified number of rows: 5

GD1000	Device comment (1st row)	160 word devices
⋮		
GD1031		
⋮	⋮	
GD1128	Device comment (5th row)	
⋮		
GD1159		

Order	Stored data	Details
Start device to the 32nd device	Device comment	Storing one device comment requires 32 word devices.

The data is stored in Unicode.

■Recipe information

To store recipe information, reserve 40 word devices.

Ex.

Start device: GD1000

GD1000	Recipe No.	40 words
GD1001	File format	
GD1002	Recipe name	
⋮		
GD1033		
GD1034	Number of records	
GD1035	Number of blocks	
GD1036	Number of rows	
GD1037		
GD1038	Total number of devices	
GD1039		

Order	Stored data	Details
Start device	Recipe No.	—
2nd device	File format	Recipe file format • 0: Does not use a recipe file. • 1: Binary format (*.G3P) • 2: CSV format (*.CSV) • 3: Unicode text format (*.TXT)
3rd device to the 34th device	Recipe name	The data is stored in Unicode. If a record name has less than 32 characters, the name is stored with a termination character (0) appended. If a record name has 32 characters, the name is stored with no termination character appended.
35th device	Number of records	—
36th device	Number of blocks	—
37th and 38th devices	Number of rows	Number of rows of the recipe setting
39th and 40th devices	Total number of devices	Total number of devices of the recipe setting

■Record name for search

To store a record name for search, reserve 32 word devices.

Ex.

Start device: GD1000

GD1000	Record name for search	32 word devices
⋮		
GD1031		

Order	Stored data	Details
Start device to the 32nd device	Record name for search	The data is stored in Unicode. The stored record name (including the termination character (0)) is used as the search criterion.

Error code list

The following lists the error codes that are stored in the Recipe Special Control Result device (GS1011) and the corrective actions.

Error code	Cause and corrective action
-1	Any of the set values in GS1801 to GS1808 is incorrect. Correct the set values.
322	The specified device number is outside the device range for GOT data registers (GD). Specify a device number within the device range.
345	A binary-to-BCD conversion error occurred. Make sure that the data types of the target device values are the same as the device types set in the recipe setting.
575	Device comments cannot be overwritten because the recipe file is not in the binary format (*.G3P) or [Include device comments in conversion target] is not selected in the [Recipe] dialog ([Basic] tab). Select [Include device comments in conversion target] in the recipe setting in the project.
576	The specified row number is nonexistent. Specify an existent row number.
581	An invalid recipe file exists. Delete the invalid recipe file.
582	Creating a recipe file has failed. Check that the following conditions are satisfied, and then execute the recipe special control again. • A data storage is installed on the GOT. • The SD card cover is closed. • The SD card access switch is turned on. • The installed data storage has enough free space.
583	Writing data to the target recipe file has failed. Check that the following conditions are satisfied, and then execute the recipe special control again. • The data storage is not write-protected. • The recipe file is not write-protected.
584	Writing data to the target recipe file has failed. Do not remove the data storage during the recipe special control. For saving recipe data to the nonvolatile RAM user area, consult your local sales office.
585	Reading data from the target recipe file has failed. Do not remove the data storage during the recipe special control. For saving recipe data to the nonvolatile RAM user area, consult your local sales office.
586	The specified recipe number is nonexistent. Specify an existent recipe number.
587	The specified record number is nonexistent. Specify an existent record number.
588	The target record cannot be overwritten because the record is write-protected. Disable the write protection for the target record in the recipe setting in the project, or specify another writable record.
589	The recipe special control cannot be executed because the target recipe setting is set not to use a recipe file. Execute the recipe special control for a recipe setting that is set to use a recipe file.
591	The contents of the target recipe file do not match the source recipe setting. Correct the recipe setting in the project, and then write the data to the GOT again.

66.3.11 Link with the recipe display (record list) by using GOT special registers

GT37 SoftGOT3000

The following GOT special registers store information of the recipe display (record list).

GOT special register (GS)	Description
GS1013	Stores the recipe number for the records displayed on the recipe display (record list).
GS1014	Stores the record number selected on the recipe display (record list).

With GS1013 and GS1014, you can specify a recipe number and a record number on the recipe display (record list), and perform operations such as the following.

- Write the values of GS1013 and GS1014 to the PLC CPU devices (Recipe No. Storage device and Record No. Storage device specified in the recipe common setting), and run a sequence program to turn on the trigger device of the target recipe process.
- Write the values of GS1013 and GS1014 to the GOT special registers (GS1805 and GS1806), and turn on the trigger device of the recipe special control.

For the recipe common setting, refer to the following.

☞ Page 2309 [Recipe Common Setting] dialog

For the recipe special control, refer to the following.

☞ Page 2279 Operations with GOT special registers (recipe special control)

Application example

Execute the recipe special control to read the device values of the record selected on the recipe display (record list), and display the read values on numerical display objects.

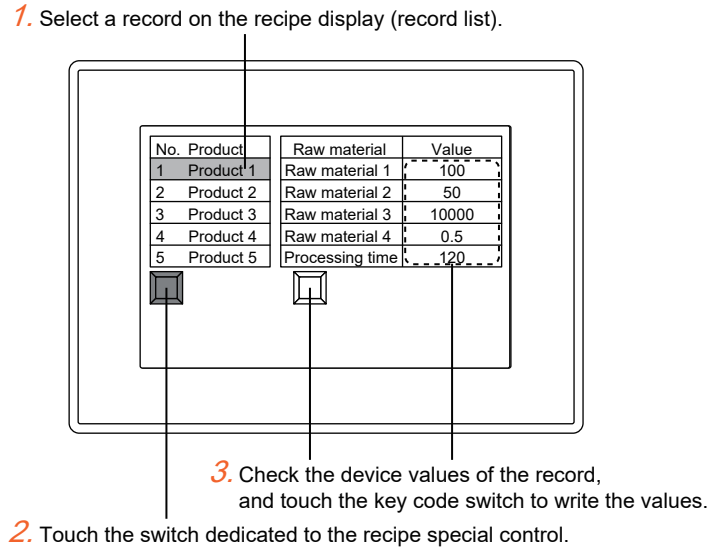
Check the values on numerical display objects, and write the values to target devices.

■Settings in GT Designer3

Place the following objects on the screen.

Object	Description
Switch	Inputs data to the GOT special registers (GS1801 to GS1803, GS1807, and GS1808), and executes the recipe special control. Set the following actions to run in top-to-bottom order as shown below. • [Word Set]: Write 1 to GS1801. • [Word Set]: Write the start device number of GOT data registers (GD) to GS1803. (The start device number is user-configurable, and the GD devices store the device values of a record.) • [Word Set]: Write the value of GS1013 to GS1805. • [Word Set]: Write the value of GS1014 to GS1806. • [Word Set]: Write 0 to GS1807. • [Word Set]: Write 0 to GS1808. • [Bit Set]: Turn on GS1802.b2. • [Bit Reset]: Turn off GS1802.b0. • [Bit Reset]: Turn off GS1802.b1. • [Bit Reset]: Turn off GS1802.b3. • [Bit Momentary]: Turn on GS1800.b2 while the switch is being touched.
Key code switch	Writes the device values of a record to target devices. Use the applicable key code switch that is placed automatically upon placement of the recipe display (record list). When placing the applicable key code switch manually, configure the following settings. • Select [Recipe Display (Record List)] for [Key Code Type]. • Select [Load record] for [Action].
Numerical display	Displays a device value of the record that has been read by the recipe special control. Place numerical displays corresponding to the number of target devices. Set the numerical displays according to the types of devices in the record.
Recipe display (record list)	On this object, select a recipe number and a record number that are targeted for the recipe special control. In [Recipe No.], specify a target recipe number.

■Operation on the GOT



1. On the recipe display (record list), select a record to write its device values to target devices.
2. Touch the switch dedicated to the recipe special control to display the device values of the selected record on the numerical displays.
3. Check the displayed values, and touch the applicable key code switch to write the values to target devices.

66.3.12 Using a GOT2000 recipe file (*.G2P)

GT37 SoftGOT3000

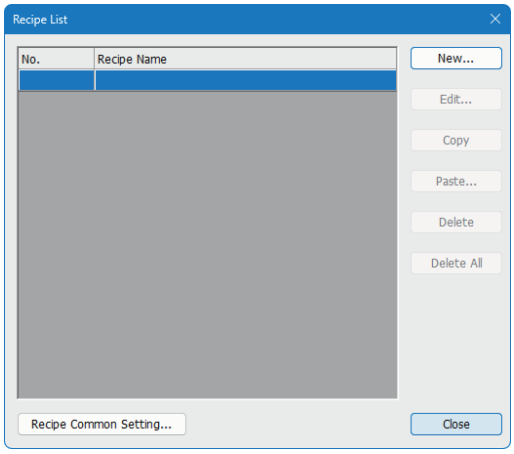
You can use a GOT2000 recipe file (*.G2P) to create a GOT3000 recipe file (*.G3P).

Settings in GT Designer3

Set the following with GT Designer3 (GOT3000) according to the recipe file (*.G2P) used.

1. Select [Common] → [Recipe] → [Recipe] from the menu to display the [Recipe List] dialog.

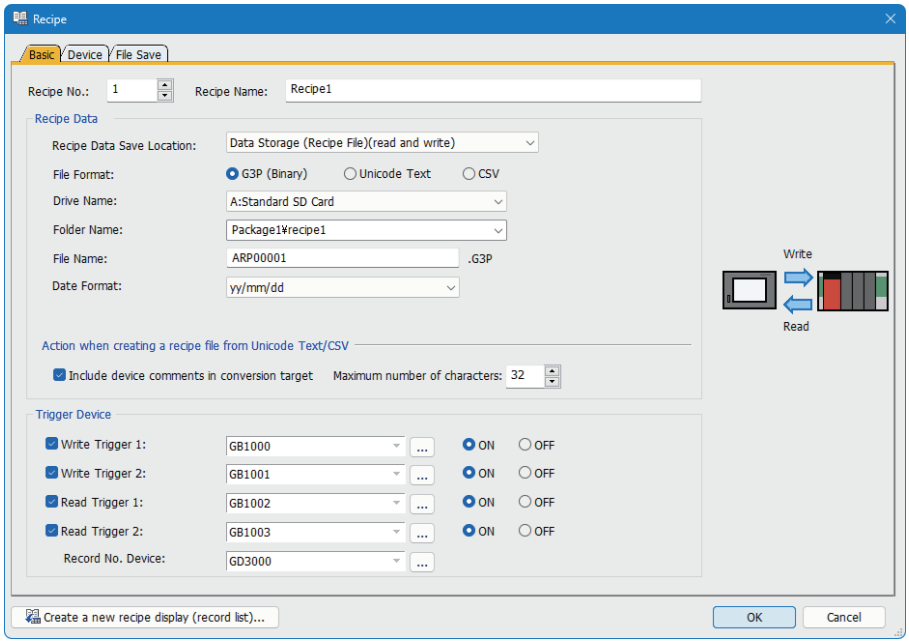
☞ Page 2310 [Recipe List] dialog



2. Perform either of the following operations to display the [Recipe] dialog.

- Click the [New] button.
- Select a recipe setting and click the [Edit] button.

☞ Page 2311 [Recipe] dialog



3. Set the following items in the [Basic] tab.

Item	Description
[Recipe Data Save Location]	Select [Data Storage (Recipe File)(read and write)].
[File Format]	Select [G3P (Binary)].
[File Name]	Enter the same file name as the recipe file (*.G2P) used.
[Include device comments in conversion target]	Set this item as required. • Selected: The device comments of a recipe file (*.G2P) are used. • Deselected: The device comments set in the [Devices] tab are used.

4. Set the following items in the [Device] tab according to the recipe file (*.G2P) used, and click the [OK] button.

- [Block Number]
- [Record Number]
- [Device Type] of each block
- [Points] of each block

Preparation on a personal computer

Store the recipe file (*.G2P) in the location, which is set in [Folder Name] in the [Basic] tab of the [Recipe] dialog.

Do not store a recipe file (*.G3P) in the same location.

If a recipe file (*.G3P) has already existed, another recipe file (*.G3P) is not created.

Operation on the GOT

When writing or reading with a trigger device (external control device or trigger device of each recipe setting) is executed, a GOT3000 recipe file (*.G3P) is created based on a recipe file (*.G2P).

The recipe file (*.G2P) remains intact.

The following settings of the recipe file (*.G2P) are applied to the created recipe file (*.G3P).

Item to be applied	Remarks
Number of blocks	—
Number of records	—
Device type	—
Points	—
Device comment	The device comments of a recipe file (*.G2P) are applied when [Include device comments in conversion target] is selected in the [Recipe] dialog ([Basic] tab). ☞ Page 2311 [Basic] tab
Record name	—
Record update time	If no time zone is specified, the time difference from UTC is none. ☞ Page 642 [Local Time] tab
Record attribute	—
Device values of a record	—

Precautions for using an advanced recipe file

■When the settings of a recipe file (*.G2P) are not applied

In the following cases, a recipe file (*.G3P) is created during GOT operation based on a recipe setting in GT Designer3 (GOT3000) instead of a recipe file (*.G2P).

- The recipe file (*.G2P) to be used is not stored in the location, which is set in [Folder Name] in the [Recipe] dialog ([Basic] tab).
- The recipe settings in GT Designer3 (GOT3000) are inconsistent with those of the recipe file (*.G2P) to be used.
- The recipe file to be used is corrupted.

■Applying the recipe file (*.G3P) created based on a recipe file (*.G2P)

The recipe file (*.G3P) can be used with GOT3000 only.

It cannot be used as GOT2000 recipe file (*.G2P).

■Saving recipe data into the nonvolatile RAM user area

You cannot save a recipe file (*.G2P) directly into the nonvolatile RAM user area.

Create a recipe file (*.G3P) based on a recipe file (*.G2P), and then import data from the created file to the nonvolatile RAM user area.

For information on how to import data from a recipe file (*.G3P) to the nonvolatile RAM user area, refer to the following.

☞ Page 2269 Converting a recipe file

66.4 Control and notification with devices

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For the recipe function, devices are used to control or notify the following operations.

- Writing and reading device values and converting files
- Notifying the status of processing such as writing and reading device values and converting files

☞ Page 2301 Control devices
☞ Page 2305 Notification devices

66.4.1 Control devices

The following shows the devices used to write or read device values or convert files.

○: Available, —: Not available

Control devices	Control details			Description
	Writing device values	Reading device values	Converting a recipe file	
External control device (trigger device common in a project)	○	○	○	This device is shared among all the recipe settings in one project. Set this device in [External Control Device] in the [Recipe Common Setting] dialog. ☞ Page 2309 [Recipe Common Setting] dialog Each bit of the device set as the external control device is used as the write or read trigger device. For the function of each bit, refer to the following. ☞ Page 2302 Functions of the external control device
Trigger device of each recipe setting	○	○	—	The trigger device to be set for each recipe setting. Set this device in the [Basic] tab in the [Recipe Settings] dialog. ☞ Page 2311 [Basic] tab

Point

To control operations without using devices, refer to the following.

☞ Page 2259 Writing device values
☞ Page 2263 Reading device values
☞ Page 2269 Converting a recipe file

☞ Page 2302 Functions of the external control device
☞ Page 2303 Priority when multiple trigger conditions are satisfied simultaneously
☞ Page 2304 Trigger judgment when the same trigger condition is repeatedly satisfied
☞ Page 2304 Timing to change the writing or reading target after a trigger condition is satisfied
☞ Page 2304 When a trigger condition is satisfied while the [Recipe information] screen is being displayed

Functions of the external control device

The following table lists the functions of each bit of the device set in [External Control Device].

When a bit device is set, a function is assigned to each of the 16 bits starting from the top.

Bit number	Signal name	Function	
b0	Recipe-shared Trigger Write signal	When this signal turns on, values are written to the target devices by using the recipe setting and record specified with [Recipe No. Storage Device] and [Record No. Storage Device].	
b1	Recipe-shared Trigger Read signal	When this signal turns on, values are read from the target devices by using the recipe setting and record specified with [Recipe No. Storage Device] and [Record No. Storage Device].	
b2 to b7	Use prohibited	—	
b8	Convert Recipe File signal	The operation varies depending on the recipe data save destination setting.	
		For the data storage (recipe file)	When this bit turns on, the recipe file (*.G3P) corresponding to the recipe data specified with [Recipe No. Storage Device] is converted to a CSV or Unicode text file. Set the file format of the conversion destination file in the [File Save] tab in the [Recipe] dialog. If a recipe file having the same name exists, the recipe file is overwritten.
		For the nonvolatile RAM user area	When this bit turns on, the recipe data specified with [Recipe No. Storage Device] is exported to a recipe file. Set the file format of the export destination file in the [File Save] tab in the [Recipe] dialog. If a recipe file having the same name exists, the recipe file is overwritten.
b9	Reverse-convert Recipe File signal	The operation varies depending on the recipe data save destination setting.	
		For the data storage (recipe file)	When this bit turns on, the recipe file (CSV or Unicode text format) corresponding to the recipe data specified with [Recipe No. Storage Device] is converted to a binary file (*.G3P). Set the file format of the conversion source file in the [File Save] tab in the [Recipe] dialog. If a recipe file having the same name exists, the recipe file is overwritten.
		For the nonvolatile RAM user area	When this bit turns on, the recipe data specified with [Recipe No. Storage Device] is imported from the relevant recipe file to the nonvolatile RAM user area. Set the import source file in the [File Save] tab in the [Recipe] dialog.
b10 to b14	Use prohibited	—	
b15	Clear Recipe Processing Error signal	When this signal turns on, the Recipe Processing Error Notification signal (External notification device.b15) turns off.	

Priority when multiple trigger conditions are satisfied simultaneously

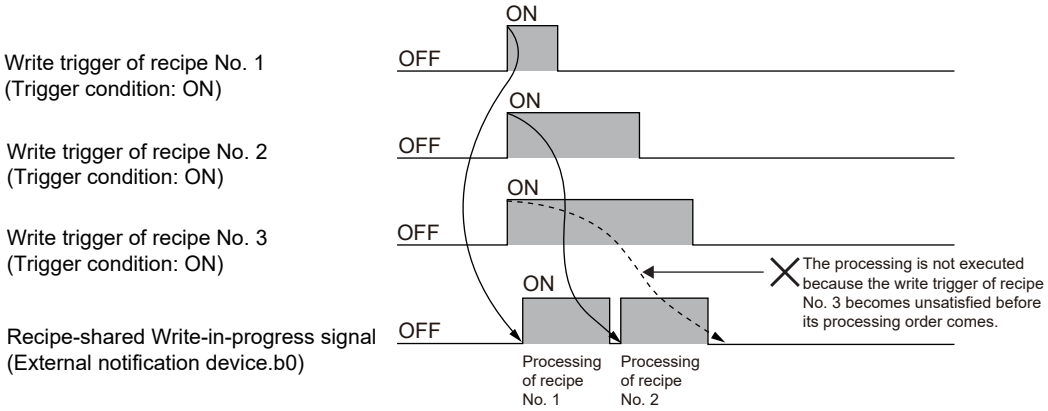
When trigger conditions for writing, reading, and file conversion are satisfied simultaneously, the processes are executed in the following order.

Priority	Trigger device		
High ↕ Low	Trigger device of each recipe setting	Recipe No. 1	Read trigger device
			Write trigger device
		:	:
		Recipe No. 32767	Read trigger device
			Write trigger device
	External control device (trigger device common in a project)	Read trigger device	
		Write trigger device	
		Trigger File Conversion device	

If a satisfied trigger condition becomes unsatisfied before the processing order comes, the process is not executed.

Ex.

When the trigger condition becomes unsatisfied before the writing process of recipe No. 3 is executed



■How to make sure that the processing for the simultaneously-satisfied triggers are executed

To make sure that the processing for the simultaneously-satisfied triggers are executed, set the trigger devices for each recipe setting as follows.

Multiple recipes can be processed sequentially by turning on and off one device.

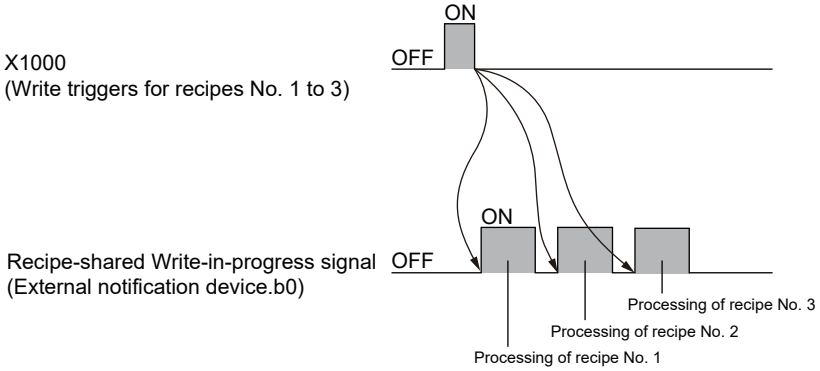
- Set the conditions to satisfy the trigger devices to "OFF". (A trigger condition is satisfied when a device turns off.)
- Set the same device as the trigger devices of multiple recipe settings.

☞ Page 2311 [Basic] tab

Ex.

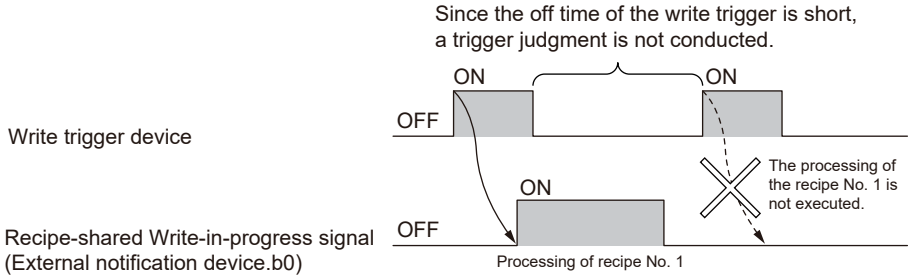
Executing the writing processes of recipe No. 1 to 3 sequentially

- [Write Trigger 1] of recipe No. 1 to 3: X1000
- Trigger condition of [Write Trigger 1] of recipe No. 1 to 3: [OFF]



Trigger judgment when the same trigger condition is repeatedly satisfied

A trigger judgment is conducted each and every time a trigger condition is satisfied.
When the state of a trigger condition changes from satisfied to unsatisfied to satisfied, a trigger judgment is conducted again.
When the time while the trigger condition is not satisfied is too short, the trigger cannot be detected as its condition is not satisfied. Therefore, the recipe may not be processed.



Timing to change the writing or reading target after a trigger condition is satisfied

Before changing the writing or reading target (such as the recipe number and the record number), confirm that the writing or reading process are complete with the following signals.

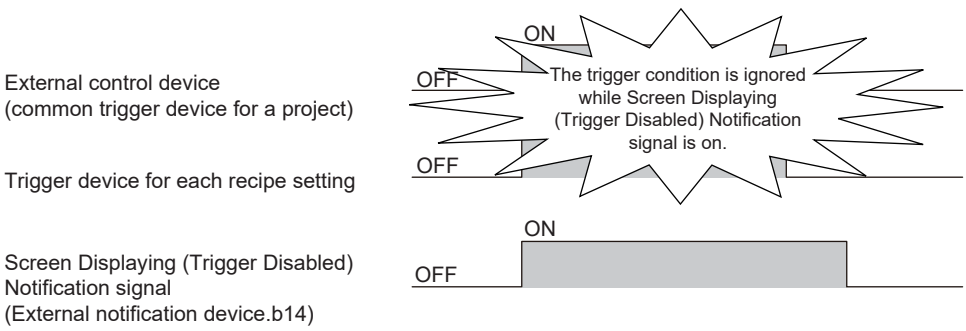
- For the writing process: Recipe-shared Write Completed signal (External notification device.b4)
- For the reading process: Recipe-shared Read Completed signal (External notification device.b5)

If you change the target before the corresponding signal turns on, a next writing or reading process may not be executed properly.

When a trigger condition is satisfied while the [Recipe information] screen is being displayed

The trigger devices for writing, reading, and file conversion are ignored while the [Recipe information] screen is being displayed.
You can check the display status of the [Recipe information] screen with Screen Displaying (Trigger Disabled) Notification signal (External notification device.b14).

☞ Page 2305 Functions of the external notification device



66.4.2 Notification devices

The following shows the devices used to notify the status of processing such as writing or reading of device values and file conversion.

Notification devices	Description
External notification device	This device is shared among all the recipe settings in one project. Set this device in [External Notification Device] in the [Recipe Common Setting] dialog. ☞ Page 2309 [Recipe Common Setting] dialog Each bit of the device set as the external notification device is used as the write or read processing status notification signal. For the function of each bit, refer to the following. ☞ Page 2305 Functions of the external notification device
System information	Notifies that the writing or reading process started by the following trigger devices is in progress. • Recipe-shared Trigger Write signal (External control device.b0) • Recipe-shared Trigger Read signal (External control device.b1) • Write trigger device of each recipe setting • Write trigger device of each recipe setting For details on the system information, refer to the following. ☞ Page 576 Setting a device which controls the GOT operations or notifies the GOT status ([System Information])

☞ Page 2305 Functions of the external notification device
☞ Page 2307 Operation example of the external notification device
☞ Page 2308 Difference between the external notification device and system information
☞ Page 2308 Handshake by the notification signal

Functions of the external notification device

The following table lists the functions of each bit of the device set in [External Notification Device].

When a bit device is set, a function is assigned to each of the 16 bits starting from the top.

For the operation example of each bit, refer to the following.

☞ Page 2307 Operation example of the external notification device

For a handshake established using the notification signal, refer to the following.

☞ Page 2308 Handshake by the notification signal

Bit number	Signal name	Function
b0	Recipe-shared Write-in-progress signal	Turns on while the Recipe-shared Trigger Write signal (External control device.b0) is on or values are being written with the write trigger device of each recipe setting. Turns off when all of the following conditions are satisfied. • The writing process is complete. • The Recipe-shared Trigger Write signal (External control device.b0) is off, or the write trigger condition of each recipe setting is not satisfied.
b1	Recipe-shared Read-in-progress signal	Turns on when the Recipe-shared Trigger Read signal (External control device.b1) is on or values are being read with the read trigger device of each recipe setting. Turns off when all of the following conditions are satisfied. • The reading processing is complete. • The Recipe-shared Trigger Read signal (External control device.b1) is off, or the read trigger condition of each recipe setting is not satisfied.
b2 to b3	Use prohibited	—
b4	Recipe-shared Write Completed signal	Turns on when the Recipe-shared Trigger Write signal (External control device.b0) is on, or the writing process with the write trigger device of each recipe setting is complete. Turns off when a next writing or reading process starts.
b5	Recipe-shared Read Completed signal	Turns on when the Recipe-shared Trigger Read signal (External control device.b1) is on, or the reading process with the read trigger device of each recipe setting is complete. Turns off when a next writing or reading process starts.
b6 to b7	Use prohibited	—
b8	Recipe File Converting Notification signal	Turns on when the file conversion is started by the Convert Recipe File signal (External control device.b8). Turns off when all of the following conditions are satisfied. • The file conversion is complete. • The Convert Recipe File signal (External control device.b8) is off.

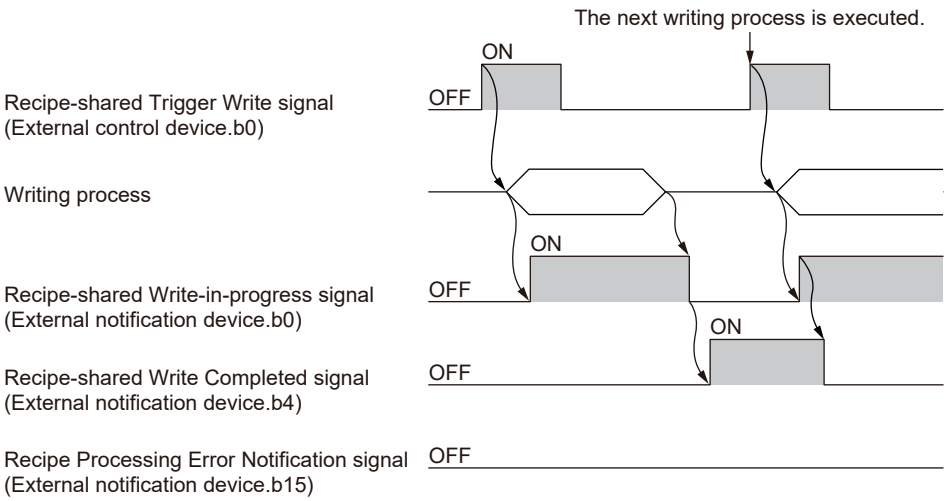
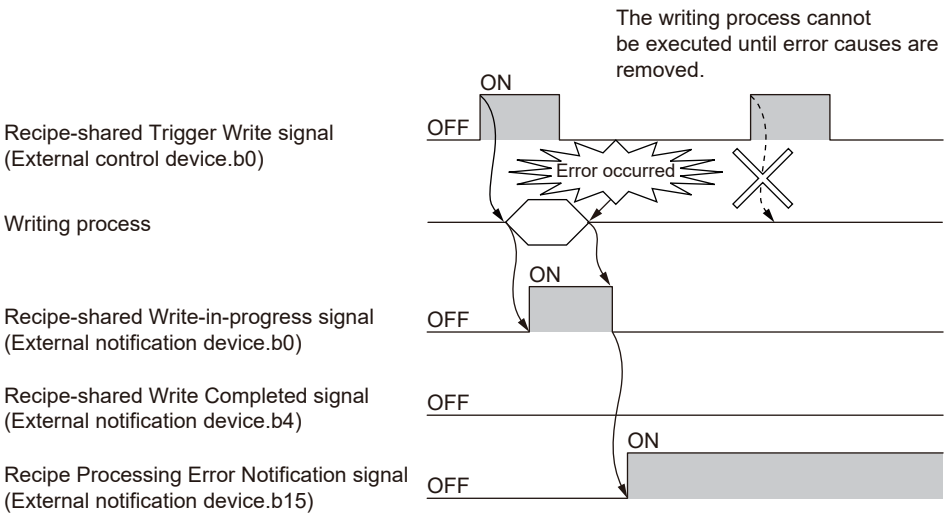
Bit number	Signal name	Function
b9	Recipe File Reverse-converting Notification signal	Turns on when the file conversion is started by the Reverse-convert Recipe File signal (External control device.b9). Turns off when all of the following conditions are satisfied. • The file reverse conversion is complete. • The Reverse-convert Recipe File signal (External control device.b9) is off.
b10	Recipe File Conversion Error Notification signal	Turns on at the end of the file conversion started by the Convert Recipe File signal (External control device.b8), if an error occurs during the conversion and the target file is not converted properly. Turns off when a next conversion of a recipe file starts.
b11	Recipe File Reverse-conversion Error Notification signal	Turns on at the end of the file conversion started by the Reverse-convert Recipe File signal (External control device.b9), if an error occurs during the conversion and the target file is not converted properly. Turns off when a next reverse conversion of a recipe file starts.
b12	Recipe Processing (Trigger Disabled) Notification signal	Turns on during either of the following processing and notifies that the operations (including file conversion) from external control devices cannot be performed. • Recipe processing (including reading of recipe information for display) from the recipe display (record list) • Import/export of a recipe file using a special function switch Turns off when the above processing is completed.
b13	Recipe File Reverse-conversion Warning Error Notification signal	Turns on at the end of the file conversion started by the Reverse-convert Recipe File signal (External control device.b9), if any of the following mismatches is found between the recipe setting and the target recipe file at the conversion. • Recipe setting [Include device comments in conversion target] is not selected in the [Basic] tab in the [Recipe] dialog. ☞ Page 2311 [Basic] tab • Recipe file [DEVCMT_CNV] (number of characters in the device comment to be converted) is input in the edited recipe file. ☞ Page 2252 Configuration of the recipe file Turns off when a next reverse conversion of a recipe file starts.
b14	Screen Displaying (Trigger Disabled) Notification signal	Turns on while the [Recipe information] screen is being displayed and notifies that the operations (including file conversion) from external control devices cannot be performed. Turns off when the [Recipe Information] screen disappears.
b15	Recipe Processing Error Notification signal	Turns on if an error occurs during the recipe process (such as writing or reading) started by an external control device and the process is performed improperly. A system alarm occurs when this signal turns on. Check the message and remove error causes. After the error causes are removed, even if this signal is on, the recipe process (writing or reading) can be performed. One of the following operations turns off this signal. • Turn on the Clear Recipe Processing Error signal (External control device.b15). • Start another process with the external control device.

Operation example of the external notification device

The following shows the ON/OFF timing of each signal.

Ex.

Behavior of the signal at writing

Status	Behavior
When the process ends successfully	
When the process ends abnormally	

Difference between the external notification device and system information

The following shows differences between the external notification device and system signal, both of which notify the recipe processing status.

To establish a handshake, use the external notification device.

☞ Page 2308 Handshake by the notification signal

■External notification device

Signal	Condition for the signal to be turned on	Condition for the signal to be turned off
Recipe-shared Write-in-progress signal (External notification device.b0)	Turns on during the writing process started by the following trigger devices. • Recipe-shared Trigger Write signal (External control device.b0) • Write trigger device of each recipe setting	Turns off when all of the following conditions are satisfied. • The writing process is complete. • The Recipe-shared Trigger Write signal (External control device.b0) is off, or the write trigger condition of each recipe setting is not satisfied.
Recipe-shared Read-in-progress signal (External notification device.b1)	Turns on during the reading process started by the following trigger devices. • Recipe-shared Trigger Read signal (External control device.b1) • Write trigger device of each recipe setting	Turns off when all of the following conditions are satisfied. • The reading processing is complete. • The Recipe-shared Trigger Read signal (External control device.b1) is off, or the read trigger condition of each recipe setting is not satisfied.

■System information

Signal	Condition for the signal to be turned on	Condition for the signal to be turned off
System signal 2-1.b10	Turns on during the writing or reading process started by the following trigger devices. • Recipe-shared Trigger Write signal (External control device.b0) • Recipe-shared Trigger Read signal (External control device.b1) • Write trigger device of each recipe setting • Write trigger device of each recipe setting	Turns off when the writing or reading process is complete, regardless of the status of the trigger device.

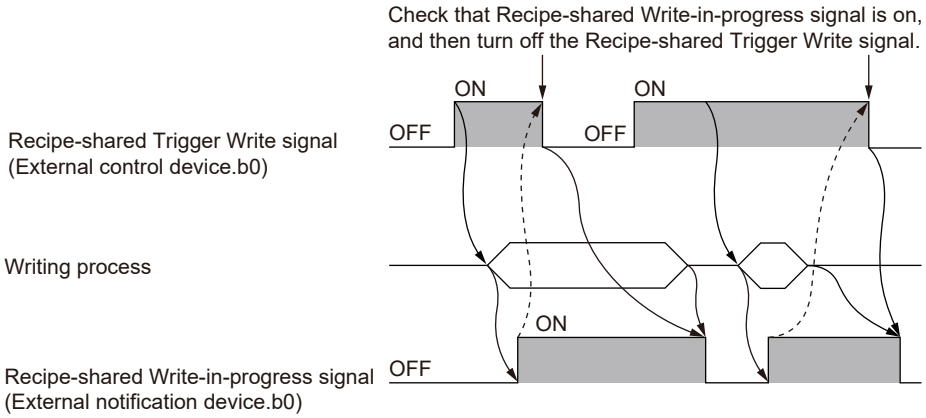
Handshake by the notification signal

To ensure that a process is performed, use the notification signal to establish a handshake.

Ex.

Handshake established by the Recipe-shared Write-in-progress signal (External notification device.b0)

Confirm that the Recipe-shared Write-in-progress signal (External notification device.b0) is on. Then, turn off the Recipe-shared Trigger Write signal (External control device.b0) to ensure that the writing process is performed.



66.5 [Recipe Common Setting] dialog

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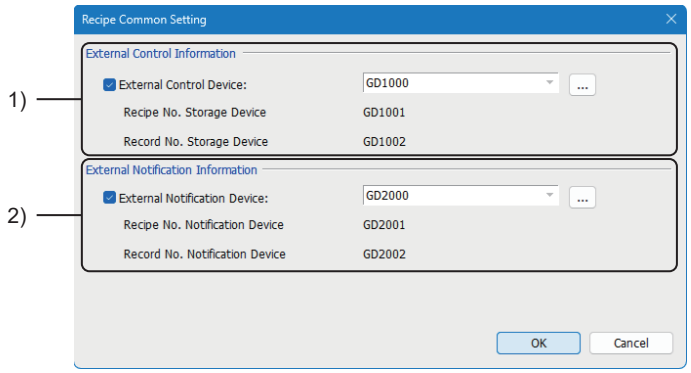
Set devices for controlling the recipe function.

Select [Common] → [Recipe] → [Recipe Common Setting] from the menu to display the following dialog.



Item			Description
1)	[External Control Information]	—	Enable the device setting to control the writing and reading processes. This setting is common to all the recipe settings in a project.
		[External Control Device]	Controls the writing and reading of device values, and the file format conversion. You can specify a word device or word-specified bit device. The device set in [External Notification Device] cannot be set here. ☞ Page 2302 Functions of the external control device
		[Recipe No. Storage Device]	Specifies the target recipe number when the device set in [External Control Device] controls the writing and reading of device values and the file conversion. One of the consecutive devices starting from the device set in [External Control Device] is set automatically.
		[Record No. Storage Device]	Specifies the target record number when the device set in [External Control Device] controls the writing and reading of device values and the file conversion. One of the consecutive devices starting from the device set in [External Control Device] is set automatically.
2)	[External Notification Information]	—	Enable the device setting to output the execution status of a recipe, including a recipe process error.
		[External Notification Device]	Notifies the execution status of writing or reading device values. You can specify a word device or word-specified bit device. The device set in [External Control Device] cannot be set here. ☞ Page 2305 Functions of the external notification device
		[Recipe No. Notification Device]	Stores the recipe number of a recipe being processed by the trigger device. One of the consecutive devices starting from the device set in [External Notification Device] is set automatically.
		[Record No. Notification Device]	Stores the record number of a recipe being processed by the trigger device. One of the consecutive devices starting from the device set in [External Notification Device] is set automatically.

66.6 [Recipe List] dialog

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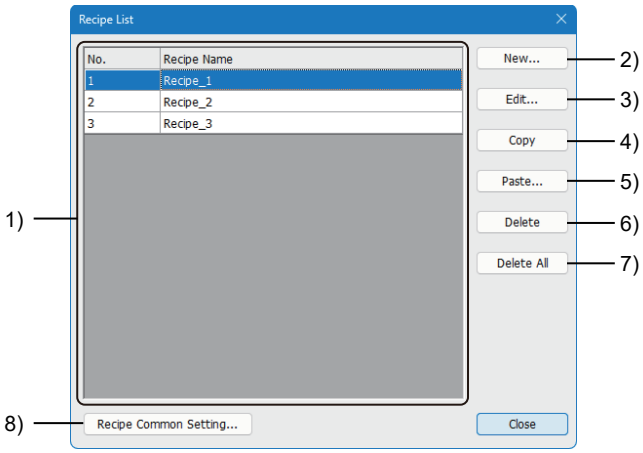
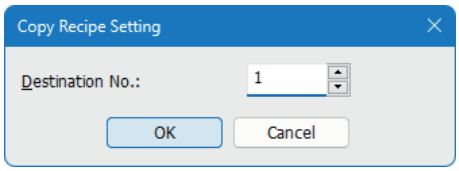
Displays the list of the recipe settings and manages the settings.

Select [Common] → [Recipe] → [Recipe] from the menu to display the following dialog.



Item			Description
1)	Recipe setting list	—	List of recipe settings in a project
		[No.]	Recipe number of each recipe setting
		[Recipe Name]	Recipe name of each recipe setting
2)	[New] button		Displays the [Recipe] dialog. Create a recipe setting. ☞ Page 2311 [Recipe] dialog
3)	[Edit] button		Displays the [Recipe] dialog. to edit a recipe setting selected in the recipe setting list. ☞ Page 2311 [Recipe] dialog
4)	[Copy] button		Copies a recipe setting selected in the recipe setting list.
5)	[Paste] button		Displays the [Copy Recipe Setting] dialog. Create a recipe setting by using a copied recipe setting.  Set the recipe number of a recipe setting, which is created by using a copied recipe setting. The setting range is [1] to [32767].
6)	[Delete] button]		Deletes a recipe setting selected in the recipe setting list.
7)	[Delete All] button		Deletes all the recipe settings.
8)	[Recipe Common Setting] button		Displays the [Recipe Common Setting] dialog. ☞ Page 2309 [Recipe Common Setting] dialog

66.7 [Recipe] dialog

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☞ Page 2311 [Basic] tab
☞ Page 2314 [Device] tab
☞ Page 2320 [File Save] tab

66.7.1 [Basic] tab

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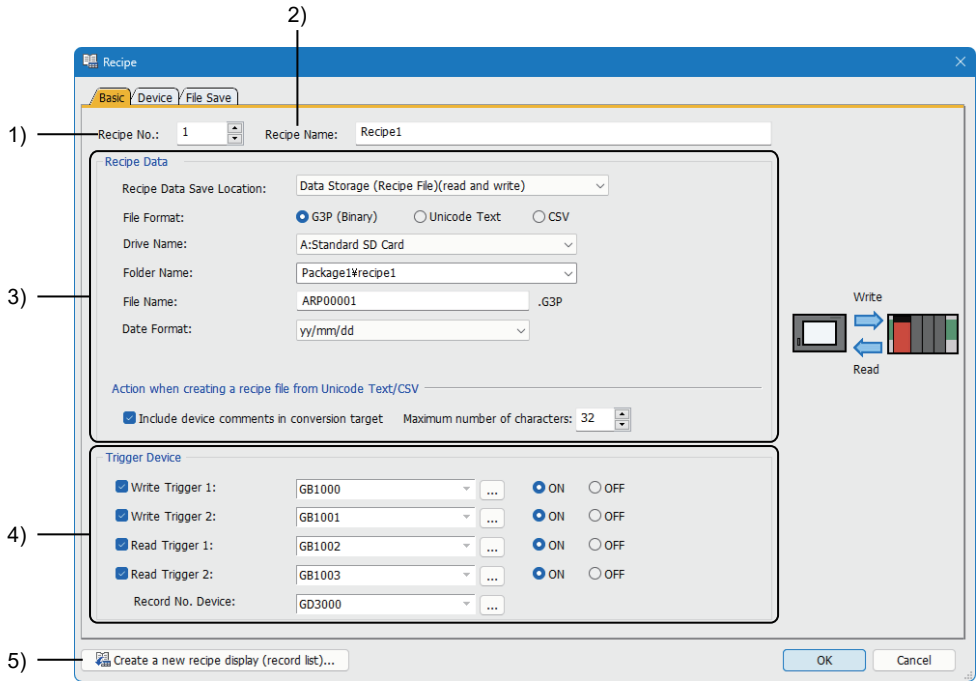
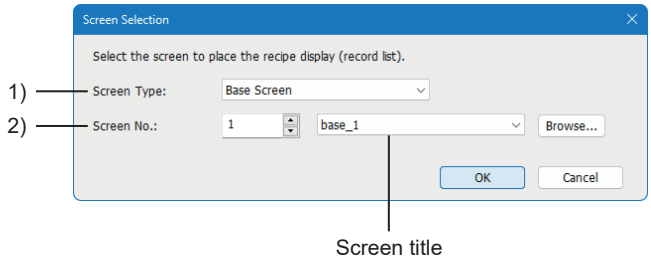
Configure the recipe file setting and set the write and read trigger devices.



Item		Description
1)	[Recipe No.]	Set the recipe number of a recipe setting. The setting range is [1] to [32767]. ☞ Page 2246 Contents of a recipe setting
2)	[Recipe Name]	Set the name of a recipe setting. Up to 32 characters can be set.

Item			Description
3)	[Recipe Data]	—	Configure the settings to save recipe data. ☞ Page 2250 Specifications of the recipe file
		[Recipe Data Save Location]	Set the destination to save recipe data. The recipe data is handled differently depending on the save destination setting. For details, refer to the following. ☞ Page 2249 Recipe data
		[File Format]	Set this item when [Recipe Data Save Location] is set to [Data Storage (Recipe File)(read and write)]. Select a file format of the recipe file. ☞ Page 2251 Recipe file format
		[Drive Name]	Set this item when [Recipe Data Save Location] is set to [Data Storage (Recipe File)(read and write)]. Select a drive at which a recipe file is located on the GOT.
		[Folder Name]	Set this item when [Recipe Data Save Location] is set to [Data Storage (Recipe File)(read and write)]. Specify a folder to which a recipe file is saved on the GOT. For the restrictions on the folder name used in the GOT, refer to the following. ☞ Page 84 Restrictions for folder names and file names used in GOT When [File Format] is set to [Unicode Text] or [CSV], recipe files are created for each record. It is recommended to specify different folders to save each recipe file.
			Do not specify the same save destination on the GOT for recipe files and for files of other functions (such as the alarm function). Only recipe files can be displayed or operated on the [Recipe information] screen in the utility. When a recipe file and a file of other functions are stored in the same folder, the folder cannot be deleted on the [Recipe information] screen.
		[File Name]	Set this item when [Recipe Data Save Location] is set to [Data Storage (Recipe File)(read and write)]. Set the name of a recipe file. For the restrictions of the file name used in the GOT, refer to the following. ☞ Page 84 Restrictions for folder names and file names used in GOT
		[Date Format]	Set this item when [Recipe Data Save Location] is set to [Data Storage (Recipe File)(read and write)] or [Embedded Memory in GOT (read and write)]. Select a date format in which the record update date is displayed.
		[Include device comments in conversion target]	Set this item when [File Format] is set to [G3P (Binary)]. Enables editing of device comments when a binary recipe file (*.G3P) is converted to a Unicode text or CSV file. Includes device comments in the conversion target when a recipe file is converted back to a binary file (*.G3P).
		[Maximum number of characters]	Set this item when [Include device comments in conversion target] is selected. Set the number of conversion target characters in a device comment when a recipe file is converted back to a binary file (*.G3P). The setting range is [1] to [32].
4)	[Trigger Device]	—	Set the write and read trigger devices. ☞ Page 834 How to set devices, labels, and tags The set trigger device can be used only in the recipe setting being edited. For the trigger device types, refer to the following. ☞ Page 2301 Control and notification with devices
		[Write Trigger 1] [Write Trigger 2]	Set a device to be written and a trigger condition (ON, OFF). Set [Write Trigger 2] to execute the writing when two conditions are satisfied. In that case, device values are written only when the trigger conditions of both the trigger device 1 and 2 are satisfied.
		[Read Trigger 1] [Read Trigger 2]	Set a device to be read and a trigger condition (ON, OFF). Set [Read Trigger 2] to execute the reading when two conditions are satisfied. In that case, device values are read only when the trigger conditions of both the trigger device 1 and 2 are satisfied.
		[Record No. Device]	Set a device that specifies the target record number when the trigger device of each recipe setting starts the writing or reading process. When the number of records is one, record 1 is always specified, and thus no setting is required.
5)	[Create a new recipe display (record list)] button		This item is not displayed when the [Recipe] dialog is called up from the [Recipe Display (Record List)] dialog. Displays the [Screen Selection] dialog. Select a screen to place a recipe display (record list). ☞ Page 2313 [Screen Selection] dialog

[Screen Selection] dialog



Item		Description
1)	[Screen Type]	Select the type of a screen to place a recipe display (record list).
2)	[Screen No.]	Select the screen number of a screen to place a recipe display (record list). The setting range is [0] to [32767]. A target screen is selectable from among screen titles as well. To place a recipe display (record list) on a new screen, select [A new screen will be created.] for the screen title. Click the [Browse] button to select a screen in thumbnail view in the [Screen Image List] dialog. ☞ Page 3683 [Image List] dialog (screen)

66.7.2 [Device] tab

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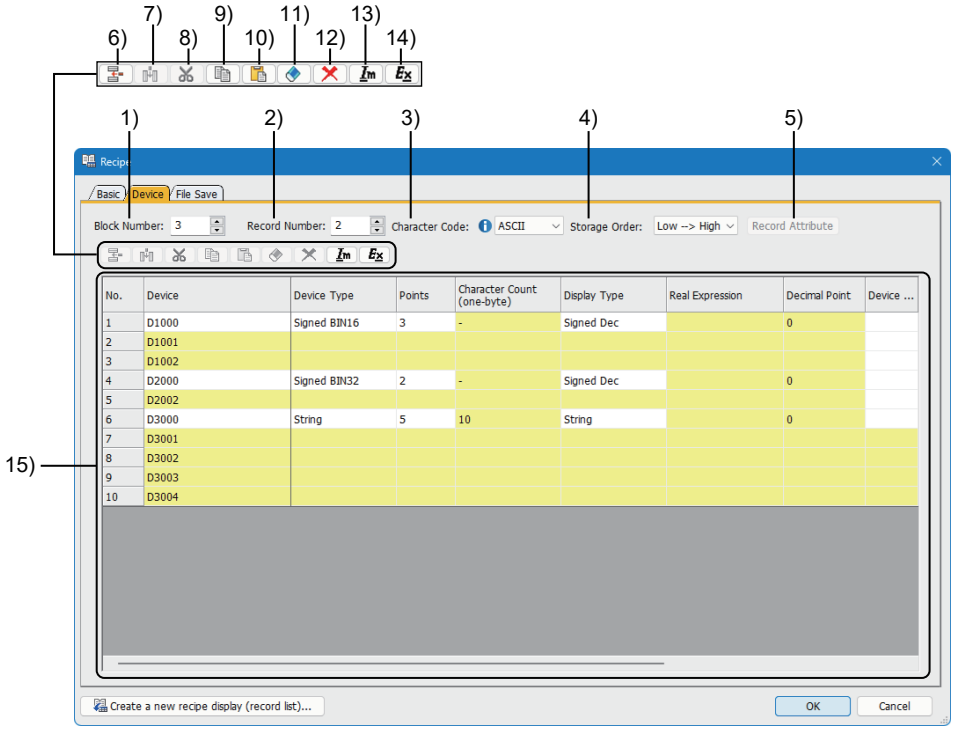
Set the target devices and the initial values of records.



Item		Description
1)	[Block Number]	Set the number of blocks of the recipe setting. The setting range is [1] to [2048]. ☞ Page 2247 Block
		To specify the number of target devices more than the number of blocks, set consecutive devices in blocks. Depending on the number of blocks and the setting of [Points], specifying the number of target devices up to its upper limit may be unavailable. Example) When 2048 is set in [Block Number] and 1 is set in [Points] of all the blocks According to the upper limit of the number of blocks, up to 2048 devices can be set.
		When a large number of blocks are set in a recipe setting, processing time for writing and reading may increase. To shorten the processing time, reduce the number of blocks.
2)	[Record Number]	Set the number of records of the recipe setting. The setting range is [1] to [2000]. ☞ Page 2248 Record The number of records in a recipe is not user-changeable on the GOT. If you perform record reading, preset several blank records that have no name and device value. Doing so enables you to add new records on the GOT by overwriting the blank records.

Blank record with no name and device value

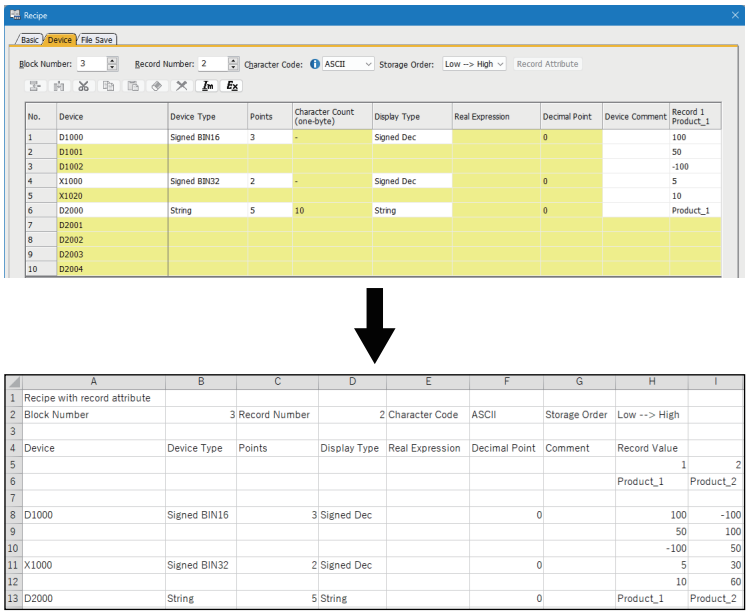
Recipe No. 1

Device	Record 1	Record 2	Record 3	Record 4
	Product A	Product B		
D300	76	74		
D301	7	8		
D302	17	18		
D303	0	0		

Record No.

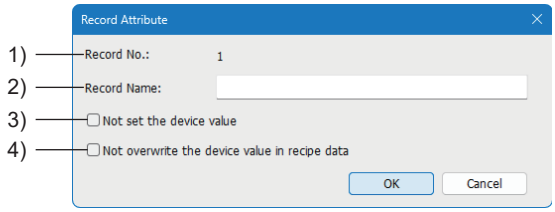
Record name

Item		Description	
3)	[Character Code]	Set this item when [String] is selected for [Device Type] in a block. Select the character code to be applied to the value of devices whose [Device Type] is set to [String]. If you set a string-type label or tag for the device whose [Device Type] is set to [String], set the character code according to the type of the label or tag. • Global label: [ASCII], [Unicode], or [S-JIS] • AB native tag: [ASCII] • OMRON NJ/NX tag: Unicode • OPC UA tag: Unicode	
		When [Character Code] is set to [Unicode] for a recipe target device, if you specify the device for a text display or text input object, the following settings need to be configured in the object setting dialog.	
		When [Storage Order] is set to [Low→High] in the [Recipe] dialog	• Select [Unicode] for [Character Code] in the [Device/Style] tab. • Select [Display in order of High -> Low] in the [Extended] tab.
		When [Storage Order] is set to [High→Low] in the [Recipe] dialog	• Select [Unicode] for [Character Code] in the [Device/Style] tab. • Deselect [Display in order of High -> Low] in the [Extended] tab.
4)	[Storage Order]	Set this item when [String] is selected for [Device Type] in a block. Select an order in which data is stored to the devices whose [Device Type] is set to [String].	
5)	[Record Attribute] button	Displays the [Record Attribute] dialog. Set the attribute of the record selected in the target device list. You can select multiple records by drugging on the record title column. ☞ Page 2318 [Record Attribute] dialog	
6)	[Insert Block] button	Inserts a block above the block selected in the target device list.	
7)	[Insert Record] button	Inserts a record in the left of the record selected in the target device list.	
8)	[Cut] button	Cuts an editable cell selected in the target device list.	
9)	[Copy] button	Copies an editable cell selected in the target device list.	
10)	[Paste] button	Pastes the cut or copied data in the selected cell.	
11)	[Clear] button	Clears data of a cell or record selected in the target device list.	
12)	[Delete] button	Deletes a block or record selected in the target device list.	
13)	[Import] button	Imports a recipe setting file which is exported with GT Designer3, and overwrites the existing setting in the [Device] tab. Files of recipe settings or advanced recipe settings exported with the following software can also be imported. • GT Designer3 Version1(GOT2000) • GT Designer3 Version1(GOT1000) • GT Designer2 Version2 Recipe files created on the GOT cannot be imported.	

Item		Description
14)	[Export] button	Saves the setting in the [Device] tab with a Unicode text or CSV file. You can edit the exported file in spreadsheet software and others. The edited file can be imported with GT Designer3. The following shows the file format of the exported file.  When importing or exporting files in the multiple-language input environment, use Unicode text files. The characters of multiple languages can be imported or exported normally by using Unicode text files.

Item			Description	
15)	Target device list	—	Lists the target devices and records set in blocks.	
		[Device]	Set the devices from which values are read or to which values are written. ☞ Page 834 How to set devices, labels, and tags	
		[Device Type]	Select the data type of devices in each block. When setting a string-type label or tag for the recipe target device, select [String].	
		[Points]	Set the number of target devices set in each block. Devices starting from the start device are set sequentially for the set number. The maximum number of devices that can be set depends on the setting of [Device Type].	
			[Bit]	[1]
			[Signed BIN16] [Unsigned BIN16] [Signed BIN8] [Unsigned BIN8] [BCD16]	256 records or less: [1] device to [32768] devices 257 records or more: [1] device to [8192] devices
			[Signed BIN32] [Unsigned BIN32] [BCD32] [Real(32bit)]	256 records or less: [1] device to [16384] devices 257 records or more: [1] device to [4096] devices
			[Signed BIN64] [Unsigned BIN64] [BCD64] [Real(64bit)]	256 records or less: [1] to [8192] 257 records or more: [1] to [2048]
			[String]	[1] to [2048]
		[Character Count (one-byte)] ([Character Count] when [Unicode] is selected for [Character Code])	Maximum number of characters to be collected. This item is displayed when [String] is selected for [Device Type]. The settings of [Points] and [Character Code] determine the setting value.	
			When [Unicode] is selected for [Character Code] The maximum number of characters equals the value in [Points].	
			When an item other than [Unicode] is selected The maximum number of characters equals the value in [Points] multiplied by 2. A two-byte character is counted as two characters.	
		[Display Type]	Select the display type of a device when its data is output into a CSV or Unicode text file. The setting range depends on the setting of [Device Type]. ☞ Page 2318 Relationship between the record setting range and [Device Type] and [Display Type]	
		[Real Expression]	Select the expression type of the real number. Set this item when [Real] is selected for [Display Type]. Example) When 12345 is set as the record value and 3 is set in [Decimal Point] • Display in [Exponential Expression]: 1.235E+004 • Display in [Fixed Decimal]: 12345.000	
		[Decimal Point]	Set the number of digits of decimal numbers. Set this item when [Real] is selected for [Display Type]. The setting range is [0] digits to [32] digits.	
		[Device Comment]	Set the comment for a target device. Up to 32 characters can be set.	
		Record	Combinations of device values specified at writing or reading Set values are the initial values of a record. The setting range of the record initial value depends on [Device Type] and [Display Type]. ☞ Page 2318 Relationship between the record setting range and [Device Type] and [Display Type]	
			The device values displayed in the records are adjusted according to the settings of [Display Type], [Real Expression], and [Decimal Point]. The values may differ when the settings in the [Device] tab are exported.	
			Record columns are created corresponding to the setting of [Record Number]. ☞ Page 2248 Record	
			Click a column header of the table to display the [Edit] button on the header. Click the [Edit] button to display the [Record Attribute] dialog, and set the attributes of the relevant record. ☞ Page 2318 [Record Attribute] dialog	

[Record Attribute] dialog



Item		Description
1)	[Record No.]	Record number of a selected record This item is not displayed when multiple records are selected.
2)	[Record Name]	Set the record name. Up to 32 characters can be set.
3)	[Not set the device value]	Set no initial value for a record. A record without values cannot be used for writing. Set a value by reading device values or editing the recipe file.
4)	[Not overwrite the device value in recipe data]	Protects the record from being overwritten. Device values cannot be written to a record, which is protected from being overwritten.

Relationship between the record setting range and [Device Type] and [Display Type]

The selectable items for [Display Type] vary depending on the setting of [Device Type].

The device value range that can be set for records depends on the setting of [Display Type].

[Device Type]	[Display Type]	Range of device values
[Bit]	[Bin]	0, 1
	[Bit]	
[Signed BIN8]	[Signed Dec]	-128 to 127
	[Hex]	00 to FF
	[Octal]	000 to 377
	[Bin]	00000000 to 11111111
	[Real]	-128 to 127
[Unsigned BIN8]	[Unsigned Dec]	0 to 255
	[Hex]	00 to FF
	[Octal]	000 to 377
	[Bin]	00000000 to 11111111
	[Real]	0 to 255
[Signed BIN16]	[Signed Dec]	-32768 to 32767
	[Hex]	0000 to FFFF
	[Octal]	000000 to 177777
	[Bin]	0000000000000000 to 1111111111111111
	[Real]	-32768 to 32767
[Unsigned BIN16]	[Unsigned Dec]	0 to 65535
	[Hex]	0000 to FFFF
	[Octal]	000000 to 177777
	[Bin]	0 to 1111111111111111
	[Real]	0 to 65535
[Signed BIN32]	[Signed Dec]	-2147483648 to 2147483647
	[Hex]	00000000 to FFFFFFFF
	[Octal]	00000000000 to 37777777777
	[Bin]	00000000000000000000000000000000 to 11111111111111111111111111111111
	[Real]	-2147483648 to 2147483647

[Device Type]	[Display Type]	Range of device values	
[Unsigned BIN32]	[Unsigned Dec]	0 to 4294967295	
	[Hex]	00000000 to FFFFFFFF	
	[Octal]	00000000000 to 37777777777	
	[Bin]	0 to 11111111111111111111111111111111	
	[Real]	0 to 4294967295	
[Signed BIN64]	[Signed Dec]	-9223372036854775808 to 9223372036854775807	
	[Hex]	0000000000000000 to FFFFFFFFFFFFFFFF	
	[Real]	-9223372036854775808 to 9223372036854775807	
[Unsigned BIN64]	[Unsigned Dec]	0 to 18446744073709551615	
	[Hex]	0000000000000000 to FFFFFFFFFFFFFFFF	
	[Real]	0 to 18446744073709551615	
[BCD16]	[Unsigned Dec]	0 to 9999	
	[Real]		
[BCD32]	[Unsigned Dec]	0 to 99999999	
	[Real]		
[BCD64]	[Unsigned Dec]	0 to 9999999999999999	
	[Real]		
[Real(32bit)]	[Real]	0, ±(1.17550e-38 to 3.40282e+38) Number of significant digits: 6 digits	
[Real(64bit)]	[Real]	0, ±(2.2250738585073e-308 to 1.7976931348623e+308) Number of significant digits: 14 digits	
[String]	[String]	The settings of [Points] and [Character Code] determine the setting value.	
		When [ASCII] is selected for [Character Code]	The maximum number of characters equals the value in [Points] multiplied by 2. A two-byte character is counted as two characters.
		When an item other than [ASCII] is selected for [Character Code]	The maximum number of characters equals the value in [Points].

66.7.3 [File Save] tab

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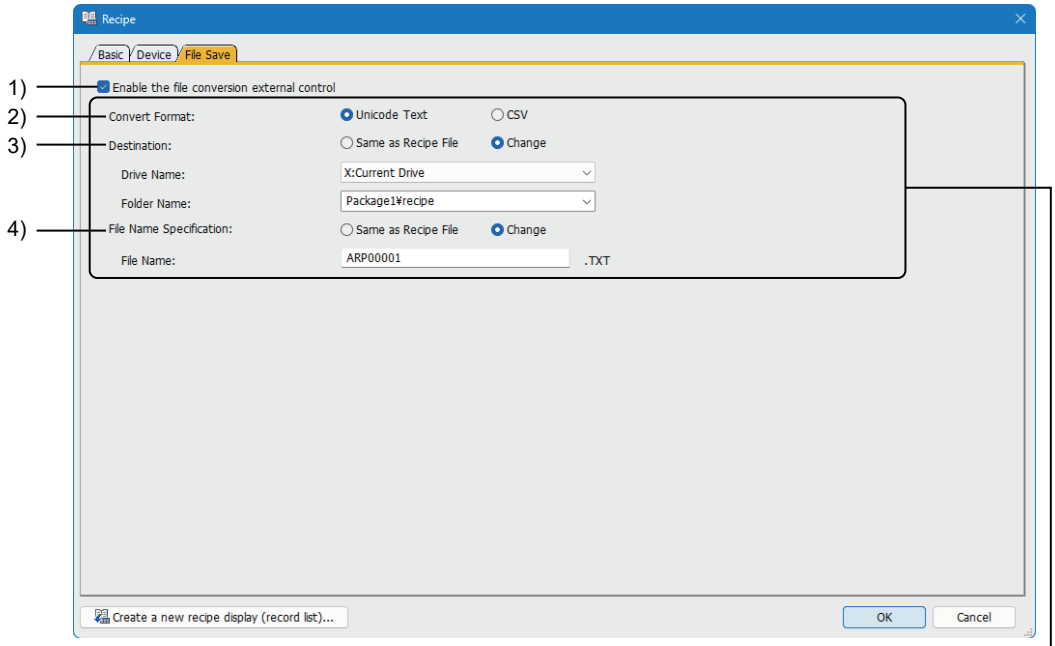
Configure the settings to convert a recipe file (*.G3P) or to import or export the recipe data of the nonvolatile RAM user area.
For details, refer to the following.

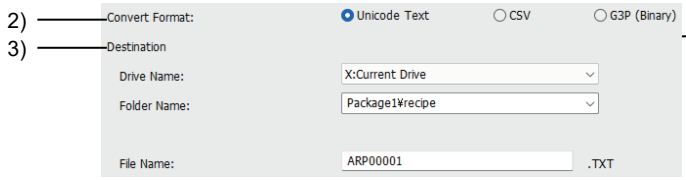
☞ Page 2269 Converting a recipe file

The [File Save] tab does not appear when the following settings are made in the [Basic] tab.

- [Recipe Data Save Location] is set to [Not save (record value write only)].
- [File Format] is set to [Unicode Text] or [CSV].



When [Recipe Data Save Location] is set to [Data Storage (Recipe File)(read and write)]



When [Recipe Data Save Location] is set to [Embedded Memory in GOT (read and write)]

Item		Description
1)	[Enable the file conversion external control]	Allows the file conversion to be controlled by an external control device. ☞ Page 2302 Functions of the external control device Select this item to configure the settings on the [File Save] tab.
2)	[Convert Format]	Select the file format after the conversion.
3)	[Destination]	If the save destination of recipe data is set to the data storage (recipe file), set the destination path of the conversion destination file. To change the destination from the one where a recipe file is saved, select [Change] and set [Drive Name] and [Folder Name]. If the save destination of recipe data is set to the nonvolatile RAM user area, set the destination path of the export destination file or import source file. Set [Drive Name], [Folder Name], and [File Name]. For the restrictions on the folder name and the file name used on the GOT, refer to the following. ☞ Page 84 Restrictions for folder names and file names used in GOT
4)	[File Name Specification]	If the save destination of recipe data is set to the data storage (recipe file), set the name of the conversion destination file. To change the file name from the one of the recipe file, select [Change] and set [File Name].

66.8 [Recipe File Conversion] dialog

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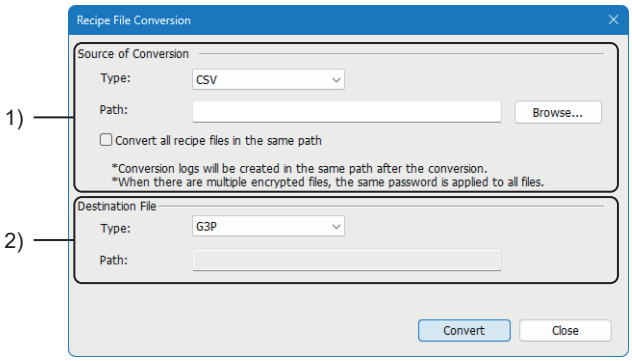
Convert the file format of a recipe file.

Select [Tools] → [Resource Data Conversion] → [Recipe File] from the menu to display the following dialog.

When the information protection function is enabled, a dialog to enter a password is displayed during file conversion.

☞ Page 3065 Protecting the files in the GOT (Information protection function)



Item			Description
1)	[Source of Conversion]	[Type]	Select a file type of the conversion source file.
		[Path]	Specify a path of the conversion source file.
		[Convert all recipe files in the same path]	Converts the recipe files, which are in a format selected for [Type], in a specified path. A conversion log is created in the specified path. The full path of the conversion destination files, the conversion results (OK or NG), and the creation date of files are output to the conversion log. C:¥recipe¥ARP00001.txt OK 20240917092625 C:¥recipe¥ARP00002.txt OK 20240917092625 C:¥recipe¥ARP00003.txt OK 20240917092625
2)	[Destination File]	[Type]	Select a file type of a file to be created after the conversion.
		[Path]	Displays the path of a file to be saved at the destination, which is the same path as the one of the conversion source file.

66.9 Relevant settings

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Set the relevant settings other than the specific settings for the recipe function as required.
The following shows the functions that are available by configuring the relevant settings.

66.9.1 GOT environmental settings (System information)

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Select [Common] → [GOT Environmental Setting] → [System Information] from the menu to display the [Environmental Setting] dialog.
☞ Page 576 Setting a device which controls the GOT operations or notifies the GOT status ([System Information])

Function	Setting item
Notifies that recipe processing (writing or reading) is in progress.*1	[System Signal 2-1] System signal 2-1.b10

*1 The signals available to notify the recipe process status include external notification devices.
For the differences between the external notification device and system information, refer to the following.
☞ Page 2308 Difference between the external notification device and system information

66.9.2 GOT internal device

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☞ Page 3581 GOT special register (GS)

Function	Setting item
Turning on when a recipe file is imported with an applicable special function switch	GS1010.b0
Turning on when a recipe file is exported with an applicable special function switch	GS1010.b1
Turning on when the recipe special control is executed	GS1010.b2
Turning on after a recipe file is successfully imported or exported with an applicable special function switch	GS1010.b14
Turning on when a recipe file is unsuccessfully imported or exported with an applicable special function switch	GS1010.b15
Notifying the result of the recipe special control	GS1011
Notifying the search result of the recipe special control	GS1012
Changing the character code to Unicode at the following timing • When a binary file is converted to CSV format • When data is written to or read from a recipe file in CSV format	GS522.b2
Executing the recipe special control	GS1800.b2
Turning off the Touch Switch Operation Completed signal (GS1010.b14) and the Touch Switch Operation Error signal (GS1010.b15) of the Recipe Status device	GS1800.b14
Specifying the action of the recipe special control	GS1801
Specifying the target of the recipe special control	GS1802
Specifying the start device number of the GOT data registers (GD) that are used for the recipe special control	GS1803
Specifying the target recipe setting for the recipe special control	GS1805
Specifying the target record for the recipe special control	GS1806
Specifying the target start row for the recipe special control	GS1807
Specifying the number of target rows (starting from the specified start row) for the recipe special control	GS1808

PART 12 Script

67 Controlling operations with scripts ([Script])

68 Project script, screen script, script part, and script block

69 Object script

67 Controlling operations with scripts ([Script])

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☞ Page 2326 Overview of the script function
☞ Page 2327 Features of the script function
☞ Page 2329 Script types

PART 12

67.1 Overview of the script function

GT37 SoftGOT3000

Scripts allow you to control the GOT display with the GOT's original programs.
By controlling the GOT display with scripts in the GOT, you can significantly reduce the load for the display of the system (controllers).

Precautions

■Applicable range of the scripts

Since this function is designed to control the GOT display, do not use it for machine control that requires precise time management.
When changing the data in the PLC through the GOT, create an interlock circuit using a sequence program to ensure the whole system can always operate safely.
The following periods may vary depending on projects.

- The period between when the trigger device condition of the script is satisfied and when the script is actually executed
- Processing time of the script

67.2 Features of the script function

GT37 SoftGOT3000

67.2.1 Easy system maintenance

With scripts, the controllers can be programmed to handle machine control only, so the system maintenance becomes much easier.

67.2.2 Various screen controls available together with the GOT

Using scripts enables the following operations that could not be achieved by the GOT alone.

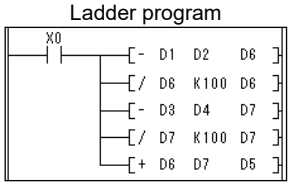
Operations together with other object functions

- The status of multiple bit devices can be indicated by one lamp.
- A specific part can be displayed if any of the bit devices is on, and hidden if all of them are off.
- When a numerical value is input, the part which indicates that it has already been input is pasted next to the then input numerical display frame.
- One touch switch can perform multiple operations corresponding to the status in multiple situations.
- The error handling screen appears automatically upon the detection of an error. (The GOT Error Code device of the system information stores the error code upon its detection.)

Processing complicated arithmetic operations

- Polynomial operations can be expressed simply in a line, which are difficult for ladder programs to express.

Ladder program



Script

```
[w:D5]=([w:D1]-[w:D2])/100+([w:D3]-[w:D4])/100;
```

- In addition to four arithmetic operations, scripts can be used for various application arithmetic operation functions such as trigonometric and exponential functions.

No limit on application

- You can obtain a target date using an entered date and interval (number of days in between).

What is the date after 345 days from May 20, 2012?→ April 30, 2013

- You can obtain the corresponding day of the week from an entered date.

What day of the week was February 21, 1961?→ Tuesday

67.2.3 Simple programming language

Scripts are in a language similar to C language, so you can easily make a program with elementary programming knowledge.

67.2.4 Programming using a commercially available text editor

Commercially-available text editors (such as the Microsoft® Windows® standard memo pad and Wordpad) which you may use every day can be used for programming, so you can improve program productivity.

PART 12

67.2.5 Operating conditions settable for each script

Various conditions can be set as triggers for a script, so script execution can be scheduled.
In addition to the above conditions, the execution of an object script can be tied to an input to the object, display on the object, or a touch on a touch switch.

67.2.6 A wide variety of the debug functions

Since scripts and C language are similar, you can simulate the scripts by making minor corrections using a general C language compiler or debugger.
Complicated scripts including many control statements can be debugged easily by using them.
Placing objects such as numerical displays and lamps for test operation is useful for debugging using the GOT.
By using them, you can check conditional branches in a script.
By monitoring the GOT special register (GS), error information and scripts in execution can be easily checked.

67.2.7 Syntax check of the created scripts

You can check the syntax of a created script in GT Designer3 before running the script on the GOT, improving programming efficiency.

67.2.8 Converting the script language of SCHNEIDER EJH software

You can convert the D-Scripts or Global D-Scripts of SCHNEIDER EJH software so that the scripts run on the GOT.
To convert the script language, use GT Converter2.
For details on the data to be converted and the conversion method, refer to the following.
📖 GT Converter2 Version3 Operating Manual for GT Works3

67.3 Script types

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The following five types of scripts are supported.

Type	Description
Project script	Project scripts are set and operate for the whole project. For details on project scripts, refer to the following. ☞ Page 2330 Project script, screen script, script part, and script block
Screen script	Screen scripts are set and operate for each base screen and window screen (superimpose windows and overlap windows). For details on screen scripts, refer to the following. ☞ Page 2330 Project script, screen script, script part, and script block
Script part	A script parts object is placed on a base screen or a window screen (superimpose window or overlap window), and the script set for the object runs. For details on script parts, refer to the following. ☞ Page 2330 Project script, screen script, script part, and script block
Script block	Script blocks are operated by calling them from a project script or screen script as a subroutine. For details on script blocks, refer to the following. ☞ Page 2330 Project script, screen script, script part, and script block
Object script	Object scripts are set and operate for the following objects. • Touch switch ([Switch] only) • [Bit Lamp] • [Word Lamp] • [Numerical Display] • [Numerical Input] • [Text Display] • [Text Input] • [Date Display] • [Time Display] • [Bit Comment] • [Word Comment] • [Bit Parts] • [Word Parts] • [Fixed Parts] • [Frame Animation] • [Line Graph] • [Trend Graph] • [Bar Graph] • [Bar(Rectangle)] • [Pie(Circle)] • [Scatter Graph] • [Historical Trend Graph] • [Graphical Meter] • [Level] • [Panelmeter] For details on object scripts, refer to the following. ☞ Page 2447 Object script

PART 12

68 Project script, screen script, script part, and script block

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☞ Page 2331 Overview of the script function
☞ Page 2334 Specifications of the script
☞ Page 2377 How to use a script
☞ Page 2387 Program example
☞ Page 2403 [Script] dialog
☞ Page 2412 [Script Edit] dialog (for project scripts and screen scripts)
☞ Page 2415 [Edit Script(script name)] dialog
☞ Page 2417 [Script File List] dialog
☞ Page 2421 [Script Symbol] dialog
☞ Page 2424 [Script Parts] dialog
☞ Page 2428 [Script Edit] dialog (for script parts)
☞ Page 2431 Relevant settings
☞ Page 2434 Troubleshooting

68.1 Overview of the script function

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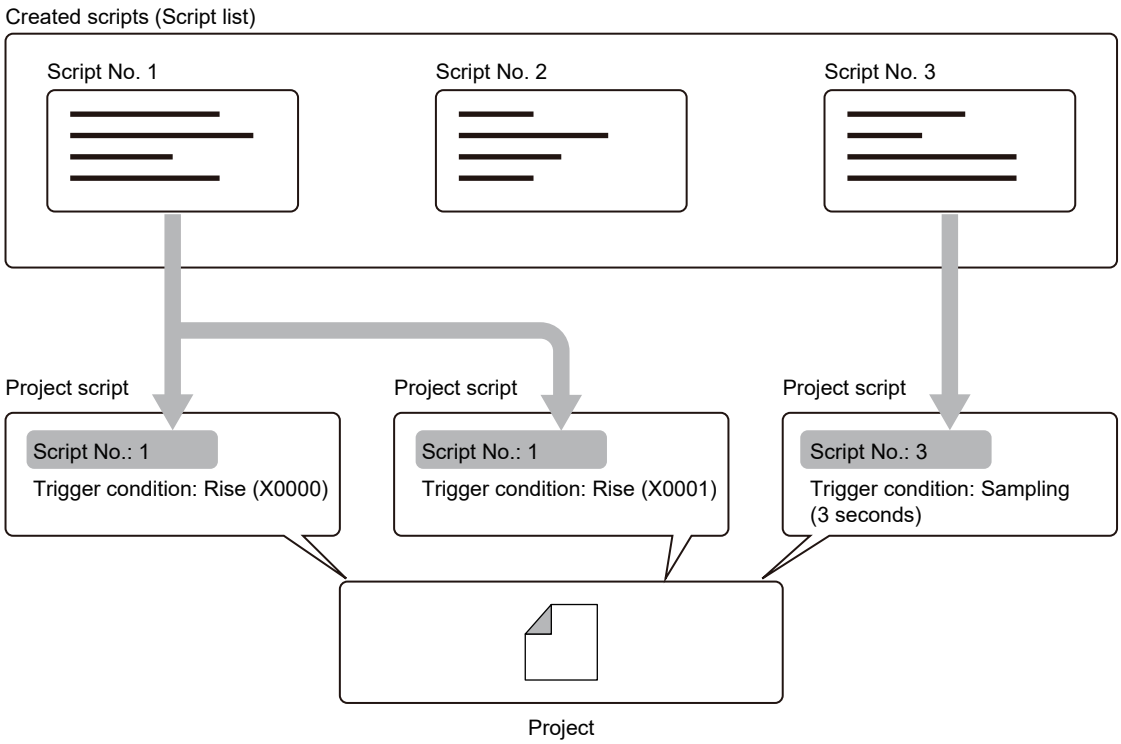
68.1.1 Overview of a project script

Set a project script for the current project.

If the trigger condition of the script is satisfied, the script runs.

A created script can be specified in a project script setting or a screen script setting.

If you edit the script, the edit will affect the project script setting or screen script setting.



Precautions

The monitor device of a project script is always operating.

Note that displaying the monitor screen may take long when the number of monitor devices is large.

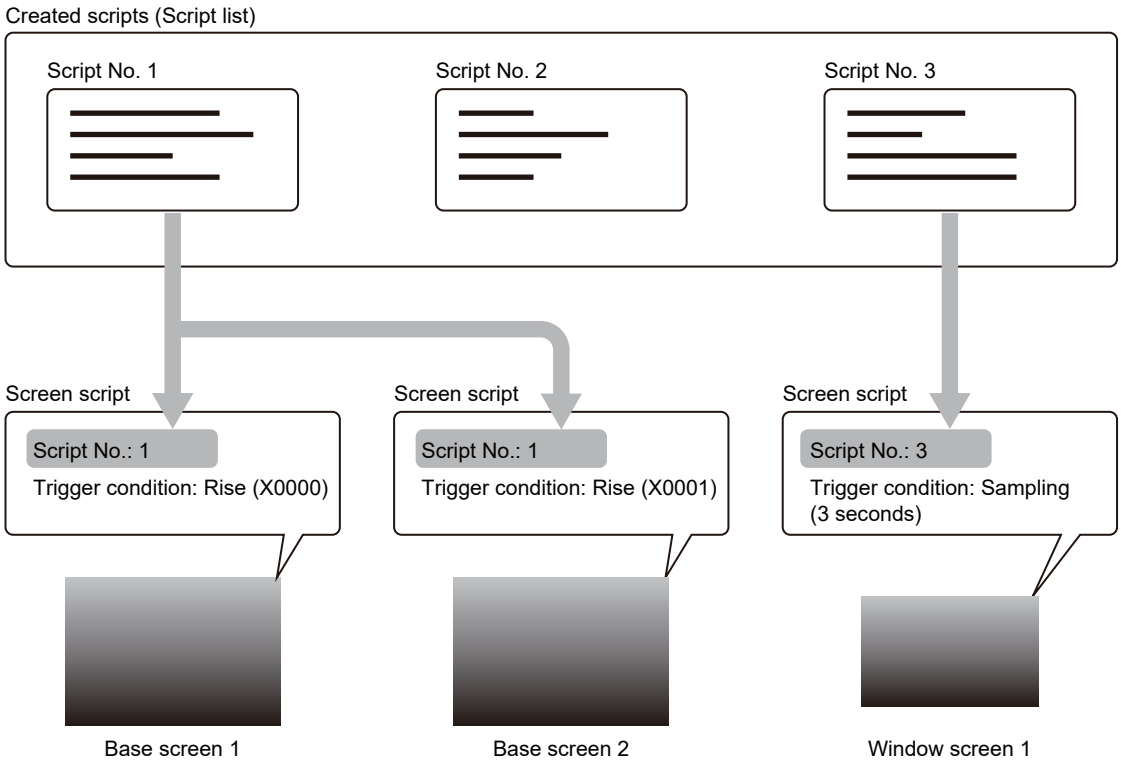
68.1.2 Overview of a screen script

Set a screen script for the user-specified screen.

While the GOT displays the screen, if the trigger condition of the script is satisfied, the script runs.

A created script can be specified in a project script setting or a screen script setting.

If you edit the script, the edit will affect the project script setting or screen script setting.



68.1.3 Overview of a script part

Place a script parts object on a screen to create a script.

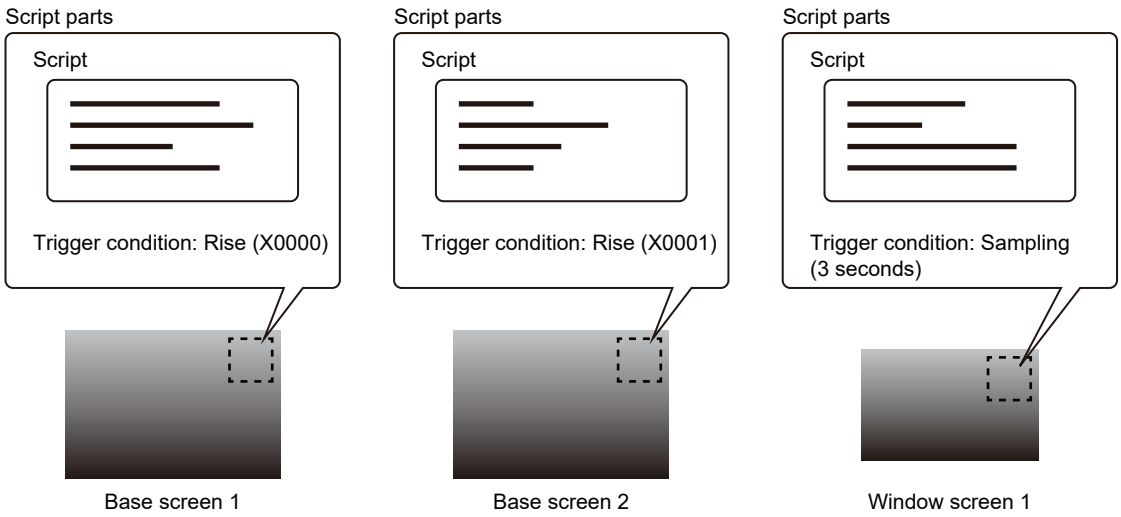
While the GOT displays the screen having a script parts object, if the trigger condition of the created script is satisfied, the script runs.

Each script parts object has its own scripts.

If you edit a script of a script parts object, the edit will not affect the other script parts objects.

The following object manipulations are supported.

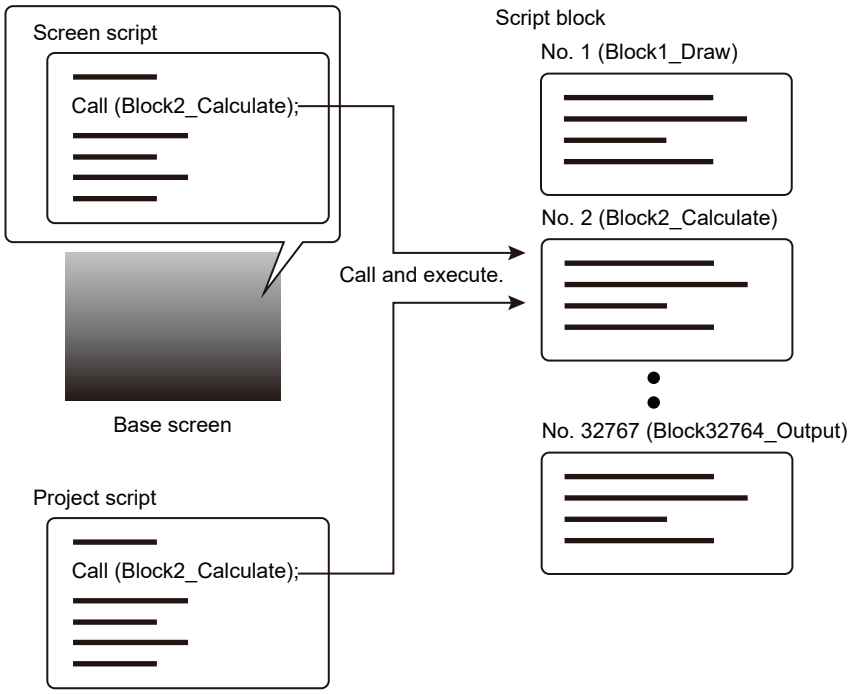
- Copying to another screen
- Grouping
- Registering to the library
- Adding to a template



A script parts object is visible only on the screen editor of GT Designer3.
The object is invisible on the GOT screen.

68.1.4 Overview of a script block

A script block is a script that is called as a subroutine from another script.
The script is executed when it is called from a project script or screen script with a call statement.
Using it to execute the same processing in multiple scripts allows you to reduce the number of steps in the script.



68.2 Specifications of the script

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☞ Page 2334 Specifications related to a script setting
☞ Page 2334 Specifications related to the behavior of a script
☞ Page 2335 Control structures for scripts
☞ Page 2352 Available data and how to express the data

68.2.1 Specifications related to a script setting

A script setting consists of a script trigger condition and a script.
The setting target, and the maximum numbers of script settings and scripts vary depending on the script type.

Script type	Setting target	Maximum number of script settings	Maximum number of scripts
Project script	Project	256	32767 (in both the project script settings and the screen script settings)
Screen script	• Base screen • Window screen (superimpose window or overlap window)	256 per screen (The script settings for called screens are included.)	
Script part		Maximum number of script parts objects: 32 per screen Maximum number of script settings: 16 per object	16 per object
Script block	• Project script • Screen script	256	256 per project

68.2.2 Specifications related to the behavior of a script

The following shows the specifications related to the behavior of a script.

Script type	Execution condition	Number of executable scripts
Project script	The trigger condition of a script is satisfied.	256
Screen script	The trigger condition of a script is satisfied while the GOT displays the screen for which the script is set.	256 per screen (in both the screen script settings and the script settings of script parts objects)
Script part		
Script block	It is called from a project script or screen script with a call statement.	256

Specifications of a screen script and script part

The following shows the behavior of a script when the set overlay screen function or a parts display object displays the screen for which the script is set.

Function	Behavior
Set overlay screen	If the set overlay screen function calls a screen for which a screen script or script part is set, the script or script part runs.
Parts display	If a parts display object displays a screen for which a screen script or a script part is set, the script does not run.

68.2.3 Control structures for scripts

The following explains the control structures for scripts.

Program scripts using the following commands (including control statements, operators, and functions).

You can describe nests (hierarchy) for if, while, and switch statements.

End a script using a return statement.

Control statement

Control statements are used to execute the conditional branches and repetitions.

Control statement	Description	
if	Syntax	if (conditional expression) {statements}
	Function	Performs a conditional control. The if statement evaluates (conditional expression). If the expression is true (other than 0), {statements} is executed. The if statement is a fundamental conditional control and used to execute specified processing when a value satisfies a condition or to alter the flow of program execution.
if to else	Syntax	if (conditional expression) {statements 1} else {statements 2}
	Function	Performs a conditional control. The if statement evaluates (conditional expression). If the expression is true (other than 0), {statements 1} is executed. If the expression is false (0), {statements 2} is executed. The if statement is a fundamental conditional control and used to execute specified processing when a value satisfies a condition or to alter the flow of program execution.
while break	Syntax	while (continuous conditional expression) {statements}
	Function	Evaluates (continuous conditional expression). As long as the expression is true (other than 0), {statements} is repeatedly executed. In the following cases, the iterative loop is terminated. • When (continuous conditional expression) is false (0) • When {statements} includes the break statement The while statement is used to execute processing repeatedly until a target condition is satisfied. (For example, repeating the processing until a device value becomes 0) If a condition is always evaluated to true (other than 0), an infinite loop is created. Use the temporary device area or a GOT internal device as the write destination.

switch
case
default
break
	Syntax	switch (target)
		{
		case constant: statements; break;
		case constant: statements; break;
		default: statements;
		}

	Function	Determines the result of the expression indicated by switch and branches the processing using a case statement and default statement. In the following cases, the statements that follow a case statement and the default statement are executed. • When (target) matches a specified constant • When (target) does not match any constant that case statements have and when there is the default statement In the following cases, the switch body {} is terminated. • When there is a break statement in the script • When there is no case statement or default statement that has the constant that matches (target) The break statement and default statement are not required in the control statement. The switch statement is used when various processing are required according to the value of a variable.
call	Syntax	call (<script block name>)
	Function	Calls and executes the script block specified in <script block name>.
return	Syntax	return;
	Function	Terminates the script. A single script can have multiple return statements.
;	Syntax	;
	Function	Indicates the end of a line. It must be put at the end of each line.

Operator (logic)

Logical operators are used to determine whether conditions in expressions, such as an if statement, are true or false.

Operator	Description	
&&	Syntax	if ((relevant expression) && (relevant expression) {·····}
	Function	If both of (relevant expression) are true, the result has 1. If either of (relevant expression) is false, the result has 0. (Logical AND operator)
||	Syntax	if ((relevant expression) || (relevant expression)) {·····}
	Function	If either of (relevant expression) is true, the result has 1. If both of (relevant expression) are false, the result has 0. (Logical OR operator)
!	Syntax	if (! (relevant expression)) {·····}
	Function	If (relevant expression) is 0, the result has 1. Otherwise, the result has 0. (Logical NOT operator)

Operator (relation)

Relational operators are used to determine the size of two values in expressions, such as an if statement.

Operator	Description	
<	Syntax	<target 1> < <target 2>
	Function	<target 1> is less than <target 2>. (Left-inequality operator)
<=	Syntax	<target 1> <= <target 2>
	Function	<target 1> is less than or equal to <target 2>. (Equivalence left-inequality operator)
>	Syntax	<target 1> > <target 2>
	Function	<target 1> is greater than <target 2>. (Right-inequality operator)
>=	Syntax	<target 1> >= <target 2>
	Function	<target 1> is greater than or equal to <target 2>. (Equivalence right-inequality operator)
!=	Syntax	<target 1> != <target 2>
	Function	<target 1> and <target 2> are not equal. (Inequality operator)
==	Syntax	<target 1> == <target 2>
	Function	<target 1> and <target 2> are equal. (Equality operator)

Operator (arithmetic)

Arithmetic operators are used for four arithmetic operations.

Operator	Description	
+	Syntax	<target> + <factor>
	Function	Adds <factor> to <target>. (Addition operator)
-	Syntax	<target> - <factor>
	Function	Subtracts <factor> from <target>. (Subtraction operator)
*	Syntax	<target> * <factor>
	Function	Multiplies <target> by <factor>. (Multiplication operator)
/	Syntax	<target> / <factor>
	Function	Divides <target> by <factor>. (Division operator) When <factor> is 0, the script operation stops.
%	Syntax	<target> % <factor>
	Function	Finds the remainder dividing <target> by <factor>. (Remainder operator) When <factor> is 0, the script operation stops.

Operator (bit device)

Bit device operators are used for bit device logical operations, alternations, and shift operations.

Operator	Description	
&	Syntax	<target> & <factor>
	Function	Finds the logical product (AND) of <target> and <factor>. (Bit accumulation operator)
|	Syntax	<target> | <factor>
	Function	Finds the logical add (OR) of <target> and <factor>. (Bit addition operator)
~	Syntax	~<bit>
	Function	Negates (alternates) <bit>. (Complement operator)
^	Syntax	<target> ^ <factor>
	Function	Finds the exclusive logical add (XOR) of <target> and <factor>. (Bit difference operator)
<<	Syntax	<target> << <factor>
	Function	Shifts <target> left by the number of bits specified by <factor>. (Left-shift operator)
>>	Syntax	<target> >> <factor>
	Function	Shifts <target> right by the number of bits specified by <factor>. (Right-shift operator)

Precautions

If you perform a bitwise operation on the device with a signed data type, an unexpected value may result.
Set an unsigned data type for the target device of a bitwise operation.

Operator (assignment)

Assignment operators are symbols used to assign device values.

Operator	Description	
=	Syntax	<device> = <target>
	Function	Stores <target> in <device>. (Assignment operator)

Variables

Variables are used to represent devices in scripts.

Variable	Description	
Device and temporary device area	Syntax	[w:GD150]
	Function	Indicates a PLC CPU device, a GOT internal device, or a temporary device area. For devices and temporary device areas, refer to the following. ☞ Page 2352 Available data and how to express the data

Functions (device operation)

Device operation functions are used to turn on, turn off, and alternate bit devices.

Function	Description	
set	Syntax	set (<bit device>)
	Function	Turns on <bit device>.
	Example	set([b:M0001]);
rst	Syntax	rst (<bit device>)
	Function	Turns off <bit device>.
	Example	rst([b:M0001]);
alt	Syntax	alt (<bit device>)
	Function	Inverts <bit device>.
	Example	alt([b:M0001]);

Functions (consecutive device operation)

Consecutive device operation functions are used to transfer device values to another device at a time.

These functions cannot be used in object scripts.

For the data type of arguments, refer to the following.

☞ Page 2359 Data type setting and function definition

Function	Description	
bmov	Syntax	bmov (<word device 1>, (word device 2>, <integer>)
	Function	Batch-transfers the data in the devices in the contiguous sequence, the first area of which is <word device 1>, to the devices in the contiguous sequence, the first area of which is <word device 2>. The number of the devices in the contiguous sequence is specified by <integer>.
	Data type of arguments	<word device 1>, <word device 2>: Specified data format*1 <integer>: long
	Example	bmov([w:D100],[w:D500],10);
fmov	Syntax	fmov (<word device 1>, (word device 2>, <integer>)
	Function	Transfers the data in <word device 1> to the devices in the contiguous sequence, the first area of which is <word device 2>. The number of the devices in the contiguous sequence is specified by <integer>.
	Data type of arguments	<word device 1>, <word device 2>: Specified data format*1 <integer>: long
	Example	fmov([w:D100],[w:D500],10);

*1 Set the same data type for the word device 1 and word device 2.

■Data type

When using bmov or fmov, use the same data type for <word device 1> and <word device 2>.

Otherwise, an error occurs during the syntax check.

☞ Page 2375 Data type conversion function

Functions (application arithmetic operation)

Application arithmetic operation functions are used for advanced calculations such as trigonometric functions, logarithms, exponents, and square roots.

For the data type of arguments and return values, refer to the following.

☞ Page 2359 Data type setting and function definition

Function	Description	
sin	Syntax	sin (<word device or constant>)
	Function	Calculates the sine of a specified <word device or constant>. (Sine) Specify <word device or constant> in radian.
	Data type of arguments	<word device or constant>: double
	Return value	double
	Example	sin([w:D100]);
cos	Syntax	cos (<word device or constant>)
	Function	Calculates the cosine of a specified <word device or constant>. (Cosine) Specify <word device or constant> in radian.
	Data type of arguments	<word device or constant>: double
	Return value	double
	Example	cos([w:D100]);

Function	Description	
tan	Syntax	tan (<word device or constant>)
	Function	Calculates the tangent of a specified <word device or constant>. (Tangent) Specify <word device or constant> in radian.
	Data type of arguments	<word device or constant>: double
	Return value	double
	Example	tan([w:D100]);
asin	Syntax	asin (<word device or constant>)
	Function	Calculates the arc sine of <word device or constant>. (Arc sine) Specify <word device or constant> in radian.
	Data type of arguments	<word device or constant>: double
	Return value	double
	Example	asin([w:D100]);
acos	Syntax	acos (<word device or constant>)
	Function	Calculates the arc cosine of <word device or constant>. (Arc cosine) Specify <word device or constant> in radian.
	Data type of arguments	<word device or constant>: double
	Return value	double
	Example	acos([w:D100]);
atan	Syntax	atan (<word device or constant>)
	Function	Calculates the arc tangent of <word device or constant>. (Arc tangent) Specify <word device or constant> in radian.
	Data type of arguments	<word device or constant>: double
	Return value	double
	Example	atan([w:D100]);
abs	Syntax	abs (<word device or constant>)
	Function	Calculates the absolute value of <word device or constant>. (Absolute value)
	Data type of arguments	<word device or constant>: double
	Return value	double
	Example	abs([w:D100]);
log	Syntax	log (<word device or constant>)
	Function	Calculates the base-e logarithm <natural logarithm> of <word device or constant>.
	Data type of arguments	<word device or constant>: double
	Return value	double
	Example	log([w:D100]);

Function	Description	
log10	Syntax	log10 (<word device or constant>)
	Function	Calculates the base-10 logarithm (common logarithm) of <word device or constant>. (Common logarithm)
	Data type of arguments	<word device or constant>: double
	Return value	double
	Example	log10([w:D100]);
exp	Syntax	exp (<word device or constant>)
	Function	Calculates the value of e raised to the power of <word device or constant>. (Exponent)
	Data type of arguments	<word device or constant>: double
	Return value	double
	Example	exp([w:D100]);
ldexp	Syntax	ldexp (<word device 1 or constant 1>, <word device 2 or constant 2>)
	Function	Calculates <word device 1 or constant 1> multiplied by (2 raised to the power of <word device 2 or constant 2>). (Exponent of product)
	Data type of arguments	<word device 1 or constant 1>: double <word device 2 or constant 2>: long
	Return value	double
	Example	ldexp([w:D100], [w:D101]);
sqrt	Syntax	sqrt (<word device or constant>)
	Function	Calculates the square root of <word device or constant>. (Square root)
	Data type of arguments	<word device or constant>: double
	Return value	double
	Example	sqrt([w:D100]);

Functions (file operation)

File operation functions are used for operations such as new file creation, file name change, movement, and deletion.

For the arguments used for the file operation function, refer to the following.

☞ Page 2357 Arguments for the file operation function and string operation function and how to express them

For the data type of arguments and return values, refer to the following.

☞ Page 2359 Data type setting and function definition

Function	Description	
file_getlist	Syntax	file_getlist (<folder name>, <file name>, <storage device>, <offset>, <number of files>, <maximum number of characters>)
	Function	Obtains the file list. Extracts file names equivalent to the number of characters specified by <maximum number of characters>, and stores the file names in <storage device> and the following devices in the contiguous sequence. The number of files specified by <number of files> is read from the xth file (x is specified by <offset>) counted from the first specified by <folder name> and <file name>.
	Data type of arguments	<folder name>, <file name>, <storage device>, <offset>, <number of files>, <maximum number of characters>: long
	Return value	long Normal: Number of obtained files When a specified file is nonexistent or the value of <offset> is larger than the number of existing files: 0 Error: -1
	Example	[s16:D500] = file_getlist("X:\\Package1\\", "*.DAT", [w:D100], 3, 2, 8);

Function	Description	
file_getfolderlist	Syntax	file_getfolderlist (<folder name 1>, <folder name 2>, <storage device>, <offset>, <number of folders>, <maximum number of characters>)
	Function	Obtains the folder list. In a folder specified by <folder name 1> and <folder name 2>, obtains characters of the name of the <offset>th and subsequent folders. Then, stores the obtained characters in <storage device> and subsequent devices. The number of obtained characters is specified by the <maximum number of characters>, and that of target folders is specified by <number of folders>.
	Data type of arguments	<folder name 1>, <folder name 2>, <offset>, <number of folders>, <maximum number of characters>: long <storage device>: Signed 32-bit binary
	Return value	long Normal: Number of obtained folders When a specified folder is nonexistent or the value of <offset> is larger than the number of existing folders: 0 Error: -1
	Example	[s16:D500] = file_getfolderlist("X:\\Package1\\", "", [w:D100], 6, 2, 8);
file_read*2	Syntax	file_read (<folder name>, <file name>, <storage device>, <offset>, <number of read bytes>)
	Function	Reads data from a file. Reads data of the file specified by <folder name> and <file name>, and stores the data in <storage device> and the following devices in the contiguous sequence. The number of bytes specified by <number of read bytes> is read from the xth byte (x is specified by <offset>).
	Data type of arguments	<folder name>, <file name>, <storage device>, <offset>, <number of read bytes>: long
	Return value	long Normal: Size of read data (bytes) When <number of read bytes> is 0 or <offset> is greater than the file size: 0 Error: -1
	Example	[s16:D500] = file_read("X:\\Package1\\", "ARP00001.DAT", [w:D100], 4, 16);
file_lineread*2	Syntax	file_lineread (<folder name>, <file name>, <storage device>, <offset>, <maximum number of read bytes>)
	Function	Reads only one line of data from a file. This function is for an ASCII or Shift-JIS file. Reads 1-line data starting from the <offset>th byte from a file specified by <folder name> and <file name>, and stores the data in <storage device> and subsequent devices. Data size that can be read at a time is within <maximum number of read bytes>.
	Data type of arguments	<folder name>, <file name>, <storage device>, <offset>, <maximum number of read bytes>: long
	Return value	long Normal: Size of read data (bytes)*1 When <number of read bytes> is 0 or <offset> is greater than the file size: 0 Error: -1
	Example	[s16:D200] = file_lineread("X:\\Package1\\", "ARP00001.CSV", [w:D300], 0, 32);
file_unilineread*2	Syntax	file_unilineread (<folder name>, <file name>, <storage device>, <offset>, <maximum number of read bytes>)
	Function	Reads only one line of data from a file. This function is for a Unicode file. Reads 1-line data starting from the <offset>th byte from a file specified by <folder name> and <file name>, and stores the data in <storage device> and subsequent devices. Data size that can be read at a time is within <maximum number of read bytes>.
	Data type of arguments	<folder name>, <file name>, <storage device>, <offset>, <maximum number of read bytes>: long
	Return value	long Normal: Size of read data (bytes)*1 When <number of read bytes> is 0 or <offset> is greater than the file size: 0 Error: -1
	Example	[s16:D200] = file_unilineread("X:\\Package1\\", "ARP00001.txt", [w:D300], 0, 32);

Function	Description	
file_write[*2]	Syntax	file_write (<folder name>, <file name>, <storage device>, <offset>, <number of write bytes>, <mode>)
	Function	Writes data to the file. Writes data in a manner specified by <mode>. • New: 0 Creates the file specified by <folder name> and <file name> to which device data is written. The number of bytes specified by <number of write bytes> of the device data in <storage device> and the following devices in the contiguous sequence is written. When the file that <file name> specifies already exists, the file is deleted and a new file is created. • Addition: 1 Adds data equivalent to the number of bytes specified by <number of write bytes> in <storage device> and the following devices in the contiguous sequence to the end of the file specified by <folder name> and <file name>. When <file name> specifies a file that does not exist, a new file is created. • Overwrite: 2 Overwrites a position in the file specified by <folder name> and <file name> with the device data equivalent to the number of bytes specified by <number of write bytes> in <storage device> and the following devices in the contiguous sequence. The position in the file is specified by <offset>.
	Data type of arguments	<folder name>, <file name>, <storage device>, <offset>, <number of write bytes>, <mode>: long
	Return value	long Normal: Size of written data (bytes) Error: -1
	Example	[s16:D500] = file_write("X:\\Package1\\", "ARP00001.DAT", [w:D100], 4, 16, 2);
file_rename	Syntax	file_rename (<folder name>, <file name>, <new file name>)
	Function	Renames the file. Changes <file name> of the file specified by <folder name> and the <file name> to <new file name>.
	Data type of arguments	<folder name>, <file name>, <new file name>: long
	Return value	long Normal: 0 Error: -1
	Example	[s16:D500] = file_rename("X:\\Package1\\", "ARP00001.DAT", "DATA1201.DAT");
file_delete	Syntax	file_delete (<folder name>, <file name>)
	Function	Deletes the file. Deletes a specified <file name> in <folder name>.
	Data type of arguments	<folder name>, <file name>: long
	Return value	long Normal: 0 Error: -1
	Example	[s16:D500] = file_delete("X:\\Package1\\", "ARP00001.DAT");
file_copy	Syntax	file_copy (<copy source folder name>, <copy source file name>, <copy destination folder name>, <copy destination file name>, <copy mode>)
	Function	Copies the file. Copies the file specified by <copy source folder name> and <copy source file name> into the folder specified by <copy destination folder name> changing the file name to <copy destination file name>. With <copy mode>, whether or not write protection is imposed can be specified. • Overwrite prohibited: 0 • Overwrite allowed: 1 When <copy destination folder name> specifies a folder that does not exist, a new folder is created and the file is pasted. A file with the length of 0 byte is copied.
	Data type of arguments	<copy source folder name>, <copy source file name>, <copy destination folder name>, <copy destination file name>, <copy mode>: long
	Return value	long Normal: 0 Error: -1
	Example	[s16:D500] = file_copy("X:\\Package1\\", "ARP00001.DAT", "B:\\backup\\", "", 1);

Function	Description	
file_xcopy	Syntax	file_xcopy (<copy source folder name 1>, <copy source folder name 2>, <copy destination folder name 1>, <copy destination folder name 2>, <copy mode>)
	Function	Copies the folder. Copies the folders specified by <copy source folder name 1> and <copy source folder name 2> to the folders specified by <copy destination folder name 1> and <copy destination folder name 2>. With <copy mode>, whether or not write protection is imposed and sub folders are set as the target for a copy can be specified. • Overwrite prohibited, subfolders not copied: 0 • Overwrite allowed, subfolders not copied: 1 • Overwrite prohibited, subfolders copied: 2 • Overwrite allowed, subfolders copied: 3
	Data type of arguments	<copy source folder name 1>, <copy source folder name 2>, <copy destination folder name 1>, <copy destination folder name 2>, <copy mode>: long
	Return value	long Normal: 0 Error: -1
	Example	[s16:D500] = file_xcopy("X:\\Package1\\", "sample1", "B:\\backup\\", "sample1", 1);
#pragma folder_name_length	Syntax	#pragma folder_name_length (<maximum number of folder name characters>)
	Function	Declares the maximum number of characters in a folder name within the range of 1 to 78. Use this declaration statement to specify a folder name with a device. If a folder name is directly specified by character strings, this function is invalid. Up to 12 characters can be used for a folder name when this declaration statement is not used. The declaration statement is declared only once before the body of the script. Declarations in the calling source do not apply to script blocks. To apply a declaration to a script block, the declaration must be made within the script block to be called. Additionally, declarations in a script block do not apply to the calling source script.
	Example	#pragma folder_name_length(14)
#pragma file_name_length	Syntax	#pragma file_name_length (<maximum number of file name characters>)
	Function	Declares the maximum number of characters in a file name within the range of 1 to 78. Use this declaration statement to specify a file name with a device. If a file name is directly specified by character strings, this function is invalid. Up to 12 characters can be used for a file name when this declaration statement is not used. The declaration statement is declared only once before the body of the script. Declarations in the calling source do not apply to script blocks. To apply a declaration to a script block, the declaration must be made within the script block to be called. Additionally, declarations in a script block do not apply to the calling source script.
	Example	#pragma file_name_length(12)
#pragma use_character_code unicode	Syntax	#pragma use_character_code unicode
	Function	Declares that the characters of the folder name and file name specified in a file operation function are used as Unicode characters. The characters of the folder name and file name, which are obtained using "file_getlist" or "file_getfolderlist", are encoded in Unicode. When this declaration statement is not used, the characters of the folder name and file name are encoded in ASCII. The declaration statement is declared only once before the body of the script. Declarations in the calling source do not apply to script blocks. To apply a declaration to a script block, the declaration must be made within the script block to be called. Additionally, declarations in a script block do not apply to the calling source script.
	Example	#pragma use_character_code unicode

*1 The data which is read does not contain line feed codes but the return value contains the number of bytes containing line feed codes.

*2 Specify a data storage order (from higher-order bytes or from lower-order bytes) in GT Designer3 or with GS390.

Setting method	Description
Setting in GT Designer3	Set [File/Text Handling Function Storage Order] on the [Option] tab in the [Script] dialog. ☞ Page 2410 [Option] tab
Setting with GS390	Specify a data storage order with the value of GS390. • 0 or 3 or more: Data is stored in the order specified in GT Designer3. • 1: Data is stored from lower-order bytes. • 2: Data is stored from higher-order bytes.

■Devices used for arguments

If a controller device is used for any of the following arguments, a function using the argument takes a long time to execute. Therefore, using a GOT internal device is recommended.

- <folder name>
- <folder name 1>
- <folder name 2>
- <file name>
- <storage device>
- <new file name>
- <copy source folder name>
- <copy source folder name 1>
- <copy source folder name 2>
- <copy source file name>
- <copy destination folder name>
- <copy destination folder name 1>
- <copy destination folder name 2>
- <copy destination file name>

■Order of storing data in arguments

The [File/Text Handling Function Storage Order] setting is not applied to some arguments.
When the setting is not applied, the argument storage order is fixed to [Low→High].
☞ Page 2410 [Option] tab

Argument to which the [File/Text Handling Function Storage Order] setting is applied	Argument to which the [File/Text Handling Function Storage Order] setting is not applied
<storage device> for the following functions • file_read • file_write • file_lineread • file_unilineread	Arguments other than <storage device> for the following functions • file_read • file_write • file_lineread • file_unilineread All arguments for the following functions • file_getlist • file_getfolderlist • file_rename • file_delete • file_copy • file_xcopy

When [High→Low] is selected for [File/Text Handling Function Storage Order] and a string operation function and a file operation function are used together, the resulting operation may not be as intended depending on whether the setting for [File/Text Handling Function Storage Order] is applied or not.
Although a 32-bit data type such as signed 32-bit binary can be specified for the device specified in the argument, the storage order setting operates in 16-bit units.
When specifying the storage order, it is recommended that you specify a 16-bit data type such as signed 16-bit binary data.

■Data type

When using the file operation functions, do not specify BCD for the data type of the storage devices.
Doing so may disable detection of abnormality in the script.

■Data type for [w:device]

The data type for [w:device] is set to the one specified in the [Script Edit] dialog.
When using [w:device] for the file operation functions, do not specify BCD for the data type of the storage devices.

■Character code for the file line read function (file_lineread, file_unilineread)

When using file_lineread or file_unilineread, pay attention to the supported character codes (ASCII, Unicode).
If a character with an unsupported character code is read, the function handles it as a supported character code, resulting in incorrect output.

■Operations while files are read or written

The following file operation functions cannot be executed while the target file is accessed by other functions.
Execute the functions after the access to the target file from the other functions is complete.

File status	File operation function that cannot be executed
Being written from another function	• file_read • file_write • file_lineread • file_unilineread • file_rename • file_delete • file_copy • file_xcopy
Being read to another function	• file_write • file_rename • file_delete • file_copy*1 • file_xcopy*1

*1 This function cannot be executed while the copy destination file is being read.

■Influences on other functions

When the size of the files handled by the file operation function is large or the number of files is large, the following functions may delay the processing.

- Trigger action
- Time action
- Clock control
- Update of system information
- Update of GOT special register (GS)
- Screen save
- Object for which the trigger type of the display condition is set to [Sampling]
- Data saving by buffering and file access control (GS520)
- Delay of touch switch
- Clock display update of utility

■Overwritten file of the file write function (file_write)

Overwriting when <mode> for file_write is 1 or 2 is recommended only for files created by the file operation function.
If a file other than the above is overwritten, the file may be broken.

■Argument for the file rename function (file_rename)

When the full path to a file to be renamed is specified in <folder name>, do not leave <file name> blank.
Otherwise, the file name is not renamed correctly.

Ex.

When specifying the full path to a file in <folder name> without setting <file name>
[s16:D500] = file_rename("A:\\Package1\\ARP00001.DAT", "", "DATA-15-JAN-08.DAT"); //Renames file name.
The file name with the folder name is renamed from "A:\Package1\ARP00001.DAT" to "A:\Package1\ARP00001.DATDATA-15-JAN-08.DAT".

When specifying the full path to a file in <file name>, specify the full path to the file in <renamed file name> also.
Otherwise, the path is changed together with the change of the file name.
Therefore, the file is not moved in the intended location.

Ex.

When specifying the full path to a file in <file name> without setting <folder name>
[s16:D500] = file_rename("", "A:\\Package1\\ARP00001.DAT", "DATA-15-JAN-08.DAT"); //Renames file name.
The file name is renamed from "A:\Package1\ARP00001.DAT" to "A:\DATA-15-JAN-008.DAT".

■Argument for the file copy function (file_copy)

If there is no folder specified in <copy destination folder name>, create a folder when copying the file.
Make sure to add "\\" at the end of <copy destination folder name>.
Otherwise, the file is renamed to the folder name specified in <copy destination folder name> and copied.

Ex.

When there is no folder specified in <copy destination folder name> and "\\" is not added at the end of <copy destination folder name>
[s16:D200] = file_copy("A:\\Package1\\ARP00001.DAT", "B:\\backup", "", 1); //Copies file.
If no backup folder exists in the drive B, "ARP00001.DAT" is renamed to backup and copied in "B:\\".

Do not create any folder in the same name as that of the file specified in <copy source file name> in the copy destination drive.
Otherwise, the file cannot be copied correctly.

■Operation of the folder copy function (file_xcopy)

If an error occurs during the copying process, copying files stops.
The files copied before interruption are correctly copied.
Do not create any folder in the same name as that of the file specified in <copy source file name> in the copy destination drive.
Otherwise, the file cannot be copied correctly.

■Maximum number of characters in the folder or file name

When specifying the folder and file names with devices, keep the maximum number of characters that are specified by the declaration statement (#pragma folder_name_length, #pragma file_name_length) to a minimum.

When specifying the folder and file names with devices, the GOT reads as many devices as the number of the characters specified in the declaration statement.

If the values specified in the functions exceed the actual number of the file and folder name characters, the GOT reads unnecessary devices.

Reading unnecessary data results in an excessive load on the communication process, so such an operation as updating a screen or executing a script may take longer time.

Ex.

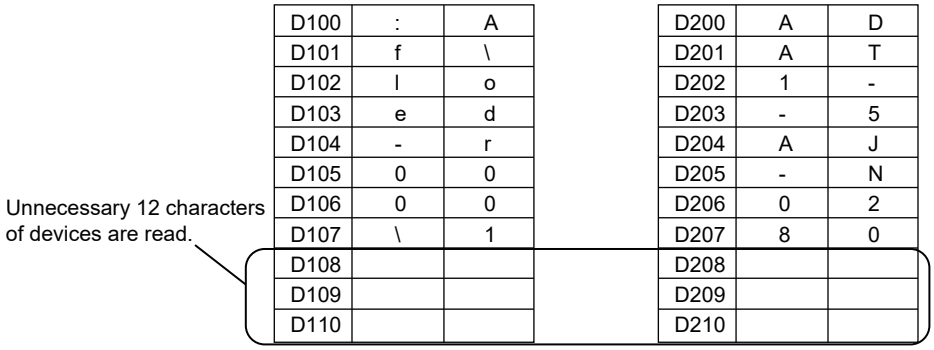
When the maximum number of characters in a file name is set to 22 and the number of characters in the actual file name is 16

D100 to D110: Holds the folder name "A:\folder-00001\".

D200 to D210: Holds the file name "DATA-15-JAN-2008".

GD100: Storage device

```
#pragma folder_name_length(22)                          //Limits the maximum folder name length to 22 characters.
#pragma file_name_length(22)                            //Limits the maximum file name length to 22 characters.
[s16:D500]=file_read([w:D100],[w:D200],[w:GD100],0,16); //Reads the 16-byte data from the specified file.
```



D100	:	A		D200	A	D
D101	f	\		D201	A	T
D102	l	o		D202	1	-
D103	e	d		D203	-	5
D104	-	r		D204	A	J
D105	0	0		D205	-	N
D106	0	0		D206	0	2
D107	\	1		D207	8	0
D108				D208		
D109				D209		
D110				D210		

Functions (string operation)

The string operation functions are used to partially read strings stored in the devices or convert strings of different character codes and write them to the devices.

By using a file operation function together with a string operation function, you can read data from a CSV file or Unicode text file, or edit the file.

For the arguments available to the string operation functions, refer to the following.

☞ Page 2357 Arguments for the file operation function and string operation function and how to express them

For the data type of arguments and return values, refer to the following.

☞ Page 2350 Devices used for arguments

Function	Description	
str_scanf	Syntax	str_scanf (<input string storage device>, <input byte count>, <offset>, <format>, <input value storage device>, <input value storage device>, ...)
	Function	Use this function to read data from an ASCII or Shift JIS string. Stores the character string equivalent to <input byte count> extending from the xth byte (x is specified by <offset>) of <input string storage device> in <input value storage device> in the format specified by <format>. Up to 10 pieces of data can be read.
	Data type of arguments	<input string storage device>, <input byte count>, <offset>: long <format>: Character string <input value storage device>, ...: Changes the specified data type to the device type.
	Return value	long Normal: Number of the pieces of read data Error: -1
	Example	[s16:D500] = str_scanf([w:D100], 32, 0, "%d,%4x", [w:D200], [w:D204]);

Function	Description	
str_printf	Syntax	str_printf (<output string storage device>, <output byte count>, <format>, <output value storage device>, <output value storage device>, ...)
	Function	Use this function to write a device value in ASCII or Shift JIS code. Writes the value of <output value storage device> equivalent to <output byte count>, starting from the first byte of <output string storage device> in <format>. A null is appended to a string, and therefore specify "the number of characters + 1" for <output byte count>. Up to 10 pieces of data can be written.
	Data type of arguments	<output string storage device>, <output byte count>: long <format>: Character string <output value storage device>, ...: Changes the device value to the specified data type.
	Return value	long Normal: Data length of the written string (bytes) Error: -1
	Example	[s16:D500] = str_printf([w:D100], 18, "%04d,%4x,%4.2f\r\n", [s16:D200], [s16:D300], [flt:D400]);
str_strlen	Syntax	str_strlen (<input string storage device>, <input byte count>)
	Function	Use this function to obtain the data length of an ASCII or Shift JIS string. Obtains the data length of characters from the first byte of <input string storage device> to the byte specified by <input byte count>.
	Data type of arguments	<input string storage device>, <input byte count>: long
	Return value	long Normal: Data length of the string (bytes) Error: -1
	Example	[s16:D500] = str_strlen([w:D100], 10);
str_strmid	Syntax	str_strmid (<input string storage device>, <output string storage device>, <offset>, <string length>)
	Function	Use this function to read a part of an ASCII or Shift JIS string and write the read data to a device. Stores the character string equivalent to <string length> extending from the xth byte (x is specified by <offset>) of <input string storage device> in <output string storage device>.
	Data type of arguments	<input string storage device>, <output string storage device>, <offset>, <string length>: long
	Return value	long Normal: Data length of the read string (bytes) Error: -1
	Example	[s16:D500] = str_strmid([w:D100], [w:D200], 5, 7);
str_uniscanf	Syntax	str_uniscanf (<input string storage device>, <input byte count>, <offset>, <format>, <input value storage device>, <input value storage device>, ...)
	Function	Use this function to read data from a Unicode string. Stores the character string equivalent to <input byte count> extending from the xth byte (x is specified by <offset>) of <input string storage device> in <input value storage device> in the format specified by <format>. Up to 10 pieces of data can be read.
	Data type of arguments	<input string storage device>, <input byte count>, <offset>: long <format>: Character string <input value storage device>, ...: Changes the specified data type to the device type.
	Return value	long Normal: Number of the pieces of read data Error: -1
	Example	[s16:D500] = str_uniscanf([w:D100], 32, 0, "%d%5s", [s16:D200], [w:D300]);
str_uniprintf	Syntax	str_printf (<output string storage device>, <output byte count>, <format>, <output value storage device>, <output value storage device>, ...)
	Function	Use this function to write a device value in Unicode. Writes the value of <output value storage device> equivalent to <output byte count>, starting from the first byte of <output string storage device> in <format>. A null is appended to a string, and therefore specify "the number of characters + 2" for <output byte count>. Up to 10 pieces of data can be written.
	Data type of arguments	<output string storage device>, <output byte count>: long <format>: Character string <output value storage device>, ...: Changes the device value to the specified data type.
	Return value	long Normal: Data length of the written string (bytes) Error: -1
	Example	[s16:GD400] = str_uniprintf([w:GD100], 32, "%04d?t%5s\r\n", [s16:GD200], [w:GD300]);

Function	Description	
str_unistrlen	Syntax	str_unistrlen (<input string storage device>, <input byte count>)
	Function	Use this function to obtain the data length of a Unicode string. Obtains the data length of characters from the first byte of <input string storage device> to the byte specified by <input byte count>.
	Data type of arguments	<input string storage device>, <input byte count>: long
	Return value	long Normal: Data length of the string (bytes) Error: -1
	Example	[s16:GD200] = str_unistrlen([w:GD100], 20);
str_unistrmid	Syntax	str_unistrmid (<input string storage device>, <output string storage device>, <offset>, <string length>)
	Function	Use this function to read a part of a Unicode string and write it to a device. Stores the character string equivalent to <string length> extending from the xth byte (x is specified by <offset>) of <input string storage device> in <output string storage device>.
	Data type of arguments	<input string storage device>, <output string storage device>, <offset>, <string length>: long
	Return value	long Normal: Data length of the read string (bytes) Error: -1
	Example	[s16:GD400] = str_unistrmid([w:GD100], [w:GD200], 10, 5);
str_lc2uni	Syntax	str_lc2uni (<local code type>, <original string storage device>, <destination string storage device>, <input byte count>, <output byte count>)
	Function	Use this function to encode characters in a local code to characters in Unicode. Reads characters from a string in <local code type> in <original string storage device> and subsequent devices. The number of read characters is specified by <input byte count>. The following shows the setting of <local code>. • 0: Depends on the system language. (ASCII for English, Shift JIS for other languages): 0 • SJIS: 1 • ASCII: 2 • GB: 3 • KS: 4 • Big5: 5 Encodes the read characters to Unicode, and writes the Unicode characters to <destination string storage device> and subsequent devices. The number of written characters is specified by <output byte count>. A character that cannot be encoded is replaced with a space.
	Data type of arguments	<local code type>, <conversion source string storage device>, <conversion destination string storage device>, <input byte count>, <output byte count>: long
	Return value	long Normal: Data length of the written string (bytes) Error: -1
	Example	[s16:GD300] = str_lc2uni(1, [w:GD100], [w:GD200], 6, 12);
str_uni2lc	Syntax	str_uni2lc (<local code type>, <original string storage device>, <destination string storage device>, <input byte count>, <output byte count>)
	Function	Use this function to encode characters in Unicode to characters in a local code. Reads characters from a Unicode string in <original string storage device> and subsequent devices. The number of read characters is specified by <input byte count>. The read Unicode characters are encoded to a character code specified in <local code type>, and the encoded characters are written to <destination string storage device> and subsequent devices. The number of written characters is specified by <output byte count>. A character that cannot be encoded is replaced with a space.
	Data type of arguments	<local code type>, <conversion source string storage device>, <conversion destination string storage device>, <input byte count>, <output byte count>: long
	Return value	long Normal: Data length of the written string (bytes) Error: -1
	Example	[s16:GD300] = str_uni2lc(3, [w:GD100], [w:GD200], 12, 6);

■Devices used for arguments

If a controller device is used for any of the following arguments, a function using the argument takes a long time to execute. Therefore, using a GOT internal device is recommended.

- <input string storage device>
- <output string storage device>
- <input value storage device>
- <output value storage device>
- <original string storage device>
- <destination string storage device>

■Order of storing data in arguments

The [File/Text Handling Function Storage Order] setting is not applied to some arguments.
When the setting is not applied, the argument storage order is fixed to [Low→High].
☞ Page 2410 [Option] tab

Argument to which the [File/Text Handling Function Storage Order] setting is applied	Argument to which the [File/Text Handling Function Storage Order] setting is not applied
• <input string storage device> • <output string storage device>	• Arguments other than <input string storage device> and <output string storage device>

When [High→Low] is selected for [File/Text Handling Function Storage Order] and a string operation function and a file operation function are used together, the resulting operation may not be as intended depending on whether the setting for [File/Text Handling Function Storage Order] is applied or not.

Although a 32-bit data type such as signed 32-bit binary can be specified for the device specified in the argument, the storage order setting operates in 16-bit units.
When specifying the storage order, it is recommended that you specify a 16-bit data type such as signed 16-bit binary data.

■Character code for string operation function

When using string operation functions, pay attention to the supported character codes (ASCII, Shift JIS, Unicode).
If a character with an unsupported character code is read, the function handles it as a supported character code, resulting in incorrect output.

■Return value when an error occurs

If an error occurs when data in a device set as an argument is being read or written, execution of the script is aborted. Therefore, no return value is stored in the device for storing the return value.

Others

Constants, symbols, and declaration statements used to write scripts

Item	Description	
Constant	Syntax	1234
	Function	Constant (decimal number, hexadecimal number, BCD, real number, character string) For details on the constants, refer to the following. ☞ Page 2352 Available constants and how to express the constants
#pragma use_ptmp_length	Syntax	#pragma use_ptmp_length (<points to be used>)
	Function	It can only be used with script parts. Declare the number of script parts temporary device areas (PTMP) ranging from 1 to 32768. If not declared, the number is 1024. (PTMP0 to PTMP1023) The declaration statement is declared before the body of the script. When multiple numbers are declared in a script part, the maximum number is applied. When a value out of the range is set in <maximum number of areas>, the declaration becomes disabled. (1024, PTMP0 to PTMP1023)
	Example	#pragma use_ptmp_length (32768)
Local Symbol Definition	Syntax	#defsym <symbol name> <symbol definition>
	Function	Defines <symbol name>. Replaces the contents of <symbol name> in a script with those of <symbol definition> while the script is running. Even if a same-name symbol of the following types already exists in the script, the symbol name will be replaced with the symbol definition by #defsym. • Script symbol • Script parts symbol • Object script symbol The set symbol definition is effective from the definition line to the end of the script.
	Example	#defsym XYZ 10
Comment	Syntax	//(comment)
	Function	A comment can be described in (comment).

Precautions

In a syntax check, whether the number of PTMPs falls within the following range is checked regardless of the setting of #pragma use_ptmp_length.

• 32768 (PTMP0 to PTMP32767)

Even if the number of PTMPs is invalid according to the above setting, no error will occur during the syntax check.

You must check that the number of PTMPs is within the valid range.

68.2.4 Available data and how to express the data

The following describes available data used for project scripts and screen scripts and how to express them.

Data type of scripts

The following data types are provided for scripts.

- [Signed BIN16]
- [Unsigned BIN16]
- [Signed BIN32]
- [Unsigned BIN32]
- [Signed BIN64]
- [Unsigned BIN64]
- [BCD16]
- [BCD32]
- [BCD64]
- [Real(32bit)]
- [Real(64bit)]

The data types are fixed for each script.

To operate different types of data, using the integer-real number conversion function enables you to handle integral device values as real numbers for each script.

☞ Page 2373 Integer-real number conversion function

Select a data type when creating a monitor screen with GT Designer3.

Precautions

The data type for [w:device] is set to the one specified in the [Script Edit] dialog.

The following example shows an error that occurs in the syntax check when using [w:device].

Ex.

When setting [Signed BIN16] for the data type in the [Script Edit] dialog

bmov([w:GD200],[flt:GD201],10);

Since the data type for GD200 is signed 16-bit binary while the data type for GD201 is real number, an error occurs in the syntax check.

☞ Page 2375 Data type conversion function

Available constants and how to express the constants

The following four constants are provided for scripts.

Constant	Expression example	Description method
Decimal number	32-bit (positive): 124 64-bit (negative): -124LL	Describe the constant using 0 to 9 and add minus (-) at the beginning if the number is negative. When the data type is 64-bit, add "LL" after the constant.
Hexadecimal number	32-bit: 0xFF12 64-bit: 0xFF12LL	Describe the constant using 0 to 9 and A to F and add "0x" at the beginning. When the data type is 64-bit, add "LL" after the constant.
BCD	32-bit: 344 64-bit: 344LL	Describe the constant using 0 to 9. When the data type is 64-bit, add "LL" after the constant.
Real number	32-bit, positive real number: 32.124 64-bit, negative real number (exponential expression): -3.2124e + 10LF	Describe the constant using 0 to 9 and a decimal point (.) and add minus (-) at the beginning if the number is negative. When it is represented as an exponent, add "e" or "E" after the mantissa part. When the data type is 64-bit, add "LF" after the constant.

However, available constants and the data range are determined according to the data type of each script as shown below.

Data type	Available constant	Available data range
Signed 16-bit binary	Decimal number	-32768 to 32767
	Hexadecimal number	0 to FFFF
Unsigned 16-bit binary	Decimal number	0 to 65535
	Hexadecimal number	0 to FFFF

Data type	Available constant	Available data range
Signed 32-bit binary	Decimal number	-2147483648 to 2147483647
	Hexadecimal number	0 to FFFFFFFF
Unsigned 32-bit binary	Decimal number	0 to 4294967295
	Hexadecimal number	0 to FFFFFFFF
Signed 64-bit binary*4	Decimal number	-9223372036854775808 to 9223372036854775807
	Hexadecimal number	0 to FFFFFFFFFFFFFFFF
Unsigned 64-bit binary*4	Decimal number	0 to 18446744073709551615
	Hexadecimal number	0 to FFFFFFFFFFFFFFFF
BCD16	BCD	0 to 9999
BCD32	BCD	0 to 99999999
BCD64	BCD	0 to 9999999999999999
Real number (32 bits)*1	Real number	0, ±1.17550e-38 to 3.40282e+38*2
Real number (64 bits)*1	Real number	0, ±2.2250738585073e-308 to 1.7976931348623e+308*3

*1 When a value exceeding the number of digits to which a real number is accurate is set, the set value and the operating value differ. For a real number, set the number of digits not exceeding the number of digits to which the real number is accurate.
*2 The real number precision is given to 6-digit.
*3 The real number precision is given to 14-digit.
*4 When there are real numbers (32 bits or 64 bits) in the expression of a single, if, switch, or while statement, the precision is reduced to 14 digits, which is the precision of real numbers (64 bits).

Available devices and how to express the devices

Scripts use the same devices as the ones used by other monitor functions.

Expressions of devices differ according to the device type and whether a station is specified or not.

Devices which can be monitored by the GOT depend on the device to be monitored.

☞ Page 3128 Device range and settings of Mitsubishi Electric equipment

☞ Page 3487 Device range and settings of each controller

To readily specify a device in the device setting screen, use the input navigation in the [Edit Script (script name)] dialog.

☞ Page 2415 [Edit Script(script name)] dialog

Device type		Statement example	Expression example	Model
Word device	Data type specified in the script	[w: Device No.]	[w:D100]	GT37 SoftGOT3000
	Signed 16-bit binary	[s16: Device No.]	[s16:D100]	
	Unsigned 16-bit binary	[u16: Device No.]	[u16:D100]	
	Signed 32-bit binary	[s32: Device No.]	[s32:D100]	
	Unsigned 32-bit binary	[u32: Device No.]	[u32:D100]	
	Signed 64-bit binary	[s64: Device No.]	[s64:D100]	
	Unsigned 64-bit binary	[u64: Device No.]	[u64:D100]	
	Real number (32 bits)	[flt: Device No.]	[flt:D100]	
	Real number (64 bits)	[flt64: Device No.]	[flt64:D100]	
Word device (offset)*5		[w: Device No.[w: Offset device No.]]*1*2	[w:D100[w:D0]]	GT37 SoftGOT3000
Bit device		[b: Device No.]	[b:X100]	GT37 SoftGOT3000
Bit device (offset)*5		[b: Device No.[w: Offset device No.]]*1*2	[b:X100[w:D0]]	GT37 SoftGOT3000

Device type	Statement example	Expression example	Model
Word device specified as bit device	[b: Device No.. Bit location]	[b:D100.b1]	GT37 SoftGOT3000
Bit device specified as word device	[w: Device No.]	[w:X100]	GT37 SoftGOT3000
Station number-specified device*3	[Network No.-station number:w: device No.]	[0-FF:w:D100]	GT37 SoftGOT3000
Multiple CPU number specification*4	[Network No.-station number/CPU No.:w: device No.]	[0-FF/1:w:D100]	GT37 SoftGOT3000
Block No. specification for extension file register (ER)*6	[w: ER block No.-device No.]	[w:ER255-100]	GT37 SoftGOT3000
Buffer memory (BM) start I/O number specification*7	[w: BM buffer memory start I/O No.-device No.]	[w:BM1E-100]	GT37 SoftGOT3000
Buffer memory (G) unit number specification*8	[w: U Unit No.-G device No.]	[w:U2F-G100]	GT37 SoftGOT3000
SFC block No. specification for step relay (block) (BLS)*9	[b: BL SFC block No.-S device No.]	[b:BL2-S100]	GT37 SoftGOT3000
Axis No. specification for servo amplifier device*10	[w: A Axis No.-device No.]	[w:A1-PA3]	GT37 SoftGOT3000
	[w: U Unit No.-A Axis No.-device No.]	[w:U2F-A1-PA3]	GT37 SoftGOT3000
Channel specification*11*12	[@Channel No.:w: device No.]	[@3:w:D100]	GT37 SoftGOT3000

Device type		Statement example	Expression example	Model
Global label*13	Bit	[gl_b::(Global Label Name)]	[4-5:gl_b::Global label Name]	GT37 SoftGOT3000
	Word	[gl_w::(Global Label Name)]	[4-5:gl_w::Global label Name]	
	Signed 16-bit binary	[gl_s16::(Global Label Name)]	[4-5:gl_s16::Global label Name]	
	Unsigned 16-bit binary	[gl_u16::(Global Label Name)]	[4-5:gl_u16::Global label Name]	
	Signed 32-bit binary	[gl_s32::(Global Label Name)]	[4-5:gl_s32::Global label Name]	
	Unsigned 32-bit binary	[gl_u32::(Global Label Name)]	[4-5:gl_u32::Global label Name]	
	Signed 64-bit binary	[gl_s64::(Global Label Name)]	[4-5:gl_s64::Global label Name]	
	Unsigned 64-bit binary	[gl_u64::(Global Label Name)]	[4-5:gl_u64::Global label Name]	
	Real number (32 bits)	[gl_flt::(Global Label Name)]	[4-5:gl_flt::Global label Name]	
	Real number (64 bits)	[gl_flt64::(Global Label Name)]	[4-5:gl_flt64::Global label Name]	
Global label (Motion Control Setting Function)*1 3*16	Bit	[gl_b::U (Module No.)-(Global Label Name)]	[4-5:gl_b::U00-Global label Name]	GT37 SoftGOT3000
	Word	[gl_w::U (Module No.)-(Global Label Name)]	[4-5:gl_w::U00-Global label Name]	
	Signed 16-bit binary	[gl_s16::U (Module No.)-(Global Label Name)]	[4-5:gl_s16::U00-Global label Name]	
	Unsigned 16-bit binary	[gl_u16::U (Module No.)-(Global Label Name)]	[4-5:gl_u16::U00-Global label Name]	
	Signed 32-bit binary	[gl_s32::U (Module No.)-(Global Label Name)]	[4-5:gl_s32::U00-Global label Name]	
	Unsigned 32-bit binary	[gl_u32::U (Module No.)-(Global Label Name)]	[4-5:gl_u32::U00-Global label Name]	
	Real number (32 bits)	[gl_flt::U (Module No.)-(Global Label Name)]	[4-5:gl_flt::U00-Global label Name]	
	Real number (64 bits)	[gl_flt64::U (Module No.)-(Global Label Name)]	[4-5:gl_flt64::U00-Global label Name]	
Label (GT Designer3)*14		[<$:Group Name:Label Name>]	[<$:Group Name:Label Name>]	GT37 SoftGOT3000
OMRON NJ/NX tag*17	Bit	[gl_b::(Tag Name)]	[4-5:gl_b::Tag name]	GT37 SoftGOT3000
	Word	[gl_w::(Tag Name)]	[4-5:gl_w::Tag name]	
	Signed 16-bit binary	[gl_s16::(Tag Name)]	[4-5:gl_s16::Tag name]	
	Unsigned 16-bit binary	[gl_u16::(Tag Name)]	[4-5:gl_u16::Tag name]	
	Signed 32-bit binary	[gl_s32::(Tag Name)]	[4-5:gl_s32::Tag name]	
	Unsigned 32-bit binary	[gl_u32::(Tag Name)]	[4-5:gl_u32::Tag name]	
	Signed 64-bit binary	[gl_s64::(Tag Name)]	[4-5:gl_s64::Tag name]	
	Unsigned 64-bit binary	[gl_u64::(Tag Name)]	[4-5:gl_u64::Tag name]	
	Signed 8-bit binary	[gl_s8::(Tag Name)]	[4-5:gl_s8::Tag name]	
	Unsigned 8-bit binary	[gl_u8::(Tag Name)]	[4-5:gl_u8::Tag name]	
	Real number (32 bits)	[gl_flt::(Tag Name)]	[4-5:gl_flt::Tag name]	
	Real number (64 bits)	[gl_flt64::(Tag Name)]	[4-5:gl_flt64::Tag name]	
AB native tag*15	Bit	[gl_b::(Tag Name)]	[4-5:gl_b::Tag name]	GT37 SoftGOT3000
	Word	[gl_w::(Tag Name)]	[4-5:gl_w::Tag name]	
	Signed 16-bit binary	[gl_s16::(Tag Name)]	[4-5:gl_s16::Tag name]	
	Unsigned 16-bit binary	[gl_u16::(Tag Name)]	[4-5:gl_u16::Tag name]	
	Signed 32-bit binary	[gl_s32::(Tag Name)]	[4-5:gl_s32::Tag name]	
	Unsigned 32-bit binary	[gl_u32::(Tag Name)]	[4-5:gl_u32::Tag name]	
	Real number (32 bits)	[gl_flt::(Tag Name)]	[4-5:gl_flt::Tag name]	
OPC UA tag*18	Bit	[ou_b::&(Tag Name)]	[@2:ou_b::&(Tag Name)]	GT37 SoftGOT3000
	Word	[ou_w::&(Tag Name)]	[@2:ou_w::&(Tag Name)]	
	Signed 16-bit binary	[ou_s16::&(Tag Name)]	[@2:ou_s16::&(Tag Name)]	
	Unsigned 16-bit binary	[ou_u16::&(Tag Name)]	[@2:ou_u16::&(Tag Name)]	
	Signed 32-bit binary	[ou_s32::&(Tag Name)]	[@2:ou_s32::&(Tag Name)]	
	Unsigned 32-bit binary	[ou_u32::&(Tag Name)]	[@2:ou_u32::&(Tag Name)]	
	Real number (32 bits)	[ou_flt::&(Tag Name)]	[@2:ou_flt::&(Tag Name)]	

*1 The available data range for the offset device number is 16 bits (-32768 to 32767).

*2 If a data type other than [w:] is specified for the offset device No., the offset can be used within the range appropriate for the data type.
*3 To specify the host station or all stations, specification of a network number and station number can be omitted.
However, enter 0-0 to specify all stations for monitoring MODBUS salve equipment.
*4 Even if the target PLC is the host station (0-FF), station specification must be performed.
*5 For details on the offset devices, refer to the following.
☞ Page 963 Offset
*6 Can be set only when an ER device is used.
*7 The start I/O No. can be specified only when a BM device is used.
*8 The unit No. can be specified only when a G device is used.
*9 The SFC block No. can be specified only when a BLS device is used.
*10 The axis No. can be specified only when a device of the servo amplifier is used.
The unit No. can be specified only when the target device is monitored through a simple motion module.
*11 When specifying both a channel No. and a station number, specify the channel No. first. (Example: [@3:0-FF:w:D100])
*12 When specifying a device of channel No.1, specification of the channel No. (@channel No.:) can be omitted.
([@1:w:D100] can also be expressed as [w:D100] by omitting "@1:" part.)
*13 Settable only when an RCPU model is set in the [Controller Setting] window.
☞ Page 729 [Controller Setting]
*14 Settable only when a label (GT Designer3) is registered.
☞ Page 867 How to set labels (GT Designer3)
*15 Settable only when [AB Control/CompactLogix(Tag)] is set for the controller type in the [Controller Setting] window.
☞ Page 729 [Controller Setting]
*16 For the global label created by the Motion Control Setting Function, specify the module number.
Specify the second and third digit values of the start I/O number of the connected Motion module.
Example) When the start I/O number is 0FE0, set FE to module number.
*17 Settable only when [OMRON NJ/NX] is set for the controller type in the [Controller Setting] window.
☞ Page 729 [Controller Setting]
*18 Settable only when [OPC UA] is set for the controller type in the [Controller Setting] window.
☞ Page 729 [Controller Setting]

Precautions

Do not write a script that causes an operation result which exceeds the allowable range of a device value.
Script operation is processed internally in double-precision real numbers.
Therefore, when a judgment is made using an if statement and others, the result of the judgment may differ depending on the operation methods.

Ex.
Judgment of difference between GD100 and D100 using an if statement (in the case of 16-bit signed binary)
For GD100: -32758, D100: 32767
• When operation is executed in an evaluation expression

```
if(([w:GD100]-[w:D100])>=10){ //If the difference between GD100 and D100 is 10 or larger,
[w:D200]=0; //Writes 0 to D200.
}
```

The calculation result of "GD100 - D100" (-32758 - 32767) is -65525, thus the condition is not satisfied.
• When processing the script after assignment

```
[w:GD200]=[w:GD100]-[w:D100]; //Assigns the value of "GD100 - D100" to GD200.
if([w:GD200]>=10){ //When the value of GD200 is 10 or larger,
[w:D200]=0; //Writes 0 to D200.
}
```

When -65525; the calculation result of "GD100 - D100" (-32758 - 32767) is assigned to GD200 as 16-bit signed binary data, GD200 becomes 10, so the condition is satisfied.
(Since a value out of the range that can be handled by a variable (device) is assigned as the result of an operation, the result differs from the result obtained above.)

Arguments for the file operation function and string operation function and how to express them

The following shows available arguments for the file operation function and string operation function.

Argument	Expression example	Available data range
Folder name[*1] Folder name 1[*1] Folder name 2[*1] Copy source folder name[*1] Copy source folder name 1[*1] Copy source folder name 2[*1] Copy destination folder name[*1] Copy destination folder name 1[*1] Copy destination folder name 2[*1]	For specifying with character strings: "X:\\Package1\\" For specifying with devices: [w:D0001]	The following drives can be specified. A, B, E, F, G, X The total number of the characters of a folder name and a file name must be 78 or less. This specification is also applied to a case where multiple arguments are used to specify a folder name or file name. ☞ Page 2359 Folder name delimiter (\) An argument can be specified using a device. ☞ Page 2353 Available devices and how to express the devices
File name[*1] Copy source file name[*1] Copy destination file name[*1]	For specifying with character strings: "FILE00001.CSV" For specifying with devices: [w:D0001]	
New file name[*1]	For specifying with character strings: "FILE00001.BAK" For specifying with devices: [w:D0001]	
Storage device[*1]	[w:GD200]	For applicable devices, refer to the following. ☞ Page 2353 Available devices and how to express the devices Bit devices and the word specification of bit devices cannot be used.
Number of folders Number of files	1	The setting range is 1 to 32. An argument can be specified using a device. ☞ Page 2353 Available devices and how to express the devices
Offset	0	The offset is the argument which represents the storage location of the target data in a folder or file. Specify it with a fixed value or a device. The storage location of the target data is counted starting with 0. • For the file operation function 16 bits: 0 to 65535 32 bits: 0 to 2147483647 When the offset is used for the file name obtaining function (file_getlist), only 16 bits can be specified. When the file write function (file_write) is used, the offset is available only when <mode> is 2 (overwrite). For a mode other than overwrite, set 0 for the offset. • For the string operation function (str_scanf, str_strmid) 0 to 255 • For the string operation function (str_uniscanf, str_unistrmid) 0 to 510 When using Unicode, make sure to set an even number. ☞ Page 2353 Available devices and how to express the devices
Maximum number of characters	8	The setting range is 1 to 78. An argument can be specified using a device. ☞ Page 2353 Available devices and how to express the devices
Number of read bytes Number of write bytes	For specifying with character strings: 32 For specifying with devices: [w:GD200]	The setting range is 1 to 2048. An argument can be specified using a device. ☞ Page 2353 Available devices and how to express the devices
Input byte count String length Output byte count	For specifying with character strings: 32 For specifying with devices: [w:GD200]	• For str_scanf, str_printf, str_strlen, str_strmid, and str_lc2uni 1 to 256 • For str_uniscanf, str_uniprintf, str_unistrlen, str_unistrmid, and str_uni2lc 2 to 512 Make sure to set an even number. An argument can be specified using a device. ☞ Page 2353 Available devices and how to express the devices

Argument	Expression example	Available data range
Maximum number of read bytes	256	The setting range is 1 to 256. Set an even number in "file_unilineread". An argument can be specified using a device. ☞ Page 2353 Available devices and how to express the devices
Mode	0	The following shows the setting range. • 0: New • 1: Addition • 2: Overwrite For operations of the file write function (file_write) for each mode, refer to the following. ☞ Page 2340 Functions (file operation) An argument can be specified using a device. ☞ Page 2353 Available devices and how to express the devices
Copy mode	For specifying with character strings: 3 For specifying with devices: [w:D0001]	The setting range is 0 to 3. Each bit of the setting value determines the copy mode. • Bit 0 0: Prohibits overwriting a file. 1: Allows overwriting a file. • Bit 1 0: Does not copy subfolders. 1: Copies subfolders. • Bit 2 to 15: Use prohibited An argument can be specified using a device. ☞ Page 2353 Available devices and how to express the devices
Maximum number of folder name characters	12	The setting range is 1 to 78.
Maximum number of file name characters	12	The setting range is 1 to 78.
Input string storage device*1 Output string storage device*1	[w:GD200]	For applicable devices, refer to the following. ☞ Page 2353 Available devices and how to express the devices
Format	For specifying with character strings: "%d,%5s" For specifying with comments: cmt(1,3)	Specify a format using format specifiers and escape sequences. • For specifying with character strings: Number of characters: 256 characters or less Number of format specifiers: 10 or less Enclose a format specifier in double quotation marks. ☞ Page 2361 Format specifier ☞ Page 2365 Escape sequence • For specifying with comments: cmt (comment group, comment No.) Comment group: 1 to 255 Comment No.: 1 to 32767 Only the comments registered in the comment group can be used. ☞ Page 2360 Specifying a format with comments
Input value storage device*1 Output value storage device*1	[w:GD200]	For applicable devices, refer to the following. ☞ Page 2353 Available devices and how to express the devices
Local code type	1	The following shows the setting range. • 0: Depends on the system language. (ASCII for English, Shift JIS for other languages) • 1: SJIS • 2: ASCII • 3: GB • 4: KS • 5: Big5
Conversion source string storage device*1 Conversion destination string storage device*1	[w:GD200]	For applicable devices, refer to the following. ☞ Page 2353 Available devices and how to express the devices

*1 An error occurs if a primitive data type label is set.
When using a label, set an array-type or structure-array-type label.

■Data type setting and function definition

To use an argument, refer to the data type of the set device and convert the argument data type to the function definition type.

To assign a return value, convert the operation result obtained in the function definition type to the data type of the set device.

To use the argument or return value as the type of the function definition, set the following data types.

- long: Signed 32-bit binary
- double: Real number (64 bits)

■Folder name delimiter (\)

To specify a folder name with character strings, use \\ in a path as a delimiter.

In the file operation function, the first \ is recognized as a control character.

Therefore, unless the delimiter is used as \\, the path is not correctly specified and an error occurs.

Ex.

A:\Package1\(actual path) → A:\\Package1\\(path used as an argument)

To specify a folder name with devices, do not use \\ as a delimiter.

The path is not correctly specified and an error occurs.

■Restrictions for folder names and file names

For the character strings available and unavailable for folder names and file names, refer to the following.

☞ Page 84 Restrictions for folder names and file names used in GOT

Precautions

Only ASCII code is applicable to the screens for file manipulations in the utility.

A file name, which is not encoded in ASCII, is displayed incorrectly in the utility.

■Specifying the folder name and file name with the wild card

A wildcard is a symbol that represents any string of characters when part of a folder name or file name is unknown.

The part specified by wild cards can be any character strings.

A wild card can be used for the following arguments to specify the folder name or file name.

- <folder name>, <file name> of the file name obtaining function (file_getlist)
- <folder name 1> of the obtain folder name function (file_getfolderlist)

The following shows the specifications of the wild cards.

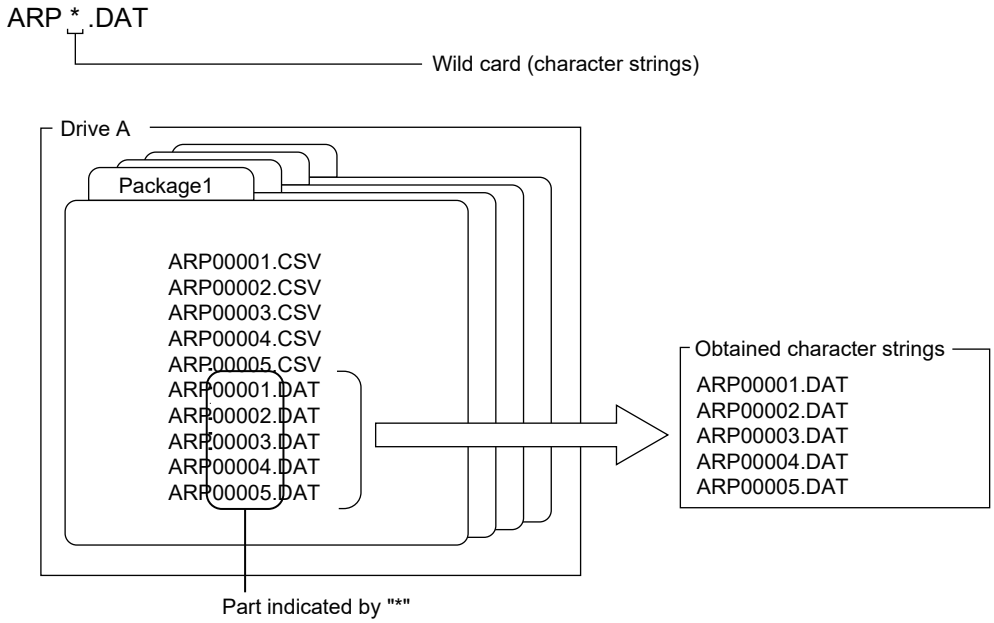
Specifications	Example of valid use	Example of invalid use
Only [*] can be used as the wild card.	ARP*.DAT	ARP?????.DAT
Only one [*] can be used in an argument. However, you can use [*.*] as an exception.	*.DAT	ARP012*0.*
You can use [*] only immediately before [.] (period) for the file name.	ARP*.DAT	ARP*01.DAT
When [*] is used in the extension part of the file name of the script, the extension must consist of the wild card only.	ARP00001.*	ARP00001.*AT

The following shows application examples of wild cards.

Ex.

For obtaining the file whose name starts with ARP and ends with .DAT from the folder A:\\Package1\\

[s16:D500] = file_getlist("A:\\Package1\\", "ARP*.DAT", [w:GD100], 0, 5, 12); //Obtains file name.



■Specifying a format with comments

Only the comments registered in the comment group can be used.

Do not enter a line feed in the format.

The description after a line feed is not reflected in the format.

■Format specifier

Determines the data type for reading and writing.

The form of a format specifier differs according to the function used.

Target function	Format of the format specifier	Description example
String input function (str_scanf, str_uniscanf)	% + flag + field width + type specifier	%*c%5d (Skipping one character and reading the data (field width: 5) in decimal number)
String output function (str_printf, str_uniprintf)	% + flag + field width + precision specification + type specifier	%-5.4f (Writing the data (field width: 5) in fixed-point numbers of four digits after the decimal point and left-aligning the numbers)

Describe one format specifier for one data.

The number of format specifiers must be the same as the number of devices, which are the storage locations of read or written data.

The following describes the content to be described in each format.

• Flag

The flag is the processing to be executed when the data is written.

Add a flag after % as required.

Target function	Flag	Expression	Description example	Description
String input function (str_scanf, str_uniscanf)	Skip	*	%*d	Skips the specified type data. The number of the skipped data is not added to the number of the read data (return value). (Description example: when decimal data is skipped)
String output function (str_printf, str_uniprintf)	Left alignment	-	%-d	Left-aligns character strings when a field width is specified. If the number of characters in the written data is smaller than the field width, blanks are stored in the remaining digits. (Description example: when decimal data is written and left-aligned)
	Plus sign (+) addition	+	%+d	Adds a plus sign before a positive numerical value and writes the data. (Description example: when decimal data is written after a plus sign is added to the data)
	Blank addition	Blank	% d	Adds a blank before a positive numerical value and writes the data. (Description example: when decimal data is written after a blank is added to the data)
	Zero padding	0	%05d	Right-aligns numerical values, adds a zero to blank spaces, and writes the data when a field width is specified. (Description example: when decimal data of 5 digits is written after a zero is added to the data)
	Prefix addition	#	%#5x	Adds 0, 0x, or 0X as a prefix when octal or hexadecimal numbers are written. (Description example: when hexadecimal data is written after 0x is added as a prefix to the data)

• Field width

The field width is the maximum number of characters for the character string to be read or written.

Specify the field width with positive integers.

Add a field width before a specifier as required.

If the data exceeding the field width is attempted to be read with the string input function (str_scanf, str_uniscanf), the excess portion of the data cannot be read.

In addition, if characters exceeding the field width are attempted to be written with the string output function (str_printf, str_uniprintf), an overflow occurs and a value of -1 (error) is returned.

• Precision specification

Specify precision specification with 0, positive integers, and "." (period).

The effect of precision specification differs depending on the type specifier to be used.

If precision specification is not added, the default value is applied.

Add a precision specification after the field width as required.

Target function	Type specifier	Effect of the precision specification	Default value
String output function (str_printf, str_uniprintf)	c	The precision specification is invalid.	None
	s	Specifies the maximum number of characters to be output. The characters which exceed the value of precision specification are not output. Example) Outputting a string of 26 alphabetic characters (A to Z) • %s (default value): Outputting 8 characters (A to H) • %.10s (10 characters specified): Outputting 10 characters (A to J)	8
	d, u, o, x, X	Specifies the minimum value of the number of digits to be written. If the number of digits in an argument is smaller than the specified value, Null or zero is input into the remaining digits. (Whether either one is input into the digits differs depending on the flag to be specified.) If the number of digits exceeds the value of precision specification, the value is not rounded down.	1
	f*1	Specifies the number of digits after the decimal point of decimal numbers. When the decimal point is displayed, integers are displayed. The value is rounded down until the value becomes an appropriate number of digits.	6
	e, E*1	Specifies the number of digits to be output after the decimal point of decimal numbers. Up to 39 digits can be specified for precision. The last number of the data to be output is rounded down.	
	g, G	Specifies the maximum value of the number of significant digits to be written. Up to 14 digits can be specified for precision.	

*1 The values after the decimal point are not output in the following cases.
When 0 is set for the precision specification
When a period (.) is set without specifying subsequent numerical values

• Type specifier

Specify the data type for the character string to be read and written.

Target function	Specifier	Description
String input function (str_scanf, str_uniscanf)	c	Reads one character.
	s	Reads character strings.
	d	Reads integers in decimal numbers.
	lld	Reads 64-bit integers in decimal numbers.
	u	Reads unsigned integers in decimal numbers.
	llu	Reads unsigned 64-bit integers in decimal numbers.
	o	Reads integers in octal numbers.
	llo	Reads 64-bit integers in octal numbers.
	x	Reads integers in hexadecimal numbers.
	llx	Reads 64-bit integers in hexadecimal numbers.
	f	Reads real numbers (32 bits).
	lf	Reads real numbers (64 bits).
	[...]	Reads the characters specified with square brackets.*1 Reading is stopped at the time of reading characters which are not specified with the brackets. Example) If %[ABC] is set for a format specifier and the character string CBAGAB is read, the result is CBA. If ^ is added to the character string in square brackets, characters other than the specified ones are read. Reading is stopped at the time of reading the character string specified with square brackets. Example) If %[^ABC] is set for a format specifier and the character string DEFADE is read, the result is DEF.
	%	Skips a percent sign (%).

Target function	Specifier	Description
String output function (str_printf, str_uniprintf)	c	Writes one character.
	s	Writes character strings.
	d	Writes integers as signed decimal numbers.
	lld	Writes 64-bit integers as signed decimal numbers.
	u	Writes integers in unsigned decimal numbers.
	llu	Writes 64-bit integers in unsigned decimal numbers.
	o	Writes integers in octal numbers.
	llo	Writes 64-bit integers in octal numbers.
	x, X	Writes integers in hexadecimal numbers. When X is used, alphabets in the data are capitalized.
	llx, llX	Writes 64-bit integers in hexadecimal numbers. When X is used, alphabets in the data are capitalized.
	f	Writes real numbers in real number form. Example) 123.456
	e, E	Writes real numbers in exponential form. The exponents are displayed with three digits. Example) 12345.6e-002 When E is used, alphabets in the data are capitalized.
	g, G	Writes real numbers in an optimal form. If an exponent is either of the following, real numbers are written in exponential form. • Value less than -4 • Value larger than the precision value specified with the precision specification For an exponent other than the above, real numbers are written in real number form. When G is used, alphabets in the data are capitalized.
	%	Writes a percent sign (%). Specifying the corresponding device is not required. Even though a field width and a flag are specified, they are invalid.

*1 The following cannot be read.
[ ](square brackets)(Example: %[[ ], %[^]])
Range specification using "-" (hyphen) (Example: %[a-z], %[^0-9])
Characters other than ASCII (Example: %[?], %[^?])

Precautions

• Specifying a format with comments

Comments consist of the Unicode text.

When specifying the format with a comment, do not use a character that cannot be converted from the Unicode text to the ASCII characters.

If such characters are used, they are replaced with blanks.

• Data delimiter of a CSV file

When reading/writing data in a CSV file, indicate a delimiter with the format specifier.

Ex.

When reading obtained numerical values from a CSV file

If delimited by a blank: 123 456 can be read with the syntax %d%d.

If delimited by a comma: 123,456 can be read with the syntax %d,%d can read.

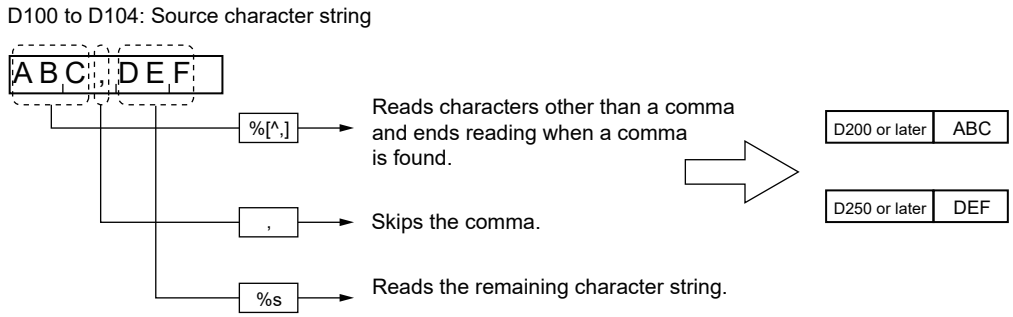
(The first "%d" is used to enter 123, the comma (,) is skipped, and the second "%d" is used to enter 456.)

• Character string delimiters

When a character string is read using "%s", a comma is not recognized as a delimiter but as a part of the string.
Therefore, the string with a comma for a delimiter is read as one data including the comma.
To read the character string as the data that is delimited by a comma, use "%[^,]" to read characters other than the comma, and then skip the delimiter with the comma.

Ex.

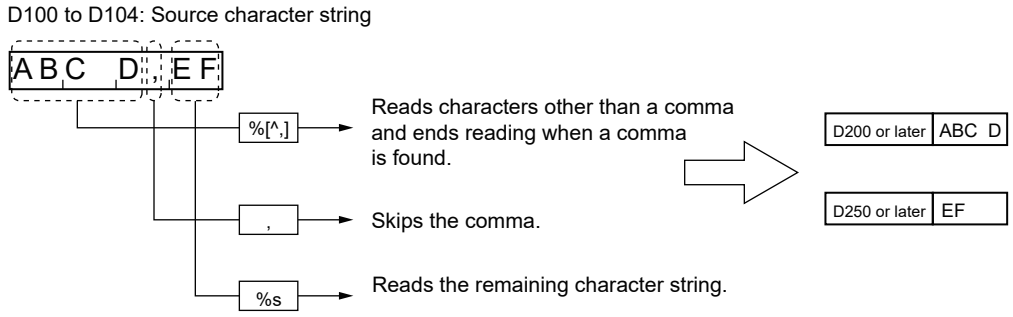
When reading the character string ABC,DEF with "%s"
GD100 to D108: Holds the character string ABC,DEF.
GD200: Input value storage device 1
GD250: Input value storage device 2
[s16:GD500]=str_scanf([w:GD100],7,0,"%[^,],%s",GD200,GD250); //Reads the 7-byte character string.



Blanks are recognized as delimiters. Therefore, if a character string including blanks is read, it is read as multiple data.
To read a character string with blanks as one data, use "%[^,]" to read characters other than a comma, then skip a delimiter with the comma.

Ex.

When reading the character string ABC D,EFG in the above script



• Number of significant digits for the single precision real number

The maximum number of significant digits for the single precision real number is six.
If the precision with six digits or more is set for the format specifier, the result may be incorrect.
In addition, when a value equal to or more than 256 is specified for the field width or precision specification, it is corrected to 255.
This is because the maximum number of output bytes that can be specified as a single-precision real number is up to 256, which is 255 if NULL at the end is excluded.

• Differences in the written result between the GOT and GT SoftGOT3000 or GT Simulator3

Some of the processing differs between the GOT and GT SoftGOT3000 or GT Simulator3.
If single precision real numbers more than the number of significant digits (six digits) are written, the results may differ.

• When writing a character string with "%s"

Starting from the device to be written, a number of devices corresponding to that of characters are used.
Reserve the writable device area in advance.

■Escape sequence

Skips or writes control symbols.

Available escape sequences differ depending on the function used.

Target function	Escape sequence	Description
String input function (str_scanf, str_uniscanf)	\n	Skips a line feed (LF).
	\t	Skips a tab.
	\\	Skips a backslash (\).
	\?	Skips a question mark (?).
	\'	Skips a single quotation mark (').
	\"	Skips a double quotation mark (").
String output function (str_printf, str_uniprintf)	\n	Writes a line feed (LF).
	\r	Writes a carriage return (CR).
	\t	Writes a tab.
	\\	Writes a backslash (\).
	\?	Writes a question mark (?).
	\'	Writes a single quotation mark (').
	\"	Writes a double quotation mark (").

Available temporary device areas and how to express the temporary device areas

Temporary device areas are usable in a script in addition to controller devices.

They are variables used when there is a delay in writing to the controller devices or when a device areas are required for operations, repetitive processing, and others.

Data is written to the specified temporary device areas in real time during script execution.

The GOT does not need to communicate with a controller when using temporary device areas, reducing communication load.

■Temporary device areas and their uses

The following types of temporary device areas are supported.

Type	Specifications
Temporary device area (TMP)	A TMP is a global variable that is accessible by multiple scripts. It can be used in the following scripts. • Project script • Screen script • Script part • Script block • Object script For details, refer to the following. ☞ Page 2366 Specifications of a temporary device area (TMP)
Script parts temporary device area (PTMP)	A PTMP is a local variable that is accessible by the scripts of each script parts object. PTMPs can be specified in the scripts of the object or as the trigger devices to run the scripts. For details, refer to the following. ☞ Page 2367 Specifications of a script parts temporary device area (PTMP)

Use temporary device areas in the following cases.

Application	Description

To prevent an assignment delay	If a controller device is specified as the write destination in a script, the operation result will be written to the device when the script ends, resulting in an assignment delay.
	If a temporary device area is specified instead, the result will be written to the area in real time without delay.
	Example) If you manipulate a bit device, and then use the bit device in a conditional formula
	`if(...) {`
	`  alt([b:TMP0001.03]);  //Invert TMP0001.03`
	`}`
	`if([b:TMP0001.03] == ON) {  //A branch is executed based on the status of TMP0001.03`
	`...`
	`} else {`
	`  ...`
	`}`
	For details on the assignment delay, refer to the following.
	☞ Page 2368 Assignment delay

Application	Description
As the write destination device of a while statement	A device causing an assignment delay cannot be used as the write destination device of a while statement. Use a temporary device area that does not cause an assignment delay or a GOT internal device accordingly.

■Specifications of a temporary device area (TMP)

The following shows the specifications of a temporary device area (TMP).

Item	Specifications
Size	One TMP is 64 bits long. If a TMP is used as a bit device, it is handled as 16 bits long. The settable bit range is 0 to 15.
Initial value	A TMP stores 0 when the GOT is powered on.
Maximum number of the areas	1024 (TMP0 to TMP1023)
Expression example	• To handle TMP0001 as a word device [w:TMP0001] • To handle bit 1 of TMP1023 as a bit device [b:TMP1023.01]

Project scripts, screen scripts, script parts, and script blocks use common TMPs.

Object scripts use different TMPs.

Accordingly, object scripts and the other types of scripts cannot exchange data using their TMPs.

To exchange data, use the GOT internal devices (GD or GB).

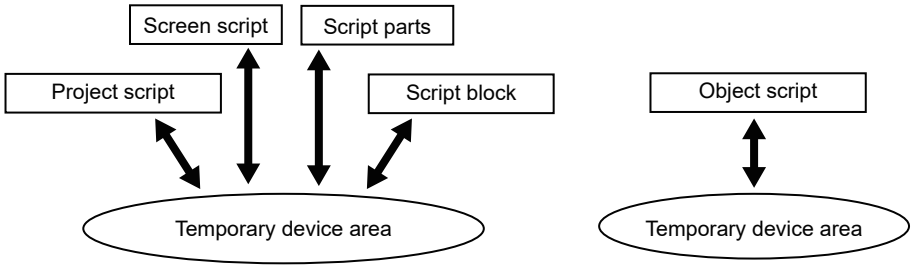


Figure conceptualizing the access to each TMP with the same number

To access the same TMP from multiple scripts, set the same data type for the scripts and the same representation for the TMP in the scripts.

Otherwise, the stored value may be rendered invalid in the following uses.

Invalid use	Example

Scripts with different data types access the same TMP.	Script A (unsigned 16-bit binary) writes a value to TMP0000, and then script B (unsigned 32-bit binary) reads the value from TMP0000.
	Script A ([Data Type]: [Unsigned BIN16])
	[w:TMP0000] = 0x1234; //Write a value to TMP0000 as unsigned 16-bit binary data.
	Script B ([Data Type]: [Unsigned BIN32])
	[w:GD0000] = [w:TMP0000]) //Read the value from TMP0000 as unsigned 32-bit binary data.

The representation of a TMP at reading differs from the one at writing.	Script A writes a hexadecimal value to TMP0000 represented as a word device, and then script B reads the value from TMP0000 represented as a bit device.
	[w:TMP0000] = 0x3; //Write a value to TMP0000 represented as a word device.
	if([b:TMP0000.b0] == ON) {... //Read the value from TMP0000 represented as a bit device.

■Specifications of a script parts temporary device area (PTMP)

The following shows the specifications of a script parts temporary device area (PTMP).

Item	Specifications
Size	One PTMP is 32 bits long. If a PTMP is used as a bit device, it is handled as 16 bits long. The settable bit range is 0 to 15.
Initial value	A PTMP is reset to 0 at screen switching. The value stored during script execution is retained until the next screen switching.
Maximum number of the areas	Using #pragma use_ptmp_length, you can specify the maximum number of PTMPs ranging from 1 to 32768. The default is set as shown below. 1024 (PTMP0 to PTMP1023)
Expression example	• To handle PTMP0001 as a word device [w:PTMP0001] • To handle bit 1 of PTMP1023 as a bit device [b:PTMP1023.01]

Each script parts object uses its own PTMPs.

The scripts of a script parts object can exchange data each other using their common PTMPs.

Script parts objects cannot exchange data each other using their PTMPs.

To exchange data, use the GOT internal devices (GD or GB) or temporary device areas (TMPs).

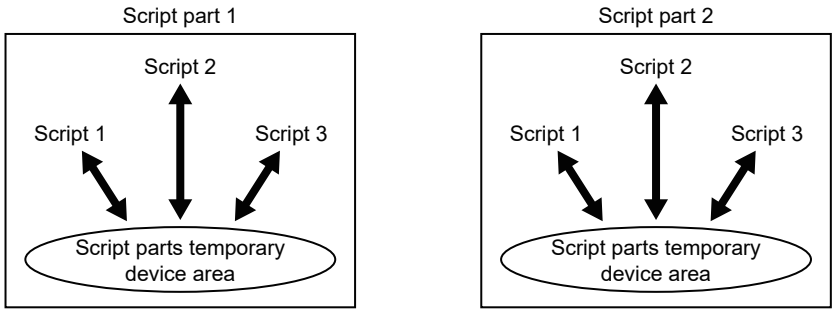


Figure conceptualizing the access to each PTMP with the same number

Precautions

When you use PTMPs, the size of the user area to be used depends on the number of the PTMPs.

Set the minimum number of PTMPs.

■Assignment delay

Depending on devices where you write the operation result of scripts, some time (called assignment delay) is needed for writing the result to the device when the operation of a script is complete.

The following shows whether each device needs assignment delay or not.

Synchronized: The result is written in synchronization with the script. Delay: Assignment delay occurs.

Device and temporary device area	Script
Controller device	Delay
GB	Synchronized
GD	
GS	
TMP	

If you perform an assignment as shown in the following example, an assignment delay leads to an unexpected operation result.

To reduce the frequency of communication with the PLC CPU to lower the influence on the monitoring process, describe the script such as assignment delay workarounds 1 and 2.

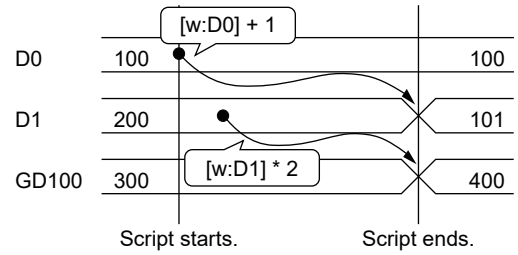
Ex.

Assignment using PLC CPU devices (assignment delay example)

In the following example, due to an assignment delay, after the script ends, the operation result of the first line (D0+1) is reflected to D1.

Therefore, the operation result of the first line is not reflected to that of the second line (D1*2).

```
[w:D1]=[w:D0]+1;       //Assign the result of the operation D0 + 1 to D1.
[w:GD100]=[w:D1]*2;  //Assign the result of the operation D1*2 to GD100.
```



Ex.

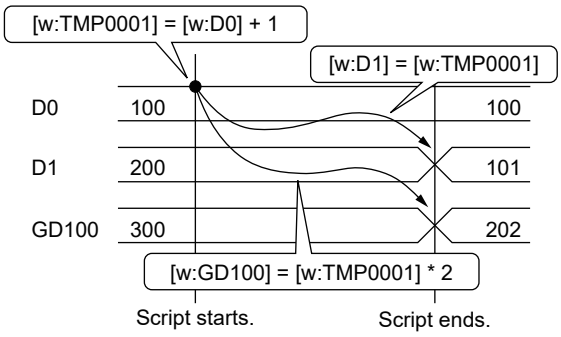
Assignment using a temporary device area (assignment delay workaround 1)

Using a temporary device area for the script avoids an assignment delay.

For details on temporary device areas, refer to the following.

☞ Page 2365 Temporary device areas and their uses

```
[w:TMP0001]=[w:D0]+1;       //Assign the result of the operation D0 + 1 to TMP0001.
[w:D1]=[w:TMP0001];         //Assign the value of TMP0001 to D1.
[w:GD100]=[w:TMP0001]*2;  //Assign the result of the operation TMP0001*2 to GD100.
```



Ex.

Assignment using GOT internal devices (GD, GB) (assignment delay workaround 2)

The processing timing with GOT internal devices (GD and GB) is the same as one with temporary device areas. Therefore, you can avoid assignment delays.

```
[w:GD10]=[w:D0]+1;       //Assign the result of the operation D0 + 1 to GD10.
[w:D1]=[w:GD10];         //Assign GD10 to D1.
[w:GD100]=[w:GD10]*2;  //Assign the result of the operation GD10*2 to GD100.
```

How to express bit devices (system define)

The following expressions can be used for bit devices.

■If a relevant expression for bit devices is processed

Device values which are normally expressed with 1 or 0 can be expressed with on and off.

if([b:X100]==1){[w:D0]=100;} //If X100 is on, D0 is 100.

↓

if([b:X100]==ON){[w:D0]=100;} //If X100 is on, D0 is 100.

■If assignment processing of bit devices is processed

Device values which are normally expressed with the set statement, the rst statement, 1, or 0 can be expressed with on or off.

set([b:X100]); //X100 turns on.

[b:X100]=1; //X100 turns on.

↓

[b:X100]=ON; //X100 turns on.

Substituting devices and constants by the user-defined character strings

The devices and constants in a script are substitutable by the user-defined character strings.

Define character strings as symbols for devices and constants. You can check for duplicate devices and constants, and apply changes of devices and constants to the script without editing the script directly.

Ex.

When substituting the device [b:X1000] by the character string "ERROR_CHECK"

if(ERROR_CHECK == 1) {[w:D0] = 100;} // Write 100 to D0 if ERROR_CHECK ([b:X1000]) turns on.

The following types of symbols are supported.

Symbol	Description
Script symbol	It can be used in the following scripts. • Project script • Screen script • Script block For instruction on setting a script symbol, refer to the following. ☞ Page 2407 [Script Symbol] tab
Script parts symbol	It can only be used with script parts. Each script parts object has its own script parts symbols. For instruction on setting a script parts symbol, refer to the following. ☞ Page 2407 [Script Symbol] tab
Object script symbol	Object script symbols are usable in object scripts only. For instruction on setting an object script symbol, refer to the following. ☞ Page 2421 [Script Symbol] dialog
Local symbol	Local symbols are usable in all types of scripts. They are valid only in the script where they are defined. For the local symbols, refer to the following. ☞ Page 2351 Others

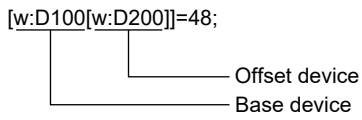
Offset device specification

The offset device can be specified.

■Format

Ex.

When D200 is 5, 48 is stored in D105.



■Available devices

• Base device

Controller devices, GOT internal devices, and temporary device areas can be specified.

Word devices and bit devices can be used.

• Offset device

Controller devices, GOT internal devices, and temporary device areas can be specified.

Only word devices can be used.

Bit devices can be specified as word devices.

In that case, specify a device with a multiple of 16.

The device cannot be used when the data type is 8 bits or 64 bits.

Ex.

Changing parameters according to the operation mode

D10: For switching the operation mode

D100 to D109: For storing parameter values

GD500: Base device

TMP100: Offset device

· Script 1 (specifies a parameter value.)

```
[w:GD500]=10; //Parameter value of operation mode 1
[w:GD501]=11;
[w:GD502]=12;
:
[w:GD600]=20; //Parameter value of operation mode 2
[w:GD601]=21;
[w:GD602]=22;
:
[w:GD700]=30; //Parameter value of operation mode 3
[w:GD701]=31;
[w:GD702]=32;
```

· Script 2 (determines an offset value according to the device value for switching the operation mode.)

```
switch( [w: D10] ){
case 1: //If D10 is 1, the offset value is 0.
[w:TMP100]=0;
break;
case 2: //If D10 is 2, the offset value is 100.
[w:TMP100]=100;
break;
case 3: //If D10 is 3, the offset value is 200.
[w:TMP100]=200;
break;
}
```

· Script 3 (writes parameters according to the offset value.)
bmov([w:GD500[w:TMP100]],[w:D100],10); //Writes the device value of [GD500 + value of TMP100] to the devices from D100 to D109.
If script 2 and 3 are processed simultaneously or as one script, the scripts do not operate properly due to the switching delay of offsets.

■Data type of offset devices

The data type of offset devices is converted into signed 16-bit binary data regardless of [Data Type] set in [Edit Script].
Example) [w:GD100] = [w:D1000[s32:GD1000]];
1) If 65535 is set to GD1000 (signed 32-bit binary), the equation "65535 (signed 32-bit binary) = -1 (signed 16-bit binary)" is satisfied and the value in D999 is assigned to GD100.
2) If 65537 is set to GD1000 (signed 32-bit binary), the equation "65537 (signed 32-bit binary) = 1 (signed 16-bit binary)" is satisfied and the value in D1001 is assigned to GD100.
Example) [w:GD100] = [w:D1000[d32:GD1000]];
If 10 is set to GD1000 (signed 32-bit binary), the equation "10 (signed 32-bit binary) = 16 (signed 16-bit binary)" is satisfied and the value in D1016 is assigned to GD100.
Example) [w:GD100] = [w:D1000[flt:GD1000]];
1) If 65535.0 is set to GD1000 (real number), the equation "65535.0 (real number) = -1 (signed 16-bit binary)" is satisfied and the value in D999 is assigned to GD100.
2) If 65537.0 is set to GD1000 (real number), the equation "65537.0 (real number) = 1 (signed 16-bit binary)" is satisfied and the value in D1001 is assigned to GD100.

■Assignment delay when an offset is specified

• When reading values from devices

If you specify an offset in a script when devices of controllers are used as base devices, assignment delays may occur and the script may not operate correctly even if the values of offset devices are changed.

Ex.

When specifying a target device for reading with an offset device does not work correctly (when R200 = 10)
In the following case, the value of the offset device (TMP0000) is the value before assignment. The value of R110 cannot be referenced.

```
[w:TMP0000]=[w:R200];
[w:TMP0001]=[w:R100[w:TMP0000]];    The value of R110 cannot be referred to at this timing.
     Base device ──┘          └─ Offset device
```

If the "value of R100 + offset device value before assignment" is outside the range of the base device (R), an error other than an assignment delay occurs.
To avoid assignment delays, use temporary device areas or GOT internal devices (GD, GB) for both base devices and offset devices.

Ex.

Assignment delay workaround using temporary device areas (when R200 = 10)
By assigning the values of R devices to the temporary device areas in advance, the operation not available in the above example becomes available.
In the following example, the range of the offset device (R200) is 0 to 10, and the values of 11 devices counted from the base device (R100) are assigned to the temporary device areas.
The number of devices to be assigned to the temporary device areas must be changed according to the range of offset device values.

```
[w:TMP0100]=[w:R100];
[w:TMP0101]=[w:R101];
     :
[w:TMP0109]=[w:R109];
[w:TMP0110]=[w:R110];
[w:TMP0000]=[w:R200];
[w:TMP0001]=[w:TMP0100[w:TMP0000]];    The value of R110 can be referred to at this timing.
```

• When writing values to devices

When writing values to devices, there are no specific restrictions applied when reading values from devices. (Refer to the following example (Enabled).)

Ex.

Specifying a target device for writing with an offset device (Enabled)

```
[w:TMP0000]=10;
[w:R100[w:TMP0000]]=[w:TMP0001];    The value can be assigned to R110 at this timing.
Base device ┘          └ Offset device
```

However, when controller devices are used as base devices, you cannot assign values repeatedly by switching values of offset devices in a while statement as shown in the following example (Disabled).

Ex.

Specifying a target device for writing with an offset device in a while statement (Disabled)

```
[w:TMP0000]=10;
while([w:TMP0000]<20){
[w:R100[w:TMP0000]]=[w:TMP0001];          An error occurs.
[w:TMP0000]=[w:TMP0000]+2;
}
```

To assign values repeatedly by switching offset device values in a while statement, assign R devices to the temporary device areas in advance, and write the values last assigned to the temporary device areas to R devices as shown in the following example (Workaround).

Ex.

Specifying a target device for writing with an offset device in a while statement (Workaround)

```
[w:TMP0110]=[w:R110];
      :
[w:TMP0119]=[w:R119];
[w:TMP0000]=10;
while([w:TMP0000]<20){
[w:TMP0100[w:TMP0000]]=[w:TMP0001];        No error occurs.
[w:TMP0000]=[w:TMP0000]+2;
}
[w:R110]=[w:TMP0110];
      :
[w:R119]=[w:TMP0119];
```

Integer-real number conversion function

Although the device data type is selected for each script, using the integer-real number conversion function enables you to use 16-bit integral device values as real numbers for operation. (and vice versa)

The integer-real number conversion function is available only for GOT internal devices (GD).

To convert the value of a controller device, transfer the value to the GOT internal device (GD) using bmov.

When real numbers are converted into integers, the value after the decimal point is rounded down. (1.53→1)

If the real number is out of the range, an error occurs before the value after the decimal point is rounded down and the real number is not converted.

■Conversion method

The integer-real number conversion is executed using the GOT internal device (GD) as the target to be converted.

Execute the integer-real number conversion by specifying the following GOT special registers (GS).

Up to 4096 points can be converted at once.

For details on the GOT special register (GS), refer to the following.

☞ Page 3581 GOT special register (GS)

• Read device

Device	Function	Description
GS460	Conversion Start Indication	Specifies the conversion start and the conversion method with each bit. b0: Unsigned 16-bit binary data is converted into real numbers. b1: Signed 16-bit binary data is converted into real numbers. b2 and b3: Use prohibited b4: Real numbers are converted into unsigned 16-bit binary data. b5: Real numbers are converted into signed 16-bit binary data. b6 to b14: Use prohibited b15: This bit is turned on when conversion is executed.
GS461	Number of Conversion Devices	Specifies the number of devices to be converted. The setting range is 1 to 4096.
GS462	Conversion Source Head Device No.	Specifies the start device No. of the GOT internal device (GD) where the value before conversion is stored.
GS463	Conversion Destination Head Device No.	Specifies the start device No. of the GOT internal device (GD) where the conversion result is to be stored.
GS464	Storage Error Value	Specifies the device value to be stored in the conversion destination device when a conversion error occurs. (Using this device for error recognition may be useful.)

Turn off the Conversion Start Indication (GS460) after completion of conversion.

If the Conversion Start Indication is executed when it is on, the device value is not converted.

• Write device

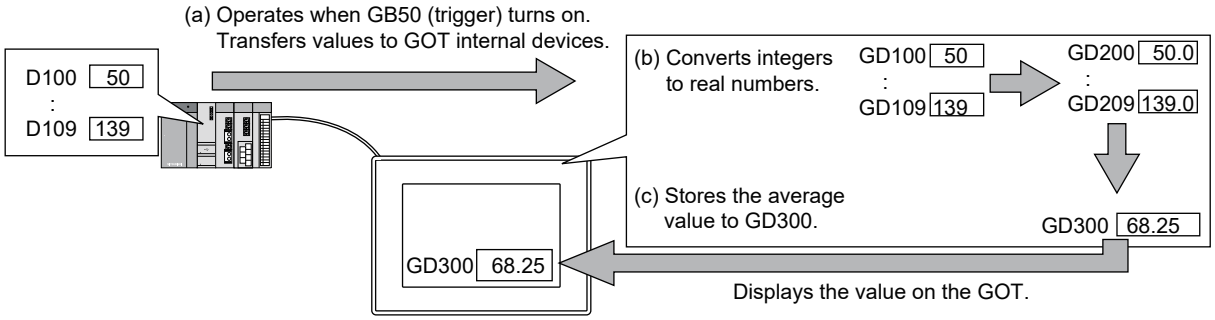
Device	Function	Description
GS260	Status	Stores the conversion completion notification and an error occurrence in each bit. If the Conversion Start Indication (GS460.b15) is turned off (0), each bit becomes 0. b0 to b13: Use prohibited b14: This bit turns on when an error occurs during conversion in the GOT. (An error code is stored in GS261.) b15: This bit turns on when conversion is finished in the GOT.
GS261	Error code*1	Stores an error which has occurred at conversion. When conversion is finished properly, 0 is stored in this device.

*1 The following shows the error codes to be stored in GS261.

Error code	Description	Remarks
1	The Conversion Start Indication is not initialized.	Conversion processing is not executed.
2	The setting of the Conversion Start Indication is incorrectly configured.	
3	The number of devices is out of range.	
4	The device is out of range.	
5	The conversion souse and destination are the same.	
6	Not used	-
7	Conversion error (such as an overflow)	Conversion processing continues.

Ex.

The average value of the data (signed 16-bit binary) stored in controller devices is displayed on the GOT in real numbers.



• Script 1 (conversion start processing)

Transfers the controller device values (D100 to D109) to the GOT internal devices (GD100 to GD109) and then converts integer numbers to real numbers.

Script 2 is started after the conversion is started.

· Data type: Signed 16-bit binary

· Trigger: Rise of GB50

```
bmov([w:D100],[w:GD100],10);
[w:GS461]=10; //Number of devices to be converted
[w:GS462]=100; //Conversion source head device No.
[w:GS463]=200; //Conversion destination head device No.
[w:GS460]=0x8002; //Starts conversion.
set([b:GB100]); //Launches script 2.
```

• Script 2 (conversion completion monitor processing)

Waits for completion of the conversion from integral numbers to real numbers.

When no error occurs after completion of the conversion, the Conversion Start Indication device is cleared at the same time of starting script 3.

· Data type: Signed 16-bit binary

· Trigger: While GB100 is on

```
if([b:GS260.15]==1)
{ //Conversion is complete.
if([b:GS260.14]==0)
{
set([b:GB101]); //Conversion is complete and the status is normal. (Launches script 3.)
}
[w:GS460]=0; //Clears the conversion start trigger.
rst([b:GB100]); //Clears the script 2 trigger.
}
```

• Script 3 (Average calculation processing)

Calculates the average value of GD200 to GD218 converted into real numbers and stores the average value in GD300.

• Data type: Real number

• Trigger: Rise of GB101

```
[w:TMP001]=0;
[w:TMP001]=[w:TMP001]+[w:GD200];
[w:TMP001]=[w:TMP001]+[w:GD202];
[w:TMP001]=[w:TMP001]+[w:GD204];
[w:TMP001]=[w:TMP001]+[w:GD206];
[w:TMP001]=[w:TMP001]+[w:GD208];
[w:TMP001]=[w:TMP001]+[w:GD210];
[w:TMP001]=[w:TMP001]+[w:GD212];
```

[w:TMP001]=[w:TMP001]+[w:GD214];
[w:TMP001]=[w:TMP001]+[w:GD216];
[w:TMP001]=[w:TMP001]+[w:GD218];
[w:GD300]=[w:TMP001]/10; //Stores the average in GD300 (real number).
rst([b:GB101]); //Clears the script 3 trigger.

Data type conversion function

Using this function makes calculating integral device values as real numbers much easier than using the integer-real number conversion function.
The values of word devices can be converted into a specified data type for reading or writing.
Specify the data type when reading or writing the device values.
The following shows the list of the data types which can be specified with the data type conversion function.

Data type after conversion	Statement example	Expression example	
Signed 8-bit binary	[s8:device]	[s8:GB50]=[s16:D100];	Refers to the values in D100 and D101 as signed 16-bit binary data, converts the values into unsigned 8-bit binary data, and assigns the data to GB50 to GB81.
Unsigned 8-bit binary	[u8:device]	[u8:GB50]=[s16:D100];	Refers to the values in D100 and D101 as signed 16-bit binary data, converts the values into unsigned 8-bit binary data, and assigns the data to GB50 to GB81.
Signed 16-bit binary	[s16:device]	[s16:D0]=[w:GD0];	Refers to the value in GD0 as the data type set in [Data Type], converts the value into signed 16-bit binary data, and assigns the data to D0.
Unsigned 16-bit binary	[u16:device]	[w:GD0]=[u16:D0];	Refers to the value in D0 as unsigned 16-bit binary data, converts the value into the data type set in [Data Type], and assigns the data to GD0.
Signed 32-bit binary	[s32:device]	if([s32:D0]<0){	Refers to the values in D0 and D1 as signed 32-bit binary data and compares the data with 0.
Unsigned 32-bit binary	[u32:device]	[u32:GD10]=[w:GD0]*[w:GD1];	Refers to the values in GD0 and GD1 as the data type set in [Data Type], converts the operation results into unsigned 32-bit binary data, and assigns the results to GD10 and GD11.
Signed 64-bit binary	[s64:device]	[s64:W12]=[w:D100];	Refers to the values in D100 to D103 as the data type set in [Data Type], converts the values into signed 64-bit binary data, and assigns the data to W12 to W15.
Unsigned 64-bit binary	[u64:device]	[u64:D100]=[s64:D40];	Refers to the values in D40 and D43 as signed 64-bit binary data, converts the values into unsigned 64-bit binary data, and assigns the data to D100 to D103.
BCD16	[d16:device]	[d16:GD0]=[w:D0]&0x000F;	Refers to the value in D0 as the data type set in [Data Type], converts the operation result into BCD16 data, and assigns the result to GD0.
BCD32	[d32:device]	[w:GD0]=[d32:D0];	Refers to the value in D0 and D1 as the BCD32 data, converts the values into the data type set in [Data Type], and assigns the values to GD0.
BCD64	[d64:device]	[d64:D10]=[flt64:D30];	Refers to the values in D30 to D33 as the real numbers (64 bits), converts the values into the BCD64 data, and assigns the values to D10 to D13.
Real number (32 bits)	[flt:device]	[flt:D100]=log([w:D200]);	Refers to the value in D200 as the data type set in [Data Type], converts the operation result into real numbers (32 bits), and assigns the result to D100 and D101.
Real number (64 bits)	[flt64:device]	[flt64:D10]=[u64:D30];	Refers to the values in D30 to D33 as unsigned 64-bit binary data, converts the values into real numbers (64 bits), and assigns the values to D10 to D13.

The following shows application examples of the data type conversion function.

Ex.
If signed 16-bit binary is set for [Data Type] and the average value of the device values is assigned as a real number (32 bits)
[flt:D10]=([w:D20]+[w:D30]+[w:D40]+[w:D50]+[w:D60])/5;

Ex.
If the device value (32-bit real number) is rounded down and written to the signed 32-bit binary format
[s32:D100]=[flt:D200];

Ex.

If the device value (32-bit real number) is rounded off and written to the signed 32-bit binary format

[s32:D100]=[flt:D200]+0.5;

Precautions

When converting the data type of a device value to a different data type, note the following.

- When the data type is converted from a real data type to an integer data type, the values after the decimal point are omitted.
- If a device value after conversion exceeds the setting range of the data type, do not convert the value.
- If a device value is negative, do not convert the data type to an unsigned data type.

68.3 How to use a script

GT37 SoftGOT3000

☞ Page 2377 Setting procedure
☞ Page 2380 Operation
☞ Page 2384 Load reduction on bmov processing

This section explains how to use a project script, screen script, script part, or script block.

68.3.1 Setting procedure

The following shows the procedure for setting a script.

Procedure for setting a project script or screen script

1. Configure the script settings with GT Designer3, such as the data type and trigger type.

☞ Page 2403 [Script] dialog

2. Edit a script with the script editor.

When you have edited a script with a commercially available text editor, import a locally saved text file.

☞ Page 2415 [Edit Script(script name)] dialog

3. Check the syntax of the script with GT Designer3.

☞ Page 2415 [Edit Script(script name)] dialog

If an error is detected, return to step 1 and correct the script.

A general C language compiler is also usable to simulate the operation.

☞ Page 2434 Simulation using a general C language compiler or debugger

4. Write the project from the personal computer to the GOT with GT Designer3.

☞ Page 408 Transferring data to the GOT

5. Start monitoring.

6. Monitor the device values using the monitor function of the software in the controller to check the operation status of the script.

If the script runs properly, the creation of the script is complete.

When the script does not run properly, return to step 1 and correct the script.

Procedure for setting a script part

When you place a script parts object on the screen editor, make sure that the object overlaps the screen display area 1 dot or more.

Otherwise, the script set for the object does not run.

1. Select [Object] → [Script Parts] from the menu.
2. Click the position to place a script parts object.
3. Double-click the script parts object to display the [Script Parts] dialog.

☞ Page 2424 [Script Parts] dialog

4. On the [Script Setting] tab, set a trigger type and a script.
5. Check the syntax of the script with GT Designer3.

☞ Page 2415 [Edit Script(script name)] dialog
☞ Page 2428 [Script Edit] dialog (for script parts)

If an error is detected, return to step 4 and correct the script.

A general C language compiler is also usable to simulate the operation.

☞ Page 2434 Simulation using a general C language compiler or debugger

6. Write the project from the personal computer to the GOT with GT Designer3.

☞ Page 408 Transferring data to the GOT

7. Start monitoring.
8. Monitor the device values using the monitor function of the software in the controller to check the operation status of the script.

If the script runs properly, the creation of the script is complete.

When the script does not run properly, return to step 4 and correct the script.

Precautions

If an overlap window, superimpose window, and the set overlay screen function call a screen having a script parts object, the script of the script parts object runs only when the screen is called up for the first time.

The script does not run in the other locations even after you close the screen where the script has run.

In the above state, if the screen is called up again in any of these locations, the script will run on the newly displayed screen.

Procedure for setting a script block

A script block is called from a project script or screen script with a call statement and executed.

Incorporate the call processing by the call statement in the project script and screen script in advance.

1. To display the [Script File List] dialog, select [Common] → [Script] → [Script File List] from the menu.

☞ Page 2417 [Script File List] dialog

2. Click the [Script Block] tab to display.

☞ Page 2419 [Script Block] tab

3. Click the [Add] button to add a script to the script list.

☞ Page 2419 [Script Block] tab

4. Click the [Script Edit] button to display the [Edit Script(script name)] dialog.

☞ Page 2419 [Script Block] tab

5. Edit a script with the script editor.

When you have edited a script with a commercially available text editor, import a text file.

☞ Page 2415 [Edit Script(script name)] dialog

6. Check the syntax of the script with GT Designer3.

☞ Page 2415 [Edit Script(script name)] dialog

If an error is detected, return to step 5 and correct the script.

A general C language compiler is also usable to simulate the operation.

☞ Page 2434 Simulation using a general C language compiler or debugger

7. Write the project from the personal computer to the GOT with GT Designer3.

☞ Page 408 Transferring data to the GOT

8. Start monitoring.

9. Monitor the device values using the following method and check the operation status of the script.

- GOT internal device

Monitor the device values using the GOT internal device monitor.

☞ Page 3577 GOT internal devices

- Controller device

Monitor the device values using the monitor function of the software in the controller.

If the script runs properly, the creation of the script is complete.

When the script does not run properly, return to step 5 and correct the script.

68.3.2 Operation

The following shows the operation of a project script, screen script, script part, or script block.

Operating condition

A project script, a screen script, or the script of a script parts object runs when its trigger condition is satisfied, and the result is written to a target PLC CPU.

The following shows the selectable trigger types.

- [Ordinary]
- [ON]
- [OFF]
- [Rise]
- [Fall]
- [Rise/Fall]
- [ON Sampling]
- [OFF Sampling]
- [Sampling] (Unit: second)
- [When closing a screen] (for screen scripts and script parts)

The script block is called by a project or screen script with a call statement to execute the script and write the results to the PLC CPU.

Precautions

When the trigger type is [Sampling], [ON Sampling], or [OFF Sampling], note the following.

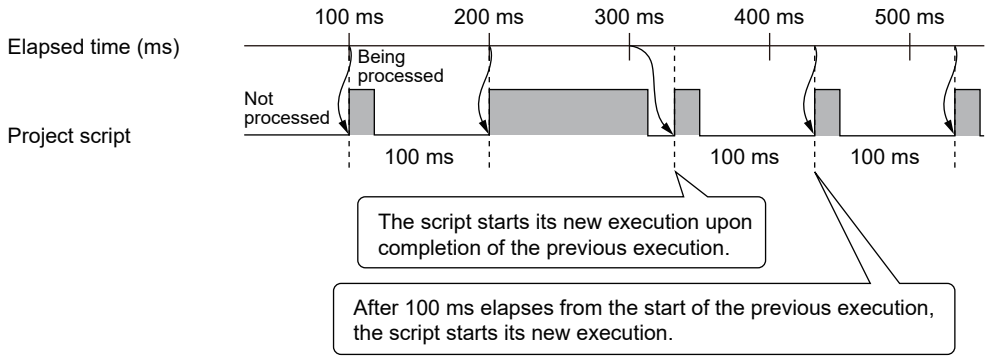
- If a script does not complete within the set cycle time

If a script does not complete within the set cycle time, its subsequent execution is delayed until the current execution completes.

After the set cycle time elapses from the start of the delayed execution, the script starts its new execution.

Ex.

Executing a project script for which [Trigger Type] is set to [Sampling] and [Sampling] is set to 1 (×100 ms)



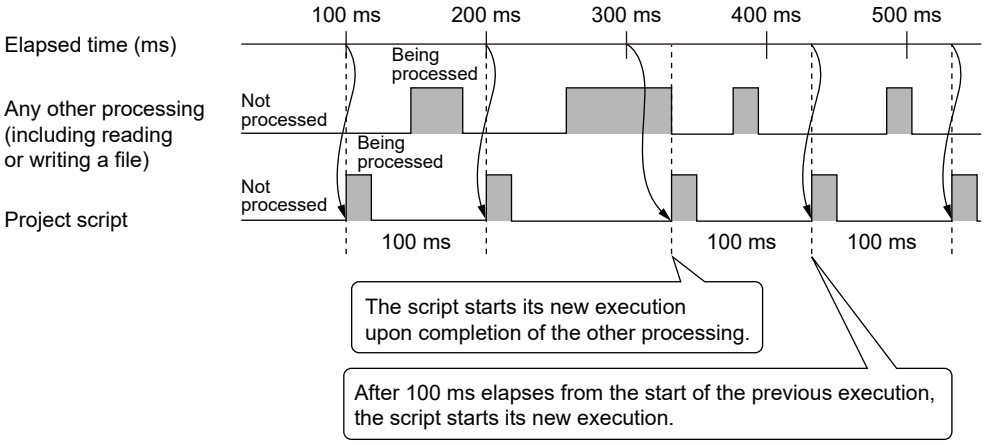
• If the trigger condition for a script is satisfied while any processing other than the script is in progress

If the trigger condition for a script is satisfied while any processing other than the script (including reading or writing a file and updating a screen) is in progress, the script execution is delayed until the processing completes.

After the set cycle time elapses from the start of the delayed execution, the script starts its new execution.

Ex.

Executing a project script for which [Trigger Type] is set to [Sampling] and [Sampling] is set to 1 (×100 ms)



• If the scripts running periodically are set for multiple screens to be displayed simultaneously

When these screens are displayed simultaneously, the scripts may fail to run at short time intervals, such as every 100 ms. In such a case, set a longer cycle time.

Execution unit

Project scripts, screen scripts, and the scripts of a script parts object run one by one.

Even if the trigger conditions of multiple scripts are satisfied, the scripts do not run simultaneously.

Execution order

The GOT check whether the trigger conditions of project scripts, screen scripts, and scripts of script parts objects are satisfied in top-to-bottom order as shown in the table below.

Depending on when the trigger device status is refreshed, the scripts may not run in the specified order even though the same trigger device is set for the scripts.

To control the execution order of scripts, establish a handshake between the scripts.

Priority order of screens	Priority order of scripts	Hierarchical order of the set overlay screen function	Execution order specified in GT Designer3	Number of executable scripts
—	Project script	—	1→2→...	256
Base screen	Screen script	Basic screen	1→2→...	256
		Called screen of the 1st layer	1→2→...	
		⋮	⋮	
		Called screen of the 16th layer	1→2→...	
	Script part	32 script parts objects on the basic screen	Script parts object 1: 1 → 2 → ... ⋮ Script parts object 32: 1 → 2 → ...	
		32 script parts objects on a called screen of the 1st layer	Script parts object 1: 1 → 2 → ... ⋮ Script parts object 32: 1 → 2 → ...	
		⋮	⋮	
		32 script parts objects on the called screens of the 16th layer	Script parts object 1: 1 → 2 → ... ⋮ Script parts object 32: 1 → 2 → ...	

Priority order of screens	Priority order of scripts	Hierarchical order of the set overlay screen function	Execution order specified in GT Designer3	Number of executable scripts
Superimpose window 1	Screen script	Basic screen	1→2→...	256
		Called screen of the 1st layer	1→2→...	
		⋮	⋮	
		Called screen of the 16th layer	1→2→...	
	Script part	32 script parts objects on the basic screen	Script parts object 1: 1 → 2 → ... ⋮ Script parts object 32: 1 → 2 → ...	
		32 script parts objects on a called screen of the 1st layer	Script parts object 1: 1 → 2 → ... ⋮ Script parts object 32: 1 → 2 → ...	
		⋮	⋮	
		32 script parts objects on the called screens of the 16th layer	Script parts object 1: 1 → 2 → ... ⋮ Script parts object 32: 1 → 2 → ...	
Superimpose window 2	Screen script	Basic screen	1→2→...	256
		Called screen of the 1st layer	1→2→...	
		⋮	⋮	
		Called screen of the 16th layer	1→2→...	
	Script part	32 script parts objects on the basic screen	Script parts object 1: 1 → 2 → ... ⋮ Script parts object 32: 1 → 2 → ...	
		32 script parts objects on a called screen of the 1st layer	Script parts object 1: 1 → 2 → ... ⋮ Script parts object 32: 1 → 2 → ...	
		⋮	⋮	
		32 script parts objects on the called screens of the 16th layer	Script parts object 1: 1 → 2 → ... ⋮ Script parts object 32: 1 → 2 → ...	
Overlap window 1	Screen script	Basic screen	1→2→...	256
		Called screen of the 1st layer	1→2→...	
		⋮	⋮	
		Called screen of the 16th layer	1→2→...	
	Script part	32 script parts objects on the basic screen	Script parts object 1: 1 → 2 → ... ⋮ Script parts object 32: 1 → 2 → ...	
		32 script parts objects on a called screen of the 1st layer	Script parts object 1: 1 → 2 → ... ⋮ Script parts object 32: 1 → 2 → ...	
		⋮	⋮	
		32 script parts objects on the called screens of the 16th layer	Script parts object 1: 1 → 2 → ... ⋮ Script parts object 32: 1 → 2 → ...	
⋮	⋮	⋮	⋮	:
Overlap window 5	Screen script	Basic screen	1→2→...	256
		Called screen of the 1st layer	1→2→...	
		⋮	⋮	
		Called screen of the 16th layer	1→2→...	
	Script part	32 script parts objects on the basic screen	Script parts object 1: 1 → 2 → ... ⋮ Script parts object 32: 1 → 2 → ...	
		32 script parts objects on a called screen of the 1st layer	Script parts object 1: 1 → 2 → ... ⋮ Script parts object 32: 1 → 2 → ...	
		⋮	⋮	
		32 script parts objects on the called screens of the 16th layer	Script parts object 1: 1 → 2 → ... ⋮ Script parts object 32: 1 → 2 → ...	

Precautions

If screen switching is executed while a screen script or the script of a script parts object is running, the target screen will not be switched until the script ends.
If screen switching is executed while a project script is running, the script will temporarily stop running until the target screen is switched.

Execution status

A project script, a screen script, or the script of a script parts object is processed according to the script status.

Script status	Processing
Waiting for turn	• Waits for the processing turn according to the execution order. • When the turn has come, the script enters the "Waiting for execution" status.
Waiting for execution	• The processing differs depending on the operating condition. Satisfied: The script enters the "Execution" status. Not satisfied: The script enters the "Waiting for turn" status, and the next script enters the "Waiting for execution" status.
Execution	• When the script has ended, the processing result is written to the PLC CPU and the script enters the "Waiting for turn" status. The next script enters the "Waiting for execution" status. • If an error occurs, the script enters the "Stop" status and the next script enters the "Waiting for execution" status. • When a screen is switched while screen scripts are used, the next script does not enter the "Waiting for execution" status until all the scripts set in the screen have been executed.
Stop	• The "Stop" status is held until the error history is cleared.

Interruption

In any of the following cases, the corresponding script being processed stops and an error occurs.

- In division, when the divisor becomes 0 and the calculation becomes zero division
- When [BCD16], [BCD32], or [BCD64] is selected as the script data type but the monitor device value cannot be handled as BCD
- When [BCD16], [BCD32], or [BCD64] is selected as the script data type but the operation result is out of the BCD range
- When a controller device is specified as the write destination device of a while statement

For the available data type and data range, refer to the following.
☞ Page 2352 Available data and how to express the data
For details on the while statement, refer to the following.
☞ Page 2335 Control statement
For troubleshooting when the script processing is interrupted, refer to the following.
☞ Page 2439 Script execution errors and their corrective actions on the GOT

Precautions

In the following cases, you may get an unexpected result of processing.

- When a format other than [BCD16], [BCD32], or [BCD64] is selected as the script data type but a constant out of the selected format range is included
- When [Unsigned BIN16] or [Unsigned BIN32] is selected as the script data type but a negative constant is included
- When a format other than [Real(32bit)] or [Real(64bit)] is selected as the script data type but a decimal is used as a constant

For details on data types, refer to the following.
☞ Page 2352 Available data and how to express the data

68.3.3 Load reduction on bmov processing

For project scripts or screen scripts, using many bmov commands to read device values from the controller and to store them in the GOT internal devices may slow the performance of the GOT display refresh or the reaction of the touch switch input. This section explains how to make the GOT monitor operate at a higher speed by reducing the frequency of the communication with controllers by bmov.

How to read device values from controllers without bmov

The GOT can read device values with device data transfer instead of bmov.
With device data transfer, the GOT communicates with controllers only when trigger conditions are satisfied. Therefore, the GOT has no communication loads by always monitoring the device used for the script function.
For details on device data transfer, refer to the following.
☞ Page 2498 Transferring data between devices ([Device Data Transfer])

How to reduce the communication time when using bmov

When controller devices are handled in a bmov, if, or switch statement, communication with the controller is performed every time a device value is read.
To reduce the communication time, it is recommended that you read a batch of values from the source devices temporarily into a temporary device area.
Take measures as follows.

• If device values are read from controllers in divided blocks

Change the script into the one that reads values temporarily into the temporary device area at a time, then divides them again, and then transfers them to the GOT internal devices.
☞ Page 2385 Reading device values into a temporary device area at a time

• If the GOT reads device values in a controller according to each operating condition of an if or switch statement

Read the values temporarily into the temporary device area before the if or switch statement is executed.
Then, change the script into the one that transfers the values from the temporary device area to the GOT internal devices by dividing the values into groups according to the condition of if or switch statement.
☞ Page 2386 Reading bmov commands in a script at a time

■Reading device values into a temporary device area at a time

This solution saves the communication time by reducing the frequency of communication between the GOT internal memory and the controller from three times to once.

When data are transferred from a temporary device area to GOT internal devices (such as GD), the internal memory does not communicate with controllers.

The internal memory is used for communication processing.

It is a system area, and the user is not permitted to access to the area.

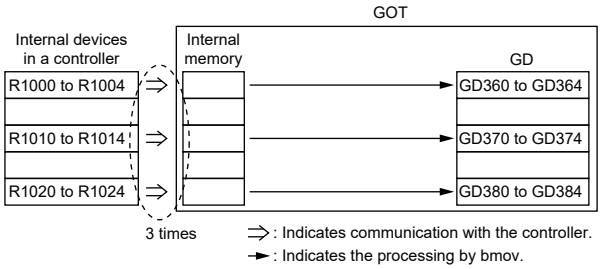
Before applying remedy

• Processing outline

Device values are transferred from R1000 to R1004, R1010 to R1014 and R1020 to R1024 into GD360 to GD364, GD370 to GD374 and GD380 to GD384 respectively.

• Script description

```
bmov([w:R1000],[w:GD360],5);
bmov([w:R1010],[w:GD370],5);
bmov([w:R1020],[w:GD380],5);
```



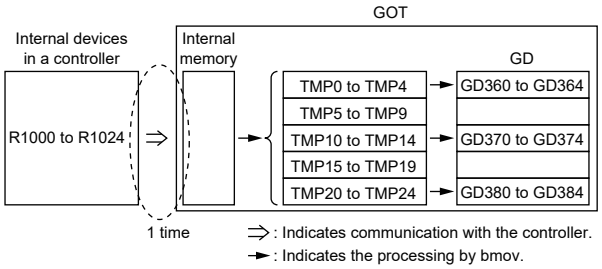
After applying remedy

• Processing outline

Device values are transferred from R1000 to R1024 into TMP0 to TMP24 in the GOT first, then transferred again from TMP0 to TMP24 into GD360 to GD364, GD370 to GD374 and GD380 to GD384 respectively.

• Script description

```
bmov([w:R1000],[w:TMP0],25);
bmov([w:TMP0],[w:GD360],5);
bmov([w:TMP10],[w:GD370],5);
bmov([w:TMP20],[w:GD380],5);
```



■Reading bmov commands in a script at a time

This solution saves the communication time by reducing the frequency of communication between the GOT internal memory and the controller from 10 times to once.

(When internal devices in a controller are read in an if or switch statement, the internal memory communicates with the controller regardless of the operating condition. When data are transferred from a temporary device area to GOT internal devices (such as GD), the internal memory does not communicate with controllers.)

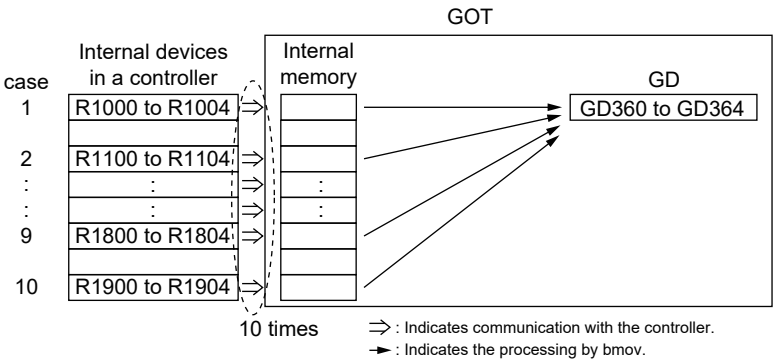
Before applying remedy

• Processing outline

Device values are transferred from R1000 to R1004, ⋯ and R1900 to R1904 into GD360 to GD364 according to the case statements.

• Script description

```
switch([w:D1000]){
case 1:
bmov([w:R1000],[w:GD360],5);
break;
case 2:
bmov([w:R1100],[w:GD360],5);
break;
:
case 9:
bmov([w:R1800],[w:GD360],5);
break;
case 10:
bmov([w:R1900],[w:GD360],5);
break;
}
rst([b:GB1000]);
```



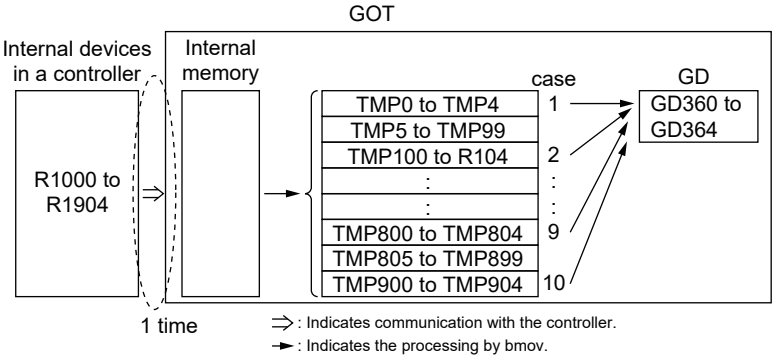
After applying remedy

• Processing outline

Device values are transferred from R1000 to R1904 into TMP0 to TMP904 in the GOT at a time, then transferred again from TMP0 to TMP904 into GD360 to GD364 according to the case statements.

• Script description

```
bmov([w:R1000],[w:TMP0],905);
switch([w:D1000]){
case 1:
bmov([w:TMP0],[w:GD360],5);
break;
case 2:
bmov([w:TMP100],[w:GD360],5);
break;
:
case 9:
bmov([w:TMP800],[w:GD360],5);
break;
case 10:
bmov([w:TMP900],[w:GD360],5);
break;
}
rst([b:GB1000]);
```



68.4 Program example

GT37 SoftGOT3000

☞ Page 2387 Switches with the interlock function
☞ Page 2388 Lamps which change display objects according to multiple conditions
☞ Page 2390 Password entry screen with time limit function
☞ Page 2392 GOT operation check (watchdog) on a PLC
☞ Page 2393 Selecting data and swapping between upper and lower data
☞ Page 2394 Data type conversion
☞ Page 2395 File operation
☞ Page 2400 Character string operation

The following shows the examples of project scripts, screen scripts, and the scripts of script parts objects.

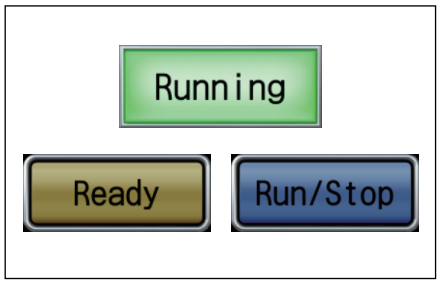
68.4.1 Switches with the interlock function

GT37 SoftGOT3000

Operation

When the ready switch and the run/stop switch turn on, the running lamp turns on.

The system operation is controlled associating with the running lamp.

Screen image	Operation of each object
	Running lamp: Displays the operation status of the system. Ready switch: Operates as an interlock of the [Run/Stop] switch. Run/Stop switch: Switches the operation status of the system (running or stop).

Monitor screen setting

Object name	Type	Setting item	Setting
Running lamp	Bit lamp	Monitor device	M0003 (System operation control device)
Ready switch	Bit switch	Monitor device	M0001
		Operation setting	Bit set
Run/Stop switch	Bit switch	Monitor device	M0002
		Operation setting	Bit set

Program example

Item	Description	
Data type	Signed 16-bit binary	
Trigger type	Ordinary	

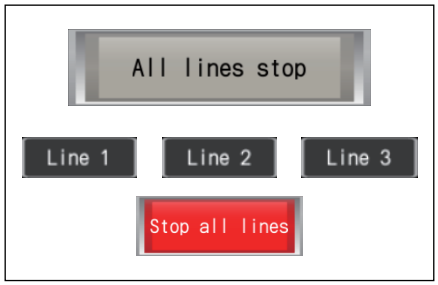
Script	if ([b:M0001]&&[b:M0002]){
	set([b:M0003]);
	}else{
	rst([b:M0003]);
	rst([b:M0002]);
	}
		//When both the ready switch and the run/stop switch turn on,
		//the running lamp turns on and the system operation starts.
		//If not,
		//the running lamp turns off and the system stops and
		//the run/stop switch is reset.

68.4.2 Lamps which change display objects according to multiple conditions

GT37 SoftGOT3000

Operation

The operations of three lines are controlled by the switches, and the control statuses of each line are indicated by one lamp.

Screen image	Operation of each object
	Control status lamp: The lamp color and the comment change according to the operation status of each line. Line 1 to Line 3 switch: Control the operations of line 1 to line 3. Stop all lines switch: Stops all the lines.

Monitor screen setting

Object name	Type	Setting item	Setting
Control status lamp	Word lamp	Monitor device	D10
Control status lamp	Word lamp	Style, text	Display range: $V==0 Lamp color: 182 Text: All lines stop
			Display range: $V==1 Lamp color: 3 Text: Line 1 running
			Display range: $V==2 Lamp color: 224 Text: Line 2 running
			Display range: $V==3 Lamp color: 227 Text: Line 3 running
			Display range: $V==4 Lamp color: 28 Text: Line1 and 2 running
			Display range: $V==5 Lamp color: 31 Text: Line1 and 3 running
			Display range: $V==6 Lamp color: 252 Text: Line2 and 3 running
			Display range: $V==7 Lamp color: 162 Text: Line1, 2 and 3 running
Line 1 switch	Bit switch	Monitor device	X1
		Operation setting	Bit alternate
Line 2 switch	Bit switch	Monitor device	X2
		Operation setting	Bit alternate
Line 3 switch	Bit switch	Monitor device	X3
		Operation setting	Bit alternate
Stop all lines switch	Bit switch	Monitor device	X0
		Operation setting	Bit set

Program example

Item	Description	
Data type	Signed 16-bit binary	
Trigger type	Ordinary	

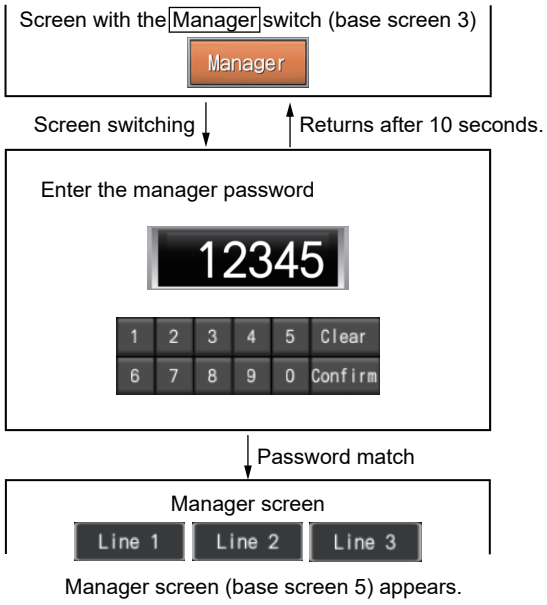
Script	if(([b:X1]==OFF)&&([b:X2]==OFF)&&([b:X3]==OFF)){
	[w:D10]=0;
	}
	if(([b:X1]==ON)&&([b:X2]==OFF)&&([b:X3]==OFF)){
	[w:D10]=1;
	}
	if(([b:X1]==OFF)&&([b:X2]==ON)&&([b:X3]==OFF)){
	[w:D10]=2;
	}
	if(([b:X1]==OFF)&&([b:X2]==OFF)&&([b:X3]==ON)){
	[w:D10]=3;
	}
	if(([b:X1]==ON)&&([b:X2]==ON)&&([b:X3]==OFF)){
	[w:D10]=4;
	}
	if(([b:X1]==ON)&&([b:X2]==OFF)&&([b:X3]==ON)){
	[w:D10]=5;
	}
	if(([b:X1]==OFF)&&([b:X2]==ON)&&([b:X3]==ON)){
	[w:D10]=6;
	}
	if(([b:X1]==ON)&&([b:X2]==ON)&&([b:X3]==ON)){
	[w:D10]=7;
	}
	if ([b:X0]==ON){
	rst([b:X1]);
	rst([b:X2]);
	rst([b:X3]);
	rst([b:X0]);
	}
		//When line 1, 2, and 3 are off,
		//0 is stored in D10.
		//When line 1 is on and line 2 and 3 are off,
		//1 is stored in D10.
		//When line 2 is on and line 1 and 3 are off,
		//2 is stored in D10.
		//When line 3 is on and line 1 and 2 are off,
		//3 is stored in D10.
		//When line 1 and 2 are on and line 3 is off,
		//4 is stored in D10.
		//When line 1 and 3 are on and line 2 is off,
		//5 is stored in D10.
		//When line 2 and 3 are on and line 1 is off,
		//6 is stored in D10.
		//When line 1, 2, and 3 are on,
		//7 is stored in D10.
		//When the Stop all lines switch is turned on,
		//line 1 is turned off.
		//line 2 is turned off.
		//line 3 is turned off.
		//The Stop all lines switch is turned off.

68.4.3 Password entry screen with time limit function

GT37 SoftGOT3000

Operation

The password entry screen is displayed. If the correct password is not entered within 10 seconds, the screen returns to the previous screen.

Screen image	Operation of each object
 Manager screen (base screen 5) appears.	Manager button: Displays the password entry screen (base screen 4). Password entry: Displays the password entered using 0 to 9 switches. 0 to 9 switch: Inputs a value. Clear switch: Clears the input value. Confirm switch: Confirms the input value.

Monitor screen setting

Object name	Type	Setting item	Setting
Manager button	Go To Screen switch	Operation setting	Base screen switching 4
Password entry	Numerical input	Monitor device	D10
1 switch	Key code switch	Operation setting	Key code [0031h]
2 switch	Key code switch	Operation setting	Key code [0032h]
3 switch	Key code switch	Operation setting	Key code [0033h]
4 switch	Key code switch	Operation setting	Key code [0034h]
5 switch	Key code switch	Operation setting	Key code [0035h]
6 switch	Key code switch	Operation setting	Key code [0036h]
7 switch	Key code switch	Operation setting	Key code [0037h]
8 switch	Key code switch	Operation setting	Key code [0038h]
9 switch	Key code switch	Operation setting	Key code [0039h]
0 switch	Key code switch	Operation setting	Key code [0030h]
Clear switch	Key code switch	Operation setting	Key code [0088h]
Confirm switch	Key code switch	Operation setting	Key code [000Dh]

Program example

This program example uses the GOT special registers (GS devices).

In the GOT special registers, the GOT internal information, the communication status, and the error information of the scripts are stored.

Associating the GOT special registers with scripts enables various operations.

For details on the GOT special register, refer to the following.

☞ Page 3581 GOT special register (GS)

Item	Description	
Data type	Signed 16-bit binary	
Trigger type	Ordinary	

Script	if([b:GS1.01]==ON){
	[w:TMP0001]=[w:GS7];}
	if([w:D10]==3238){
	[w:D0]=5;
	[w:D10]=0; }
	if([w:GS7]-[w:TMP0001]>=10){
	[w:D0]=3; }
		//Only when the screen switches to the password entry screen,
		//TMP0001 is input to GS7.
		//When the correct password (3238) is entered,
		//the manager screen (base screen 5) appears.
		//Clear password
		//When 10 seconds or longer have passed after the password entry screen appears,
		//the screen with the manager switch (base screen 3) appears.

68.4.4 GOT operation check (watchdog) on a PLC

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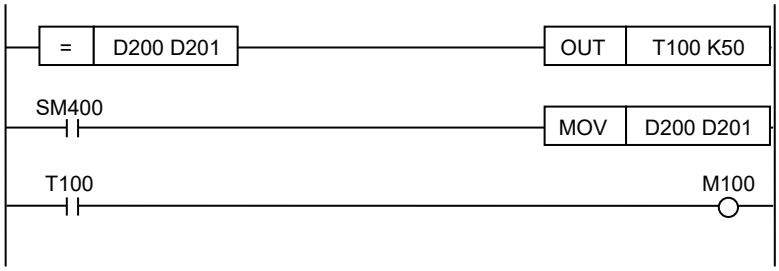
Write data from the GOT to the device (D200) of the PLC at regular intervals.
This enables the PLC to check whether the GOT is operating normally.
For example, if you configure a setting so that the indicator light is lit on the GOT screen when the value in D200 does not change, the GOT visually notifies that it operates abnormally.

Devices and ladder diagrams of the PLC

The following shows the devices and the ladder diagrams to be used in the PLC.

Description	Device
Write destination device from GOT	D200
Written device from the GOT change confirmation device	D201
Timeout timer	T100
Processing start trigger	M100
Always ON	SM400



Program example

Item	Description
Trigger type	Cycle (1 second)
Script	[u16:D200] = [u16:D200] + 1;

68.4.5 Selecting data and swapping between upper and lower data

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The GOT selects higher-order bits or lower-order bits of 16 or 32 bit data or swap the data.

The following shows program examples and the results using a script.

Trigger types are user-selected.

(1) Selecting higher-order bits of 8-bit data

The GOT selects the higher-order 8 bits of the 16-bit data stored in D300 and stores the data in D350.

```
[u16:D350] = ([u16:D300] & 0xFF00) >> 8;
```

(2) Selecting lower-order bits of 8-bit data

The GOT selects the lower-order 8 bits of the 16-bit data stored in D300 and stores the data in D351.

```
[u16:D351] = [u16:D300] & 0x00FF;
```

(3) Swapping data between higher-order bits and lower-order bits of 16-bit data

The GOT swaps data between higher-order 8 bits and lower-order 8 bits of the 16-bit data stored in D300 and stores the data in D352.

```
[u16:D352] = (([u16:D300] & 0x00FF) << 8) | (([u16:D300] & 0xFF00) >> 8);
```

(4) Swapping data between higher-order bits and lower-order bits of 32-bit data

The GOT swaps data between higher-order 16 bits and lower-order 16 bits of the 32-bit data stored in D400 and stores the data in D450.

```
[u32:D450] = (([u32:D400] & 0x0000FFFF) << 16) | (([u32:D400] & 0xFFFF0000) >> 16);
```

Specify [u16] or [u32] so that the data type is unsigned.

Specify the unsigned data type for a script when specifying [w].

Examples of the result using a script

Description		Device	Example of stored data
16-bit source data storage destination device		D300	0x1234
(1)	Higher-order bit data storage destination device	D350	0x12
(2)	Lower-order bit data storage destination device	D351	0x34
(3)	Higher/lower bit data swap storage destination device	D352	0x3412
32-bit source data storage destination device		D400	0x12345678
(4)	Higher/lower bit data swap storage destination device	D450	0x56781234

PART 12

68.4.6 Data type conversion

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Convert decimal data into BCD data or BCD data into decimal.

The following shows program examples and the results using a script.

Trigger types are user-selected.

(1) Converting decimal data into BCD data

The GOT converts decimal data stored in D300 into BCD data and stores the data in D350.

```
if( [u16:D300] < 10000 ) {
    [d16:D350] = [u16:D300];
}
```

If 5 digits of data or more is stored in D300, set the storage destination to 32 bits instead of using an if statement as follows.

```
[d32:D350] = [u16:D300];
```

(2) Converting BCD data into decimal data

The GOT converts BCD data stored in D400 into decimal data and stores the data in D450.

```
[[u16:D450] = [d16:D400];
```

Examples of the result using a script

Description		Device	Example of stored data
Decimal data storage destination device		D300	1234
(1)	Converted BCD data storage destination device	D350	0x1234
BCD data storage destination device		D400	0x1234
(2)	Converted decimal data storage destination device	D450	1234

68.4.7 File operation

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The following shows file operation examples using the file operation functions.

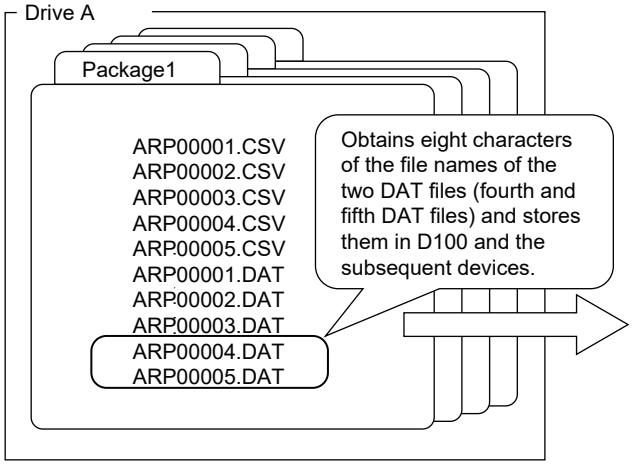
Obtaining a file name

To obtain a file name, use the file name obtaining function (file_getlist).

Ex.

To obtain the file names of the two DAT files from the fourth DAT file in the Package1 folder on drive A and store eight characters of each file name in D100 and subsequent devices

```
//(Without using the declare function, #pragma use_character_code unicode)
[s16:D500] = file_getlist("A:\\Package1\\", "*.DAT", [w:D100], 3, 2, 8); //Obtain a file name.
```



Storage device

D100	R	A
D101	0	P
D102	0	0
D103	4	0
D104	\0	\0
D105	R	A
D106	0	P
D107	0	0
D108	5	0
D109	\0	\0

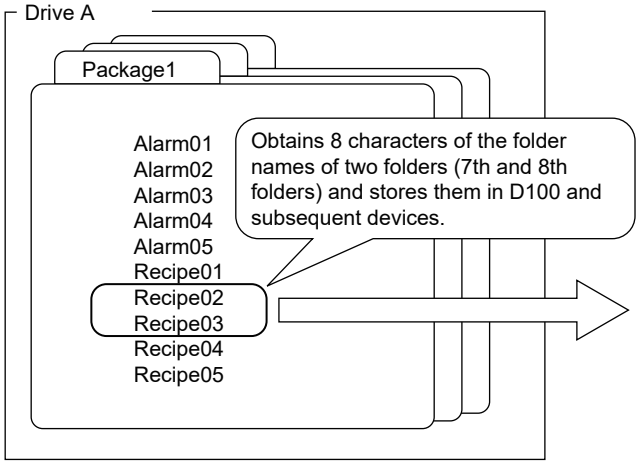
Obtaining a folder name

To obtain a folder name, use the obtain folder name function (file_getfolderlist).

Ex.

To obtain eight characters of the name of the seventh and eighth folders each in the Package1 folder on drive A and to store the characters in D100 and subsequent devices

```
//(Without using the declare function, #pragma use_character_code unicode)
[s16:D500] = file_getfolderlist("A:\\Package1\\", "",[w:D100],6,2,8); // Obtain a folder name.
```



Storage device

D100	e	R
D101	i	c
D102	e	p
D103	2	0
D104	\0	\0
D105	e	R
D106	i	c
D107	e	p
D108	3	0
D109	\0	\0

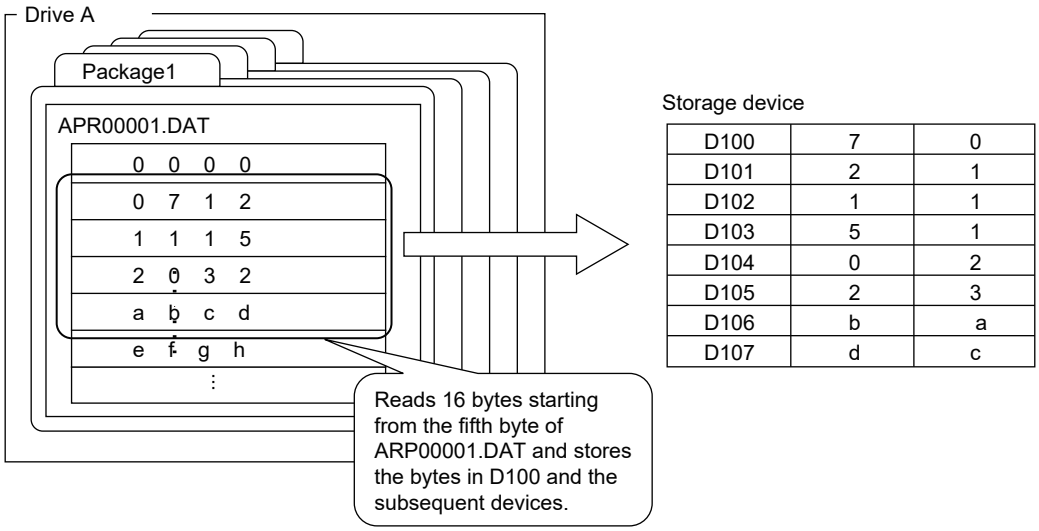
Reading data from a file

To read data from a file, use the file read function (file_read).

Ex.

To read 16 bytes from the fifth byte of ARP00001.DAT in the Package1 folder on drive A and store the bytes in D100 and subsequent devices

```
[s16:D500] = file_read("A:\\Package1\\", "ARP00001.DAT", [w:D100], 4, 16); //Reads file.
```



Storage device

D100	7	0
D101	2	1
D102	1	1
D103	5	1
D104	0	2
D105	2	3
D106	b	a
D107	d	c

Reading data for only one line from a file

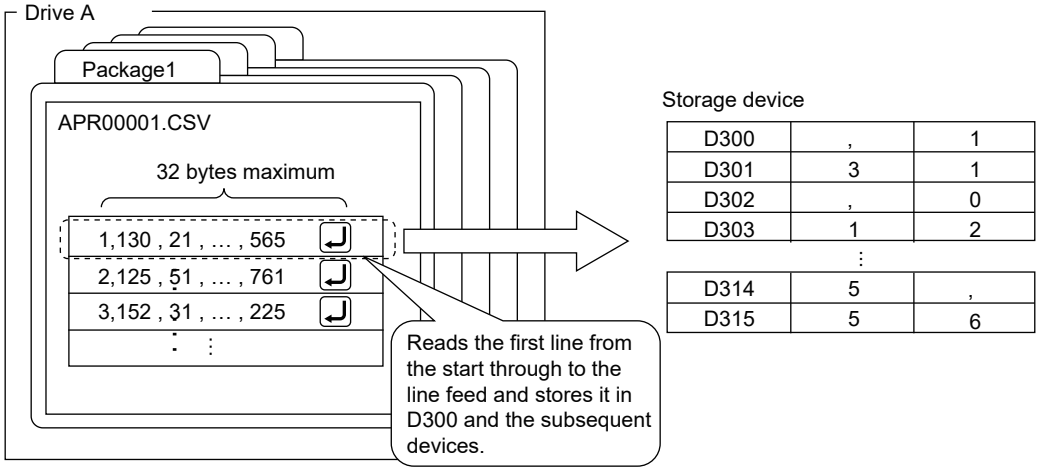
To read data for only one line from a file, use the file line read function (file_lineread, file_unilineread).

Ex.

To read the first line of ARP00001.CSV in the Package1 folder on drive A and store it in D300 and subsequent devices

- Length of one line: Up to 32 bytes
- D200: Return value (number of read bytes)
- D300: Device storing the read data

```
[s16:D200] = file_lineread("A:\\Package1\\","ARP00001.CSV",[w:D300],0,32); //Read one line.
```



Storage device

D300	,	1
D301	3	1
D302	,	0
D303	1	2
⋮		
D314	5	,
D315	5	6

By adding the number of read bytes stored in the return value to the offset, the second or later lines can be read consecutively.

Ex.

Reading data from the second and subsequent lines

```
[s16:D400] = [s16:D400] + [s16:D200]; //Add the number of read bytes to the offset.
[s16:D200] = file_lineread("A:\\Package1\\","ARP00001.CSV",[w:D300],[s16:D400],256);
```

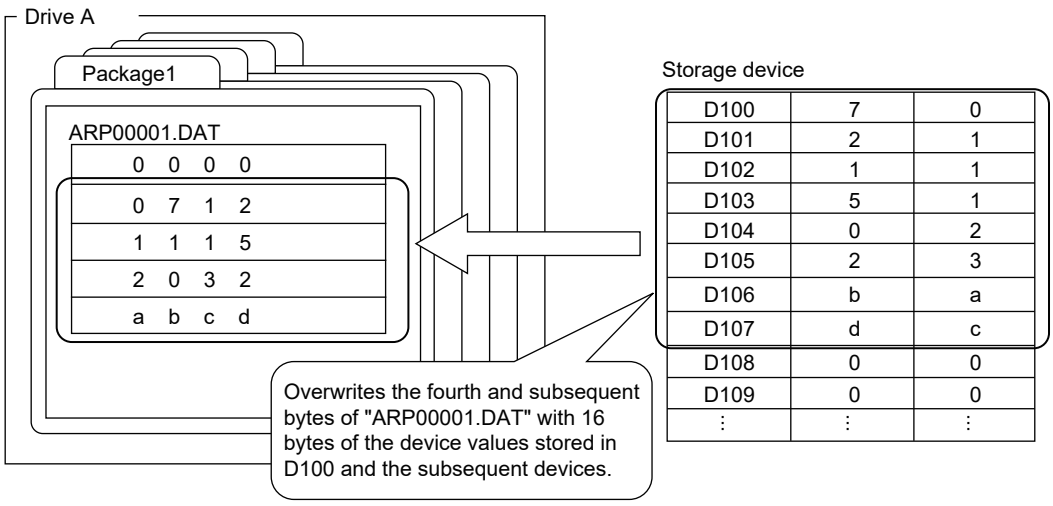
Writing data to a file

To write data to a file, use the file write function (file_write).

Ex.

To overwrite the bytes from the fourth byte of ARP00001.DAT in the Package1 folder on drive A with 16 bytes of the device value stored in D100 and subsequent devices

```
[s16:D500] = file_write("A:\\Package1\\", "ARP00001.DAT", [w:D100], 4, 16, 2); //Write file.
```



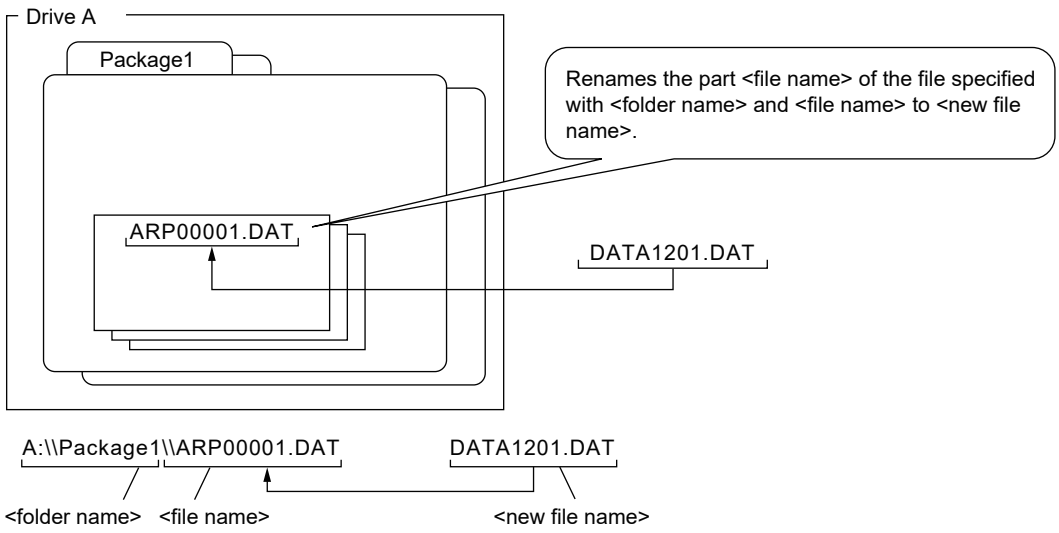
Renaming a file

To rename the file, use the file rename function (file_rename).

Ex.

To rename ARP00001.DAT in the Package1 folder on drive A to DATA1201.DAT

```
[s16:D500] = file_rename("A:\\Package1\\", "ARP00001.DAT", "DATA1201.DAT"); //Rename file.
```



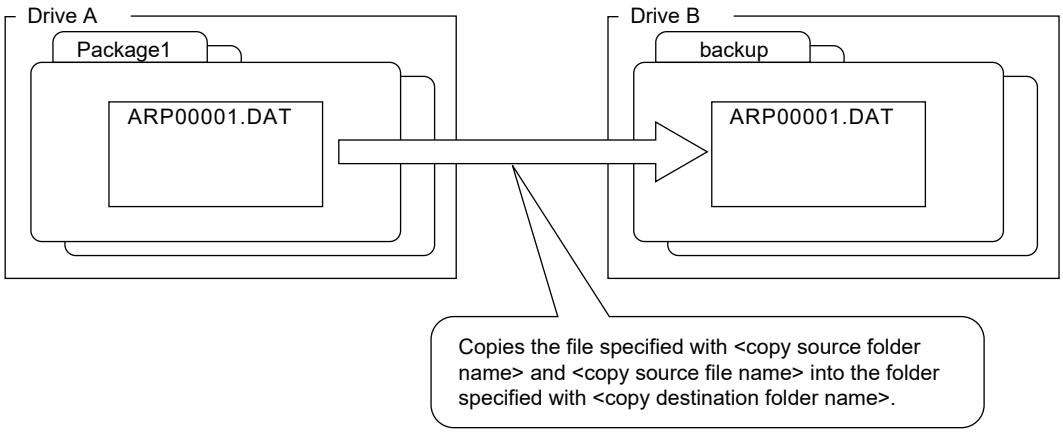
Copying a file

To copy the file, use the file copy function (file_copy).

Ex.

To copy ARP00001.DAT in the Package1 folder on drive A to the backup folder on drive B

```
[s16:D500] = file_copy("A:\\Package1\\", "ARP00001.DAT", "B:\\backup\\", "", 1); //Copy file.
```



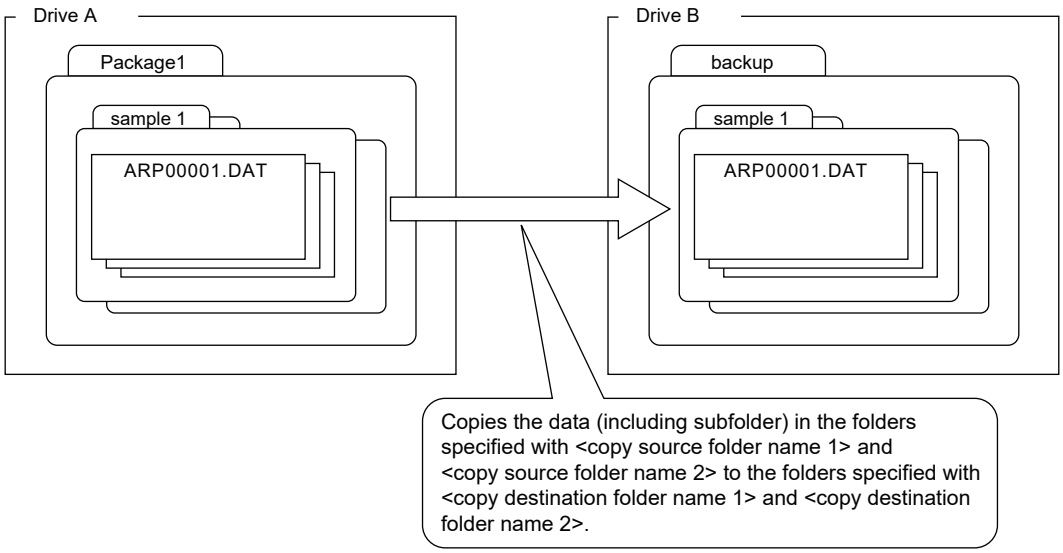
Copying a folder

To copy the folder, use the folder copy function (file_xcopy).

Ex.

To copy the data (including subfolders) in the Package1 folder on drive A to the backup folder on drive B

```
[s16:D500] = file_xcopy("A:\\Package1\\", "sample1", "B:\\backup\\", "sample1", 1); //Copy folder.
```



Specifying the number of characters in the folder or file name at file reading

Use the following declaration statements to specify the number of characters in the folder or file name at file reading.

- #pragma folder_name_length
- #pragma file_name_length

Ex.

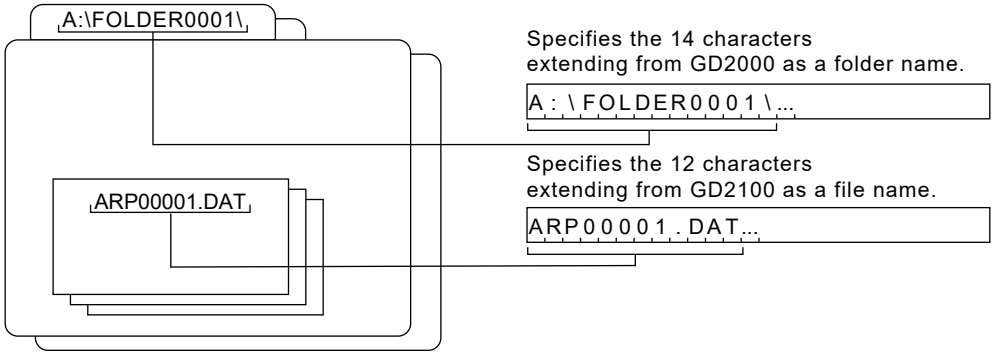
To limit the folder name to 14 characters and file name to 12 characters at file reading

GD2000 to GD2006: Store folder name A: \FOLDER0001\.

GD2100 to GD2105: Store file name ARP00001.DAT.

GD3000 to GD3015: Store the data read from a file.

```
#pragma folder_name_length(14) //Limit the folder name length to 14 characters.
#pragma file_name_length(12) //Limit the file name length to 12 characters.
[s16:D500]=file_read([w:GD2000],[w:GD2100],[w:GD3000],0,32);//Read 32 characters from the start of file name GD2100.
```



Obtaining a file name in Unicode

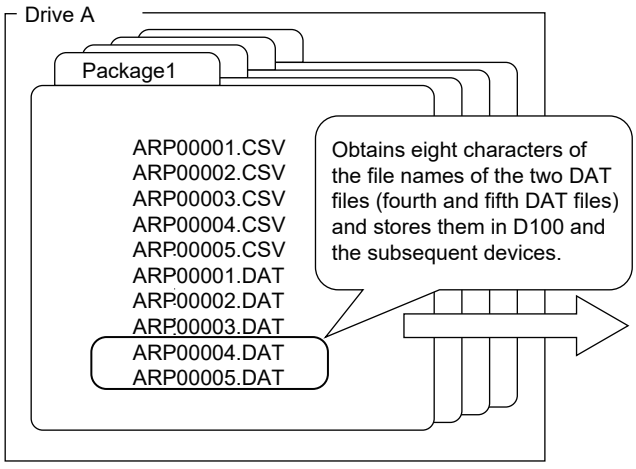
To obtain a file name in Unicode, use the following declaration statement.

- #pragma use_character_code unicode

Ex.

To specify a file name in Unicode at file reading

```
#pragma use_character_code unicode
[s16:D500] = file_getlist("A:\\Package1\\", "*.DAT", [w:D100], 3, 2, 8); //Obtain a file name.
```



Storage device

D100	A
D101	R
D102	P
D103	0
D104	0
D105	0
D106	0
D107	4
D108	\0
D109	A
D110	R
D111	P
D112	0
D113	0
D114	0
D115	0
D116	5
D117	\0

68.4.8 Character string operation

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The following shows examples of operating the character string using the string operation functions.

Reading the specified data from a string

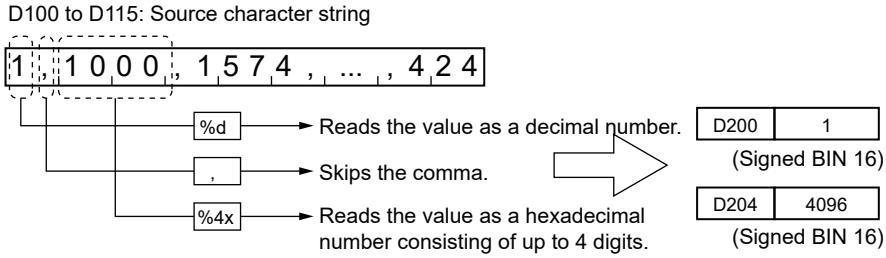
To read the specified data from a string, use the string input function (str_scanf, str_uniscanf).

Ex.

To read the first two fields from one line stored in D100 and subsequent devices

- D500: Return value
- D100: Input string storage device (read one-line data)
- D200: Input value storage device (first field)
- D204: Input value storage device (second field

```
[s16:D500] = str_scanf([w:D100], 32, 0, "%d,%4x", [w:D200], [w:D204]); //Obtain two data sets.
```



Writing the specified data into a string

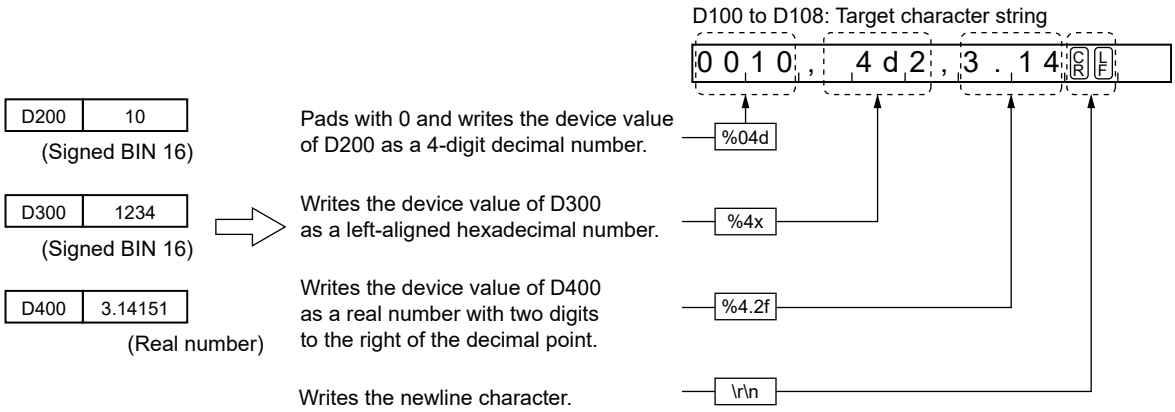
To write the specified data into a string, use the string output function (str_printf, str_uniprintf).

Ex.

To write three data sets stored in D200, D300, and D400 to one character string stored in D100 and subsequent devices

- D500: Return value
- D100: Output string storage device (target character string
- D200: Output value storage device (data to be written to the first field)
- D300: Output value storage device (data to be written to the second field)
- D400: Output value storage device (data to be written to the third field)

```
[s16:D500] = str_printf([w:D100],18,"%04d,%4x,%4.2f\r\n",[s16:D200],[s16:D300],[flt:D400]); //Write three data sets.
```



Data length of the specified string

To obtain the data length of the specified string, use the string length acquisition function (str_strlen, str_unistrlen).

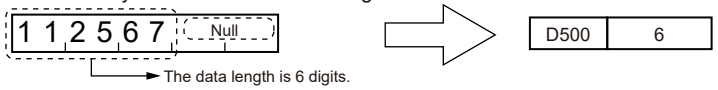
Ex.

Obtaining the data length of characters from the 1st byte of D100 to the 10th byte

- D500: Return value (data length)
- D100: Input string storage device

```
[s16:D500] = str_strlen([w:D100],10); //Obtain data length of D100.
```

Obtains the stored data length.
D100 to D104: 10 bytes of the character string



Stores the obtained data length to the return value.

D500	6

Reading a part of the string

To read a part of the string, use the partial string acquisition function (str_strmid, str_unistrmid).

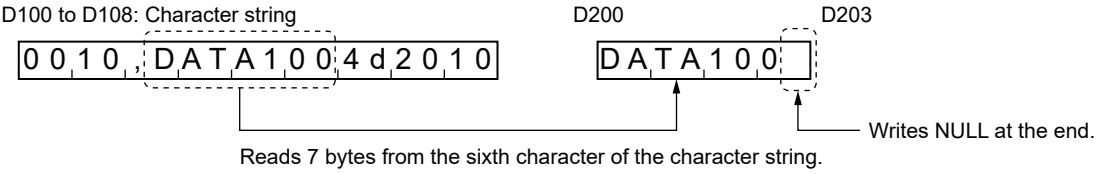
Ex.

To read 7 bytes from the sixth character of the string stored in D100 and subsequent devices and store the bytes in D200

- D500: Return value (read data amount)
- D100: Input string storage device (source character string)
- D200: Output string storage device (read data)

```
[s16:D500] = str_strmid([w:D100], [w:D200], 5, 7); //Obtain a part of the string of D100.
```

D100 to D108: Character string



Converting the character code into Unicode

To convert the character code from a local code to Unicode, use the convert character code function (local code → Unicode)(str_lc2uni).

Ex.

To read six characters (6-byte data) from an ASCII string stored in D100 and subsequent devices, encode the characters to Unicode, and write the six Unicode characters (12-byte data) to D200 and subsequent devices

- Order of storing data: Lower → higher

```
[s16:D500] = str_lc2uni(2, [w:D100], [w:D200], 6, 12); // Convert a character code.
```

D100	A	D
D101	A	T
D102	\0	1

D200	D
D201	A
D202	T
D203	A
D204	1
D205	\0

Converting the character code into a local code

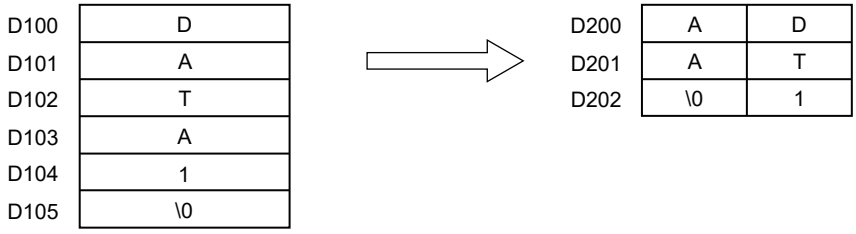
To convert the character code from Unicode to a local code, use the convert character code function (Unicode → local code)(str_uni2lc).

Ex.

To read six characters (12-byte data) from a Unicode string stored in D100 and subsequent devices, encode the characters to ASCII, and writes the six ASCII characters (6-byte data) to D200 and subsequent devices

- Order of storing data: Lower → higher

```
[s16:D500] = str_uni2lc(2, [w:D100], [w:D200], 12, 6); // Convert a character code.
```



68.5 [Script] dialog

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This dialog is used for setting a project script or screen script.

Select [Common] → [Script] → [Script] from the menu to display the setting dialog.

☞ Page 2403 [Project] tab
☞ Page 2405 [Screen] tab
☞ Page 2407 [Script Symbol] tab
☞ Page 2410 [Option] tab

68.5.1 [Project] tab

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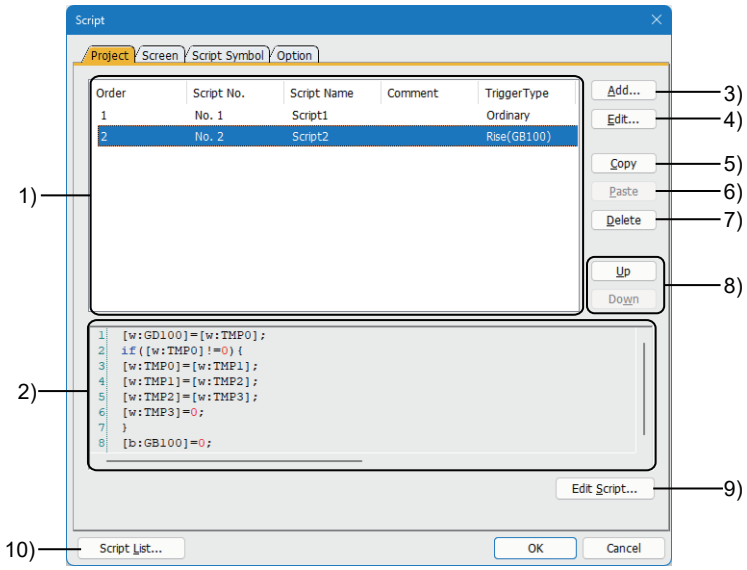
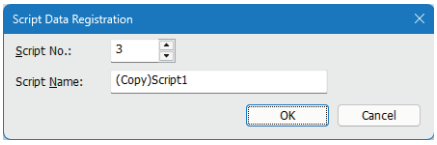
Set the project scripts which operate to the whole project.



Item		Description
1)	Script setting list	Lists the script settings. The script of the selected script No. is displayed in the space below the script setting list.
2)	Script preview	Displays the content of the script selected in the script setting list.
3)	[Add] button	Add a new script setting to the list. Click this button to display the [Script Edit] dialog. ☞ Page 2412 [Script Edit] dialog (for project scripts and screen scripts) The execution order of the scripts is set according to the order in which the scripts are added.
4)	[Edit] button	Edit the selected script setting. Click this button to display the [Script Edit] dialog. ☞ Page 2412 [Script Edit] dialog (for project scripts and screen scripts)
5)	[Copy] button	Copies the selected script setting.

Item		Description
6)	[Paste] button	Pastes the copied script setting to the last line of the list. Click the [Paste] button to display the dialog for selecting the method to paste the script. The pasting method differs depending on the [Yes] or [No] button. [Yes] button: Copies the source script. [No] button: Refers to the same script as that of the copy source. Select the [Yes] button to display the following dialog.  • [Script No.] Set the script No. for the script to be registered. (Default: The minimum number of the non-registered script No.) After registered, the script is reflected to the script list. ☞ Page 2417 [Script File List] dialog • [Script Name] Set the name of the script to be registered. The setting range is 1 character to 32 characters. However, the following symbols cannot be entered. • " * / \ : < > ? |
7)	[Delete] button	Deletes the selected script setting.
8)	[Up] button, [Down] button	Changes the execution order of the selected script setting.
9)	[Edit Script] button	Edit the selected project script in the [Script Edit] dialog. ☞ Page 2415 [Edit Script(script name)] dialog
10)	[Script List] button	Displays the list of the registered scripts. You can register scripts additionally and edit and delete the scripts in the list. ☞ Page 2417 [Script File List] dialog

68.5.2 [Screen] tab

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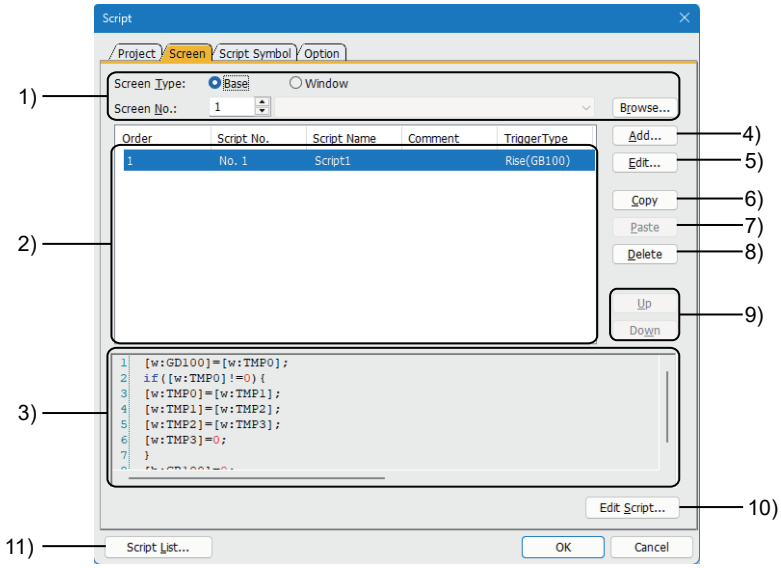
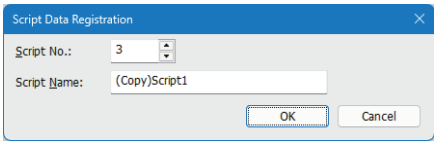


Item		Description
1)	[Screen Type]	Select the screen ([Base] or [Windows]) in which the script setting operates and the screen number. The setting range is [0] to [32767]. The screen number can be selected with the screen title. Click the [Browse] button to display the [Image List] dialog. ☞ Page 3683 [Image List] dialog (screen)
2)	Script setting list	Displays the list of script settings. The script of the selected script No. is displayed in the space below the script setting list.
3)	Script preview	Displays the content of the script selected in the script setting list.
4)	[Add] button	Add a new script setting to the list. Click this button to display the [Script Edit] dialog. ☞ Page 2412 [Script Edit] dialog (for project scripts and screen scripts) The execution order of the scripts is set according to the order in which the scripts are added.
5)	[Edit] button	Edit the selected script setting. Click this button to display the [Script Edit] dialog. ☞ Page 2412 [Script Edit] dialog (for project scripts and screen scripts)
6)	[Copy] button	Copies the selected script setting.
7)	[Paste] button	Pastes the copied script setting to the last line of the list. Click the [Paste] button to display the dialog for selecting the method to paste the script. The pasting method differs depending on the [Yes] or [No] button. [Yes] button: Copies the source script. Select the [Yes] button to display the following dialog.  • [Script No.] Set the script No. for the script to be registered. (Default: The minimum number of the non-registered script No.) After registered, the script is reflected to the script list. ☞ • [Script Name] Set the name of the script to be registered. The setting range is 1 character to 32 characters. However, the following symbols cannot be entered. • " * / \ : < > ? | [No] button: Refers to the same script as that of the copy source.

Item		Description
8)	[Delete] button	Deletes the selected script setting.
9)	[Up] button, [Down] button	Changes the execution order of the selected script setting.
10)	[Edit Script] button	Edit the selected project script with the editor selected in [Script Editor Selection] in the [Option] tab. ☞ Page 2410 [Option] tab ☞ Page 2412 [Script Edit] dialog (for project scripts and screen scripts)
11)	[Script List] button	Displays the list of the registered scripts. You can register scripts additionally and edit the scripts in the list. ☞ Page 2417 [Script File List] dialog

68.5.3 [Script Symbol] tab

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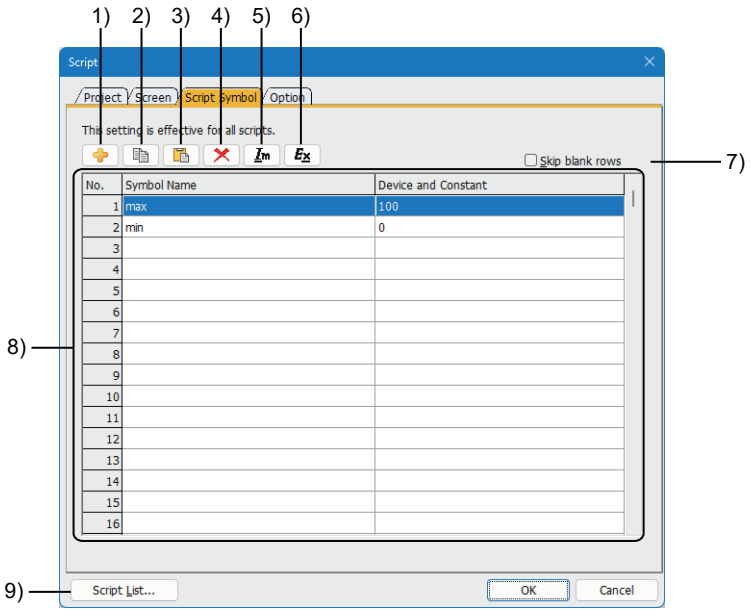
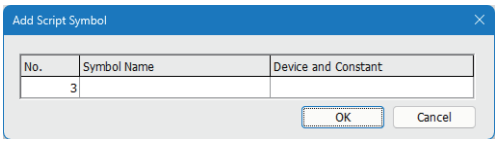
Register character strings as script symbols.

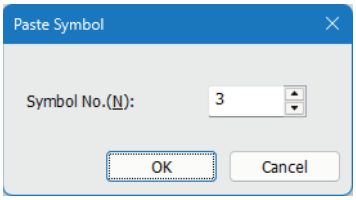
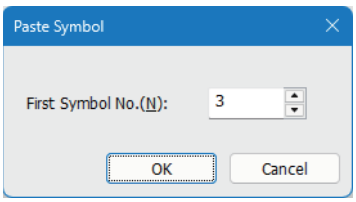
Devices and constants in a script can be substituted by the registered character strings.

The set script symbols are usable in all project scripts, screen scripts, and script blocks.

It may take a long time to select communication in GT Designer3 or save projects due to this setting.



Item		Description
1)	[Add] button	Displays the [Add Script Symbol] dialog.  • [No.] Set a number for the script symbol to be added. The setting range is [1] to [10000]. • [Symbol Name] Set a character string to be described in a script. Up to 32 alphanumeric characters and symbols can be entered. However, the symbol # is not usable. • [Device and Constant] Set a device or constant for the symbol name. Up to 32 alphanumeric characters and symbols can be entered.
2)	[Copy] button	Copies the setting from the row selected in the script symbol list. Multiple rows can be copied at once. When [Skip blank rows] is selected, the settings in the hidden rows are also copied. The copied settings can be pasted to another script symbol setting dialog.

Item			Description
3)	[Paste] button		Pastes the copied setting to the selected row. When [Skip blank rows] is selected, the [Paste Symbol] dialog is displayed.  When pasting a setting to one row  When pasting settings to multiple rows • [Symbol No.] Set a symbol number for the destination row. The setting range is [1] to [10000]. • [First Symbol No.] Set a symbol number for the first destination row. The setting range is [1] to [10000].
4)	[Delete] button		Deletes the setting from the selected row. You can delete the settings from multiple rows at one time.
5)	[Import] button		Displays the [Open] dialog. Read the script symbol settings from a Unicode text file or CSV file.
6)	[Export] button		Displays the [Save As] dialog. Save the script symbol settings to a Unicode text file or CSV file. If multi-language characters are used in the settings, use the Unicode text file format. For the precautions for using a Unicode text file or CSV file, refer to the following. ☞ Page 3668 Precautions for using CSV file ☞ Page 3669 Precautions for using Unicode text file
7)	[Skip blank rows]		Displays only the rows in which script symbols have been registered.
8)	Script symbol list	[No.]	Lists the registered script symbols. [Symbol Name] and [Device and Constant] are editable. It is a row number. Clicking a row number selects the relevant row. The following operations can be performed on the selected row. • Copy: Ctrl + C • Paste: Ctrl + V • Delete: Delete
		[Symbol Name]	Set a character string to be described in a script. Up to 32 characters can be entered. However, the symbol # is not usable.
		[Device and Constant]	Set a device or constant for the symbol name. Up to 32 characters can be entered.
9)	[Script List] button		Displays the [Script List] dialog. Displays the list of the registered scripts. You can register scripts additionally and edit the scripts in the list. ☞ Page 2417 [Script File List] dialog

Point

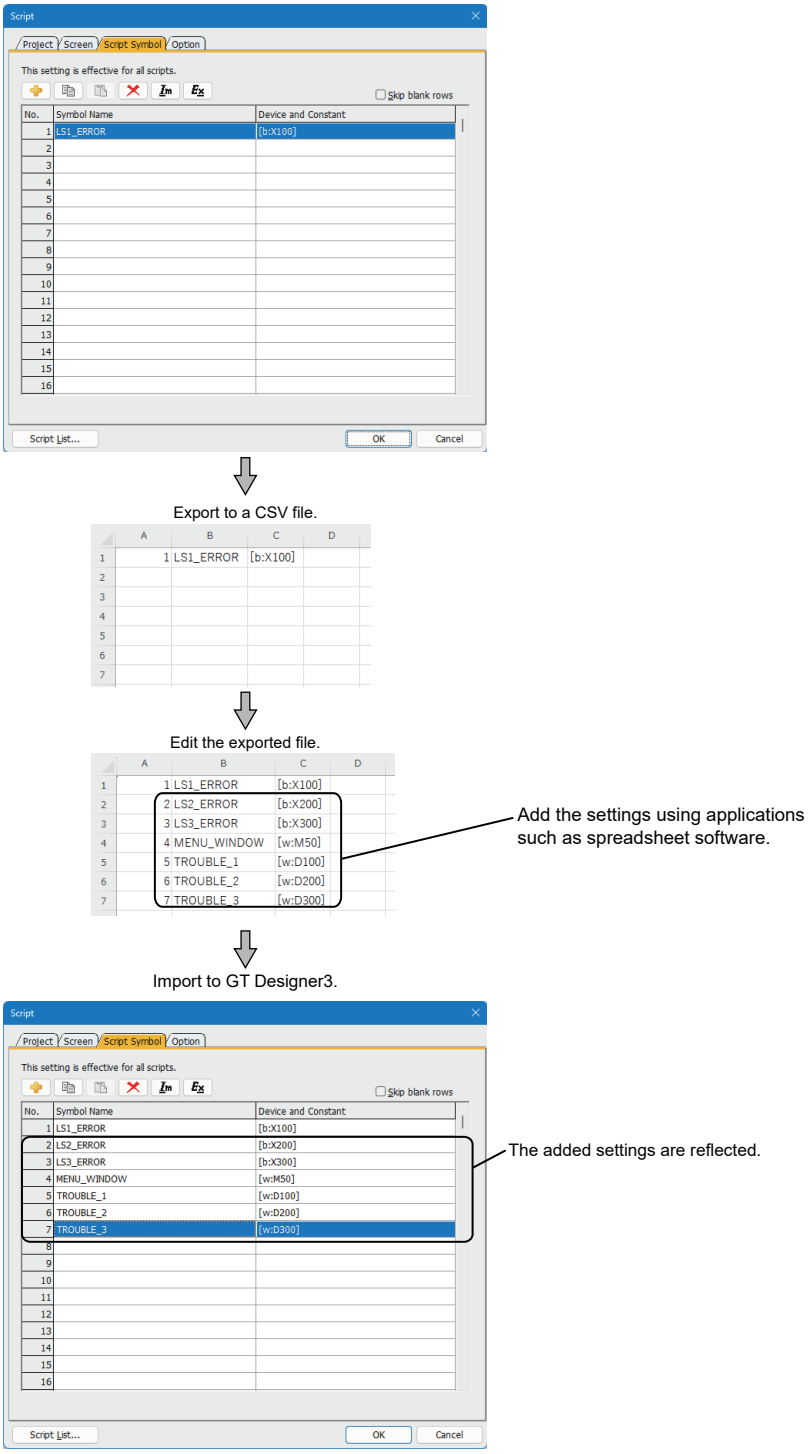
Editing method of scripts

You can edit scripts in the exported Unicode text file or CSV file using spreadsheet software and other software.

The edited Unicode text file or CSV file can be imported and read to GT Designer3.

Editing the exported file

Example) When script settings are exported into and imported from a CSV file



When 0 is set at the beginning of the symbol name, device, or constant, 0 at the beginning may be deleted depending on the function of the application for editing files (spreadsheet software and other software).

Pay attention to the above for editing exported files.

68.5.4 [Option] tab

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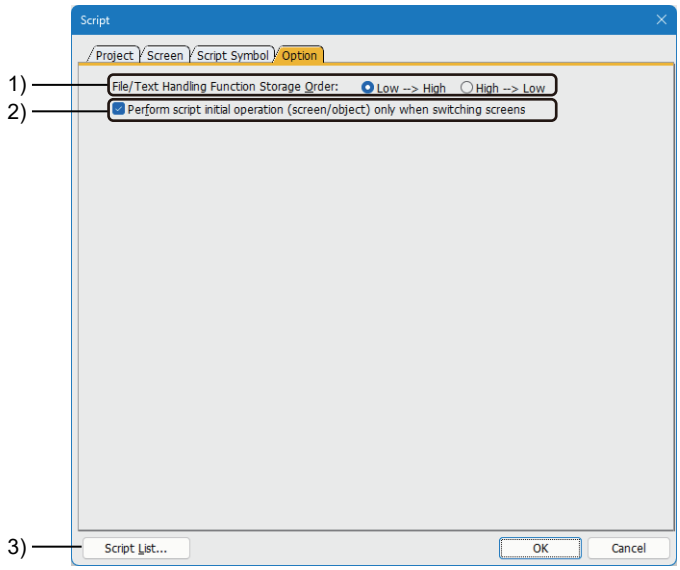
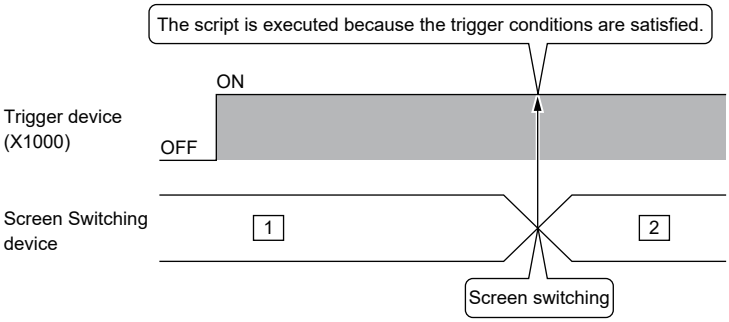
Set the data storage order of devices and processing at screen switching.



Item		Description
1)	[File/Text Handling Function Storage Order]	Select the order of data storage when using the file operation function or string operation function. • [Low-->High]: Select this item to store data in the order of lower to upper data. • [High-->Low]: Select this item to store data in the order of upper to lower data.

Item			Description
2)	[Perform script initial operation (screen/object) only when switching screens]	Selected	Enables the initial operation of the screen script or the object script upon screen switching only. The screen scripts and object scripts, which the following trigger type is set in, are executed upon screen switching. • [Rise] Executes the script when the trigger device turns on after screen switching or other processes. • [Fall] Executes the script when the trigger device turns off after screen switching or other processes. • [Rise/Fall] Executes the script when the trigger device turns on or off after screen switching or other processes. Example) When a screen script ([Trigger Type]: [Rise], [Trigger Device]: X1000) is set for base screen 2 After base screen 1 is switched to base screen 2, if the trigger device (X1000) turns on, the screen script set for base screen 2 is executed.  The setting determines the process that triggers the initial operation of the script as shown below. • Screen switching The scripts, which are set for the screen displayed after screen switching, are executed.
		Deselected	• Screen switching The scripts, which are set for the screen displayed after screen switching, are executed. • Security switching • Language switching • System language switching • Station number switching When the station number switching devices are set by screen type, the scripts that are set for the screens of the target screen type are executed. • Offset switching Only the screen scripts are executed. On a screen having a script setting, when offset switching occurs in any device of the screen, the script is executed. • Buffer memory unit No. switching • When object script "redraw_screen()" is executed You can disable the initial operation of the scripts by using the GOT internal devices. • Project script and screen script: GS386 • Object script: GS389 ☞ Page 3623 List of read devices
3)	[Script List] button		Displays the [Script List] dialog. Displays the list of the registered scripts. You can register scripts additionally and edit the scripts in the list. ☞ Page 2417 [Script File List] dialog

68.6 [Script Edit] dialog (for project scripts and screen scripts)

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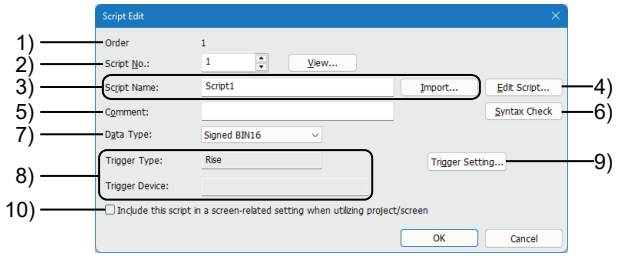
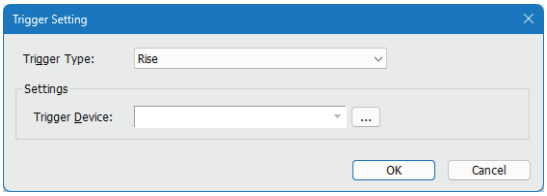
This dialog is used for setting a project script or screen script.
For each script setting, set a trigger condition and a script.

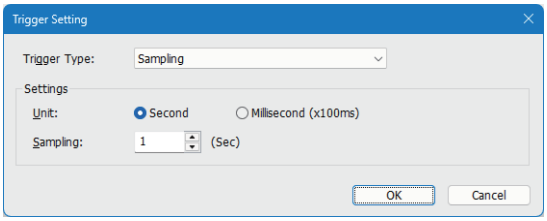


Item		Description
1)	[Order]	Displays the execution order of the script being edited.
2)	[Script No.]	Set the registration number of the script that is to be executed by the script being edited. Click the [View] button to check the registration number of other scripts. ☞ Page 2417 [Script File List] dialog
3)	[Script Name]	Set the name of the script to be executed. The following symbols cannot be entered into [Script Name]. • " * / \ : < > ? | Click the [Import] button to read the script edited in the text file format to GT Designer3. When a script file is imported, the file name excluding the extension (.TXT) is displayed at [Script Name].
4)	[Edit Script] button	Edit the script selected in [File Name] or [Script Name] with the script editor. ☞ Page 2415 [Edit Script(script name)] dialog
5)	[Comment]	Set the comment (note) of the script being edited. Up to 200 characters can be set.
6)	[Syntax Check] button	Checks the syntax of the script selected in [File Name] or [Script Name]. The available device type and device range are also checked. ☞ Page 2436 Messages to be displayed at the syntax check
7)	[Data Type]	Select the data type of the script to be executed. The following shows selectable items. • [Signed BIN16] • [Unsigned BIN16] • [Signed BIN32] • [Unsigned BIN32] • [Signed BIN64] • [Unsigned BIN64] • [BCD16] • [BCD32] • [BCD64] • [Real(32bit)] • [Real(64bit)]
8)	[Trigger Type], [Trigger Device]	Displays the operating condition and trigger device of the script which are set in the [Trigger Setting] dialog.

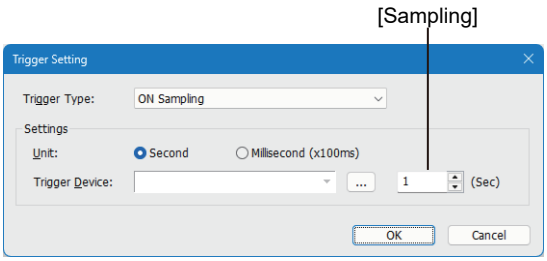
Item		Description
9)	[Trigger Setting] button	Click the [Trigger Setting] button to display the [Trigger Setting] dialog. ☞ Page 968 Trigger type settings



When [Trigger Type] is set to [Rise]



When [Trigger Type] is set to [Sampling]



When [Trigger Type] is set to [ON Sampling]

• [Trigger Type]
Select the operating condition of the script.
The following shows selectable items.
[Ordinary]
[ON]
[OFF]
[Rise]
[Fall]
[Rise/Fall]
[Sampling]
[ON Sampling]
[OFF Sampling]
[When closing a screen] (Available to the screen script only)
• [Trigger Device]
Set this item when [Trigger Type] is set to [ON], [OFF], [Rise], [Fall], [Rise/Fall], [ON Sampling], or [OFF Sampling].
Set a trigger device to execute the script.
• [Unit]
Set this item when [Trigger Type] is set to [Sampling], [ON Sampling], or [OFF Sampling].
Select the unit of the cycle time to execute the script.
The following shows selectable items.
[Second]
[Millisecond (x100ms)]
• [Sampling]
Set this item when [Trigger Type] is set to [Sampling], [ON Sampling], or [OFF Sampling].
Set the cycle time to execute the script.
The setting range depends on the setting of [Unit].
When [Unit] is set to [Second], the setting range is [1] second to [3600] seconds.
When [Unit] is set to [Millisecond (x100ms)], the setting range is [1] × 100 ms to [600] × 100 ms.
The counting of the cycle time starts when the trigger condition is satisfied.
When the satisfied trigger condition becomes unsatisfied, the count of the cycle time is reset.
Example) When [Trigger Type] is set to [ON Sampling] and the cycle time is set to 10 seconds
After the trigger device has been on for 10 seconds, the script runs.
If the trigger device turns off before a lapse of 10 seconds, the script does not run.

Item		Description
10)	[Include this script in a screen-related setting when utilizing project/screen]	This item is displayed only when this dialog has been brought up from the [Project] tab of the [Script] dialog. Utilizes this script as a screen-related setting when the project or screen utilization is executed.

68.6.1 Behavior of the script for which [Trigger Type] is set to [When closing a screen]

Such a script runs immediately before the relevant screen is switched or closed.

The screen will not be switched until the script execution is complete.

If an error or a timeout occurs during script execution, the screen is switched upon the occurrence of the event.

When [Trigger Type] is set to [When closing a screen], take the following precautions.

Item	Description
Response speed for screen switching	Depending on the controller device used in the script, there may be a delay in response when switching screens.
Restrictions during script execution	When a trigger type other than [When closing a screen] is set for a script, the script does not run if its trigger condition is satisfied during the execution of another script whose trigger type is [When closing a screen]. The GOT can accept inputs from a touch switch or others.
State of not notifying of an error	An error is not notified in the state where the communication is unestablished for reasons such as a cable disconnection or screen switching.

68.7 [Edit Script(script name)] dialog

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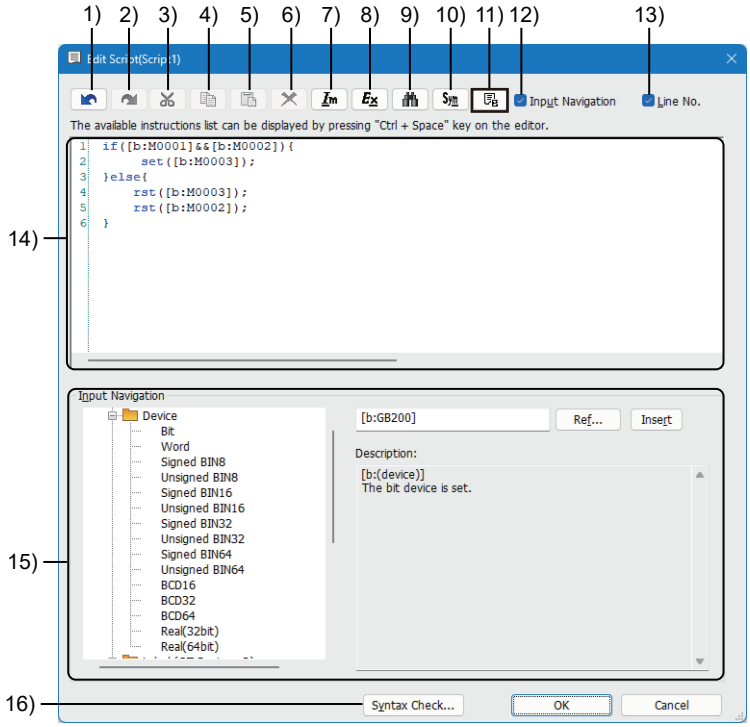
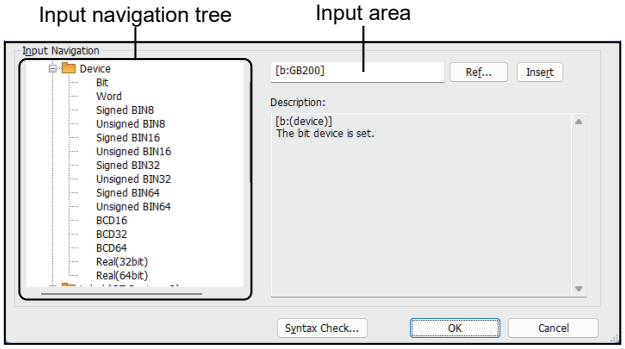
This dialog is used for setting a project script, screen script, script part, script block, or object script.
Edit, import, or export a script.



Item		Description
1)	[Undo] button	Returns the editing operation of the script to the previous step.
2)	[Redo] button	Redoes the returned operation.
3)	[Cut] button	Cuts the selected character strings.
4)	[Copy] button	Copies the selected character strings.
5)	[Paste] button	Pastes the copied or cut character strings.
6)	[Delete] button	Deletes the selected character strings.
7)	[Import] button	Displays the [Open] dialog. Read a script from a text file.
8)	[Export] button	Displays the [Save As] dialog. Save the script in the script edit area to a text file. If the script contains multi-language characters, use the Unicode text file format. For the precautions for using a Unicode text file, refer to the following. ☞ Page 3669 Precautions for using Unicode text file
9)	[Search] button	Displays the [Search] dialog. Input the text to be searched and select the search direction ([Up], [Down]). Then click the [Search Next] button to search the input text.
10)	[Symbol] button	Displays the dialog for selecting a script symbol to be inserted. The script symbol is inserted into the cursor position in the script edit area.*1
11)	[Script Block] button	Displays the [Script List] dialog. Set the script block in the [Script Block] tab. ☞ Page 2419 [Script Block] tab
12)	[Input Navigation]	Displays [Input Navigation] in the dialog.
13)	[Line No.]	Displays line numbers in the script edit area.
14)	Script edit area	Area to edit a script. The following editing operations can be performed. • Cutting and pasting the selected character string by drag and drop motion • Copying and pasting the character strings selected while the [Ctrl] key is being pressed by drag and drop motion

Item			Description
15)	[Input Navigation]	Input navigation tree	Insert a device or function to the script. Select an item from the input navigation tree to display its expression in the input area. Click the [Insert] button to insert the entry in the input area into the cursor position in the script edit area.  Select a device or function to be inserted. The expression of the selected item appears in the input area.
		Input area	Make an entry to be inserted to the script.
		[Ref] button	This item appears when a device, label, tag, or script block is selected in the input navigation tree. When a device, label, or tag is selected, the setting dialog is displayed. The settings made in the dialog is reflected to the input area. To display the [Select CH No.] dialog, hold down the Shift key and click the [Ref] button. To specify a channel, label, or tag, bring up the relevant setting dialog from the [Select CH No.] dialog. ☞ Page 835 Setting a device in the device setting dialog When a script block is selected, the [Script File List] dialog is displayed. Select a script block from the list and click the [Insert] button to insert the script block name in the call statement in the input area. ☞ Page 2417 [Script File List] dialog
		[Insert] button	Inserts the entry in the input area into the cursor position in the script edit area.
		[Description]	Describes the expression and function of the item selected in the input navigation tree.
16)	[Syntax Check] button		Checks the syntax of the script being edited. The available device type and device range are also checked. ☞ Page 2436 Messages to be displayed at the syntax check

*1 The dialog to appear varies depending on the type of the script being edited.

Script	Reference
Project script	☞ Page 2421 [Script Symbol] dialog
Screen script	
Script block	
Script part	☞ Page 2426 [Script Parts Symbol] tab
Object script	☞ Page 2472 [Object Script Symbol] dialog

68.8 [Script File List] dialog

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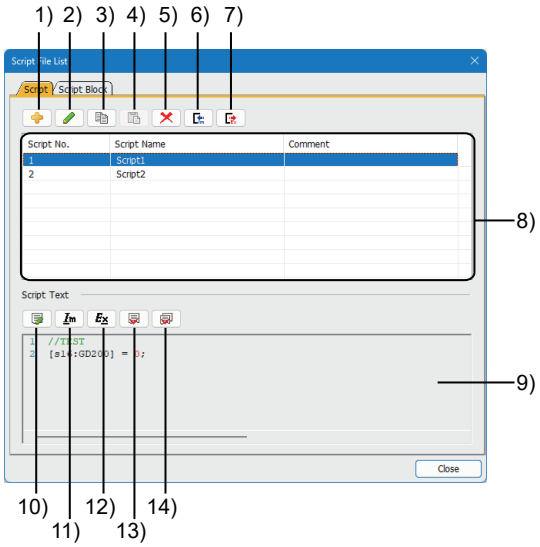
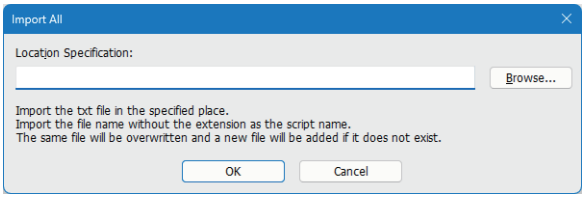
This dialog is used for setting a project script or screen script.
Select [Common] → [Script] → [Script File List] from the menu to display the setting dialog.
Register scripts additionally and edit and delete the scripts in the list of the registered scripts.

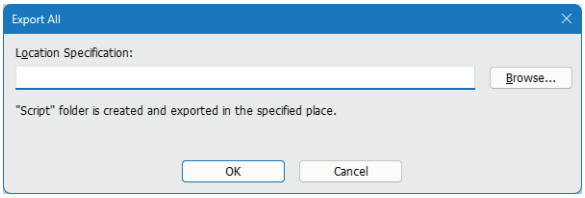
Precautions

When a syntax check is done from the [Script File List] dialog, the data type is regarded as [Signed BIN16].
When executing a syntax check using a data type other than [Signed BIN16], first set a desired data type in the [Edit Script] dialog, then execute the syntax check from the script editor.

68.8.1 [Script] tab

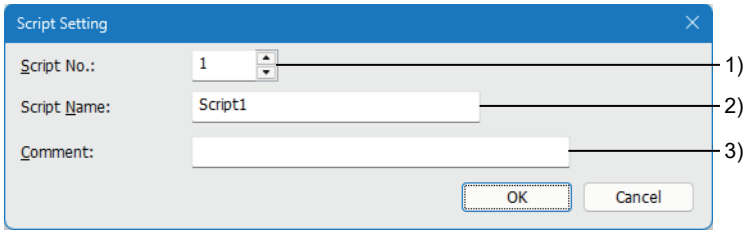


Item		Description
1)	[Add] button	Adds a new script to the script list. ☞ Page 2418 [Script Setting] dialog
2)	[Edit] button	Edit the setting of the script selected in the script list. ☞ Page 2418 [Script Setting] dialog
3)	[Copy] button	Copies the script selected in the script list.
4)	[Paste] button	Pastes the copied script to the script list. ☞ Page 2418 [Script Setting] dialog
5)	[Delete] button	Deletes the script selected in the script list.
6)	[Import All] button	Imports all the text files stored in the specified location. The file name without the extension becomes the script name. If the same script name exists in the script list, the existing script name is overwritten. 

Item		Description
7)	[Export All] button	Exports all the scripts registered in the script list as text files. The exported text files are stored in the "Script" folder, which is created in a specified location. 
8)	Script list	Displays the list of the registered scripts. The following operations can be performed on the selected row. • Copy: Ctrl + C • Paste: Ctrl + V • Delete: Delete
9)	Script preview	Displays the content of the script selected in the script list.
10)	[Edit Script] button	Edit the script selected in the script list with the script editor. ☞ Page 2415 [Edit Script(script name)] dialog
11)	[Import] button	Imports the script in the specified text file and overwrites the script selected in the script list. The file name without the extension becomes the script name.
12)	[Export] button	Exports the script selected in the script list as a text file to a specified location.
13)	[Syntax Check] button	Checks the script syntax of the selected script. If an error is detected, the relevant line number and error details are displayed. The available device type and device range are also checked. ☞ Page 2436 Messages to be displayed at the syntax check
14)	[Check All] button	Checks the script syntax of all the registered scripts. If an error is detected, the relevant line number and error details are displayed. The available device type and device range are also checked. ☞ Page 2436 Messages to be displayed at the syntax check

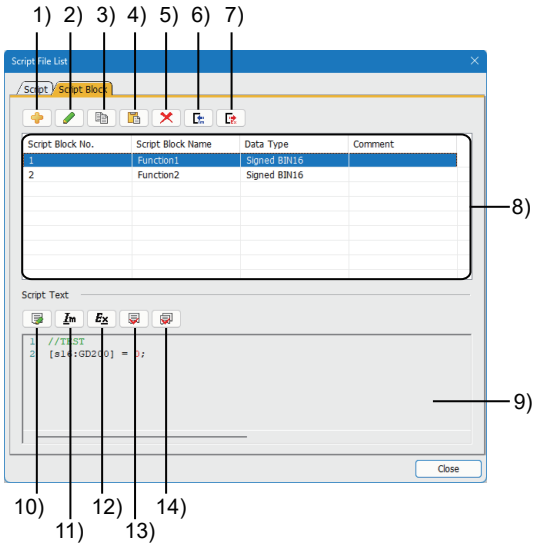
[Script Setting] dialog

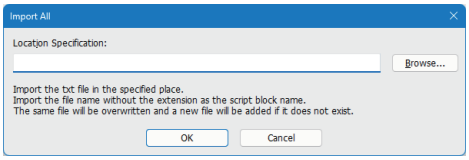
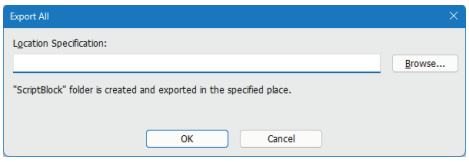
Set the No., name, and comment of the script selected in the script list.



Item		Description
1)	[Script No.]	Set the script No. The setting range is [1] to [32767].
2)	[Script Name]	Up to 32 characters can be set for a script name. The following symbols cannot be entered. • " * / \ : < > ? |
3)	[Comment]	Up to 200 characters can be entered for a comment.

68.8.2 [Script Block] tab

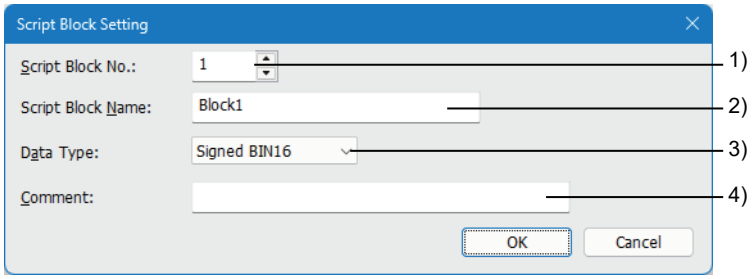


Item		Description
1)	[Add] button	Adds a new script to the script block list. ☞ Page 2418 [Script Setting] dialog
2)	[Edit] button	Edit the setting of the script selected in the script block list. ☞ Page 2418 [Script Setting] dialog
3)	[Copy] button	Copies the script selected in the script block list.
4)	[Paste] button	Pastes the copied script to the script block list. ☞ Page 2418 [Script Setting] dialog
5)	[Delete] button	Deletes the script selected in the script block list.
6)	[Import All] button	Imports all the text files stored in the specified location. The file name without the extension becomes the script block name. If the same script block name exists in the script block list, the existing script block name is overwritten. 
7)	[Export All] button	Exports all the scripts registered in the script block list as text files. The exported text files are stored in the "scriptBlock" folder, which is created in a specified location. 
8)	Script block list	Displays the list of the registered script blocks. The following shows the display items. • Script block No. • Script block name • Data type • Comment The following operations can be performed on the selected row. • Copy: Ctrl + C • Paste: Ctrl + V • Delete: Delete
9)	Script preview	Displays the content of the script selected in the script block list.
10)	[Edit Script] button	Edit the script selected in the script block list with the script editor. ☞ Page 2415 [Edit Script(script name)] dialog

Item		Description
11)	[Import] button	Imports the script in the specified text file and overwrites the script selected in the script block list. The file name without the extension becomes the script block name.
12)	[Export] button	Exports the script selected in the script block list as a text file to a specified location.
13)	[Syntax Check] button	Checks the script syntax of the selected script block. If an error is detected, the relevant line number and error details are displayed. The available device type and device range are also checked. ☞ Page 2436 Messages to be displayed at the syntax check
14)	[Check All] button	Checks the script syntax of all the registered script blocks. If an error is detected, the relevant line number and error details are displayed. The available device type and device range are also checked. ☞ Page 2436 Messages to be displayed at the syntax check

[Script Block Setting] dialog

Set the No., name, and comment of the script selected in the script list.



Item		Description
1)	[Script Block No.]	Set the script block No. The setting range is [1] to [32767].
2)	[Script Block Name]	Up to 32 characters can be set for a script block name. The following symbols cannot be entered. • ! " # $ % & ' ( ) * + , ` - . / : ; < = > ? @ [\ ] ^ { | } ~
3)	[Data Type]	Set the data type of the script block. The following shows the setting range. • [Signed BIN16] • [Unsigned BIN16] • [Signed BIN32] • [Unsigned BIN32] • [Signed BIN64] • [Unsigned BIN64] • [BCD16] • [BCD32] • [BCD64] • [Real(32bit)] • [Real(64bit)]
4)	[Comment]	Up to 200 characters can be entered for a comment.

68.9 [Script Symbol] dialog

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This dialog is used for setting a project script or screen script.

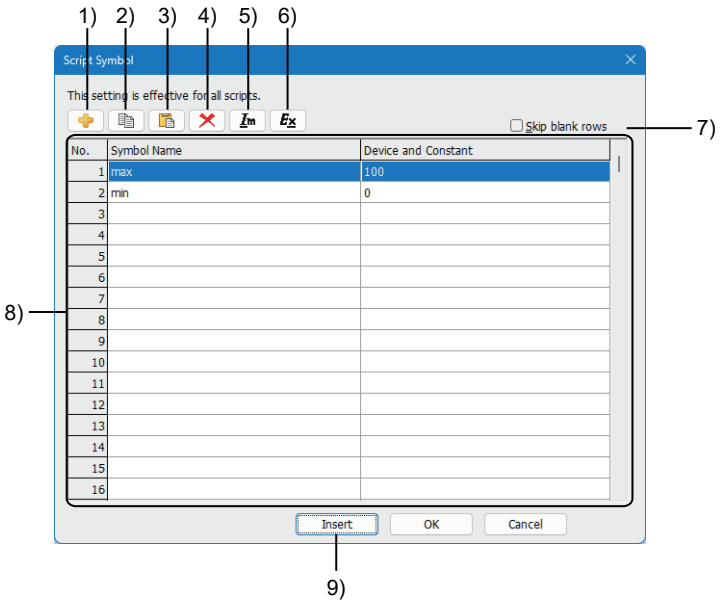
Select [Common] → [Script] → [Script Symbol] from the menu to display the setting dialog.

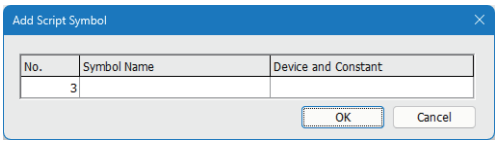
Register character strings as script symbols.

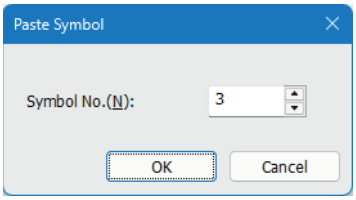
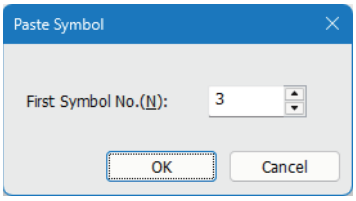
Devices and constants in a script can be substituted by the registered character strings.

The set script symbols are usable in project scripts and screen scripts.

It may take a long time to select communication in GT Designer3 or save projects due to this setting.



Item		Description
1)	[Add] button	Displays the [Add Script Symbol] dialog.  • [No.] Set a number for the script symbol to be added. The setting range is [1] to [10000]. • [Symbol Name] Set a character string to be described in a script. Up to 32 characters can be entered. However, the following symbol names cannot be set. Symbol name containing "#" Same symbol name as another script symbol • [Device and Constant] Set a device or constant for the symbol name. Up to 32 characters can be entered.
2)	[Copy] button	Copies the setting from the row selected in the script symbol list. Multiple rows can be copied at once. When [Skip blank rows] is selected, the settings in the hidden rows are also copied. The copied settings can be pasted to another script symbol setting dialog.

Item			Description
3)	[Paste] button		Pastes the copied setting to the selected row. When [Skip blank rows] is selected, the [Paste Symbol] dialog is displayed.  When pasting a setting to one row  When pasting settings to multiple rows • [Symbol No.] Set a symbol number for the destination row. The setting range is [1] to [10000]. • [First Symbol No.] Set a symbol number for the first destination row. The setting range is [1] to [10000].
4)	[Delete] button		Deletes the setting from the selected row. You can delete the settings from multiple rows at one time.
5)	[Import] button		Displays the [Open] dialog. Read the script symbol settings from a Unicode text file or CSV file.
6)	[Export] button		Displays the [Save As] dialog. Save the script symbol settings to a Unicode text file or CSV file. If multi-language characters are used in the settings, use the Unicode text file format. For the precautions for using a Unicode text file or CSV file, refer to the following. ☞ Page 3668 Precautions for using CSV file ☞ Page 3669 Precautions for using Unicode text file
7)	[Skip blank rows]		Displays only the rows in which script symbols have been registered.
8)	Script symbol list	[No.]	Lists the registered script symbols. [Symbol Name] and [Device and Constant] are editable. [No.] is a row number. Clicking a row number selects the relevant row. The following operations can be performed on the selected row. • Copy: Ctrl + C • Paste: Ctrl + V • Delete: Delete
		[Symbol Name]	Set a character string to be described in a script. Up to 32 characters can be entered. However, the following symbol names cannot be set. Symbol name containing "#" Same symbol name as another script symbol
		[Device and Constant]	Set a device or constant for the symbol name. Up to 32 characters can be entered.
9)	[Insert] button		This item appears when this dialog is brought up from the [Edit Script(script name)] dialog. Inserts the selected script symbol into the script edit area in the [Edit Script(script name)] dialog.

Point

Editing method of scripts

You can edit scripts in the exported Unicode text file or CSV file using spreadsheet software and other software.

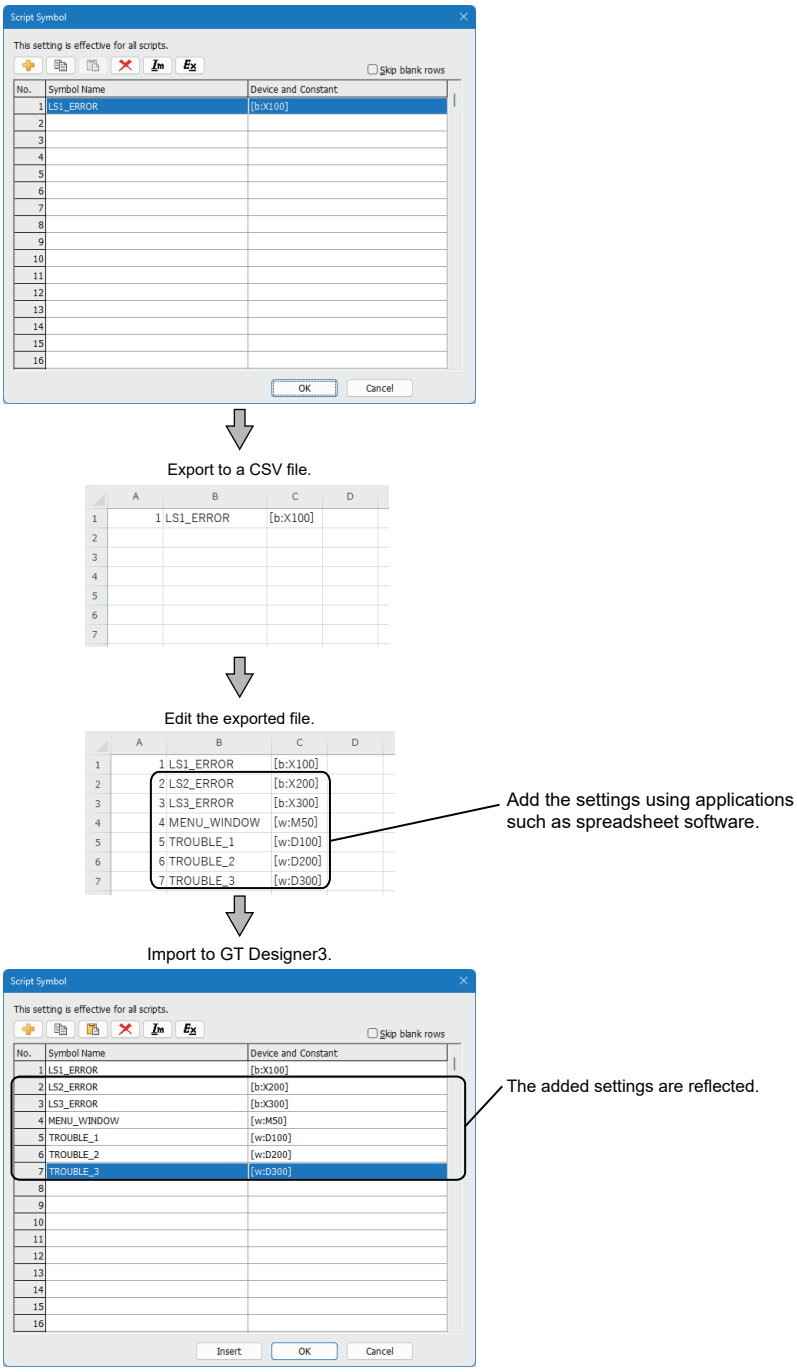
The edited Unicode text file or CSV file can be imported and read to GT Designer3.

Editing the exported file

When 0 is set at the beginning of the symbol name, device, or constant, 0 at the beginning may be deleted depending on the function of the application for editing files (spreadsheet software and other software).

Pay attention to the above for editing exported files.

Example) When script settings are exported into and imported from a CSV file



68.10 [Script Parts] dialog

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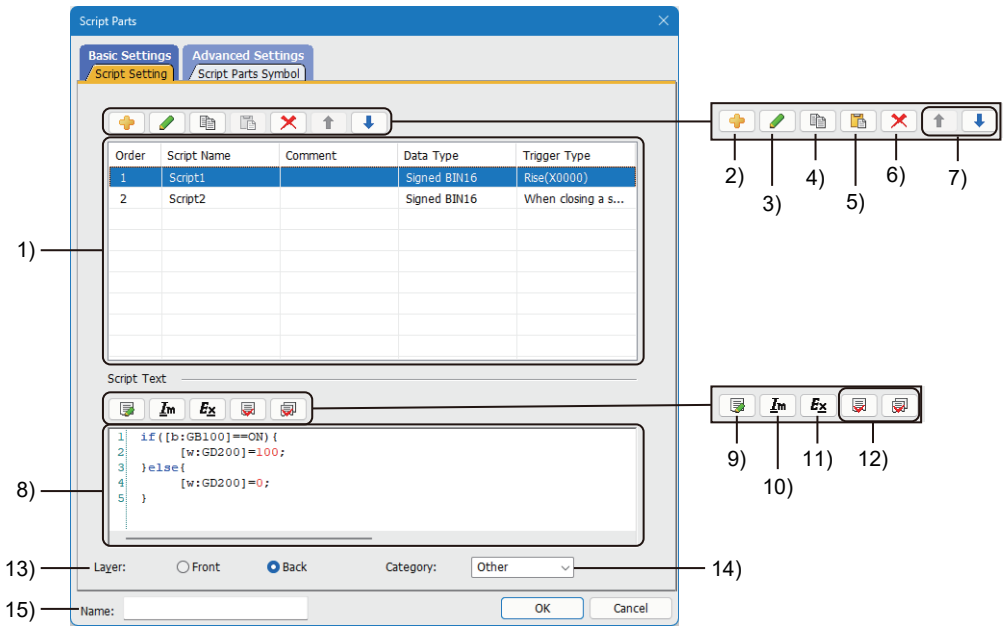
This dialog is used for setting a script part.

1. Select [Object] → [Script Parts] from the menu.
2. Click the position to place a script parts object.
3. Double-click the script parts object to display the setting dialog.

☞ Page 2424 [Script Setting] tab
☞ Page 2426 [Script Parts Symbol] tab

68.10.1 [Script Setting] tab

Set a script trigger condition and a script.



Item		Description
1)	Script setting list	Lists the scripts set for the current script parts object.
2)	[Add] button	Displays the [Script Edit] dialog. Add a new script setting to the list. ☞ Page 2428 [Script Edit] dialog (for script parts)
3)	[Edit] button	Displays the [Script Edit] dialog. Edit the selected script setting. ☞ Page 2428 [Script Edit] dialog (for script parts)
4)	[Copy] button	Copies the selected script setting.
5)	[Paste] button	Pastes the copied script setting to the last line of the list.
6)	[Delete] button	Deletes the selected script setting.
7)	[Up] button, [Down] button	Changes the execution order of the selected script setting.
8)	Script preview	Displays a preview of the script set for the selected script setting.
9)	[Edit Script] button	Displays the [Edit Script(script name)] dialog. Edit the script. ☞ Page 2428 [Script Edit] dialog (for script parts)
10)	[Import] button	Displays the [Open] dialog. Read a script from a text file. The name of the read text file is set as the script name.
11)	[Export] button	Displays the [Save As] dialog. Save the previewed script to a text file.

Item		Description
12)	[Syntax Check] button, [Check All] button	Performs a syntax check on the previewed script or all the scripts set for the script parts object. If an error is detected, the relevant line number and error details are displayed. The available device type and device range are also checked. ☞ Page 2436 Messages to be displayed at the syntax check
13)	[Layer]	Select the layer to arrange the object on. The following shows selectable items. • [Front] • [Back]
14)	[Category]	Select the category to assign the object. ☞ Page 1121 Managing figures and objects by category
15)	[Name]	Set the object name. The name is displayed in the [Data View] window, property sheet, and others. The name can also be changed in other tabs. Up to 100 characters can be entered.

68.10.2 [Script Parts Symbol] tab

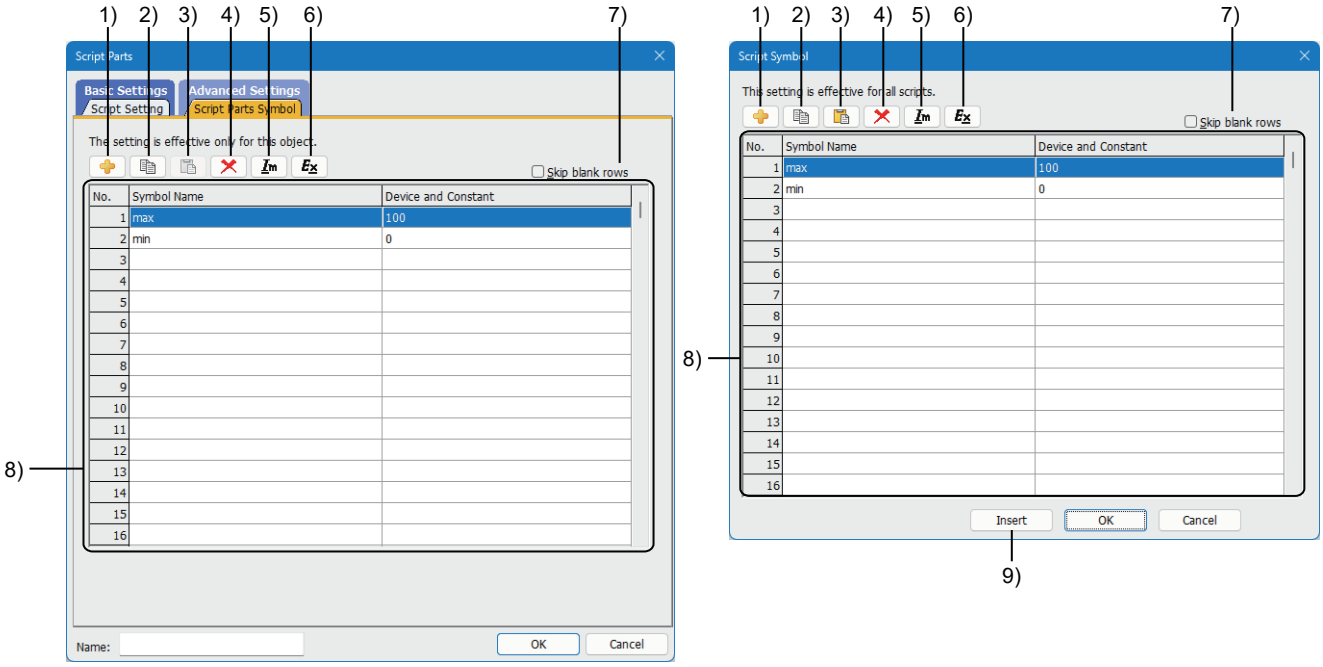
Register character strings as script parts symbols.

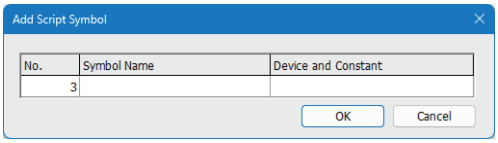
Devices and constants in a script can be substituted by the registered character strings.

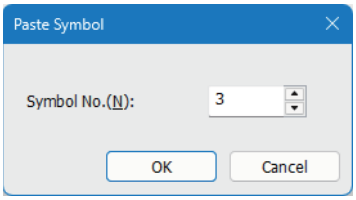
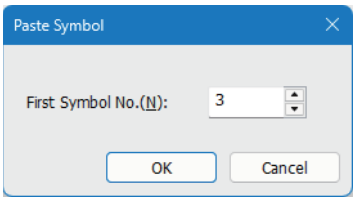
The set script parts symbols are usable only in the scripts of the current script parts object.

It may take a long time to select communication in GT Designer3 or save projects due to this setting.

Display the [Script Parts Symbol] dialog from the [Edit Script(script name)] dialog.

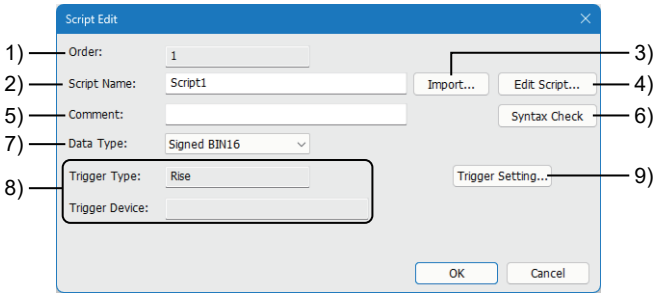


Item		Description
1)	[Add] button	This button is available when [Skip blank rows] is selected. Displays the [Add Script Parts Symbol] dialog.  • [No.] Set a number for the script symbol to be added. The setting range is [1] to [10000]. • [Symbol Name] Set a character string to be described in a script. Up to 32 characters can be entered. However, the following symbol names cannot be set. Symbol name containing "#" Same symbol name as another script symbol • [Device and Constant] Set a device or constant for the symbol name. Up to 32 characters can be entered.
2)	[Copy] button	Copies the setting from the row selected in the script symbol list. Multiple rows can be copied at once. When [Skip blank rows] is selected, the settings in the hidden rows are also copied. The copied settings can be pasted to another script symbol setting dialog.

Item			Description
3)	[Paste] button		Pastes the copied setting to the selected row. When [Skip blank rows] is selected, the [Paste Symbol] dialog is displayed.  When pasting a setting to one row  When pasting settings to multiple rows • [Symbol No.] Set a symbol number for the destination row. The setting range is [1] to [10000]. • [First Symbol No.] Set a symbol number for the first destination row. The setting range is [1] to [10000].
4)	[Delete] button		Deletes the setting from the selected row. You can delete the settings from multiple rows at one time.
5)	[Import] button		Displays the [Open] dialog. Read the script symbol settings from a Unicode text file or CSV file.
6)	[Export] button		Displays the [Save As] dialog. Save the script symbol settings to a Unicode text file or CSV file. If multi-language characters are used in the settings, use the Unicode text file format. For the precautions for using a Unicode text file or CSV file, refer to the following. ☞ Page 3668 Precautions for using CSV file ☞ Page 3669 Precautions for using Unicode text file
7)	[Skip blank rows]		Displays only the rows in which script symbols have been registered.
8)	Script symbol list	[No.]	Lists the registered script symbols. [Symbol Name] and [Device and Constant] are editable. [No.] is a row number. Clicking a row number selects the relevant row. The following operations can be performed on the selected row. • Copy: Ctrl + C • Paste: Ctrl + V • Delete: Delete
		[Symbol Name]	Set a character string to be described in a script. Up to 32 characters can be entered. However, the following symbol names cannot be set. Symbol name containing "#" Same symbol name as another script symbol
		[Device and Constant]	Set a device or constant for the symbol name. Up to 32 characters can be entered.
9)	[Insert] button		Inserts the selected script symbol into the script edit area in the [Edit Script(script name)] dialog.

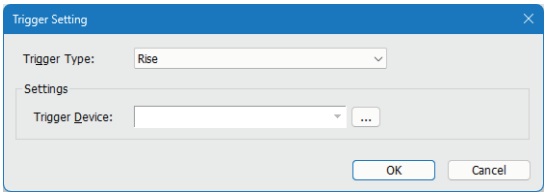
68.11 [Script Edit] dialog (for script parts)

This dialog is used for setting a script part.

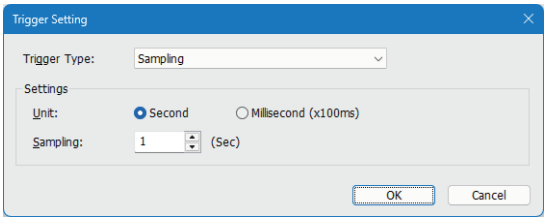


Item		Description
1)	[Order]	Execution order of the current script.
2)	[Script Name]	Name of the current script. The following symbols cannot be entered into [Script Name]. • " * / \ : < > ? |
3)	[Import] button	Displays the [Open] dialog. Read a script from a text file. The name of the read text file is set as the script name.
4)	[Edit Script] button	Displays the [Edit Script(script name)] dialog. Edit the script. ☞ Page 2415 [Edit Script(script name)] dialog
5)	[Comment]	Set the comment (note) of the script being edited. Up to 32 characters can be set.
6)	[Syntax Check] button	Checks the syntax of the script for possible errors. The available device type and device range are also checked. ☞ Page 2436 Messages to be displayed at the syntax check
7)	[Data Type]	Select the data type of the script to be executed. The following shows selectable items. • [Signed BIN16] • [Unsigned BIN16] • [Signed BIN32] • [Unsigned BIN32] • [Signed BIN64] • [Unsigned BIN64] • [BCD16] • [BCD32] • [BCD64] • [Real(32bit)] • [Real(64bit)]
8)	[Trigger Type], [Trigger Device]	Displays the script trigger type or trigger device set in the [Trigger Setting] dialog.

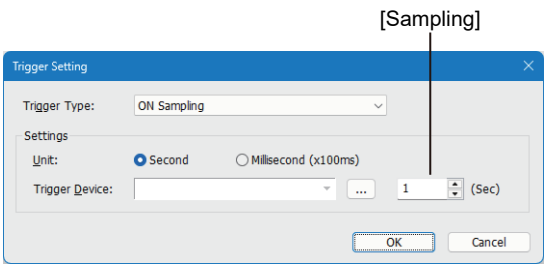
Item		Description
9)	[Trigger Setting] button	Displays the [Trigger Setting] dialog. Set a script trigger condition.



When [Trigger Type] is set to [Rise]



When [Trigger Type] is set to [Sampling]



When [Trigger Type] is set to [ON Sampling]

• [Trigger Type]
Select the operating condition of the script.
The following shows selectable items.
[Ordinary]
[ON]
[OFF]
[Rise]
[Fall]
[Rise/Fall]
[Sampling]
[ON Sampling]
[OFF Sampling]
[When closing a screen]
• [Trigger Device]
Set this item when [Trigger Type] is set to [ON], [OFF], [Rise], [Fall], [Rise/Fall], [ON Sampling], or [OFF Sampling].
Set a trigger device to execute the script.
• [Unit]
Set this item when [Trigger Type] is set to [Sampling], [ON Sampling], or [OFF Sampling].
Select the unit of the cycle time to execute the script.
The following shows selectable items.
[Second]
[Millisecond (x100ms)]
• [Sampling]
Set this item when [Trigger Type] is set to [Sampling], [ON Sampling], or [OFF Sampling].
Set the cycle time to execute the script.
The setting range depends on the setting of [Unit].
When [Unit] is set to [Second], the setting range is [1] second to [3600] seconds.
When [Unit] is set to [Millisecond (x100ms)], the setting range is [1] × 100 ms to [600] × 100 ms.
The counting of the cycle time starts when the trigger condition is satisfied.
When the satisfied trigger condition becomes unsatisfied, the count of the cycle time is reset.
Example) When [Trigger Type] is set to [ON Sampling] and the cycle time is set to 10 seconds
After the trigger device has been on for 10 seconds, the script runs.
If the trigger device turns off before a lapse of 10 seconds, the script does not run.

68.11.1 Behavior of the script for which [Trigger Type] is set to [When closing a screen]

Such a script runs immediately before the relevant screen is switched or closed.

The screen will not be switched until the script execution is complete.

If an error or a timeout occurs during script execution, the screen is switched upon the occurrence of the event.

When [Trigger Type] is set to [When closing a screen], take the following precautions.

Item	Description
Response speed for screen switching	Depending on the controller device used in the script, there may be a delay in response when switching screens.
Restrictions during script execution	When a trigger type other than [When closing a screen] is set for a script, the script does not run if its trigger condition is satisfied during the execution of another script whose trigger type is [When closing a screen]. The GOT can accept inputs from a touch switch or others.
	If a script is executed with [When closing a screen] set as the trigger type while communication is not established, no retry will be performed because the screen has already switched at the next execution cycle.
State of not notifying of an error	An error is not notified in the state where the communication is unestablished for reasons including a cable disconnection or screen switching.

68.12 Relevant settings

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Configure the relevant settings in addition to the specific settings for project scripts, screen scripts, and script parts as required.

The following shows the functions that are available by configuring the relevant settings.

68.12.1 GOT internal device

☞ Page 3581 GOT special register (GS)

○: Applicable, -: Not applicable

Function	GOT special register (GS)	Project script	Screen script	Script part	Script block
Notifying that a script error has occurred.	GS14.b0	○	○	○	○
Notifying that a BCD error has occurred.	GS14.b7	○	○	○	○
Notifying that a zero division error has occurred.	GS14.b8	○	○	○	○
Notifying that a communication error (including access to an invalid device) has occurred.	GS14.b12	○	○	○	○
Storing the start device number of the devices where the latest error record is stored. The devices range from GS16 to GS47.	GS15	○	○	-	○
Storing the script error records (including script numbers and error codes).	GS16 to GS47	○	○	-	○
Storing the device number of the device where the latest script execution record is stored. The device is in the range of GS49 to GS79.	GS48	○	○	-	○
Storing the script numbers of the executed scripts.	GS49 to GS79	○	○	-	○
Notifying that a file operation function is being executed.	GS154.b0	○	○	○	○
Notifying that a file operation function error has occurred.	GS154.b15	○	○	○	○
Storing a number showing the GOT data registers (GD) where the latest error record is stored. The GD devices are specified with GS392 and GS394.	GS157	○	○	○	○
Storing a number showing the GOT data registers (GD) where the latest script execution record is stored. The GD devices are specified with GS396 and GS398.	GS158	○	○	○	○
Notifying occurrence of an error while the integer-real number conversion is processed.	GS260.b14	○	○	○	○
Notifying the completion of the integer-real number conversion.	GS260.b15	○	○	○	○
Storing the error code of an error that occurred while the integer-real number conversion is processed.	GS261	○	○	○	○
Clearing script error records as shown below. • GS14.b0, b7, b8, and b12 store 0. • GS15 stores -1. • GS16 to GS47 store 0.	GS384.b0	○	○	○	○
Re-executing the script aborted due to an error.	GS384.b1	○	○	○	○
Setting the monitoring time for one script.	GS385	○	○	○	○
Controlling whether to run a script upon screen switching or other applicable processes. The applicable script trigger types are as follows. • [Rise] • [Fall] • [Rise/Fall]	GS386	○	○	○	○
Specifying a data storage order when a file operation function is used.	GS390	○	○	○	○
Storing the detailed script error records.	GS392 GS394 GS395	○	○	○	○

Function	GOT special register (GS)	Project script	Screen script	Script part	Script block
Storing the detailed script execution records.	GS396 GS398 GS399	○	○	○	○
Executing an integer-real number conversion.	GS460 GS461 GS462 GS463 GS464	○	○	○	○

Precautions

While the GOT displays a screen in which no script is set, the following operations are not available.

- Clearing script error data or executing a script stopped due to an error by using the Script Common Control (GS384)

☞ Page 3631 Script Common Control (GS384)

Perform the above operations while the GOT displays a screen in which a script is set.

Monitoring time setting

Specify the monitoring time of a script with GS385.

If a script does not end after a lapse of the specified monitoring time, the script is aborted.

The setting range is 1 second to 300 seconds. (Units of 1 second)

If the set value falls outside this range, 10 seconds are assumed.

If error code 15 is output during script execution, specify a longer monitoring time with GS385.

Precautions

For functions that take a long time to process, such as the folder copy function (file_xcopy), processing may not complete and timeout may not occur even after the monitoring time has elapsed.

In such cases, take a sufficiently long script monitoring time or divide the process into as small units as possible.

Initial operation setting

Use GS386 to set whether to run a script upon screen switching or other applicable processes.

When GS386 stores 0: Runs the script upon an applicable process.

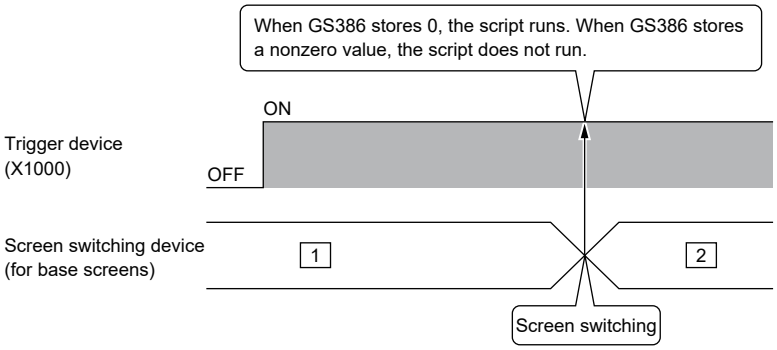
When GS386 stores a nonzero value: Does not run the script upon an applicable process.

This setting is applied to the project scripts, screen scripts, and script parts where the following trigger types are set.

Trigger type	When running a script upon an applicable process
[Rise]	When the trigger device is on, the script runs upon screen switching or other applicable processes.
[Fall]	When the trigger device is off, the script runs upon screen switching or other applicable processes.
[Rise/Fall]	When the trigger device is on or off, the script runs upon screen switching or other applicable processes.

Ex.

When a screen script ([Trigger Type]: [Rise], [Trigger Device]: X1000) is set for base screen 2



The following shows the processes upon which a script runs.

Script type	Process	Remarks
Project script	When the GOT is powered on or when the GOT returns from offline	—
Screen script Script part	Screen switching	The scripts, which are set for the screen displayed after screen switching, are executed.
	Security switching*1	—
	Language switching*1	—
	System language switching*1	—
	Station number switching*1	When the station number switching devices are set by screen type, the scripts that are set for the screens of the target screen type are executed.
	Offset switching*1	On a screen having a script setting, when offset switching occurs in any device of the screen, the script is executed.
	Buffer memory unit No. switching*1	—
	When the object script "redraw_screen()" is executed*1	—

*1 When [Perform script initial operation (screen/object) only when switching screens] is deselected on the [Option] tab in the [Script] dialog, the script runs upon the process.

☞ Page 2410 [Option] tab

68.13 Troubleshooting

GT37 SoftGOT3000

Scripts do not display error messages when an error occurs. Stopping the script where an error has occurred prevents other scripts and monitor functions from stopping. Therefore, every script must be debugged following the procedures as shown below.

68.13.1 Simulation using a general C language compiler or debugger

Since scripts and C language are similar, you can simulate the scripts by making minor corrections using a general C language compiler or debugger.
Complicated scripts including many control statements can be debugged easily by using them.
The following shows the procedure to simulate scripts using a general C language compiler or debugger.

1. Change a script file for GOTs (extension.txt) into a C language source file (extension.c).

• Change of the file extension: text1.txt → text1.c

2. Open the C language source file in a commercially-available text editor and create a frame with "main(){}".
Describe "#include<stdio.h>" at the beginning.

• Additional description of "main" and "include"

```
Additional description→ #include<stdio.h>
Additional description→ main(){
                          [w:TMP0001]=0;
                          while([w:TMP0000]<[w:D100]){
                            if(!(([w:TMP0000]-1900)%4)){
                              [w:TMP0001]=[w:TMP0001]+1;
                           ••• (Omitted) •••
                        [w:TMP0010]=[w:TMP0002]+[w:TMP0003]+[w:TMP0004]-1;
                        [w:D200] = [w:TMP0010]%7;
Additional description→ }
```

3. Change the description method of devices (variables) from the one for scripts to the one for C language.
Using the following definitions to change the variables into the one for C language enables you to smoothly restore them into the GOT scripts.
Using the batch replacement function of a commercially-available text editor may be useful for the change as well.
Definition 1 [w: → _w
Definition 2 [b: → _b
Definition 3] → __

• Change of the description method of devices (variables)

```
                        #include<stdio.h>
                        main(){
Description change→      _wTMP0001__=0;
Description change→      while(_wTMP0000__<_wD100__){
Description change→          if(!((_wTMP0000__-1900)%4)){
Description change→          _wTMP0001__=_wTMP0001__+1;
                          ••• (Omitted) •••
Description change→     _wTMP0010__=_wTMP0002__+_wTMP0003__+_wTMP0004__-1;
Description change→     _wD200__ = _wTMP0010__%7;
                        }
```

4. For C language, variables to be used must be defined in advance.

Since only one data type can be set for one script, the same variable type of C language must be set for all the variables.
The following shows the data type of scripts.
If [BCD16], [BCD32], or [BCD64] is selected as the script data type, you cannot perform a simulation using the general C language compiler or debugger.

Data type of scripts	Variable type
Signed 16-bit binary	short
Unsigned 16-bit binary	unsigned short
Signed 32-bit binary	long
Unsigned 32-bit binary	unsigned long
Signed 64-bit binary	long long
Unsigned 64-bit binary	unsigned long long
BCD16	-
BCD32	
BCD64	
Real number (32 bits)	float
Real number (64 bits)	double

- Variable definition (auto variable declaration)

Description change→
Addition →
Addition →
Addition →
Addition →
	#include<stdio.h>
	void main(void){
	  unsigned short _wTMP0000__;
	  unsigned short _wTMP0001__;
	  unsigned short _wTMP0002__;
	  unsigned short _wD100__;
	  ••• (Omitted) •••
	_wTMP0001__=0;
	  while(_wTMP0000__<_wD100__){
	  if(!((_wTMP0000__-1900)%4)){
	  _wTMP0001__=_wTMP0001__+1;
	  ••• (Omitted) •••
	_wTMP0010__=_wTMP0002__+_wTMP0003__+_wTMP0004__-1;
	_wD200__ = _wTMP0010__%7;
	}

5. Perform a simulation with the general C language compiler or debugger.

The step run, variable watch, and other functions specific to the debugger can be used.
After completion of debugging, perform Step 1 to 4 in reverse order to restore the data into the GOT script file.

Precautions

- If [BCD16], [BCD32], or [BCD64] is selected as the script data type, you cannot perform a simulation using the general C language compiler or debugger.
- Since the set, rst, alt, bmov, and fmov statements are dedicated for scripts, you cannot perform a simulation using a general C language compiler or debugger.

Use assignment of 1 or 0 instead of the set or rst statement.

- When you use the system define (ON, OFF description) of the GOT as they are, the define for it must be added to the C language source file.
- The assignment delay which occurs when a script is executed on the GOT does not occur during a simulation using a general C language compiler or debugger.

Therefore, when performing a simulation, take a possibility of occurrence of assignment delays into consideration.

- By applying the measures above, a new program created using C language then debugged can be used as a GOT script.
- Offset device specification cannot be made in the above debugging process.

If you debug the offset specified device, it is necessary to set the corresponding device in advance.

68.13.2 Messages to be displayed at the syntax check

Dialog to be displayed at the syntax check

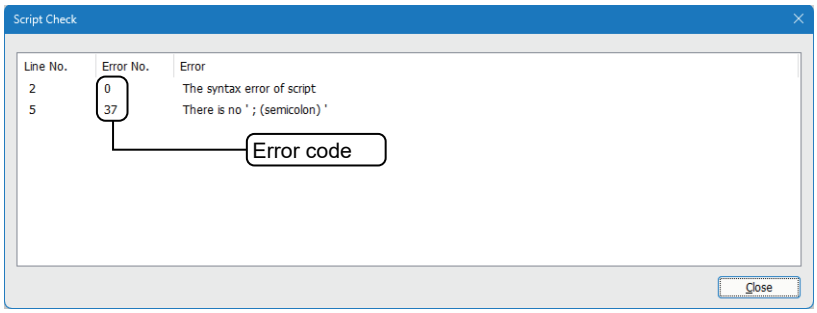
When you execute a syntax check, the [Script Check] dialog appears to display the error codes of the errors detected in a script.

For details on the error codes, refer to the following.

☞ Page 2436 List of syntax error codes

Ex.

When executing a syntax check on a project script



Some errors cannot be detected by the syntax check.

If any error which cannot be detected by the syntax check exists in the script, the error is detected when the script is executed on the GOT.

For the errors for the execution of a script and the corrective action on the GOT, refer to the following.

☞ Page 2439 Script execution errors and their corrective actions on the GOT

List of syntax error codes

The [Script Check] dialog displays the error codes listed below.

Error code*1	Description
0	The syntax error of script
1	The odd number address is set to the address
2	Extended file register (ER) setting error (inter-block settings)
3	Address is only a multiple of 16
4*2	Out of the range of device No. (displayed in HEX. Number)
5*2	Out of the range of device No. (displayed in DEC. Number)
6	Out of the range of device No. (displayed in OCT. Number address)
7	The setting is not executed with the multiple of 16 when specifying the bit device word
8	The setting is not within the range of 0 to 15 when specifying word device bit
9	The set device is out of the range or does not exist
11	Illegal address
14	Access to the device disabling word accessibility by using bit
15	Access to the device disabling bit accessibility by using bit
16	Octal device are set with odd number
17	The setting is not executed with the multiple of 16 when specifying the bit device word
20	The specified CPU does not exist
21	The specified Word type does not exist
22	A CPU not included with network settings has been specified
24	2 byte code cannot be used
25	No expression exist between {and}
26	There are a lot of expression or control structure
27	There are a lot of expression or control structure
28	case outside of switch
29	"Default" exist although there is no switch statement

Error code[*1]	Description
30	There are multiple "default" settings in switch
31	There are too many switch "case" statements
32	There are too many "switch break" statements
33	Too many nest of switch
34	System memory is insufficient
35	Parenthesis nest is deep
36	Syntax error
37	There is no ' ; (semicolon) '
38	There are invalid characters
39	File input is not specified
40	The specified input file does not exist
41	The nest of if/while is deep
45	The CPU incompatible with multi-CPU is specified as multi-CPU
46	The multi-specified station No. is incorrect
47	Network in GOT internal devices
48	Set network in GOT internal devices
101	No closed parenthesis
111	The bit device is specified for the device with indirect specification
112	The controller type of channel "n" is not specified or does not exist.[*3]
113	Channel number error
114	Common device cannot use channel
115	The read only variable is written
116	The write only variable is read
117	The read only property is written
118	The write only property is read
119	Unterminated string
120	There is EOF in string
121	The string is too long
122	Unicode translation error
124	Cannot use word type cast
125	There are invalid variables
126	There are invalid properties
127	There are invalid functions
128	There are invalid device type
129	Unterminated label
130	There is EOF in label
131	The label is too long
132	An unavailable label is set
133	The device of label is invalid
134	The device of label is not set
135	Label conversion error
136	Data types of the 1st argument and 2nd one are not equal in bmov/fmov
137	value out of range
138	can't use #pragma except in script head
139	#pragma folder_name_length redeclared
140	#pragma file_name_length redeclared
141	Bit device word cannot be used
142	Word device bit cannot be used
143	The format is invalid
144	The number of format designators is out of the valid range
145	The argument count is wrong
147	#pragma use_ptmp_length redeclared
148	PTMP cannot be used except for script parts

Error code[*1]	Description
149	An unavailable script block name is set
201	The device code is unknown
202	The device No. is beyond the valid range
203	Device No. + Device Points are beyond the valid range
204	The network No./Station No./CPU No. are beyond the valid range
205	The device name is invalid
206	The device No. notation is invalid
207	The address No. is invalid (not in even number or multiples of 8/16)
208	The device type is invalid
209	The GOT series is unknown
301	The GOT type does not support global labels/tags
302	The controller on channel "n" cannot use global labels/tags.[*3]
303	The global label/tag/label (GT Designer3) is too long
304	An invalid character is used for the global label/tag/label (GT Designer3)
305	Global label/tag/label (GT Designer3) syntax error
306	The global label/tag that is not array type is used for the continuous device setting
307	An unregistered OPC UA tag is set

*1 If the station number setting of the device is incorrect, the same error may be displayed twice.

*2 For devices in which decimal numbers and hexadecimal numbers are used for device numbers (including a coil (MB) of YASKAWA PLC CP-9200SH), error code 4 occurs if a number outside the address range is specified.

*3 The letter "n" indicates a channel number.

68.13.3 Script execution errors and their corrective actions on the GOT

The following shows how to check the errors and their error codes on the GOT.

Item	Description
Checking for the occurrence of an error	Check for the occurrence of the following errors. • Script error • BCD error • Zero division error • Communication error (including access to an invalid device) • File operation function error The following script types are supported: project script, screen script, and script part. ☞ Page 2440 Checking for the occurrence of an error
Checking an error record	Check the following information of an error. • Script number • Error code The following script types are supported: project script and screen script. ☞ Page 2440 Checking an error record
Checking a detailed error record	Check the following information of an error. • Error code • Script type • Screen number • Script number or object ID • Execution order number • Screen type • Number of the displayed base screen The following script types are supported: project script, screen script, and script part. ☞ Page 2441 Checking a detailed error record
Clearing error records	Turn on GS384.b0 to clear the script error records as shown below. • GS14.b0, b7, b8, and b12 store 0. • GS15 stores -1. • GS16 to GS47 store 0. The following script types are supported: project script, screen script, and script part.
Re-executing the script aborted due to an error	Turn on GS384.b1 to re-execute the script aborted due to an error. The following script types are supported: project script, screen script, and script part.

To check device values, use objects (including a numerical display and lamp).

Precautions

If an error occurs in the script block, the error is the call source script error.

Checking for the occurrence of an error

The following script types are supported: project script, screen script, and script part.

The following GOT internal devices notify the error status.

GOT internal devices		Description
GS14	b0	Turns on when a script error occurs.
	b7	Turns on when a BCD error occurs.
	b8	Turns on when a zero division error occurs.
	b12	Turns on when a communication error (including access to an invalid device) occurs.
GS154	b15	Turns on when a file operation function error occurs. Turns off when the subsequent file operation function is properly completed.

To reset each bit of GS14, turn on GS384.b0.

Checking an error record

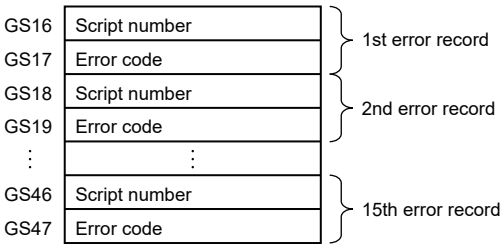
The following script types are supported: project script and screen script.

When an error occurs, the error record is stored into the devices ranging from GS16 to GS47.

GS15 stores the start device number of the devices where the latest error record is stored.

To clear error records, turn on GS384.b0.

The following shows the operation of the relevant GOT internal devices.

GOT internal devices	Description
GS15	Stores the start device number of the devices where the latest error record is stored. The devices range from GS16 to GS47. The value of GS15 changes as follows each time an error occurs. -1 → 16 → 18 → 20 → 22 → ... → 46 (The next loop will start from 16.) Example) Relationship between the value of GS15 and the storage location of the latest error record • When GS15 stores 16, the latest error record is stored in GS16 and GS17. • When GS15 stores 46, the latest error record is stored in GS46 and GS47. Turning on GS384.b0 resets GS15 to -1.
GS16 to GS47	Stores the following information when a script error occurs. • Script number • Error code Two word devices are used for one error.  If the number of errors is 17 or more, the error records are overwritten starting from the oldest one.

Checking a detailed error record

The following script types are supported: project script, screen script, and script part.

The specified GOT data registers (GD) store error records.

These GD devices are specified with the following GOT special registers (GS).

- GS392: Specify the start device number of the GD devices to store error records.
- GS394: Specify the maximum number of error records.

Ex.

When GS392 (start device number) stores 1000, and GS394 (number of error records) stores 5

GD1000 to GD1007	··· 1st error record
GD1008 to GD1015	··· 2nd error record
GD1016 to GD1023	··· 3rd error record
GD1024 to GD1031	··· 4th error record
GD1032 to GD1039	··· 5th error record

Eight word devices are used for one error.

For details on an error record, refer to the following.

☞ Page 2442 Details on an error record

To start storing error records, turn on GS395.b0.

You can identify the devices storing the latest error record based on the values of GS392 and GS157.

The following shows the operation of the relevant GOT internal devices.

- Write device

GOT internal devices	Description
GS157	Stores a number showing the devices where the latest error record is stored. Data type: Signed binary Initial value: -1 Calculate the start device number of the devices storing the latest error record by using the following expression. • GS392 + (GS157 × 8) Example) When GS392 stores 1000, and GS157 stores 5 1000 + (5 × 8) = 1040 In this case, GD1040 to GD1047 (eight GD devices) store the latest error record.

- Read device

GOT internal devices		Description
GS392		Specify the start device number of the GD devices to store error records. Data type: Unsigned binary
GS394		Specify the maximum number of error records. Data type: Unsigned binary The setting range is 0 to 5000. If the device stores 0, no error record will be stored. If the device stores 5001 or more, up to 5000 records will be stored. GS395.b1 specifies the operation to be performed when the number of errors has exceeded the maximum number of error records.
GS395	b0	When this bit is turned on, storing error records starts. When this bit is turned off, storing error records ends.
	b1	Specifies the operation to be performed when the number of errors has exceeded the maximum number of error records specified with GS394. When this bit is turned on, storing error records stops. When this bit is turned off, storing error records continues by overwriting the oldest record.
	b8	When this bit is turned on, the project script error records are not stored.
	b9	When this bit is turned on, the screen script error records are not stored.
	b10	When this bit is turned on, the script error records of script parts objects are not stored.
	b11	When this bit is turned on, the records of warnings (that do not abort a script) are not stored.

Details on an error record

The following shows an example of how an error record is stored in eight word devices starting from GD1000.

Storage device	Item	Description
GD1000	Error code	Error code of an error. For the error details and corrective actions, refer to the following. ☞ Page 2442 List of script execution error codes
GD1001	Script type	Number that shows a script type. The device stores any of the following values according to the script type. • 1: Project script • 2: Screen script (set for a base screen) • 3: Screen script (set for a window screen) • 4: Script part
GD1002	Screen number	Number of the screen for which the script is set. The device stores 0 for a project script.
GD1003	Script number or object ID	The device stores a script number or object ID according to the script type. • For project scripts and screen scripts: script number • For script parts: object ID
GD1004	Execution order number	Script execution order number specified in GT Designer3 The device stores any of the following values according to the script type. • For project scripts: 1 to 256 • For screen scripts: 1 to 256 (per screen) • For script parts: 1 to 16 (per script parts object)
GD1005	Screen type	Type of the screen for which the script is set. The device stores any of the following values according to the screen type. • 200: Base screen • 210: Superimpose window 1 • 220: Superimpose window 2 • 310: Overlap window 1 • 320: Overlap window 2 • 330: Overlap window 3 • 340: Overlap window 4 • 350: Overlap window 5 If the script is set for a called screen, the device stores a value by adding a number to the number showing the calling screen type. • When a base screen is called, 1 is added. • When a window screen is called, 2 is added. Example) When a window screen is called from overlap window 3 330 + 2 = 332 The device stores 0 for a project script.
GD1006	Number of the displayed base screen	Number of the base screen that is displayed when the script runs.
GD1007	Use prohibited	The device stores 0.

List of script execution error codes

Error code	Description	Corrective action
1	Initialization of project script failed.*2	• Reduce the number of monitor devices in scripts. • Reduce the number of project scripts to be executed.
2	Initialization of screen script (base screen) failed.*1*2	• Reduce the number of monitor devices in scripts and base screens. • Reduce the number of screen scripts (base screen) to be executed.
3	Initialization of screen script (superimpose window 1) failed.*1*2	• Reduce the number of monitor devices in scripts and superimpose window 1. • Reduce the number of screen scripts (superimpose window 1) to be executed.
4	Initialization of screen script (overlap window 1) failed.*1*2	• Reduce the number of monitor devices in scripts and overlap window 1. • Reduce the number of screen scripts (overlap window 1) to be executed.
5	Initialization of screen script (overlap window 2) failed.*1*2	• Reduce the number of monitor devices in scripts and overlap window 2. • Reduce the number of screen scripts (overlap window 2) to be executed.
6	An error occurred in reading data from the device that always collects the data.	Correct the description of the device whose data is out of the specified device range.
7	The number of scripts to be executed exceeded the limit. And some scripts were left unexecuted.	• Change the number of scripts to be executed in one project to 256 or less. • Change the number of scripts to be executed in one screen to 256 or less.

Error code	Description	Corrective action
8	When [BCD16], [BCD32], or [BCD64] was selected as the script data type, the monitor device value could not be handled as BCD.	• Check whether the device to be monitored is correct. • Check the processing for the device which could not be handled as BCD, and correct the script and sequence program.
9	When [BCD16], [BCD32], or [BCD64] was selected as the script data type, the operation result was out of the BCD data range.	Correct the processing for the device that is not in the BCD data range.
10	The numerator was divided by the denominator of 0.	Check the factor that caused zero division in the script, and correct the script.
11	Writing to a device failed.	Correct the device description in the relevant script.
12	Reservation of an internal area for writing to a device failed.	Reduce the number of devices to be written in the script.
13	The while statement includes the description of a device that causes an assignment delay.	Replace the device causing an assignment delay in the while statement with the temporary device area or a GOT internal device.
14	The expression was too complicated to process.	Simplify or divide the operation expression in the script.
15	A script did not end within the script monitoring time.	• Check whether the script has gone into an endless loop. • Increase the value of the Script Monitoring Time (GS385).
16	Access to the GOT internal device failed, resulting in an error (out of the specified device range).	• Check the processing for the GOT internal device, and correct the script and sequence program. • Correct the description of the relevant script.
18	The number of consecutive devices handled by the FMOV or BMOV function exceeded the maximum as shown below. • Maximum number of word devices: 32766 • Maximum number of double-word devices: 16383 • Maximum number of quad-word devices: 8191	Reduce the number of consecutive devices handled by the FMOV or BMOV function.
19	Initialization of screen script (superimpose window 2) failed.*1*2	• Reduce the number of monitor devices in scripts and superimpose window 2. • Reduce the number of screen scripts (superimpose window 2) to be executed.
20	The GOT failed to access a temporary device area because the area is invalid.	Correct the descriptions of temporary device areas in the relevant script.
21	An 8-bit or 64-bit device is specified for an indirect device.	Correct the indirect device description in the relevant script.
22	Temporary device areas for 32-bit data are used for the script of 64-bit data.	Correct the common settings of the relevant script.
23	The GOT failed to access a script parts temporary device area because the area is invalid.	Correct the descriptions of script parts temporary device areas in the relevant script.
24*3	The GOT failed to execute a file operation function because the function has invalid arguments (such as invalid path or value).	• Check that all arguments are valid. • Correct the folder and file names. • Check that the specified offset value, number of write bytes, or number of read bytes does not cause the storage device and file size to be invalid.
25*3	The GOT failed to write data because the data storage has insufficient free space.	Check the free space of the data storage.
26*3	The GOT failed to access the file because no data storage is installed or the SD card cover is open.	• Check that a data storage is installed on the GOT. • Check that the SD card cover is closed. • Check that the SD card access switch is turned on.
27*3	The GOT failed to write the data because the data storage is write-protected, the specified file is a read-only file, or a file in the same name as the folder name in the path of the copy destination exists.	• Check if the data storage is not write-protected. • Check if the specified file is not a read-only file. • Check if a file in the same name as the folder name in the path of the copy destination does not exist.
28*3	The GOT failed to access the file because the data storage is not formatted or is faulty.	• Check if the data storage is formatted. • Check if the data storage is not broken.
29*3	The GOT failed to access the file because the specified file is used for the other functions.	Check if the file which is being used by the file operation function is not used by other functions at the execution of the file operation function.
30*3	The GOT stopped copying the file because a file in the same name as the copy source file exists in the copy destination folder.	• Check if the copy destination folder has no file in the name which is the same as the copy source file. • If the copy mode is write protection, disable write protection.
31*3	The GOT failed to execute the string operation function because arguments in the function specify invalid character strings.	• Correct the format. • Check if the arguments are not out of the available range for specifying.
32	A 64-bit operation overflow has occurred.	Check the description of the relevant script and correct it.

Error code	Description	Corrective action
35	Initialization of screen script (overlap window 3) failed.*1*2	• Reduce the number of monitor devices in scripts and overlap window 3. • Reduce the number of screen scripts (overlap window 3) to be executed.
36	Initialization of screen script (overlap window 4) failed.*1*2	• Reduce the number of monitor devices in scripts and overlap window 4. • Reduce the number of screen scripts (overlap window 4) to be executed.
37	Initialization of screen script (overlap window 5) failed.*1*2	• Reduce the number of monitor devices in scripts and overlap window 5. • Reduce the number of screen scripts (overlap window 5) to be executed.
40	The script specified by a subroutine call (call statement) could not be found.	Check that the number specified by the call statement and the script block number match.
42	There is a function description that cannot be used in a script executed by a subroutine call (call statement).	Check that screen scripts and project scripts are not using functions that cannot be used.

*1 Script parts in the screen are also included in the causes of the error.

*2 Because the error is for each screen, "0" is stored in the script No. of GS16 to GS47 (script error data).
If an error occurs when initializing a script part, no error record is stored in GS16 to GS47 (script error data).

*3 Since it is a warning error, the script does not stop.

68.13.4 How to check a script execution record

The following shows how to check a script execution record on the GOT.

Item	Description
Checking the execution status of a file operation function	Check whether the file operation function is being executed. While a file operation function is being executed, GS154.b0 is on. After the execution is complete, GS154.b0 turns off. The following script types are supported: project script, screen script, and script part.
Checking a script execution record	Check the script number of an executed script. The following script types are supported: project script and screen script. ☞ Page 2444 Checking a script execution record
Checking a detailed script execution record	Check the following information on an executed script. • Script type • Screen number • Script number or object ID • Execution order number • Screen type • Number of the displayed base screen The following script types are supported: project script, screen script, and script part. ☞ Page 2445 Checking a detailed script execution record

To check device values, use the device monitor function or objects (including a numerical display and lamp).

Checking a script execution record

The following script types are supported: project script and screen script.

When a script runs, the script number is stored into the device in the range of GS49 to GS79.

GS48 stores the device number of the device where the latest script execution record is stored.

The following shows the operation of the relevant GOT internal devices.

GOT internal devices	Description
GS48	Stores the device number of the device where the latest script execution record is stored. The device is in the range of GS49 to GS79. The value of GS48 changes as follows each time a script is executed. -149 → 50 → 51 → 52 → ... → 79 (The next loop will start from 49.)
GS49 to GS79	Store the script numbers of the executed scripts. One word device is used for one script. If the number of the executed scripts is 32 or more, the script execution records are overwritten starting from the oldest one.

Checking a detailed script execution record

The following script types are supported: project script, screen script, and script part.

The specified GOT data registers (GD) store script execution records.

These GD devices are specified with the following GOT special registers (GS).

- GS396: Specify the start device number of the GD devices to store script execution records.
- GS398: Specify the maximum number of script execution records.

Ex.

When GS396 (start device number) stores 1000, and GS398 (number of execution records) stores 5

GD1000 to GD1007	··· 1st execution record
GD1008 to GD1015	··· 2nd execution record
GD1016 to GD1023	··· 3rd execution record
GD1024 to GD1031	··· 4th execution record
GD1032 to GD1039	··· 5th execution record

Eight word devices are used for one script execution record.

For details on a script execution record, refer to the following.

☞ Page 2446 Details on a script execution record

To start storing script execution records, turn on GS399.b0.

You can identify the devices storing the latest script execution record based on the values of GS396 and GS158.

The following shows the operation of the relevant GOT internal devices.

- Write device

GOT internal devices	Description
GS158	Stores a number showing the devices where the latest script execution record is stored. Data type: Signed binary Initial value: -1 Calculate the start device number of the devices storing the latest script execution record by using the following expression. • GS396 + (GS158 × 8) Example) When GS396 stores 1000, and GS158 stores 5 1000 + (5 × 8) = 1040 In this case, GD1040 to GD1047 (eight GD devices) store the latest script execution record.

- Read device

GOT internal devices		Description
GS396		Specify the start device number of the GD devices to store script execution records. Data type: Unsigned binary
GS398		Specify the maximum number of script execution records. Data type: Unsigned binary The setting range is 0 to 5000. If the device stores 0, no script execution record will be stored. If the device stores 5001 or more, up to 5000 records will be stored. GS399.b1 specifies the operation to be performed when the number of the executed scripts has exceeded the maximum number of script execution records.
GS399	b0	When this bit is turned on, storing script execution records starts. When this bit is turned off, storing script execution records ends.
	b1	Specifies the operation to be performed when the number of the executed scripts has exceeded the maximum number of script execution records specified with GS398. When this bit is turned on, storing script execution records stops. When this bit is turned off, storing script execution records continues by overwriting the oldest record.
	b8	When this bit is turned on, the project script execution records are not stored.
	b9	When this bit is turned on, the screen script execution records are not stored.
	b10	When this bit is turned on, the script execution records of script parts objects are not stored.

Precautions

If the range specified by GS396 (Start GD device for script event notification) and GS398 (Number of script event outputs) exceeds the device range in the GOT data register (GD), the execution records are stored with the number of outputs within the device range.

Ex.

When storing 20 execution records from GD65455 (when GS396 is "65455" and GS398 is "20")

In 80 devices from GD65455 to GD65535, 10 execution records are stored.

Details on a script execution record

The following shows an example of how a script execution record is stored in eight word devices starting from GD1000.

Storage device	Item	Description
GD1000	Script type	Number that shows a script type. The device stores any of the following values according to the script type. • 1: Project script • 2: Screen script (set for a base screen) • 3: Screen script (set for a window screen) • 4: Script part
GD1001	Screen number	Number of the screen for which the script is set. The device stores 0 for a project script.
GD1002	Script number or object ID	The device stores a script number or object ID according to the script type. • For project scripts and screen scripts: script number • For script parts: object ID
GD1003	Execution order number	Script execution order number specified in GT Designer3 The device stores any of the following values according to the script type. • For project scripts: 1 to 256 • For screen scripts: 1 to 256 (per screen) • For script parts: 1 to 16 (per script parts object)
GD1004	Screen type	Type of the screen for which the script is set. The device stores any of the following values according to the screen type. • 200: Base screen • 210: Superimpose window 1 • 220: Superimpose window 2 • 310: Overlap window 1 • 320: Overlap window 2 • 330: Overlap window 3 • 340: Overlap window 4 • 350: Overlap window 5 If the script is set for a called screen, the device stores a value by adding a number to the number showing the calling screen type. • When a base screen is called, 1 is added. • When a window screen is called, 2 is added. Example) When a window screen is called from overlap window 3 330 + 2 = 332 The device stores 0 for a project script.
GD1005	Number of the displayed base screen	Number of the base screen that is displayed when the script runs.
GD1006	Use prohibited	The device stores 0.
GD1007	Use prohibited	The device stores 0.

69 Object script

GT37 SoftGOT3000

☞ Page 2447 Overview of the object script
☞ Page 2447 Specifications of the object script
☞ Page 2463 How to use object scripts
☞ Page 2468 Program example
☞ Page 2472 [Object Script Symbol] dialog
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PART 12

69.1 Overview of the object script

GT37 SoftGOT3000

Object scripts are settable by object.
If the trigger condition for an object script is satisfied while the relevant object is being displayed, the script runs.

69.2 Specifications of the object script

GT37 SoftGOT3000

69.2.1 Target objects of the object script

Object scripts are set and operate for the following objects.

- Touch switch ([Switch] only)
- [Bit Lamp]
- [Word Lamp]
- [Numerical Display]
- [Numerical Input]
- [Text Display]
- [Text Input]
- [Date Display]
- [Time Display]
- [Comment Display]
- [Parts Display]
- [Frame Animation]
- [Line Graph]
- [Trend Graph]
- [Bar Graph]
- [Bar(Rectangle)]
- [Pie(Circle)]
- [Scatter Graph]
- [Historical Trend Graph]
- [Graphical Meter]
- [Level]
- [Panelmeter]

69.2.2 Object script type

The following three types of object scripts are provided.

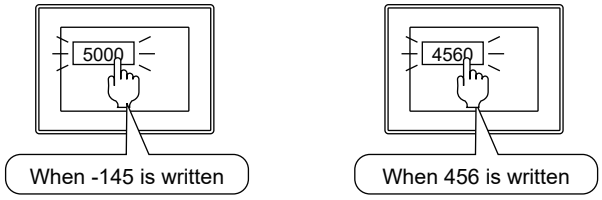
Input object script

Scripts that are executed for objects that input numerical values.

Ex.

☞ Page 2468 Data operation by a numerical input script

Changes the value to be written to a device according to the input value.



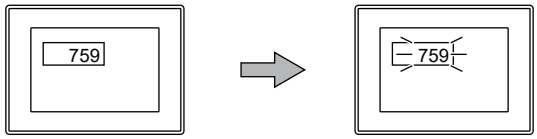
Display object script

Scripts that are executed for objects that display texts and lamps.

Ex.

☞ Page 2468 To start blinking after set time

Changes the color of numerical display and makes the value blink if it has not changed for 5 seconds.
(Notifies that a device value update has stopped.)



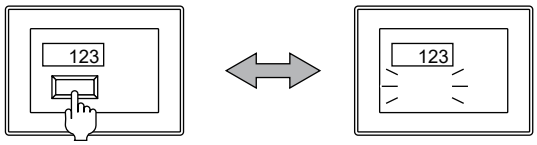
Switch object script

Scripts that are executed for touch switches ([Switch] only).

Ex.

☞ Page 2469 Showing and hiding objects for input and touch operations

Displays or hides a touch switch so that the switch can be touched only when a touch operation is necessary.



69.2.3 The GOT condition under which object scripts can be executed

Object scripts can be executed when all the following conditions are satisfied.

- The screen where the target object is placed has been displayed.
- The target object has been displayed or in operation.
- The target object has no limit on its operations by the security function.

69.2.4 Operating conditions of object scripts

Scripts are executed when the operating conditions set for each script are satisfied. The execution is also tied to: Input to the object, the display on the object, and a touch operation on a touch switch.

☞ Page 2464 Operating condition

69.2.5 Number of object script settings

For a single object for numerical input and character string input, both an input object script and a display object script can be set.

For a single object for other than numerical input and character string input, either an input object script or a display object script can be set.

Note that it takes longer time than usual for the monitor screen to display when the number of monitor devices in the object script is large.

69.2.6 Control structure of object scripts

For object scripts, the control structure of project scripts and screen scripts and the control structure described in this section are available.

However, the following control structure is not available.

Classification	Name
Contiguous device operation function	bmov
	fmov

For the control structure of project scripts and screen scripts, refer to the following.

☞ Page 2335 Control structures for scripts

Object internal variables (input object script)

These variables process the monitor device values and input values in input object scripts.

Variable	Description	
$$	Statement example	[w:D100] = $$;
	Function	Referred to for the script to process a monitor device value. Each time it is referred to in an object script, the latest value is obtained. Values cannot be assigned.
	Data type	Data type of the device to be monitored by objects
$K	Statement example	[w:D100] = $K;
	Function	Referred to for the script to process the latest key code input from a touch key. It obtains the key code equivalent to one ASCII or Shift JIS character. Assigned when a key code is written to the object. If this variable is referred to when no key code has been input, 0xFFFF is obtained.
	Data type	Unsigned 16-bit binary

$W	Statement example	[w:D100] = $W; // Example of reference
		$W = [w:D100] + $W; // Example of substitution

	Function	Referred to for the script to process the value input by the determination key of a touch key. Assigned when a value is written to the object. If this variable is referred to when no value has been input by the determination key, 0 is obtained.
	Data type	Data type of the device to be monitored by objects

Available object internal variables for input object scripts differ depending on the combination of objects and trigger types used.

The following shows available object internal variables.

RW: Reference or substitution is possible, R: Reference is possible, W: Substitution is possible, —: Use prohibited

Object	Trigger type	Variable			
		$$	$K	$W	$V
Numerical input	Ordinary, ON, OFF, Rise, Fall, Rise/Fall, Sampling, ON Sampling, OFF Sampling	R	—	—	—
	When a key code is input	R	RW	—	—
	When the input is confirmed	R	—	RW	—
Text input	Ordinary, ON, OFF, Rise, Fall, Rise/Fall, Sampling, ON Sampling, OFF Sampling	—	—	—	—
	When a key code is input	—	RW	—	—
	When the input is confirmed	—	—	—	—

Object internal variables (display object script)

These variables process the monitor device values in display object scripts.

Variable	Description	
$$	Statement example	[w:D100] = $$
	Function	Referred to for the script to process a monitor device value. Values cannot be assigned.
	Data type	Data type of the device to be monitored by objects
$V	Statement example	$V = [w:D100] + $$; // Offsets the displayed value.
	Function	Reference is unavailable. Assigned when the value displayed on the object is changed for another one. The initial value is the monitor device value ($$).
	Data type	Data type of the device to be monitored by objects

Available object internal variables for display object scripts differ depending on the combination of objects and trigger types used.

The following shows available object internal variables.

RW: Reference or substitution is possible, R: Reference is possible, W: Substitution is possible, —: Use prohibited

Object	Trigger type	Variable			
		$$	$K	$W	$V
Numerical display, numerical input, comment display*1, parts display*1, frame animation, level	Ordinary, Synchronize Display Trigger	R	—	—	W
	ON, OFF, Rise, Fall, Rise/Fall, Sampling, ON Sampling, OFF Sampling	R	—	—	—
	When the view changes	R	—	—	R
Lamp*1, panel meter, graphical meter	Ordinary	R	—	—	W
	ON, OFF, Rise, Fall, Rise/Fall, Sampling, ON Sampling, OFF Sampling	R	—	—	—
	When the view changes	R	—	—	R
Text display, text input, date display, time display, line graph, trend graph, bar graph, band graph, pie graph, scatter graph, historical trend graph	Ordinary, ON, OFF, Rise, Fall, Rise/Fall, Sampling, ON Sampling, OFF Sampling, View Change, Synchronize Display Trigger*2	—			

*1 When the device type set to the object is bit data type, reference of $$ and substitution to $V are not available.

*2 [Trigger Type] cannot be set to [Synchronize Display Trigger] if the object is for date display or time display.

Object internal variables (switch object script)

These variables process the monitor device values in switch object scripts.

Variable	Description	
$W	Statement example	$W = [w:D100]
	Function	Reference is unavailable. Assigned when a value processed in the script is used in writing with the touch switch.
	Data type	Data type of the device to be monitored by objects

Available object internal variables for switch object scripts differ depending on the combination of objects and trigger types used.

The following shows available object internal variables.

RW: Reference or substitution is possible, R: Reference is possible, W: Substitution is possible, —: Use prohibited

Object	Trigger type	Variable			
		$$	$K	$W	$V
Touch switch ([Switch] only)	Ordinary, ON, OFF, Rise, Fall, Rise/Fall, Sampling, ON Sampling, OFF Sampling, Device Writing	—	—	W	—

Point

Using object internal variables that cannot be checked by the syntax check

In the syntax check, object internal variables in the following uses are not checked.

- In referring to an object internal variable that cannot be referred to
- In assigning a value to an object internal variable to which no value can be assigned

Use object internal variables correctly when creating scripts.

Object property

These variables change the property values of objects.

For the correspondence between the read/write operation and object properties, refer to the following.

☞ [Script] tab in the setting dialog for each object

For the timing of the screen reflecting after the settings of object properties, refer to the following.

☞ Page 2456 Timing at which the setting change of an object property is reflected

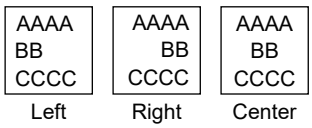
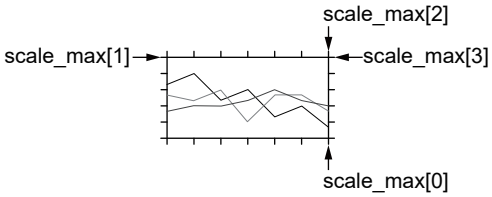
Changes of object properties are retained until the GOT is powered on/powered off/reset, the package data are written, or screen switching is performed.

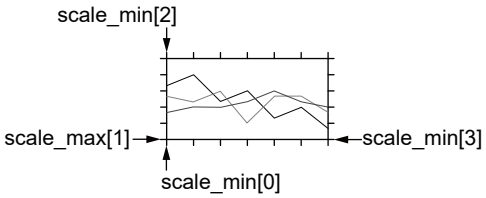
The following shows the list of the object properties.

Property	Description	
active	Statement example	my.active = 1;
	Target object	Switch, lamp, numerical display, numerical input, text display, text input, date display, time display, comment display, parts display, frame animation, line graph, trend graph, bar graph, band graph, pie graph, scatter graph, level object, panel meter, graphical meter
	Function	Specifies whether to update the object itself or not. 1: Updates the object itself. 0: Does not update the object itself. The object is not updated even if the display condition is satisfied. When "0" is specified after the screen being switched and before the object being displayed subsequently on the screen, the object itself is not displayed. However, drawing by the free figure drawing function is possible.
x	Statement example	my.x = 0;
	Target object	Switch, lamp, numerical display, numerical input, text display, text input, date display, time display, comment display, parts display, frame animation, line graph, trend graph, bar graph, band graph, pie graph, scatter graph, level object, panel meter, graphical meter
	Function	Specifies in dots the X coordinate to which the object itself moves. The setting range is 0 to 32767. The left end of the screen is 0. For parts display, this property is enabled only when [Line] is selected for [Move Way] in the [Animation] tab. When the specified coordinate is outside the screen area, the object does not move.
y	Statement example	my.y = 0;
	Target object	Switch, lamp, numerical display, numerical input, text display, text input, date display, time display, comment display, parts display, frame animation, line graph, trend graph, bar graph, band graph, pie graph, scatter graph, level object, panel meter, graphical meter
	Function	Specifies in dots the Y coordinate to which the object itself moves. The setting range is 0 to 32767. The upper end of the screen is 0. For parts display, this property is enabled only when [Line] is selected for [Move Way] in the [Animation] tab. When the specified coordinate is outside the screen area, the object does not move.
width	Statement example	[w:D100] = my.width;
	Target object	Switch, lamp, numerical display, numerical input, text display, text input, date display, time display, comment display, parts display, frame animation, line graph, trend graph, bar graph, band graph, pie graph, scatter graph, level object, panel meter, graphical meter
	Function	Obtains the width of the object frame.
height	Statement example	[w:D100] = my.height;
	Target object	Switch, lamp, numerical display, numerical input, text display, text input, date display, time display, comment display, parts display, frame animation, line graph, trend graph, bar graph, band graph, pie graph, scatter graph, level object, panel meter, graphical meter
	Function	Obtains the height of the object frame.

Property	Description	
decimal_point	Statement example	my.decimal_point = 1;
	Target object	Numerical display, numerical input
	Function	Specifies the number of digits after the decimal point. The setting range depends on the setting of the numerical display or numerical input. • When [Format String] is not set: 0 to [Digits] - 2 • When [Format String] is set: 0 to the number of sharp symbols (#) specified in [Format String] (number of display digits) This property is for a numerical display or numerical input object and enabled only when [Real] is selected for [Format] of [Display Format].
blink*1	Statement example	my.blink = 0;
	Target object	Numerical display, numerical input, text display, text input, comment display, parts display
	Function	Specifies [Blink] of the numerical value, text, or figure. 0: No blink. 1: The numerical value or text blinks. (Low speed) 2: The numerical value or text blinks. (Medium speed) 3: The numerical value or text blinks. (High speed) 128: No blink. 129: The numerical value, text, or figure blinks. (Low speed) 130: The numerical value, text, or figure blinks. (Medium speed) 131: The numerical value, text, or figure blinks. (High speed) Reading out my.blink after writing 128 causes the script to obtain 0.
highlight*1	Statement example	my.highlight = 0;
	Target object	Numerical display, numerical input, text display, text input, comment display
	Function	Specifies whether to invert the colors of characters on the object itself or not. 0: Does not invert the colors. 1: Inverts the colors.
part_no*1	Statement example	my.part_no = 1;
	Target object	Parts display
	Function	Specifies the part's number associated with the part to be displayed. The setting range is 0 to 32767. Depending on the parts number, the parts that can be displayed and operations are different. For details on parts numbers, refer to the following. ☞ Page 1435 Part No.
mark_color*1	Statement example	my.mark_color = 255;
	Target object	Parts display
	Function	Specifies the color to be changed when [Parts Type] is set to [Mark Data]. The setting range is 0 to 255. The correspondence between colors and color code numbers is the same as that in the specification of figure colors by GT Designer3.
frame_color	Statement example	[w:D100] = my.frame_color;
	Target object	Numerical display, numerical input, text display, text input, date display, time display, comment display, line graph, trend graph, bar graph, band graph, pie graph, scatter graph, panel meter
	Function	Obtains [Frame Color] of the figure. The setting range is 0 to 255. The correspondence between colors and color code numbers is the same as that in the specification of figure colors by GT Designer3.
plate_color*1	Statement example	my.plate_color = 255;
	Target object	Numerical display, numerical input, text display, text input, date display, time display, comment display, line graph, trend graph, bar graph, band graph, pie graph, scatter graph, panel meter
	Function	Specifies [Shape Color] of the figure. The setting range is 0 to 255. The correspondence between colors and color code numbers is the same as that in the specification of figure colors by GT Designer3.
graph_color*1	Statement example	my.graph_color = 255;
	Target object	Scatter graph, level object, panel meter, graphical meter
	Function	Specifies [Color] of the points or lines of the scatter graph, [Level Color] of the level object, or [Needle Color] of the panel meter or graphical meter. The setting range is 0 to 255. The correspondence between colors and color code numbers is the same as that in the specification of figure colors by GT Designer3.

Property	Description	
back_color[*1]	Statement example	my.back_color = 0;
	Target object	Level object, panel meter
	Function	Specifies [Background Color] of the level object or [Background Color] of the meter panel for the panel meter. The setting range is 0 to 255. The correspondence between colors and color code numbers is the same as that in the specification of figure colors by GT Designer3.
pattern[*1]	Statement example	my.pattern = 1;
	Target object	Level object, panel meter
	Function	Specifies [Pattern] of the mater panel. The setting range is 1 to 37. 0: Does not use any pattern. (Use is prohibited when a panel meter is used.) 1 to 37: Check the image of each pattern in the setting dialog of each object and figure.
pattern_bg_color	Statement example	my.pattern_bg_color = 255;
	Target object	Panel meter
	Function	Specifies [Fill Color] of the meter panel. The setting range is 0 to 255. The correspondence between colors and color code numbers is the same as that in the specification of figure colors by GT Designer3.
fill_color	Statement example	my.fill_color = 255;
	Target object	Panel meter
	Function	Specifies [Fill Color] when the meter attribute is [Needle and Fill] or [Fill]. The setting range is 0 to 255. The correspondence between colors and color code numbers is the same as that in the specification of figure colors by GT Designer3.
fill_bg_color	Statement example	my.fill_bg_color = 255;
	Target object	Panel meter
	Function	Specifies [Background Color] when the meter attribute is [Needle and Fill] or [Fill]. The setting range is 0 to 255. The correspondence between colors and color code numbers is the same as that in the specification of figure colors by GT Designer3.
fill_pattern	Statement example	my.fill_pattern = 1;
	Target object	Panel meter
	Function	Specifies [Pattern] when the meter attribute is [Needle and Fill] or [Fill]. The setting range is 1 to 37. 0: Use is prohibited. 1 to 37: Check the image of each pattern in the setting dialog of each object and figure.
core_color	Statement example	my.core_color = 255;
	Target object	Panel meter
	Function	Specifies [Fill Color] of the core. The setting range is 0 to 255. The correspondence between colors and color code numbers is the same as that in the specification of figure colors by GT Designer3.
core_bg_color	Statement example	my.core_bg_color = 255;
	Target object	Panel meter
	Function	Specifies [Background Color] of the core. The setting range is 0 to 255. The correspondence between colors and color code numbers is the same as that in the specification of figure colors by GT Designer3.
core_pattern	Statement example	my.core_pattern = 1;
	Target object	Panel meter
	Function	Specifies [Pattern] of the core. The setting range is 1 to 37. 0: Use is prohibited. 1 to 37: Check the image of each pattern in the setting dialog of each object and figure.
text_color[*1]	Statement example	my.text_color = 255;
	Target object	Numerical display, numerical input, text display, text input, date display, time display, comment display
	Function	Specifies [Text Color] of numerical values or text. The setting range is 0 to 255. The correspondence between colors and color code numbers is the same as that in the specification of figure colors by GT Designer3.

Property	Description	
text_width	Statement example	my.text_width = 1;
	Target object	Numerical display, numerical input, text display, text input, date display, time display, comment display
	Function	Specifies the scale factor (width) of numbers and characters the object itself displays. 0: 0.5 times 1 to 8: 1 to 8 time (s) It obtains the scale factor in multiples of 16 dots when a number or character is referred to. When the font size exceeds 128 dots (8 times), 8 is obtained. If the font size is not a multiple of 16, a fraction is rounded down to obtain the scale factor. (For example, when referring to a character with a font size of 72 dots, it obtains 4 instead of 4.5.)
		If the font size is changed to a value larger than the one when the object was placed on the screen editor in GT Designer3, characters may be displayed incompletely. Redraw the screen by executing the "redraw_screen()" function.
		Changing the font size to a value larger than the original size increases the object frame size as well. If the object frame size of an object for which a shape frame is set exceeds the size of the shape frame, the error code 1144 of the object script is detected, and the script is interrupted. ☞ Page 2488 Errors and their corrective actions during script execution on the GOT (object script)
text_height	Statement example	my.text_height = 1;
	Target object	Numerical display, numerical input, text display, text input, date display, time display, comment display
	Function	Specifies the scale factor (height) of numbers and characters the object itself displays. 0: 0.5 times 1 to 8: 1 to 8 time (s) It obtains the scale factor in multiples of 16 dots when a number or character is referred to. When the font size exceeds 128 dots (8 times), 8 is obtained. If the font size is not a multiple of 16, a fraction is rounded down to obtain the scale factor. (For example, when referring to a character with a font size of 72 dots, it obtains 4 instead of 4.5.)
		If the font size is changed to a value larger than the one when the object was placed on the screen editor in GT Designer3, characters may be displayed incompletely. Redraw the screen by executing the "redraw_screen()" function.
		Changing the font size to a value larger than the original size increases the object frame size as well. If the object frame size of an object for which a shape frame is set exceeds the size of the shape frame, the error code 1144 of the object script is detected, and the script is interrupted. ☞ Page 2488 Errors and their corrective actions during script execution on the GOT (object script)
arrange	Statement example	my.arrange = 1;
	Target object	Numerical display, numerical input, text display, text input, comment display
	Function	Specifies the position of [Alignment] for the text. • 0: Left • 1: Right • 2: Center 
scale_max[0], scale_max[1], scale_max[2], scale_max[3]	Statement example	my.scale_max[0] = 255;
	Target object	Line graph, trend graph, bar graph, scatter graph, panel meter
	Function	Specifies the upper limit value of the scale. • scale_max[0]: Upper scale limit in the horizontal direction (lower side) • scale_max[1]: Upper scale limit in the vertical direction (left side) (It cannot be specified for the panel meter or bar graph.) • scale_max[2]: Upper scale limit in the horizontal direction (upper side) (It can be specified only for the trend graph.) • scale_max[3]: Upper scale limit in the vertical direction (right side) (It can be specified only for the trend graph.) The setting range is the same as that of the upper scale limit for each object. 

Property	Description	
scale_min[0], scale_min[1], scale_min[2], scale_min[3]	Statement example	my.scale_min[0] = 0;
	Target object	Line graph, trend graph, bar graph, scatter graph, panel meter
	Function	Specifies the lower limit value of the scale. • scale_min[0]: Lower scale limit in the horizontal direction (lower side) • scale_min[1]: Lower scale limit in the vertical direction (left side) (It cannot be specified for the panel meter or bar graph.) • scale_min[2]: Lower scale limit in the horizontal direction (upper side) (It can be specified only for the trend graph.) • scale_min[3]: Lower scale limit in the vertical direction (right side) (It can be specified only for the trend graph.) The setting range is the same as that of the lower scale limit for each object. 
security	Statement example	my.security = 0;
	Target object	Switch, lamp, numerical display, numerical input, text display, text input, date display, time display, comment display, parts display, frame animation, line graph, trend graph, bar graph, band graph, pie graph, scatter graph, level object, panel meter, graphical meter
	Function	Sets the security level of the object. The setting range is 0 to 15. For the object that can have the security levels of both input and display set with it, this property sets the security level of the display.
input_security	Statement example	my.input_security = 0;
	Target object	Switch, numerical input, text input
	Function	For the object that can have the security levels of both input and display set with it, this property sets the security level of the input. The setting range is 0 to 15.
draw_mode	Statement example	my.draw_mode = 0;
	Target object	Numerical display, numerical input, comment display, parts display
	Function	Specifies a drawing mode. • For numerical display, numerical input, and comment display 0: Transparent 1: XOR • For parts display 0: Replace 1: XOR 2: Overwrite Each drawing mode is the same as that which appears in the setting dialog of GT Designer3.
delay	Statement example	my.delay = 5;
	Target object	Switch
	Function	Specifies the delay time in second the object itself takes before it performs an action after a touch. It is disabled when [Delay] is set to [None] in GT Designer3. The setting range is 0 to 5. If 0 is set, the object itself takes the action immediately after the touch.
beep	Statement example	my.beep = 0;
	Target object	Switch
	Function	Specifies the length of the buzzer and the timing of it being made. 0: One shot 1: One shot (only when the operating condition is satisfied) 2: No buzzer 128: While a key is pressed 129: While a key is pressed (only when the operating condition is satisfied)

*1 When the object has various status imposed, such as the on/off status of a bit and a condition, the object property is reflected only in the normal cases (when the bit is off or the condition is set to 0).
When the bit is on or other than 0 is set for the condition, the object property is not reflected.

Precautions

The size of the displayed text may be different from the one before the project is converted.
If the text size is larger than the one before the conversion, the part of the text that extends off the display frame is not displayed.

■Timing at which the setting change of an object property is reflected

If an object property setting is changed, the object type and the object property type determine the timing at which the new setting is reflected.
For the correspondence between object types, object property types, and the timing at which the setting change of an object property is reflected, refer to the following.
☞ [Script] tab in the setting dialog for each object
If an object property setting is changed, the new setting is reflected at the following timing.

Timing	Action
Upon the setting change	The object display is refreshed upon the setting change of the object property. After the change of the object property related to actions such as beep, the next action performs a specified action.
When the object is updated	The object display is refreshed or the object operates with the new setting when the display or operating condition of the object is satisfied. The object may be displayed or operate incorrectly until the new setting is reflected. To reflect the setting immediately, execute "redraw_object()". ☞ Page 2460 Functions (screen control)
When the screen is updated	The object display is refreshed or the object operates with the new setting when screen switching is performed. To reflect the setting immediately, execute "redraw_screen()". ☞ Page 2460 Functions (screen control)

Point

To reflect the new settings of multiple object properties, use a single "redraw_object()" function to reduce the number of times that the object is redrawn.

```
my.text_height=2;
redraw_object();
my.arrange=1;
redraw_object();
```

→

```
my.text_height=2;

my.arrange=1;
redraw_object();
```

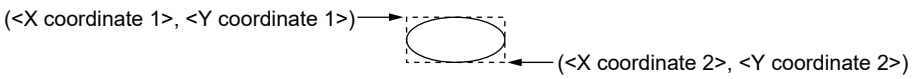
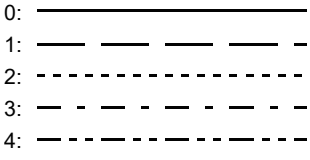
Functions (free figure drawing)

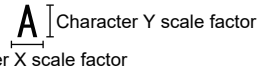
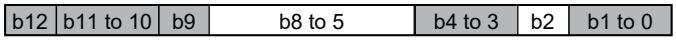
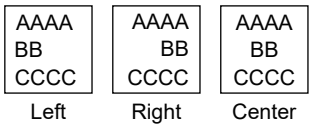
These functions display the figures on the monitor screen.

Property	Description	
d_line	Statement example	d_line(<X coordinate 1>, <Y coordinate 1>, <X coordinate 2>, <Y coordinate 2>, <Line type>, <Line width>, <Line color>)
	Function	Draws a line. Draws between (<X coordinate 1>, <Y coordinate 1>) and (<X coordinate 2>, <Y coordinate 2>).
d_rectangle	Statement example	d_rectangle(<X coordinate 1>, <Y coordinate 1>, <X coordinate 2>, <Y coordinate 2>, <Line type>, <Line width>, <Line color>)
	Function	Draws a rectangle. Draws between (<X coordinate 1>, <Y coordinate 1>) and (<X coordinate 2>, <Y coordinate 2>).
d_circle	Statement example	d_circle(<X coordinate>, <Y coordinate>, <Radius>, <Line type>, <Line width>, <Line color>)
	Function	Draws a circle.
d_ellipse	Statement example	d_ellipse(<X coordinate 1>, <Y coordinate 1>, <X coordinate 2>, <Y coordinate 2>, <Line type>, <Line width>, <Line color>)
	Function	Draws an ellipse. Draws between (<X coordinate 1>, <Y coordinate 1>) and (<X coordinate 2>, <Y coordinate 2>).
p_rectangle	Statement example	p_rectangle(<X coordinate 1>, <Y coordinate 1>, <X coordinate 2>, <Y coordinate 2>, <Line type>, <Line width>, <Line color>, <Pattern>, <Figure color>, <Background color>)
	Function	Draws a rectangle (color fill). Draws between (<X coordinate 1>, <Y coordinate 1>) and (<X coordinate 2>, <Y coordinate 2>).
p_circle	Statement example	p_circle(<X coordinate>, <Y coordinate>, <Radius>, <Line type>, <Line width>, <Line color>, <Pattern>, <Figure color>, <Background color>)
	Function	Draws a circle (color fill).

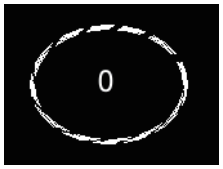
Property	Description	
p_ellipse	Statement example	p_ellipse(<X coordinate 1>, <Y coordinate 1>, <X coordinate 2>, <Y coordinate 2>, <Line type>, <Line width>, <Line color>, <Pattern>, <Figure color>, <Background color>)
	Function	Draws an ellipse (color fill). Draws between (<X coordinate 1>, <Y coordinate 1>) and (<X coordinate 2>, <Y coordinate 2>).
d_textout	Statement example	d_textout(<X coordinate 1>, <Y coordinate 1>, <X coordinate 2>, <Y coordinate 2>, <Character X scale factor>, <Character Y scale factor>, <Character attribute>, <Character color>, <Character shadow color>, "<Text>")
	Function	Draws a text.
d_commentout	Statement example	d_commentout(<X coordinate 1>, <Y coordinate 1>, <X coordinate 2>, <Y coordinate 2>, <Character X scale factor>, <Character Y scale factor>, <Character attribute>, <Comment group No.>, <Comment No.>)
	Function	Displays a comment in a comment group. Draws between (<X coordinate 1>, <Y coordinate 1>) and (<X coordinate 2>, <Y coordinate 2>).
screen_draw	Statement example	screen_draw(<screen draw flag>)
	Function	Specifies the area in which drawing is executed by the free figure drawing function. If the drawing area is not specified by screen_draw(), the drawing is executed in the object area. The object area is equivalent to the area indicated by the coordinates shown in the data list of GT Designer3.

■Argument

Argument	Description
<X coordinate 1>, <Y coordinate 1> <X coordinate 2>, <Y coordinate 2>	Specifies the area (specified by two points of (<X coordinate 1>, <Y coordinate 1>) and (<X coordinate 2>, <Y coordinate 2>)) in which a figure is drawn in dots. The setting range is -32768 to 32767. (0, 0) indicates the coordinates of the upper left position of the object. Example) Ellipse (d_ellipse())  To specify the coordinates with a rectangle (d_rectangle), ellipse (d_ellipse), rectangle (filled) (p_rectangle), or ellipse (filled) (p_ellipse), the following patterns are available. • (<X coordinate 1>, <Y coordinate 1>) = Upper left, (<X coordinate 2>, <Y coordinate 2>) = Lower right • (<X coordinate 1>, <Y coordinate 1>) = Lower right, (<X coordinate 2>, <Y coordinate 2>) = Upper left • (<X coordinate 1>, <Y coordinate 1>) = Upper right, (<X coordinate 2>, <Y coordinate 2>) = Lower left • (<X coordinate 1>, <Y coordinate 1>) = Lower left, (<X coordinate 2>, <Y coordinate 2>) = Upper right
<X coordinate 1>, <Y coordinate 1>	Specifies the coordinates of the center of a figure in dots. The setting range is -32768 to 32767.
<Radius>	Specifies the radius of a circle in dots. The setting range is 1 to 32767.
<Line type>*1	Selects a line type from those shown below. 
<Line width>*1	Specifies a line width in dots. The setting range is 0 to 7. The setting value 0 is available only for the color fill functions (p_rectangle, p_circle, p_ellipse). When 0 is specified, the line is filled without the frame line displayed.
<Line color>, <Character color>, <Figure color>, <Character shadow color>	Specifies the color of a line, character, figure, background, and background of a character with the corresponding color code number. The setting range is 0 to 255. The correspondence between colors and color code numbers is the same as that in the specification of figure colors by GT Designer3.
<Pattern>	Select a color fill pattern from the following. The setting range is 1 to 37. 0: Use is prohibited. 1 to 37: Check the image of each pattern in the setting dialog of each object and figure.

Argument	Description
<Character X scale factor>, <Character Y scale factor>	Specifies the scale factor of a character. It specifies 0 or 1 to 8. If 0 is specified, the scale factor is 0.5. 
<Character attribute>	Specifies the display attribute of a character. The explanation below assumes binary notation. When specifying in a script, change the representation meeting the applicable notation of the script, such as hexadecimal number.  • b1 to b0: Select the display type of a character. These bits can be used only for d_textout(). Specify 00 (fixed) for other functions. 00: Standard 01: Bold 10: Shadow 11: Engrave • b2: 0 (fixed) • b4 to b3: Select the alignment position of character strings in multiple lines. 00: Left justification 01: Right justification 10: Center justification 11: Use prohibited  • b8 to b5: 00 (fixed) • b9: Specify a font size. 0: 16 dots 1: 12 dots • b11 to b10: Specify a Kanji region. 00: Japanese 01: Chinese (Simplified) 10: Chinese (Traditional) 11: Korean • b12: Specify a font. 0: Mincho 1: Gothic
<Character>	Specify a character sting in up to 256 characters.
<Comment group No.>	Specify a comment group No. The setting range is 1 to 500.
<Comment No.>	Specify a comment No. The setting range is 0 to 32767.
<Screen draw flag>	Specifies the area in which drawing is executed by the free figure drawing function. 0: After the execution of screen_draw(), the figure is drawn in the object area. The object area is equivalent to the area indicated by the coordinates shown in the data list of GT Designer3. 1: After the execution of screen_draw(), the figure is drawn within the whole screen.

*1 To use the circle and ellipse drawing functions (d_circle(), d_ellipse(), p_circle(), p_ellipse()), set the solid line for the line type and 1 dot for the line width.
When a line type other than the solid line is specified for the line type and 2 dots or more is specified for the line width, the circle or ellipse is drawn as shown below.
Drawing example) d_ellipse() with the dashed line for the line type and 4 dots for the line width specified



■Number of figures that can be drawn

Up to 1280 figures can be drawn by one object script.

If the number of drawn figures exceeds 1280, the oldest figure is deleted and a new figure is drawn.

The maximum number of the text figures drawn with the d_textout or d_commentout function differs depending on the number of lines in the text figure.

Ex.

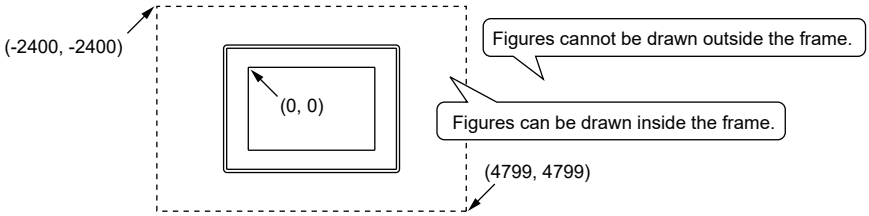
One-line text: 1280 figures

Two-line text: 640 figures

■Drawing area

Provided that the upper left corner of the GOT screen is (0, 0), you can draw figures in the area inside (-2400, -2400) to (4799, 4799).

If coordinates outside (-2400, -2400) to (4799, 4799) are specified, the figure will not be drawn.



Precautions

- The figure drawn by the free figure drawing function is designed to appear in the front on a layer.
- Even if the blink is set for the object using the free figure drawing function, the figure drawn by the function does not blink.
- If a figure drawn by the free figure drawing function overlaps with an object, the overlapping part of the figure or other objects may disappear.
- When the trigger type is other than [View Change] or [Synchronize Display Trigger], the object itself is overwritten and replaced with the figure drawn by the free figure drawing function. Therefore, the figure drawn by the free figure drawing function may be cleared.
- When using the free figure drawing function, set a trigger type other than [Key Code Input], [Input Fixation], or [Device Writing].

Drawing is not performed when the trigger type is set to [Key Code Input], [Input Fixation], or [Device Writing].
In this case, no error occurs.

Functions (screen control)

These functions redraw or delete a figure displayed by the free figure drawing function.

The functions (redraw_object(), clear_object()) are executed while the object script is executed.

The function (redraw_screen()) is executed at the timing of the screen being drawn after the execution of the object script.

Operator	Description	
redraw_object*1*2	Statement example	redraw_object()
	Function	Performs the following operations of the object itself. 1. Deletes a figure which was drawn using the free figure drawing function. 2. Redraws the object itself.
clear_object*2	Statement example	clear_object()
	Function	Deletes the following items. • Data (such as numbers or characters) the object itself has displayed • Figure drawn by the free figure drawing function of the object script for the object itself If the object is the type that can have a plate color set, such as an object for numerical display, character string display, and comment display, only the frame figure is displayed. If the object is other than those described above, the object itself is deleted.
redraw_screen*1	Statement example	redraw_screen()
	Function	Performs the following operations for the whole screen. 1. Deletes all figures drawn using the free figure drawing function. 2. Redraws all objects. The screen may flicker as it is displayed again.

*1 This function does not work when active (enabling or disabling the display) is set to 0 in the object property of the object itself.

*2 This function does not work when [Shape] is set to [None] in the [Style] tab for the switch whose [Text Type] is [Text].

Precautions

When the screen is refreshed by "redraw_screen", the following graph objects will be displayed again after the display is cleared.

- Trend graph
- Scatter graph

69.2.7 Available data and how to express the data

The following describes available data used for object scripts and how to express the data.
For object scripts, the data and the form of the expression that are available for project scripts and screen scripts are also available, as well as the data and the form of the expression described in this section.
For the data and form of the expression of project scripts and screen scripts, refer to the following.
☞ Page 2352 Available data and how to express the data

Object internal variables

Object internal variables are variables that have been allocated to inputs or outputs of objects.
Using object internal variables enables the following operations.

- Allowing the script to process monitor device values referring to them ($$)
- Changing the display on the object to the process result of the script ($V)
- Assigning the process result of the script with a touch switch ($W)

For reading and writing object internal variables, refer to the following.
☞ Page 2449 Object internal variables (input object script)
☞ Page 2450 Object internal variables (display object script)
☞ Page 2450 Object internal variables (switch object script)

Ex.
In a numerical display operation, when adding the device value (GD0) to the monitor device value ($$) and then displaying the result on the object ($V)
$V=$$+[w:GD0];

Point

Automatic adjustment to the decimal point
When the automatic adjustment to the decimal point is enabled, a value is processed as shown below.

- When a value is assigned to $V

The value which has been assigned to $V is assigned to the object as is.

- When a value is assigned to $W

The value which has been assigned to $W is assigned to the monitor device as is.
Example) In a numerical input operation, when the automatic adjustment to the decimal point is enabled and 2 is set for [Decimal Point]
When $V=1; is executed, 1.00 is displayed for the numerical input.
When "$W=1;" is executed, 1 is written to the monitor device.

Object property

With object properties, you can refer to or change (assign) the settings of an object drawn with GT Designer3.
For details on object properties, refer to the following.

• Reference and substitution

☞ Page 2451 Object property

• Setting method

☞ Object script tab of each object

■Format

When using an object property in a script, prefix the object property name with "my.".

Ex.

Changing the text color and blinking display according to the security level of the object

```
if(5<=my.security){ //If the object security level is 5 or higher
  my.text_color=224; //Changes the text color to red (224).
  my.blink=1; //Lets the display of the object blink at a low speed.
}else{ //If the object security level is lower than 5
  my.text_color=255; //Changes the text color to white (255).
  my.blink=0; //Does not let the object blink.
}
```

Precautions

• Properties that are not valid unless enabled by GT Designer3 settings

Among the setting items of objects, those which become valid only by GT Designer3 settings (such as the settings which are not valid unless another item is selected) cannot be referred or changed by the object properties.

• The numerical display or comment display movement on the GOT when a level is overlaid

If the objects are drawn with GT Designer3 so that the level can be overlaid, the numerical display or comment display correctly works only when it can be moved within the range of the level display.
If you move the numerical display or the comment display out of the area of the level display, the numerical display or the comment display cannot be displayed normally.
If you draw the numerical display or comment outside the area of the level display with GT Designer3, the numerical display or comment display is not superimposed even it is moved into the area of the level display.

Temporary device area

Object scripts can use temporary device areas in addition to the controller devices.
Temporary device areas are variables used when there is a delay in writing (assignment delay) to the controller devices or when device areas are required for operations, repetitive processing, and others.
For the temporary device areas, refer to the following.

☞ Page 2365 Available temporary device areas and how to express the temporary device areas

For the assignment delay, refer to the following.

☞ Page 2368 Assignment delay
☞ Page 2371 Assignment delay when an offset is specified

69.3 How to use object scripts

GT37 SoftGOT3000

This section explains how to use object scripts.

69.3.1 Setting procedure

The following shows the procedure for setting a script.

1. Configure the script settings with GT Designer3, such as the data type and trigger type.

☞ Page 2403 [Script] dialog

2. Create or edit a script with the script editor.

When you have edited a script with a commercially available text editor, import a locally saved text file.

☞ Page 2415 [Edit Script(script name)] dialog

3. Check the syntax of the script with GT Designer3.

☞ Page 2415 [Edit Script(script name)] dialog

If an error is detected, return to step 1 and correct the script.

A general C language compiler is also usable to simulate the operation.

☞ Page 2484 Simulation using a general C language compiler or debugger

4. Write the project from the personal computer to the GOT with GT Designer3.

☞ Page 408 Transferring data to the GOT

5. Start monitoring.

If the script runs properly, the creation of the script is complete.

When the script does not operate properly, return to step 1 and correct the script.

69.3.2 Operation

This section explains the functions and execution of object scripts.

Functions of object scripts

■Object internal variables

Object internal variables are variables that have been allocated to inputs or outputs of objects.

By using object internal variables, the monitor device values of an object can be operated and the operation result can be displayed on the object.

For details on the object internal variables, refer to the following.

- Types of object internal variables

☞ Page 2449 Control structure of object scripts

- Usage

☞ Page 2461 Object internal variables

■Object property

With object properties, you can read or change (write) the settings for an object drawn with GT Designer3.

The settings for the object on the screen can be changed automatically if the object property is changed during monitoring.

For details on object properties, refer to the following.

- Setting method

☞ Page 2462 Object property

- Expression

☞ Page 2451 Object property

■Free figure drawing function

Figures (such as a line, rectangle, circle, and character), comments, and others can be drawn on an object.

For information on how to set the free figure drawing function, refer to the following.

☞ Page 2456 Functions (free figure drawing)

To use the free figure drawing function, execute object scripts under the operating conditions other than those described below.

If the free figure drawing function is executed under the following operating conditions, no figure is drawn and no error occurs.

- When a key code is input
- When the input is confirmed
- When writing to a device is executed

■Screen control function

The screen control function controls redrawing or erasing of screens and objects.

For the screen control function types, refer to the following.

☞ Page 2460 Functions (screen control)

■Script user ID

A script user ID is a number that is set for an object script.

If the object script causes an error, the script user ID of the object script is stored in the GOT special register (GS).

By setting different user IDs for all object scripts, you can identify the object script with an error.

■Operating conditions of scripts

The execution of an object script can be tied to an input to the object, display on the object, or a touch on a touch switch, according to the object script type.

It is also possible for object scripts to be executed under conditions other than those described above.

For the operating conditions of object scripts, refer to the following.

☞ Page 968 Trigger type settings

Operating condition

Object scripts are executed when all the following conditions are satisfied.

- The screen where the object is placed has been displayed on the GOT.

The screen on which the target object is arranged must be displayed under the condition that the GOT and controller are connected.

- The object has been displayed and operating.

The target object must be displayed or in operation.

- The target object has no restriction imposed by the security function of the GOT.

When the security function is used, the object with the object script set at a high security level must not be restricted while it is on display or in operation.

- The operating condition of the script is satisfied.

The object script can be executed when the operating condition set for it is satisfied.

For details on the script operating conditions, refer to the following.

☞ Page 968 Trigger type settings

■Functions that cannot be set simultaneously

When any of the following items is set, object scripts cannot be used.

- [Data Operation] for [Operation Type]
- [Store Memory] for scatter graphs

■Object status

You cannot execute an object script when it is in either of the following statuses.

- The object is not displayed or operated because it has been extending off the screen.
- The object is not displayed or operated because no monitor device has been set.

■Executing an object script for the same window from multiple sources

When the same window is displayed from multiple sources including an overlap window, a superimpose window, and the overlay screen function, only the object script for the window that is displayed first is executed.

Even if the window displayed first is deleted, the object scripts for the windows displayed after the first one are not executed.

If, in the above situation, the same window is newly displayed from an overlap window, a superimpose window, or the overlay screen function, the object scripts for the multiple windows which are the same and have been already displayed are not executed but the object script for the new window is executed.

■Operating conditions of scripts when the trigger type is [Device Writing]

When [Trigger Type] of the object script is [Device Writing], [$W (Write Device)] must be set.

Otherwise, the script is not executed.

■Execution timing when [Trigger Type] is set to [ON Sampling] or [OFF Sampling]

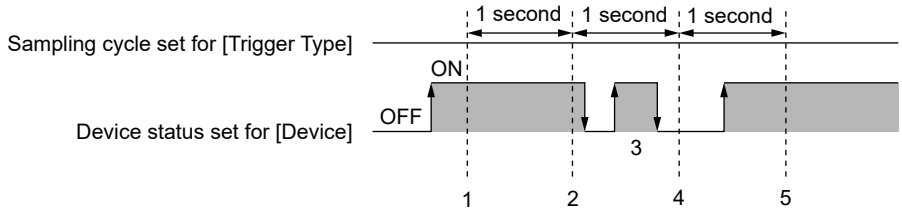
• Execution timing

The device status is checked in the sampling cycles set for [Trigger Type].

If the condition is not satisfied at the timing of the check, the object script is not executed.

Ex.

When [Trigger Type] is set to [ON Sampling] and the sampling cycle is set to 1 second



The object script is executed at timing 1.

The object script is executed at timing 2.

At timing 3, the object script is not executed because the timing does not match the end of one cycle and thus the condition is not checked.

At timing 4, the object script is not executed because the device condition is not satisfied.

The object script is executed at timing 5.

• Triggering the sampling cycle count when the device condition is satisfied

The sampling cycle set for [Trigger Type] does not depend on the device status. (The sampling cycle does not change whether the device is turned on or off.)

To start the cyclic sampling, configure the settings as shown below.

1. Set [Rise] or [Fall] for [Trigger Type].
2. Create a sequence program that turns the trigger device on or off when the object script should be executed.

■Execution timing when [Sampling], [ON Sampling], or [OFF Sampling] is set

The sampling cycle count starts and is reset at the following timing.

- When the object itself is displayed (in screen switching, a security level change, or other possible cases)
- When the language switches
- When the station No. switches
- When the security level changes

After the execution of any of the events above, the object script is executed at the start timing of the sampling cycle.

Execution unit

Object scripts are executed one by one.

Even if the trigger conditions of multiple scripts are satisfied, the scripts do not run simultaneously.

Execution order

Object scripts are executed in numerical order of object ID.

Execution status

Object scripts are processed as shown below according to the script status.

Script status	Processing
Waiting for turn	• Waits for the processing turn according to the execution order. • When the turn has come, the script enters the "Waiting for execution" status.
Waiting for execution	• The processing differs depending on the operating condition. Satisfied: The script enters the "Execution" status. Not satisfied: The script enters the "Waiting for turn" status, and the next script enters the "Waiting for execution" status.
Execution	• When the script has ended, the processing result is written to the PLC CPU and the script enters the "Waiting for turn" status. The next script enters the "Waiting for execution" status. • If a fatal error occurs, execution of the script stops and the script enters the "Stop" status.*1 • If an execution error occurs, execution of the script stops and the script enters the "Waiting for turn" status.*1
Stop	• The "Stop" status is held until the error history is cleared.

*1 For details on fatal errors and execution errors, refer to the following.
☞ Page 2488 Errors and their corrective actions during script execution on the GOT (object script)

Interruption

In any of the following cases, the corresponding script being processed stops and an error occurs.

- In division, when the divisor becomes 0 and the calculation becomes zero division
- When [BCD16], [BCD32], or [BCD64] is selected as the script data type but the monitor device value cannot be handled as BCD
- When [BCD16], [BCD32], or [BCD64] is selected as the script data type but the operation result is out of the BCD range
- When a controller device is specified as the write destination device of a while statement

For the available data type and data range, refer to the following.
☞ Page 2352 Available data and how to express the data
For details on the while statement, refer to the following.
☞ Page 2335 Control statement
For troubleshooting when the script processing is interrupted, refer to the following.
☞ Page 2484 Troubleshooting

Precautions

In the following cases, you may get an unexpected result of processing.

- When a format other than [BCD16], [BCD32], or [BCD64] is selected as the script data type but a constant out of the selected format range is included
- When [Unsigned BIN16] or [Unsigned BIN32] is selected as the script data type but a negative constant is included
- When a format other than [Real(32bit)] or [Real(64bit)] is selected as the script data type but a decimal is used as a constant

For details on data types, refer to the following.
☞ Page 2461 Available data and how to express the data

Number of writable devices

If the following type of devices is the target for writing, a single script can perform a single write operation of the type.

- Controller device

If the following types of devices are the targets for writing, a single script can perform the write operation of each type.

- GOT bit register (GB)
- GOT data register (GD)
- GOT special register (GS)
- Temporary device area (TMP)

Operation while data are being written to devices by an object script

• The execution process of the script is interrupted temporarily, and resumed after the completion of the write operation.

Interrupted operation restarts after the completion of write device.

• The display on the object is updated after the completion of the write operation.

Object display is updated after the completion of write device.

• Inputting a value by touching the object on the screen is enabled after the completion of the write operation.

Input is enabled after the completion of write device.

69.4 Program example

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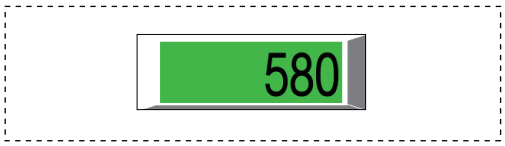
This section explains program examples of object scripts.

69.4.1 Data operation by a numerical input script

Operation

Data operation is performed when a device value is written.

Screen image	Operation of each object
	Numerical input: When the written value is 0 or greater, the written value is multiplied by 10. When the written value is less than 0, the written value is set to 5000.

Program example

Item	Description	
Data type	Signed 16-bit binary	
Trigger type	When the input is confirmed	

Script	[w:TMP0] = $W;
	if([w:TMP0] >= 0) {
	$W = [w:TMP0] * 10;
	}else{
	$W = 5000;
	}
		//Stores the written value to the temporary area.
		//If the written value is 0 or greater,
		//the written value is multiplied by 10.
		//If the written value is less than 0,
		//the written value is set to 5000.

69.4.2 To start blinking after set time

Operation

A displayed value (monitored device value) blinks when it does not change for set time.

This operation is useful when urging the use of caution is necessary after set time.

Screen image	Operation of each object
	Numerical display: If the displayed value (monitored device value) does not change for 5 seconds, the characters blink in red.

Program example

Item	Description
Data type	Signed 16-bit binary
Trigger type	Cycle (1 second)

Item	Description	

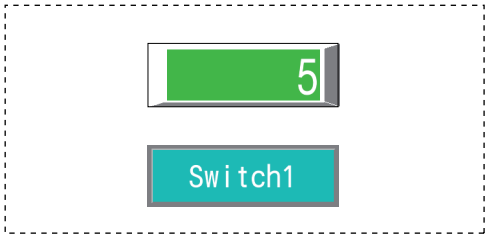
Script	if([w:TMP0002] != $$){
	[w:TMP0001] = 5;
	[w:TMP0002] = $$;
	my.blink = 0;
	my.text_color = 0xFF;
	}else{
	if([w:TMP0001] > 0){
	[w:TMP0001] = [w:TMP0001] - 1;
	if([w:TMP0001] == 0){
	my.text_color = 0xE0;
	my.blink = 3;
	}
	}else{
	[w:TMP0001] = 5;
	}
	}
	redraw_object();
		//If the displayed value changes,
		//starts counting (sets time (seconds) when the blinking starts).
		//saves the displayed value.
		//sets so that blinking is not performed.
		//changes the character color to white.
		//If the displayed value does not change,
		//If the count is not 0,
		//starts counting down.
		//If counting down to 0,
		//changes the character color to red.
		//starts high-speed blinking.
		//Lets the object reflect this property.

69.4.3 Showing and hiding objects for input and touch operations

Operation

At screen switching, objects for specific input and touch operations are switched between being displayed and hidden according to the operating conditions.

Since objects used for input and touch operations are displayed only when necessary, this operation is useful for avoiding a wrong input.

Screen image	Operation of each object
	Numerical input: If M0 turns on, the object for numerical input is displayed. If M0 turns off, the object for numerical input is hidden. Switch 1 switch: If M1 turns on, the touch switch is displayed. If M1 turns off, the touch switch is hidden.

Monitor screen setting

Object name	Type	Setting item		Setting
Numerical input	Numerical input	Display condition, operating condition	Trigger type	ON
			Trigger device	M0
Switch 1	Switch	Operating condition	Trigger type	ON
			Trigger device	M1

Program example

Numerical input

Item	Description	
Data type	Signed 16-bit binary	
Trigger type	Ordinary	

Script	if([b:M0] == ON){
	my.active = 1;
	redraw_object();
	}else{
	my.active = 0;
	clear_object();
	}
		//Enables an update.
		//Updates the object.
		//Disables an update.
		//Clears the object.

Switch 1 switch

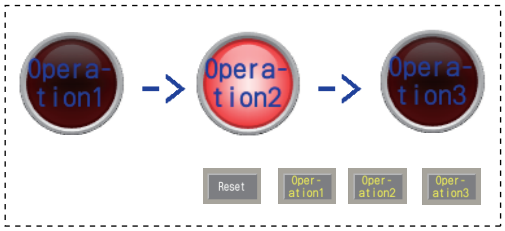
Item	Description	
Data type	Signed 16-bit binary	
Trigger type	Ordinary	

Script	if([b:M1] == ON){
	  my.active = 1;
	  redraw_object();
	}else{
	  my.active = 0;
	  clear_object();
	}
		//Enables an update.
		//Updates the object.
		//Disables an update.
		//Clears the object.

69.4.4 Drawing according to a device value

Operation

A figure is drawn on the screen according to a device value.

Screen image	Operation of each object
	Operation 1 lamp: Turns on if D500 is 1 and a circle is drawn around the lamp. Operation 2 lamp: Turns on if D500 is 2 and a circle is drawn around the lamp. Operation 3 lamp: Turns on if D500 is 3 and a circle is drawn around the lamp. Reset switch Resets operation 1 to operation 3. Operation 1 switch to operation 3 switch: Starts operation 1 to operation 3.

Monitor screen setting

Object name	Type	Setting item		Setting
Operation 1 lamp	Word lamp	Device		D500
		Text		Operation 1
		Condition 0	Lamp color	Red
		Condition 1	Range	$V<1
			Lamp color	Black
Operation 2 lamp	Word lamp	Device		D500
		Text		Operation 2
		Condition 0	Lamp color	Red
		Condition 1	Range	$V<2
			Lamp color	Black
Operation 3 lamp	Word lamp	Device		D500
		Text		Operation 3
		Condition 0	Lamp color	Red
		Condition 1	Range	$V<3
			Lamp color	Black
Reset switch	Word switch	Device		D500
		Set value (fixed)		0
		Text		Reset
Operation 1 switch	Word switch	Device		D500
		Set value (fixed)		1
		Text		Operation 1
Operation 2 switch	Word switch	Device		D500
		Set value (fixed)		2
		Text		Operation 2

Object name	Type	Setting item	Setting
Operation 3 switch	Word switch	Device	D500
		Set value (fixed)	3
		Text	Operation 3

Program example

Operation 1 lamp

Item	Description	
Data type	Signed 16-bit binary	
Trigger type	Ordinary	

Script	if ([w:D500] == 1){
	screen_draw(1);
	d_circle(57, 52, 65, 0, 2, 224);
	}else{
	screen_draw(1);
	d_circle(57, 52, 65, 0, 2, 255);
	}
		//If D500 is 1,
		//sets the drawing area to the whole screen.
		//draws a circle.
		//If D500 is not 1,
		//sets the drawing area to the whole screen.
		//deletes a circle. (draws a circle in the same color as the background color.)

Operation 2 lamp

Item	Description	
Data type	Signed 16-bit binary	
Trigger type	Ordinary	

Script	if ([w:D500] == 2){
	screen_draw(1);
	d_circle(57, 52, 65, 0, 2, 224);
	}else{
	screen_draw(1);
	d_circle(57, 52, 65, 0, 2, 255);
	}
		//If D500 is 2,
		//sets the drawing area to the whole screen.
		//draws a circle.
		//If D500 is not 2,
		//sets the drawing area to the whole screen.
		//deletes a circle. (draws a circle in the same color as the background color.)

Operation 3 lamp

Item	Description	
Data type	Signed 16-bit binary	
Trigger type	Ordinary	

Script	if ([w:D500] == 3){
	screen_draw(1);
	d_circle(57, 52, 65, 0, 2, 224);
	}else{
	screen_draw(1);
	d_circle(57, 52, 65, 0, 2, 255);
	}
		//If D500 is 3,
		//sets the drawing area to the whole screen.
		//draws a circle.
		//If D500 is not 3,
		//sets the drawing area to the whole screen.
		//deletes a circle. (draws a circle in the same color as the background color.)

69.5 [Object Script Symbol] dialog

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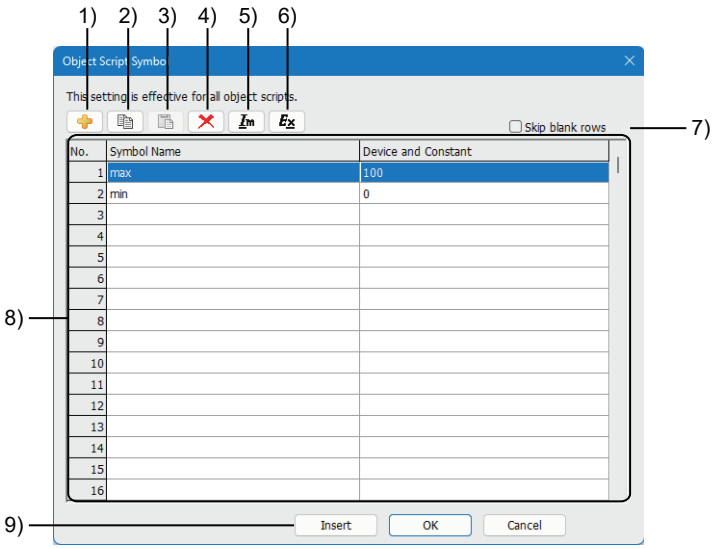
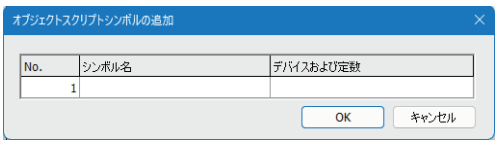
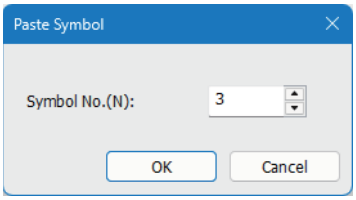
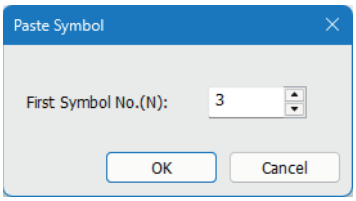
This dialog is used for setting an object script.
Set symbols that can be commonly used for the object script.
Select [Common] → [Script] → [Object Script Symbol] from the menu to display the setting dialog.
Register character strings as script symbols.
Devices and constants in a script can be substituted by the registered character strings.
This setting is enabled only for the object script.



Item		Description
1)	[Add] button	This button is available when [Skip blank rows] is selected. Displays the [Add Object Script Symbol] dialog.  • [No.] Set a number for the script symbol to be added. The setting range is [1] to [10000]. • [Symbol Name] Set a character string to be described in a script. Up to 32 alphanumeric characters and symbols can be entered. However, the symbol # is not usable. • [Device and Constant] Set a device or constant for the symbol name. Up to 32 alphanumeric characters and symbols can be entered.
2)	[Copy] button	Copies the setting from the row selected in the script symbol list. Multiple rows can be copied at once. When [Skip blank rows] is selected, the settings in the hidden rows are also copied. The copied settings can be pasted to another script symbol setting dialog.

Item			Description
3)	[Paste] button		Pastes the copied setting to the selected row. When [Skip blank rows] is selected, the [Paste Symbol] dialog is displayed.  When pasting a setting to one row  When pasting settings to multiple rows • [Symbol No.] Set a symbol number for the destination row. The setting range is [1] to [10000]. • [First Symbol No.] Set a symbol number for the first destination row. The setting range is [1] to [10000].
4)	[Delete] button		Deletes the setting from the selected row. You can delete the settings from multiple rows at one time.
5)	[Import] button		Displays the [Open] dialog. Read the script symbol settings from a Unicode text file or CSV file.
6)	[Export] button		Displays the [Save As] dialog. Save the script symbol settings to a Unicode text file or CSV file. If multi-language characters are used in the settings, use the Unicode text file format. For the precautions for using a Unicode text file or CSV file, refer to the following. ☞ Page 3668 Precautions for using CSV file ☞ Page 3669 Precautions for using Unicode text file
7)	[Skip blank rows]		Displays only the rows in which script symbols have been registered.
8)	Script symbol list	[No.]	Lists the registered script symbols. [Symbol Name] and [Device and Constant] are editable. It is a row number. Clicking a row number selects the relevant row. The following operations can be performed on the selected row. • Copy: Ctrl + C • Paste: Ctrl + V • Delete: Delete
		[Symbol Name]	Set a character string to be described in a script. Up to 32 characters can be entered. However, the symbol # is not usable.
		[Device and Constant]	Set a device or constant for the symbol name. Up to 32 characters can be entered.
9)	[Insert] button		This item appears when this dialog is brought up from the [Edit Script(script name)] dialog. Inserts the selected script symbol into the script edit area in the [Edit Script(script name)] dialog.

Point

Editing method of scripts

You can edit scripts in the exported Unicode text file or CSV file using spreadsheet software and other software.

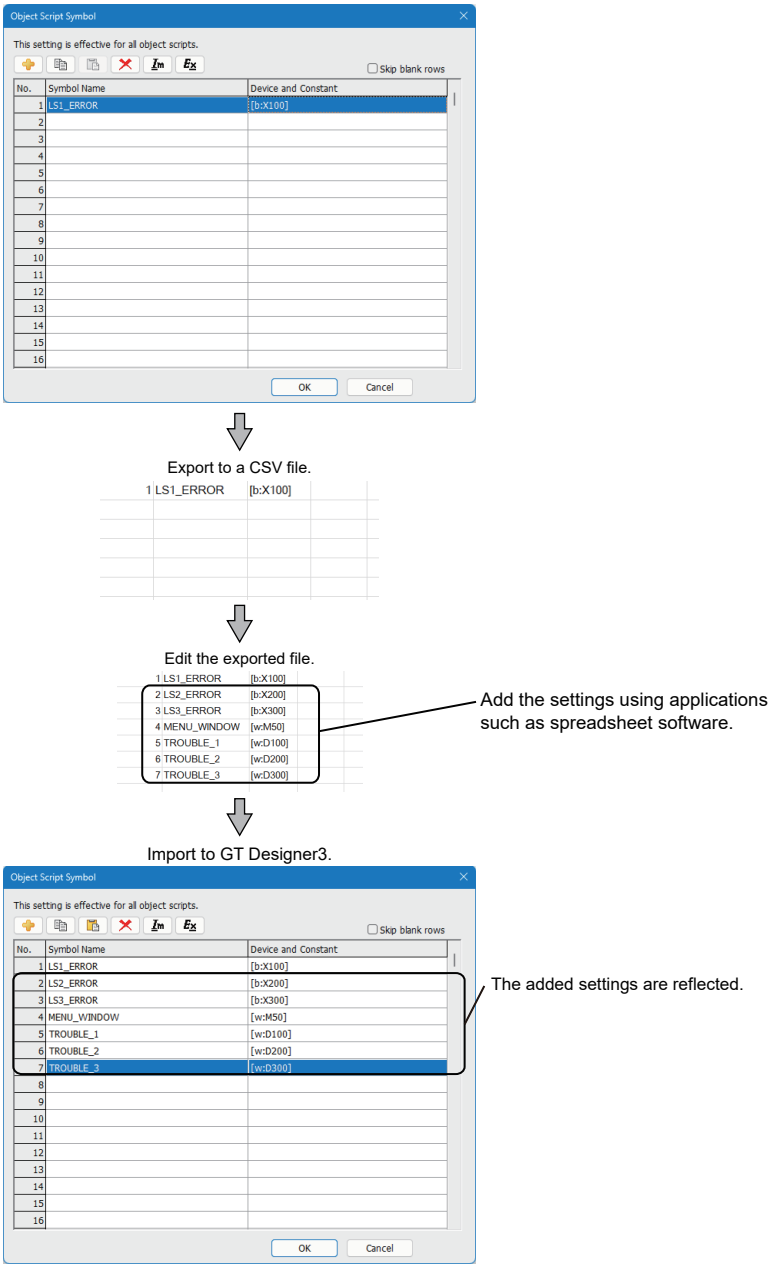
The edited Unicode text file or CSV file can be imported and read to GT Designer3.

Editing the exported file

When 0 is set at the beginning of the symbol name, device, or constant, 0 at the beginning may be deleted depending on the function of the application for editing files (spreadsheet software and other software).

Pay attention to the above for editing exported files.

Example) When script settings are exported into and imported from a CSV file



69.6 How to set object scripts

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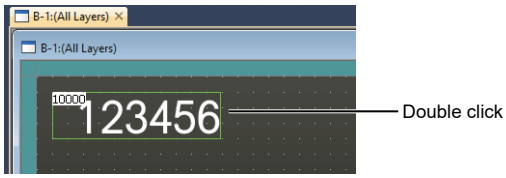
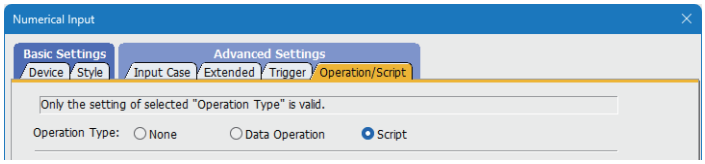
☞ Page 2476 [Script] or [Operation/Script] tab for input object scripts
☞ Page 2478 [Script] or [Operation/Script] tab for display object scripts
☞ Page 2480 [Script] tab for switch object scripts

1. Double-click an arranged object to display the setting dialog.



2. Open the [Script] or [Operation/Script] tab to configure the setting for using the object script.



[Operation/Script] tab of the numerical input

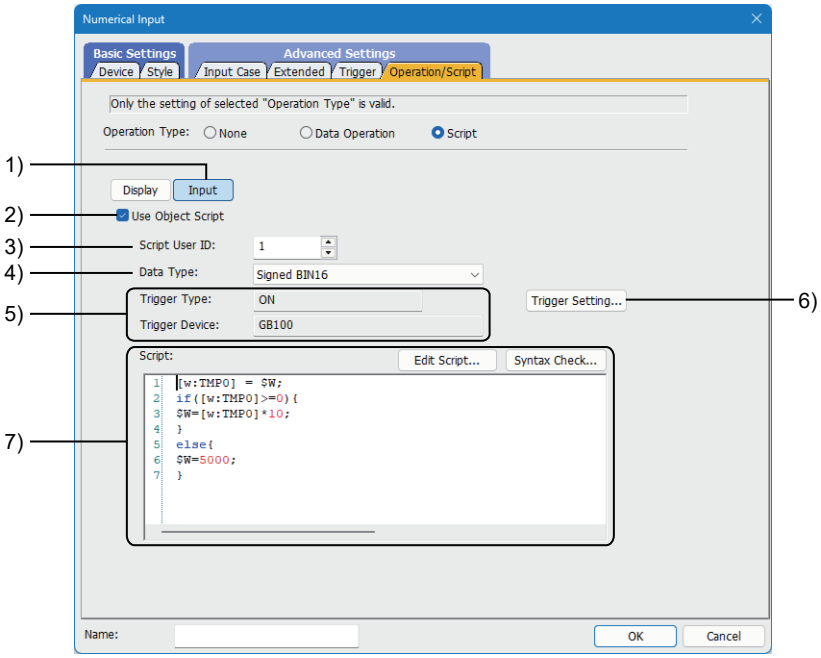
The setting of the [Script] or [Operation/Script] tab differs depending on the object type.
For details on the setting of the [Script] or [Operation/Script] tab for each object, refer to the following.

Object script type	Target object	Reference
Input object script	Numerical input, text input	☞ Page 2476 [Script] or [Operation/Script] tab for input object scripts
Display object script	Bit lamp, word lamp, numerical display, numerical input, text display, text input, date display, time display, comment display, parts display, frame animation, line graph, trend graph, bar graph, band graph, pie graph, scatter graph, historical trend graph, graphical meter, level object, panel meter	☞ Page 2478 [Script] or [Operation/Script] tab for display object scripts
Switch object script	Touch switch ([Switch] only)	☞ Page 2480 [Script] tab for switch object scripts

Precautions

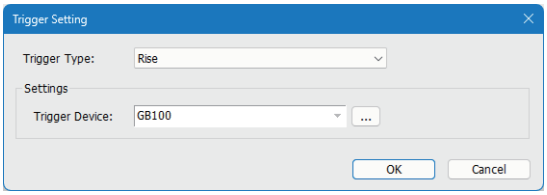
If you close the setting dialog clicking the [OK] button after changing numerical input for numerical display or character string input for character string display, the input object script settings are cleared.
Only the display object script settings remain.

69.6.1 [Script] or [Operation/Script] tab for input object scripts



Screen for setting a numerical input object script

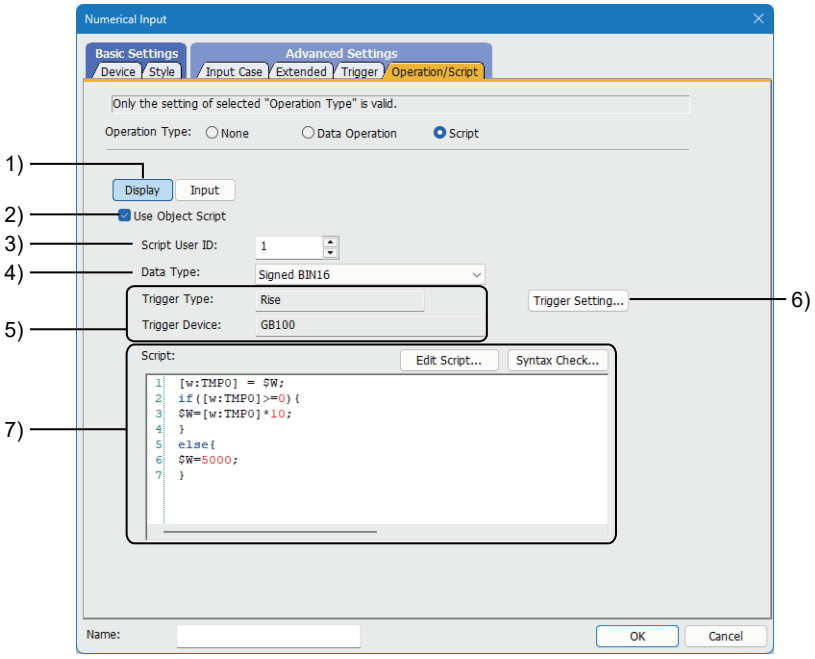
Item		Description
1)	[Input] button	To set an input object script, click the [Input] button. Then, the setting items of the input object script are displayed. This button is displayed only for the following objects. • [Numerical Input] • [Text Input]
2)	[Use Object Script]	Enables the object script.
3)	[Script User ID]	Specify a script user ID number. The setting range is [1] to [65535]. For each object script, specify a different script user ID number. Doing so enables you to identify the error-generated object script.
4)	[Data Type]	Select the data type of the script to be executed. The following shows selectable items. • [Signed BIN16] • [Unsigned BIN16] • [Signed BIN32] • [Unsigned BIN32] • [Signed BIN64] • [Unsigned BIN64] • [BCD16] • [BCD32] • [BCD64] • [Real(32bit)] • [Real(64bit)]
5)	[Trigger Type], [Trigger Device]	Displays the operating condition and trigger device of the script which are set in the [Trigger Setting] dialog.

Item			Description
6)	[Trigger Setting] button		Click the [Trigger Setting] button to display the [Trigger Setting] dialog.  • [Trigger Type]*1 Select the operating condition of the script. The following shows selectable items. [Ordinary] [ON] [OFF] [Rise] [Fall] [Rise/Fall] [Sampling] [ON Sampling] [OFF Sampling] [Key Code Input] [Input Fixation] • [Settings] Set the device that triggers the script to run. (When [ON], [OFF], [Rise], [Fall], [Rise/Fall], [ON Sampling], or [OFF Sampling] is selected in [Trigger type]) When [Sampling], [ON Sampling], or [OFF Sampling] is selected, set the cycle in units of seconds. The setting range is [1] to [3600].*2
7)	[Script]	[Edit Script] button	Displays the content of the script. You can edit the script. After editing the script, click the [Syntax Check] button to check the syntax. The editor is opened to edit the script. ☞ Page 2415 [Edit Script(script name)] dialog
		[Syntax Check] button	Checks the syntax of the displayed script. The available device type and device range are also checked. ☞ Page 2487 Messages to be displayed at the syntax check

*1 For the precautions for selecting [ON], [OFF], [Sampling], [ON Sampling], or [OFF Sampling], refer to the following.
☞ Page 2465 Execution timing when [Trigger Type] is set to [ON Sampling] or [OFF Sampling]
☞ Page 2465 Execution timing when [Sampling], [ON Sampling], or [OFF Sampling] is set

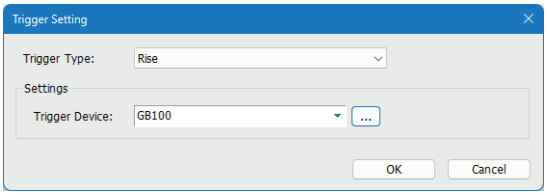
*2 When the trigger condition is satisfied, the count of the cycle starts.
When [ON Sampling] is set and the cycle is set to 10 seconds, the script is executed 10 seconds after the device set in [Trigger Device] turns on. (When [Trigger Device] turns off within 10 seconds, the script is not executed.)
When the satisfied trigger condition becomes unsatisfied, the count of the cycle time is reset.
☞ Page 968 Trigger type settings

69.6.2 [Script] or [Operation/Script] tab for display object scripts



Screen for setting a display object script for numerical input

Item		Description
1)	[Display] button	To set an input object script, click the [Display] button. Then, the setting items of the input object script are displayed. This button is displayed only for the following objects. • [Numerical Input] • [Text Input]
2)	[Use Object Script]	Enables the object script.
3)	[Script User ID]	Specify a script user ID number. The setting range is [1] to [65535]. For each object script, specify a different script user ID number. Doing so enables you to identify the error-generated object script.
4)	[Data Type]	Select the data type of the script to be executed. The following shows selectable items. • [Signed BIN16] • [Unsigned BIN16] • [Signed BIN32] • [Unsigned BIN32] • [Signed BIN64] • [Unsigned BIN64] • [BCD16] • [BCD32] • [BCD64] • [Real(32bit)] • [Real(64bit)]
5)	[Trigger Type], [Trigger Device]	Displays the operating condition and trigger device of the script which are set in the [Trigger Setting] dialog.

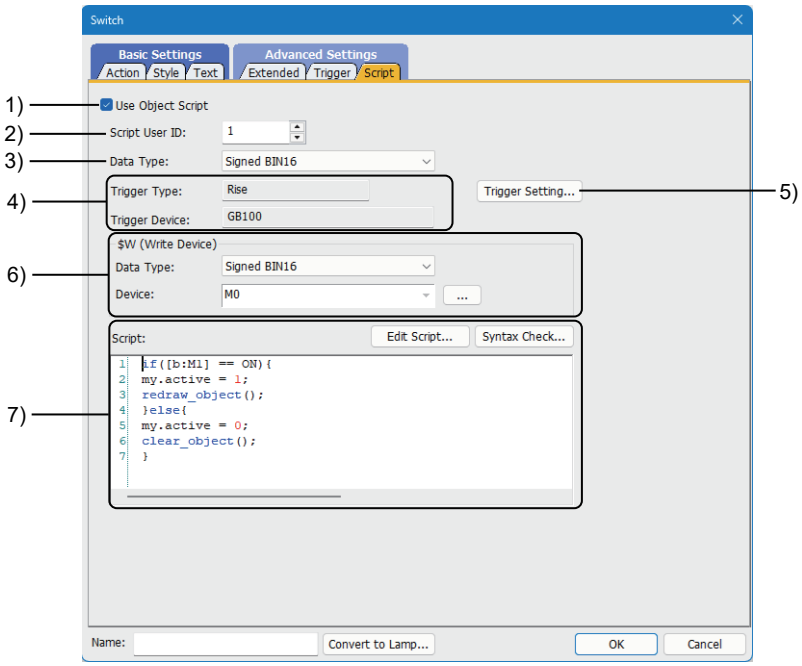
Item			Description
6)	[Trigger Setting] button		Click the [Trigger Setting] button to display the [Trigger Setting] dialog.  • [Trigger Type]*1 Select the operating condition of the script. The following shows selectable items. [Ordinary] [ON] [OFF] [Rise] [Fall] [Rise/Fall] [Sampling] [ON Sampling] [OFF Sampling] [View Change] [Synchronize Display Trigger]*2 • [Settings] Set the device that triggers the script to run. (When [ON], [OFF], [Rise], [Fall], [Rise/Fall], [ON Sampling], or [OFF Sampling] is selected in [Trigger type]) When [Sampling], [ON Sampling], or [OFF Sampling] is selected, set the cycle in units of seconds. The setting range is [1] to [3600].*3
7)	[Script]	[Edit Script] button	Displays the content of the script. You can edit the script. After editing the script, click the [Syntax Check] button to check the syntax. The editor is opened to edit the script. ☞ Page 2415 [Edit Script(script name)] dialog
		[Syntax Check] button	Checks the syntax of the displayed script. The available device type and device range are also checked. ☞ Page 2487 Messages to be displayed at the syntax check

*1 For the precautions for selecting [ON], [OFF], [Sampling], [ON Sampling], or [OFF Sampling], refer to the following.
☞ Page 2465 Execution timing when [Trigger Type] is set to [ON Sampling] or [OFF Sampling]
☞ Page 2465 Execution timing when [Sampling], [ON Sampling], or [OFF Sampling] is set

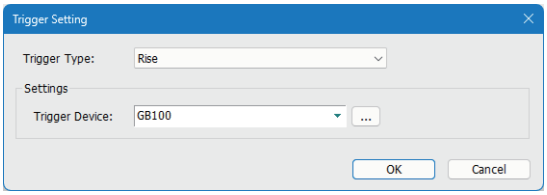
*2 This item is unavailable for the bit lamp, word lamp, date display, time display, graphical meter, and panel meter.

*3 When the trigger condition is satisfied, the count of the cycle starts.
When [ON Sampling] is set and the cycle is set to 10 seconds, the script is executed 10 seconds after the device set in [Trigger Device] turns on. (When [Trigger Device] turns off within 10 seconds, the script is not executed.)
When the satisfied trigger condition becomes unsatisfied, the count of the cycle time is reset.
☞ Page 968 Trigger type settings

69.6.3 [Script] tab for switch object scripts



Item		Description
1)	[Use Object Script]	Enables the object script.
2)	[Script User ID]	Specify a script user ID number. The setting range is [1] to [65535]. For each object script, specify a different script user ID number. Doing so enables you to identify the error-generated object script.
3)	[Data Type]	Select the data type of the script to be executed. The following shows selectable items. • [Signed BIN16] • [Unsigned BIN16] • [Signed BIN32] • [Unsigned BIN32] • [Signed BIN64] • [Unsigned BIN64] • [BCD16] • [BCD32] • [BCD64] • [Real(32bit)] • [Real(64bit)]
4)	[Trigger Type], [Trigger Device]	Displays the operating condition and trigger device of the script which are set in the [Trigger Setting] dialog.

Item			Description
5)	[Trigger Setting] button		Click the [Trigger Setting] button to display the [Trigger Setting] dialog.  • [Trigger Type]*1 Select the operating condition of the script. The following shows selectable items. [Ordinary] [ON] [OFF] [Rise] [Fall] [Rise/Fall] [Sampling] [ON Sampling] [OFF Sampling] [Device Writing] • [Settings] Set the device that triggers the script to run. (When [ON], [OFF], [Rise], [Fall], [Rise/Fall], [ON Sampling], or [OFF Sampling] is selected in [Trigger type]) When [Sampling], [ON Sampling], or [OFF Sampling] is selected, set the cycle in units of seconds. The setting range is [1] to [3600].*2
6)	[$W (Write Device)]	[Data Type]	To assign the value processed in the script to the device with the touch switch, set the target device. Select the data type of the object internal variable $W (write device).
		[Device]	Set the object internal variable $W (write device). ☞ Page 833 Device, label, and tag settings
7)	[Script]	[Edit Script] button	Displays the content of the script. You can edit the script. After editing the script, click the [Syntax Check] button to check the syntax. The editor is opened to edit the script. ☞ Page 2415 [Edit Script(script name)] dialog
		[Syntax Check] button	Checks the syntax of the displayed script. The available device type and device range are also checked. ☞ Page 2487 Messages to be displayed at the syntax check

*1 For the precautions for selecting [ON], [OFF], [Sampling], [ON Sampling], or [OFF Sampling], refer to the following.
☞ Page 2465 Execution timing when [Trigger Type] is set to [ON Sampling] or [OFF Sampling]
☞ Page 2465 Execution timing when [Sampling], [ON Sampling], or [OFF Sampling] is set

*2 When the trigger condition is satisfied, the count of the cycle starts.
When [ON Sampling] is set and the cycle is set to 10 seconds, the script is executed 10 seconds after the device set in [Trigger Device] turns on. (When [Trigger Device] turns off within 10 seconds, the script is not executed.)
When the satisfied trigger condition becomes unsatisfied, the count of the cycle time is reset.
☞ Page 968 Trigger type settings

69.7 Relevant settings

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Configure the relevant settings in addition to the specific settings for object scripts as required.
The following shows the functions that are available by configuring the relevant settings.

69.7.1 GOT internal devices

☞ Page 3581 GOT special register (GS)

Function	Setting item
Notifying that an object script error has occurred.	GS80.b0
Notifying that a BCD error has occurred.	GS80.b7
Notifying that a zero division error has occurred.	GS80.b8
Notifying that a communication error (including access to an invalid device) has occurred.	GS80.b12
Storing the start device number of the devices where the latest error record is stored. The devices range from GS82 to GS113.	GS81
Storing the object script error records (including script user IDs and error codes).	GS82 to GS113
Storing the device number of the device where the latest script execution record is stored. The device is in the range of GS115 to GS145.	GS114
Storing the script user IDs of the executed scripts.	GS115 to GS145
Storing a number showing the GOT data registers (GD) where the latest error record is stored. The GD devices are specified with GS432 and GS434.	GS159
Storing a number showing the GOT data registers (GD) where the latest script execution record is stored. The GD devices are specified with GS436 and GS438.	GS160
Notifying occurrence of an error while the integer-real number conversion is processed.	GS260.b14
Notifying the completion of the integer-real number conversion.	GS260.b15
Storing the error code of an error that occurred while the integer-real number conversion is processed.	GS261
Clearing object script error records as shown below. • GS80.b0, b7, b8, and b12 store 0. • GS81 stores -1. • GS82 to GS113 store 0.	GS387.b0
Re-executing the object script aborted due to an error.	GS387.b1
Setting the monitoring time for one script.	GS388
Controlling whether to run an object script upon screen switching or other applicable processes. The applicable script trigger types are as follows. • [Rise] • [Fall] • [Rise/Fall]	GS389
Storing the detailed object script error records.	GS432 GS434 GS435
Storing the detailed object script execution records.	GS436 GS438 GS439
Executing an integer-real number conversion.	GS460 GS461 GS462 GS463 GS464

Monitoring time of an object script

Specify the monitoring time of an object script with GS388.
If a script does not end after a lapse of the specified monitoring time, the script is aborted.
The setting range is 1 second to 300 seconds. (Units of 1 second)
If the set value falls outside this range, 10 seconds are assumed.
If error code 1015 is output during script execution, specify a longer monitoring time with GS388.

Running an object script upon an applicable process

Use GS389 to set whether to run an object script upon screen switching or other applicable processes.

When GS389 stores 0: Runs the script upon an applicable process.

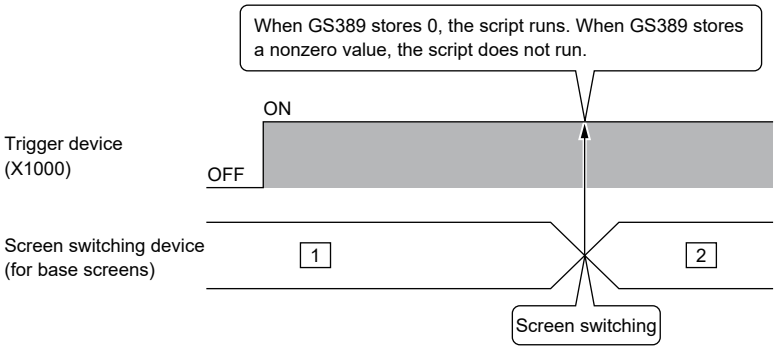
When GS389 stores a nonzero value: Does not run the script upon an applicable process.

The object script, which has the following trigger type setting, is targeted for executing the initial operation.

Trigger type	When running a script upon an applicable process
[Rise]	When the trigger device is on, the script runs upon screen switching or other applicable processes.
[Fall]	When the trigger device is off, the script runs upon screen switching or other applicable processes.
[Rise/Fall]	When the trigger device is on or off, the script runs upon screen switching or other applicable processes.

Ex.

When the object script ([Trigger Type]: [Rise], [Trigger Device]: X1000) is set for a switch on base screen 2



The following shows the processes upon which a script runs.

Process	Remarks
When the GOT is powered on or when the GOT returns from offline	—
Screen switching	The script set for the destination screen runs.
Security switching*1	—
Language switching*1	—
System language switching*1	—
Station No. switching*1	If a station No. switching device is set for a screen type, the script set for a screen of this type runs.
Buffer memory unit No. switching	—
When object script "redraw_screen()" is executed	—

*1 When [Perform script initial operation (screen/object) only when switching screens] is deselected on the [Option] tab in the [Script] dialog, the script runs upon the process.
☞ Page 2410 [Option] tab

69.8 Troubleshooting

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69.8.1 Simulation using a general C language compiler or debugger

Since scripts and C language are similar, you can simulate the scripts by making minor corrections using a general C language compiler or debugger.
Complicated scripts including many control statements can be debugged easily by using them.
The following shows the procedure to simulate scripts using a general C language compiler or debugger.

1. Export an object script created with GT Designer3 to a text file or Unicode text file (extension.txt) and change it into a C language source file (extension.c).

- Change of the file extension: text1.txt → text1.c

2. Open the C language source file in a commercially-available text editor and create a frame with "main(){}".
Describe "#include<stdio.h>" at the beginning.

- Additional description of "main" and "include"

Additional description→	#include<stdio.h>
Additional description→	main(){
	[w:TMP0001] = 0;
	while([w:TMP0000] < [w:D100]){
	if(!(([w:TMP0000] - 1900)%4)){
	[w:TMP0001] = [w:TMP0001] + 1;
	my.x = 200;
	my.scale_max[0] = 500;
	••• (Omitted) •••
	[w:TMP0010] = [w:TMP0002] + [w:TMP0003] + [w:TMP0004] -1;
	$W = [w:TMP0010]%7;
Additional description→	}

3. Change the description method of devices (variables, properties) from the one for scripts to the one for C language.

Using the following definitions to change the variables into the one for C language enables you to smoothly restore them into the GOT scripts.

Definition 1 [w: → _w

Definition 2 [b: → _b

Definition 3] → __

Definition 4 my. → my_

Definition 5 $W → device_write

Definition 6 $V → device_value

Definition 7 $$ → monitor_device

Definition 8 $K → key_input

Definition 9 [→ _

Using the batch replacement function of a commercially-available text editor may be useful for the change as well.

- Change of the description method of devices (variables)

	#include<stdio.h>
	main(){
Description change→	_wTMP0001__= 0;
Description change→	while(_wTMP0000__<_wD100__){
Description change→	if(!((_wTMP0000__-1900)%4)){
Description change→	_wTMP0001__=_wTMP0001__+1;
Description change→	my_x = 200;
Description change→	my_scale_max_0__ = 500;
	••• (Omitted) •••
Description change→	_wTMP0010__=_wTMP0002__+_wTMP0003__+_wTMP0004__-1;
Description change→	device_write = _wTMP0010__%7;
	}

4. For C language, variables to be used must be defined in advance.

Since only one data type can be set for one script, the same variable type of C language must be set for all the variables.

The following shows the data type of scripts.

If [BCD16], [BCD32], or [BCD64] is selected as the script data type, you cannot perform a simulation using the general C language compiler or debugger.

Data type of scripts	Variable type
Signed 16-bit binary	short
Unsigned 16-bit binary	unsigned short
Signed 32-bit binary	long
Unsigned 32-bit binary	unsigned long
Signed 64-bit binary	long long
Unsigned 64-bit binary	unsigned long long
BCD16	-
BCD32	
BCD64	
Real number (32 bits)	float
Real number (64 bits)	double

Use an appropriate property according to the property range.

Assign an internal variable whose variable type is the same as the data type of the script.

- Variable definition (auto variable declaration)

```
                    #include<stdio.h>
Description change→ void main(void){
Addition →            unsigned short _wTMP0000__;
Addition →            unsigned short _wTMP0001__;
Addition →            unsigned short _wTMP0002__;
Addition →            unsigned short _wD100__;
Addition →            short my_c;
Addition →            unsigned sort my_scale_max_0__;
Addition →            unsigned sort device_write;
                       ••• (Omitted) •••
                      _wTMP0001__=0;
                      while(_wTMP0000__<_wD100__){
                            if(!((_wTMP0000__-1900)%4)){
                              _wTMP0001__=_wTMP0001__+1;
                              my_x = 200;
                              my_scale_max_0__ = 500;
                       ••• ( Omitted) •••
                      _wTMP0010__=_wTMP0002__+_wTMP0003__+_wTMP0004__-1;
                      device_write = _wTMP0010__%7;
                    }
```

5. Perform a simulation with the general C language compiler or debugger.

The step run, variable watch, and other functions specific to the debugger can be used.

Precautions

- If [BCD16], [BCD32], or [BCD64] is selected as the script data type, you cannot perform a simulation using the general C language compiler or debugger.
- Since the set, rst, alt, bmov, and fmov statements are dedicated for scripts, you cannot perform a simulation using a general C language compiler or debugger.

Use assignment of 1 or 0 instead of the set or rst statement.

- When you use the system define (ON, OFF description) of the GOT as they are, the define for it must be added to the C language source file.
- The assignment delay which occurs when a script is executed on the GOT does not occur during a simulation using a general C language compiler or debugger.

Therefore, when performing a simulation, take a possibility of occurrence of assignment delays into consideration.

- By applying the measures above, a new program created using C language then debugged can be used as a GOT script.
- Offset device specification cannot be made in the above debugging process.

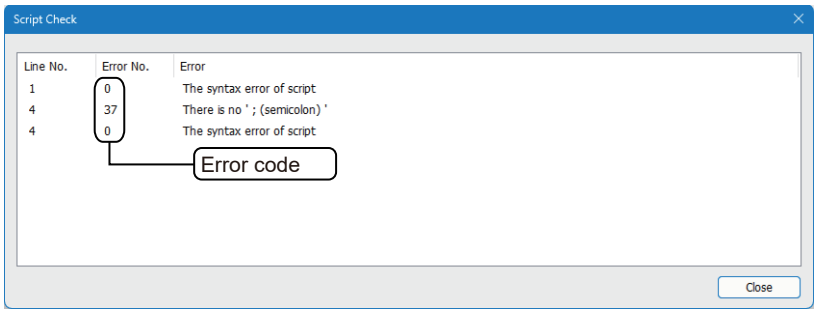
If you debug the offset specified device, it is necessary to set the corresponding device in advance.

69.8.2 Messages to be displayed at the syntax check

When you execute a syntax check, the [Script Check] dialog appears to display the error codes of the errors detected in a script.

For details on the error codes, refer to the following.

☞ Page 2436 List of syntax error codes



Some errors cannot be detected by the syntax check.

If any error which cannot be detected by the syntax check exists in the script, the error is detected when the script is executed on the GOT.

For the errors for the execution of a script and the corrective action on the GOT, refer to the following.

☞ Page 2488 Errors and their corrective actions during script execution on the GOT (object script)

69.8.3 Errors and their corrective actions during script execution on the GOT (object script)

The following shows how to check the errors and their error codes on the GOT.

Item	Description
Checking for the occurrence of an error	Check for the occurrence of the following errors. • Script error • BCD error • Zero division error • Communication error (including access to an invalid device) ☞ Page 2488 Checking the error status (object script)
Checking an error record	Check the following information of an error. • Script user ID • Error code ☞ Page 2489 Checking an error record (object script)
Checking a detailed error record	Check the following information of an error. • Error code • Script type • Screen number • Object ID • Screen type • Number of the displayed base screen ☞ Page 2490 Checking a detailed error record (object script)
Clearing error records	Turn on GS387.b0 to clear object script error records as shown below. • GS80.b0, b7, b8, and b12 store 0. • GS81 stores -1. • GS82 to GS113 store 0.
Re-executing the object script aborted due to an error	Turn on GS387.b1 to re-execute the object script aborted due to an error.

To check device values, use objects (including a numerical display and lamp).

Precautions

While the GOT displays any screen other than a user-created screen, the following operations are not available.

- Clearing object script error data or executing an object script stopped due to an error by using the Object Script Common Control (GS387)

☞ Page 3632 Object Script Common Control (GS387)

Perform the above operations while the GOT displays a user-created screen.

Checking the error status (object script)

The following GOT internal devices notify the error status.

GOT internal devices		Description
GS80	b0	Turns on when a script error occurs.
	b7	Turns on when a BCD error occurs.
	b8	Turns on when a zero division error occurs.
	b12	Turns on when a communication error (including access to an invalid device) occurs.

To reset each bit of GS80, turn on GS387.b0.

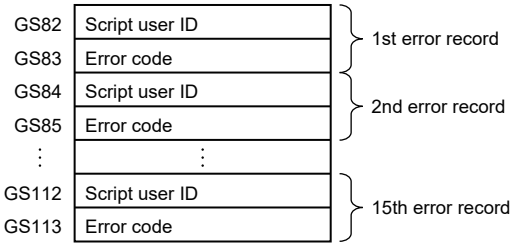
Checking an error record (object script)

When an error occurs, the error record is stored into the devices ranging from GS82 to GS113.

GS81 stores the start device number of the devices where the latest error record is stored.

To clear error records, turn on GS387.b0.

The following shows the operation of the relevant GOT internal devices.

GOT internal devices	Description
GS81	Stores the start device number of the devices where the latest error record is stored. The devices range from GS82 to GS113. The value of GS81 changes as follows each time an error occurs. -1 → 82 → 84 → 86 → 88 → ... → 112 (The next loop will start from 82.) Example) Relationship between the value of GS81 and the storage location of the latest error record • When GS81 stores 82, the latest error information is stored in GS82 and GS83. • When GS81 stores 112, the latest error information is stored in GS112 and GS113. Turning on GS387.b0 resets GS81 to -1.
GS82 to GS113	Stores the following information when a script error occurs. • Script number • Error code Two word devices are used for one error.  If the number of errors is 17 or more, the error records are overwritten starting from the oldest one.

Checking a detailed error record (object script)

The specified GOT data registers (GD) store error records.

These GD devices are specified with the following GOT special registers (GS).

- GS432: Specify the start device number of the GD devices to store error records.
- GS434: Specify the maximum number of error records.

Ex.

When GS432 (start device number) stores 1000, and GS434 (number of error records) stores 5

GD1000 to GD1007	··· 1st error record
GD1008 to GD1015	··· 2nd error record
GD1016 to GD1023	··· 3rd error record
GD1024 to GD1031	··· 4th error record
GD1032 to GD1039	··· 5th error record

Eight word devices are used for one error.

For details on an error record, refer to the following.

☞ Page 2491 Details on an error record (object script)

To start storing error records, turn on GS435.b0.

You can identify the devices storing the latest error record based on the values of GS432 and GS159.

The following shows the operation of the relevant GOT internal devices.

- Write device

GOT internal devices	Description
GS159	Stores a number showing the devices where the latest error record is stored. Data type: Signed binary Initial value: -1 Calculate the start device number of the devices storing the latest error record by using the following expression. • GS432 + (GS159 × 8) Example) When GS432 stores 1000, and GS159 stores 5 1000 + (5 × 8) = 1040 In this case, GD1040 to GD1047 (eight GD devices) store the latest error record.

- Read device

GOT internal devices		Description
GS432		Specify the start device number of the GD devices to store error records. Data type: Unsigned binary
GS434		Specify the maximum number of error records. Data type: Unsigned binary The setting range is 0 to 5000. If the device stores 0, no error record will be stored. If the device stores 5001 or more, up to 5000 records will be stored. GS435.b1 specifies the operation to be performed when the number of errors has exceeded the maximum number of error records.
GS435	b0	When this bit is turned on, storing error records starts. When this bit is turned off, storing error records ends.
	b1	Specifies the operation to be performed when the number of errors has exceeded the maximum number of error records specified with GS434. When this bit is turned on, storing error records stops. When this bit is turned off, storing error records continues by overwriting the oldest record.
	b11	When this bit is turned on, the records of warnings (that do not abort a script) are not stored.

Details on an error record (object script)

The following shows an example of how an error record is stored in eight word devices starting from GD1000.

Storage device	Item	Description
GD1000	Error code	Error code of an error. For the error details and corrective actions, refer to the following. ☞ Page 2492 List of error codes during script execution (object script)
GD1001	Script type	Number that shows a script type. The device stores any of the following values according to the script type. • 10: Display object script or switch object script • 11: Input object script
GD1002	Screen number	Number of the screen where the object is placed.
GD1003	Object ID	ID of the object with a script error.
GD1004	Use prohibited	The device stores 0.
GD1005	Screen type	Type of the screen where the object is placed. The device stores any of the following values according to the screen type. • 200: Base screen • 210: Superimpose window 1 • 220: Superimpose window 2 • 310: Overlap window 1 • 320: Overlap window 2 • 330: Overlap window 3 • 340: Overlap window 4 • 350: Overlap window 5 • 400: User-created key window • 500: Dialog window substituted for a system message If the script is set for a called screen, the device stores a value by adding a number to the number showing the calling screen type. • When a base screen is called, 1 is added. • When a window screen is called, 2 is added. Example) When a window screen is called from overlap window 3 330 + 2 = 332
GD1006	Number of the displayed base screen	Number of the base screen that is displayed when the script runs.
GD1007	Use prohibited	The device stores 0.

List of error codes during script execution (object script)

Error code	Error category[*1]	Description	Corrective action
1002	Fatal error	Initialization of objects related to the object scripts failed when a screen is switched.	• Reduce the number of monitor devices in object scripts and base screens. • Reduce the number of object scripts presently executed.
1006	Fatal error	An error occurred in reading data from the device that always collects the data.	Correct the description of the device whose data is out of the specified device range.
1011	Execution error	Writing to a device failed.	Correct the description of the relevant script.
1014	Fatal error	The expression is too complicated to process.	Simplify the script operation expression by dividing it or by using other appropriate methods.
1015	Fatal error	The object script does not end although the object script monitoring time has elapsed.	• Check whether the script has gone into an endless loop. • Increase the value of the Object Script Monitoring Time (GS388).
1016	Fatal error	The access to a GOT internal device failed.	• Correct the operation for the GOT internal device, script, and sequence program. • Correct the description of the relevant script.
1017	Fatal error	The script where an error is detected by the syntax check of GT Designer3 was executed.	Correct the script where a syntax error is detected in GT Designer3.
1018	Fatal error	The access failed since a temporary device area outside the range has been specified.	Specify the temporary device area within the range.
1019	Fatal error	An 8-bit or 64-bit device is specified for an indirect device.	Correct the indirect device description in the relevant script.
1020	Fatal error	Writing to multiple devices was attempted in a single script.	Correct the number of write devices to the available number.
1021	Fatal error	An invalid device type was detected.	Correct the device to the one that can be used by the script.
1022	Fatal error	Temporary device areas for 32-bit data are used for the script of 64-bit data.	Correct the common settings of the relevant script.
1031	Fatal error	Reference of the internal variable was impossible.	Correct the internal valuable according to the object, object script, trigger type that allow referring to the internal variable.
1032	Fatal error	Assignment to the internal variable was impossible.	Correct the internal valuable according to the object, object script, trigger type that allow assigning to the internal variable.
1039	Fatal error	The script where an error is detected by the syntax check of GT Designer3 was executed.	Correct the script where a syntax error is detected in GT Designer3.
1045	Fatal error	Setting that is not in the object was referred to or changed.	Refer to or change the property that can be set by the object itself.
1057	Fatal error	The script where an error is detected by the syntax check of GT Designer3 was executed.	Correct the script where a syntax error is detected in GT Designer3.
1060			
1070	Fatal error	An error occurs in the trigger device setting.	Correct the trigger device setting.
1108	Execution error	The operation result cannot be handled in BCD data.	• Check the setting of the monitored device. • Correct the operation of the device which could not process BCD data.
1109	Execution error	The operation result was outside the BCD data range.	Correct the operation of the device whose BCD data is outside the range.
1110	Execution error	Zero division was executed.	Correct the zero division of the script.
1111	Execution error	A 64-bit operation overflow has occurred.	Check the description of the relevant script and correct it.
1131	Execution error	Reference of the internal variable was impossible.	Correct the internal variable to be referred to.
1141	Execution error	A value outside the property range was set.	Correct the assigned value of the property.
1142	Execution error	For the element number of the property that specifies an array, a value outside the range was set.	Correct the element number of the property that specifies an array.
1143	Execution error	• The object font was set to a font other than UD font or UD font (7-segment) to change the text size property. • A value outside the range was set to change the text size property.	Correct the assigned value of the property.

Error code	Error category*1	Description	Corrective action
1144	Execution error	The magnification value that exceeds the frame figure was set to change the text size property.	Correct the value assigned to the property.
1246	Warning	The number of decimal places specified for a numerical display or numerical input object cannot be read or written using an object property in the script.	The number of decimal places specified with a device cannot be read or written using an object property in the script. Correct the relevant setting.
1251	Warning	Either of the coordinate or radius is incorrect.	Correct the arguments of the free figure drawing function.
1252	Warning	Any of the line type, line width, or line color is incorrect.	Correct the arguments of the free figure drawing function.
1253	Warning	Any of the pattern, shape color, or background color is incorrect.	Correct the arguments of the free figure drawing function.
1254	Warning	Any of the character attribute, character color, character shade color, character size, character string code, or character string length is incorrect.	Correct the arguments of the free figure drawing function.
1255	Warning	No comment is assigned to the comment No. of the specified comment group No.	Correct the arguments of the free figure drawing function.
1256	Warning	The stored amount of drawing data exceeded the allowable capacity.	Reduce the number of functions.

*1 For details on the error categories, refer to the following.
☞ Page 2494 Error category of object scripts and operation at error occurrence

Error category of object scripts and operation at error occurrence

■Error category

The following shows the categories of the object script error codes. When an error occurs, the object script operates as follows.

Error category	Object script operations at error occurrence
Fatal error	The object script stops. Even if the trigger condition is satisfied again, the object script does not operate. For the object script where the error has occurred, drawing the object and writing to a device stop.*1
Execution error	The object script stops. If the trigger condition is satisfied again, the object script operates. For the object script where the error has occurred, drawing the object and writing to a device stop.*1 If this error occurs repeatedly, the subsequent errors are not written into GS82 to GS113.
Warning	The object script does not stop.

*1 The operation of the object with the object script where the error has occurred varies according to the set operating condition.

Operating condition of object script	Monitor function of object	Write function of object
When a key code is input When the input is confirmed When writing to a device is executed	Operates	Stops
When the view changes Synchronize Display Trigger Ordinary	Stops	Operates
Other than above	Stops	Stops

■Script which has been executed before an error occurs

Reflection of the written value and execution of a function differ depending on the target device to be written and function to be executed.

Writing to a device

If writing to a device is executed by the script which has been executed before an error occurs, the written value is reflected as follows.

○: Written value is reflected. —: Written value is not reflected.

Target device to be written	Operation at error occurrence
GOT internal devices (GB and GD)	○
GOT internal devices (Other than GB and GD)	—
Controller device	—
Temporary device area	○

Executing a function:

If a function is executed by the script which has been executed before an error occurs, the function is executed as follows.

○: Function is executed. —: Function is not executed.

Target function to be written or executed	Operation at error occurrence
Free figure drawing	—
Object update function	○
Object display clear function	○
Screen update function	○
Internal variable	—
Property	○

69.8.4 How to check an object script execution record

The following shows how to check a script execution record on the GOT.

Item	Description
Checking a script execution record	Check the script user ID of an executed script. ☞ Page 2495 How to check an object script execution record
Checking a detailed script execution record	Check the following information on an executed script. • Script type • Screen number • Object ID • Screen type • Number of the displayed base screen ☞ Page 2495 Checking a detailed script execution record (object script)

To check device values, use the device monitor function or objects (including a numerical display and lamp).

Checking an object script execution record

When a script runs, the script user ID is stored into the devices GS115 to GS145.

GS114 stores the device number of the device where the latest script execution record is stored.

The following shows the operation of the relevant GOT internal devices.

GOT internal devices	Description
GS114	Stores the device number of the device where the latest script execution record is stored. The device is in the range of GS115 to GS145. The value of GS114 changes as follows each time a script runs. -1 → 115 → 116 → 117 → 118 → ... → 145 (The next loop will start from 115.)
GS115 to GS145	Store the script user IDs of the executed scripts. One word device is used for one script. If the number of the executed scripts is 32 or more, the script execution records are overwritten starting from the oldest one.

Checking a detailed script execution record (object script)

The specified GOT data registers (GD) store script execution records.

These GD devices are specified with the following GOT special registers (GS).

- GS436: Specify the start device number of the GD devices to store script execution records.
- GS438: Specify the maximum number of script execution records.

Ex.

When GS436 (start device number) stores 1000, and GS438 (number of execution records) stores 5

GD1000 to GD1007	··· 1st execution record
GD1008 to GD1015	··· 2nd execution record
GD1016 to GD1023	··· 3rd execution record
GD1024 to GD1031	··· 4th error record
GD1032 to GD1039	··· 5th error record

Eight word devices are used for one script execution record.

For details on a script execution record, refer to the following.

☞ Page 2496 Details on an execution record (object script)

To start storing script execution records, turn on GS439.b0.

You can identify the devices storing the latest script execution record based on the values of GS436 and GS160.

The following shows the operation of the relevant GOT internal devices.

• Write device

GOT internal devices	Description
GS160	Stores a number showing the devices where the latest script execution record is stored. Data type: Signed binary Initial value: -1 Calculate the start device number of the devices storing the latest script execution record by using the following expression. • GS436 + (GS160 × 8) Example) When GS436 stores 1000, and GS160 stores 5 1000 + (5 × 8) = 1040 In this case, GD1040 to GD1047 (eight GD devices) store the latest script execution record.

• Read device

GOT internal devices		Description
GS436		Specify the start device number of the GD devices to store script execution records. Data type: Unsigned binary
GS438		Specify the maximum number of script execution records. Data type: Unsigned binary The setting range is 0 to 5000. If the device stores 0, no script execution record will be stored. If the device stores 5001 or more, up to 5000 records will be stored. GS439.b1 specifies the operation to be performed when the number of the executed scripts has exceeded the maximum number of script execution records.
GS439	b0	When this bit is turned on, storing script execution records starts. When this bit is turned off, storing script execution records ends.
	b1	Specifies the operation to be performed when the number of the executed scripts has exceeded the maximum number of script execution records specified with GS438. When this bit is turned on, storing script execution records stops. When this bit is turned off, storing script execution records continues by overwriting the oldest record.

Details on an execution record (object script)

The following shows an example of how a script execution record is stored in eight word devices starting from GD1000.

Storage device	Item	Description
GD1000	Script type	Number that shows a script type. The device stores any of the following values according to the script type. • 10: Display object script or switch object script • 11: Input object script
GD1001	Screen number	Number of the screen where the object is placed.
GD1002	Object ID	ID of the object where a script runs.
GD1003	Use prohibited	The device stores 0.
GD1004	Screen type	Type of the screen where the object is placed. The device stores any of the following values according to the screen type. • 200: Base screen • 210: Superimpose window 1 • 220: Superimpose window 2 • 310: Overlap window 1 • 320: Overlap window 2 • 330: Overlap window 3 • 340: Overlap window 4 • 350: Overlap window 5 • 400: User-created key window • 500: Dialog window substituted for a system message If the script is set for a called screen, the device stores a value by adding a number to the number showing the calling screen type. • When a base screen is called, 1 is added. • When a window screen is called, 2 is added. Example) When a window screen is called from overlap window 3 330 + 2 = 332
GD1005	Number of the displayed base screen	Number of the base screen that is displayed when the script runs.
GD1006	Use prohibited	The device stores 0.
GD1007	Use prohibited	The device stores 0.

PART 13 Device data transfer

70 Transferring data between devices ([Device Data Transfer])

70 Transferring data between devices ([Device Data Transfer])

GT37 SoftGOT3000

☞ Page 2499 Overview of the device data transfer function
☞ Page 2500 Specifications of device data transfer
☞ Page 2505 How to use device data transfer
☞ Page 2514 [Device Data Transfer List] dialog
☞ Page 2515 [Device Data Transfer] dialog
☞ Page 2519 Relevant settings

70.1 Overview of the device data transfer function

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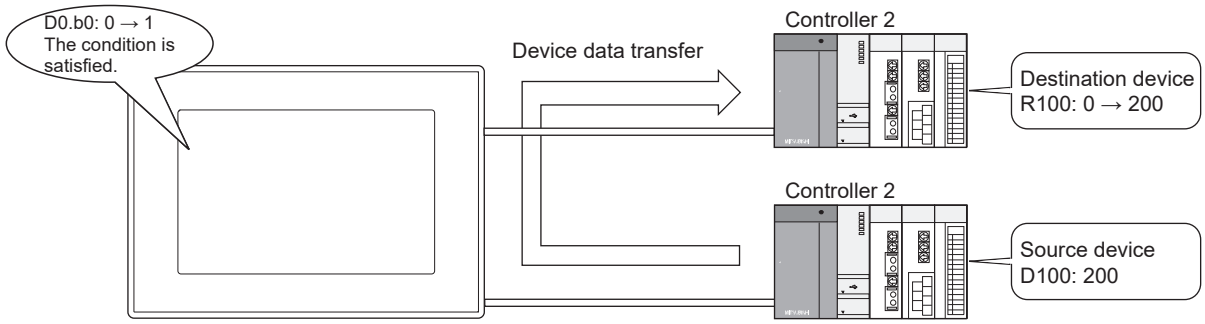
Values can be read from specified devices and written into other devices with a trigger or at intervals.

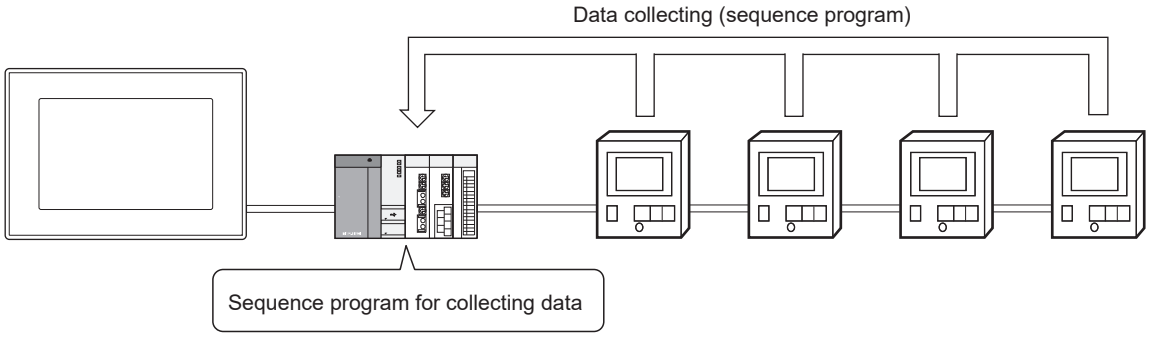
- Trigger condition: Rising edge of D0.b0
- Source device: D100 of controller 1
- Destination device: R100 of controller 2



By making device data transfers, the data of controllers can be collected without any sequence program.

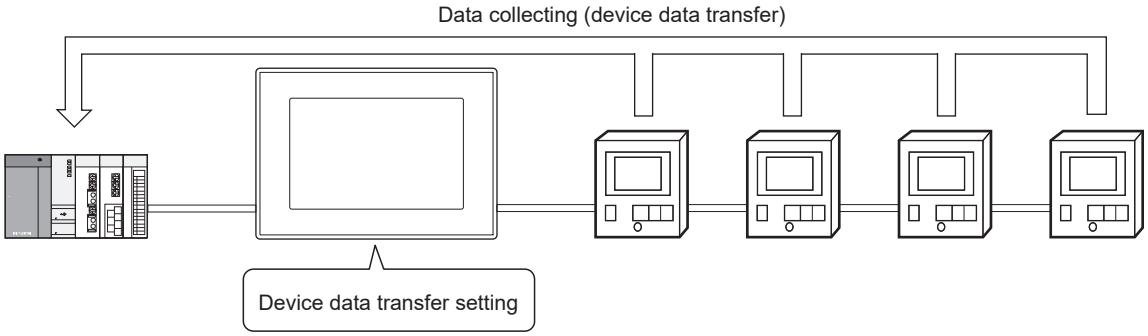
- Collecting the data of controllers without making device data transfers

A sequence program is required to collect the data of controllers. (The GOT only monitors the data.)



- Collecting the data of controllers making device data transfers

If device data transfers are set, no sequence program is required.



PART 13

70.2 Specifications of device data transfer

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70.2.1 System application (extended function)

To use the device data transfer, a system application (extended function) of [Device Data Transfer] is required.
Configuring one or more device data transfer settings incorporates the application into the package data automatically.
To use the function in GT SoftGOT3000, the system application (extended function) is not required.

70.2.2 Settable numbers

Up to 255 settings can be configured for one project.
☞ Page 2500 Data structure of device data transfer settings

70.2.3 Trigger to make device data transfers

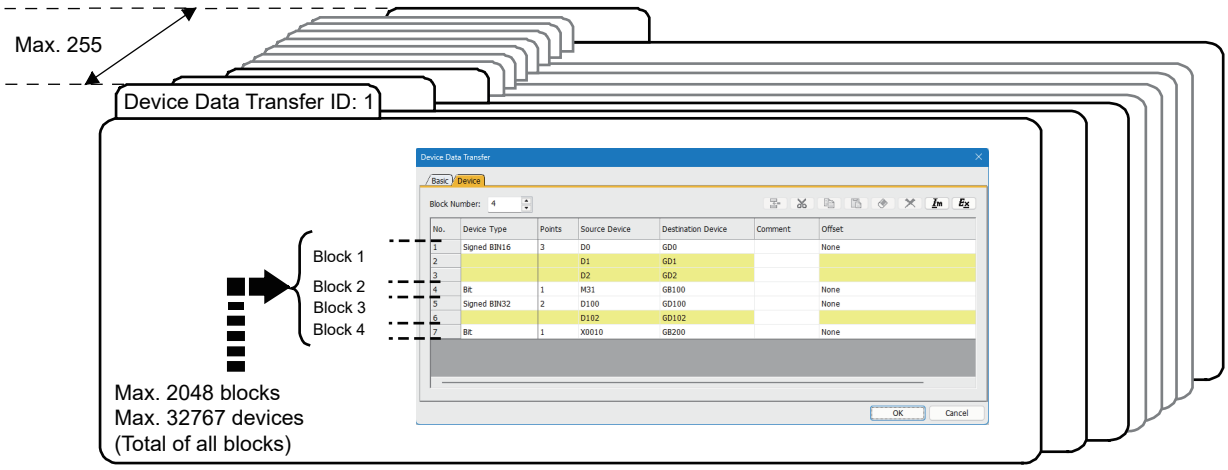
Any one of the following triggers is used as a trigger for device data transfers.

- Rising edge of the trigger device
- Falling edge of the trigger device
- Sampling

70.2.4 Data structure of device data transfer settings

If multiple settings of the following items are made, multiple device data transfers can be set for one device data transfer setting and device data transfer settings can be set for one project.

- [Device Data Transfer ID]
- [Block Number]



Device Data Transfer ID

Device data transfer ID is a number to identify each device data transfer setting.
Set the numbers in the [Basic] tab in the [Device Data Transfer] dialog.
☞ Page 2515 [Basic] tab

Block

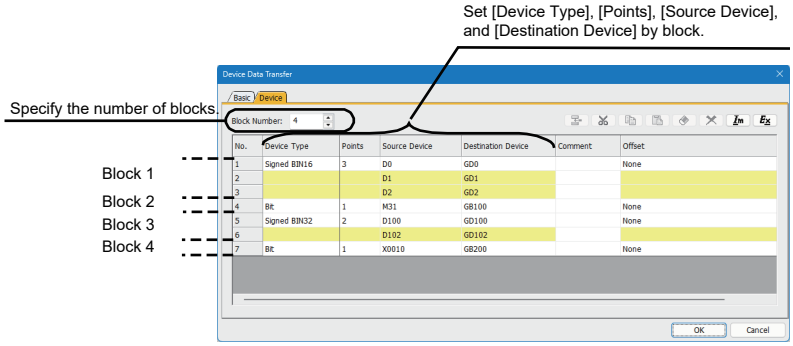
Blocks are units that divide device numbers and device types into groups.

Up to 2048 blocks can be set for one device data transfer setting (ID).

By setting device numbers and device types in block units, the following settings can be made.

- A device data transfer setting that involves multiple device types (such as bit or word)
- A device data transfer setting that involves consecutive devices and random devices

The following shows an example of a data transfer setting that involves bit devices and word devices (signed 16-bit binary and signed 32-bit binary data).



Set blocks in the [Device] tab in the [Device Data Transfer] dialog.

☞ Page 2515 [Device Data Transfer] dialog

■Relation between the number of blocks and transfer processing time

When a large number of blocks are set for a device data transfer setting, transfer processing may take a long time.

To shorten the processing time, reduce the number of blocks.

Device

■Number of devices that can be set

Regardless of the device type, up to 32767 devices can be set for one device data transfer ID.

The number of devices to be used depends on the device data type.

Device data type	Number of devices
Bit, 8-bit, 16-bit	1
32-bit	2
64-bit	4

■Relation to blocks

A single device number can be set for a single block.

To set consecutive device numbers, set the number of the devices in the same block.

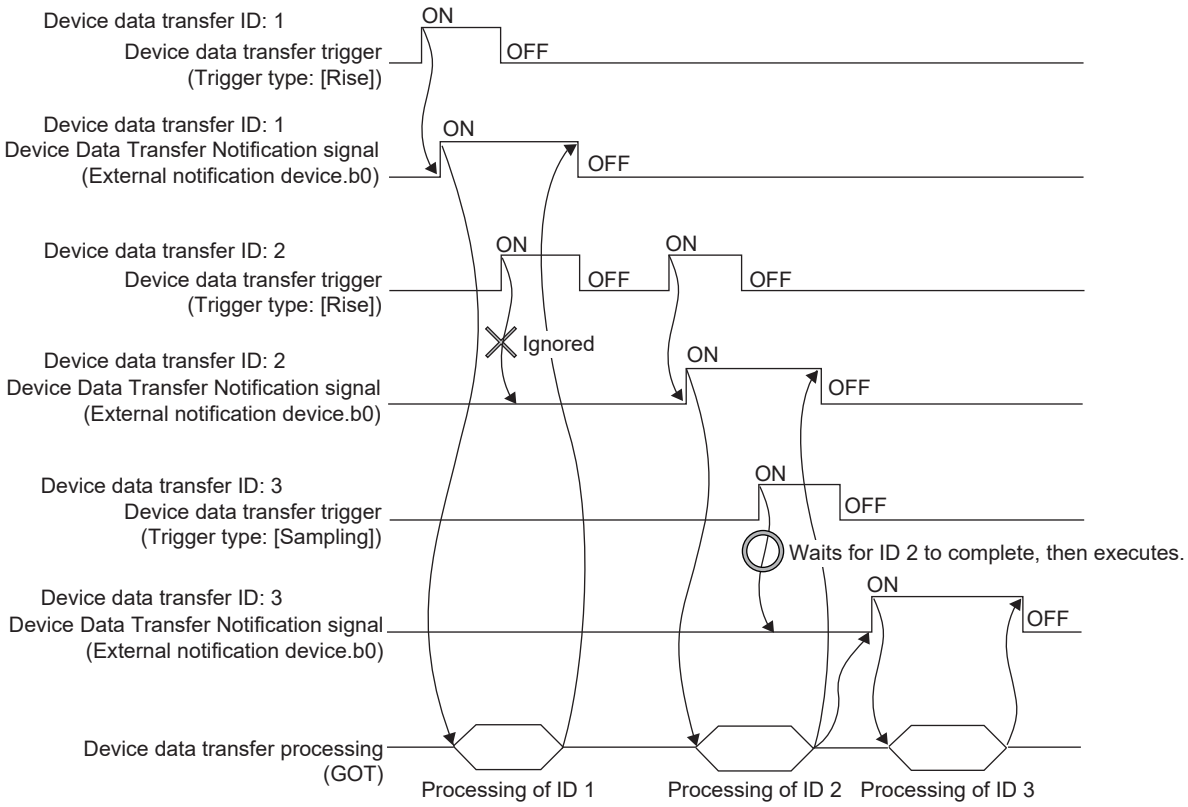
To set device numbers randomly, set the device numbers in different blocks.

70.2.5 Operations performed when multiple trigger conditions are satisfied simultaneously

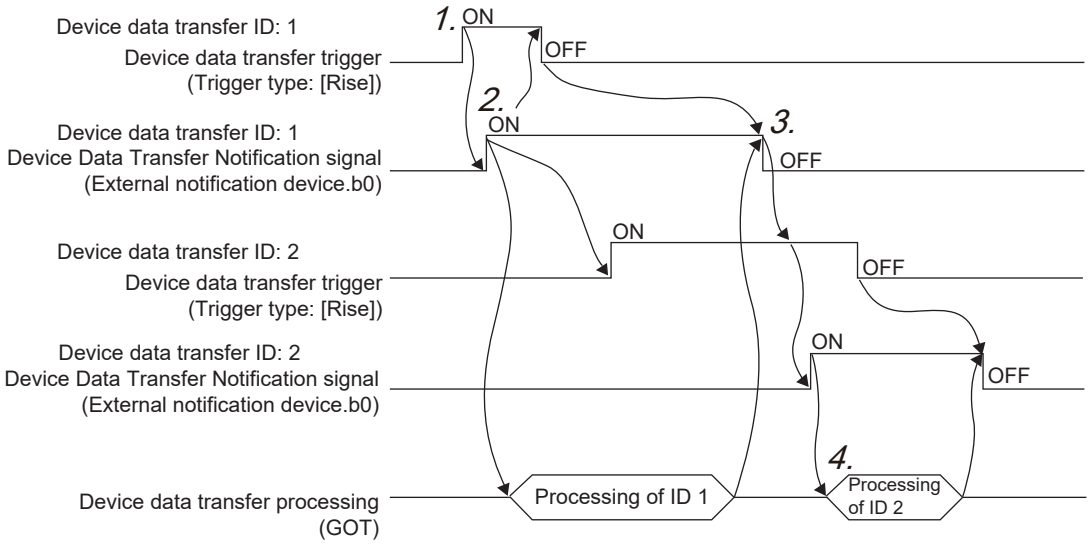
When the trigger condition for another device data transfer setting is satisfied while a device data transfer is being processed

If the trigger type is set to [Sampling], the GOT does not ignore the satisfied trigger condition, and executes the device data transfers subsequently.

If the trigger type is not set to [Sampling], the GOT ignores the satisfied trigger condition.



To execute the device data transfer without fail, select [Rise] for [Trigger Type] then time a handshake with the trigger device and Device Data Transfer Notification signal.



1. The device data transfer trigger (Device Data Transfer ID: 1) turns on.

2. The Device Data Transfer Notification signal (Device Data Transfer ID: 1) turns on.

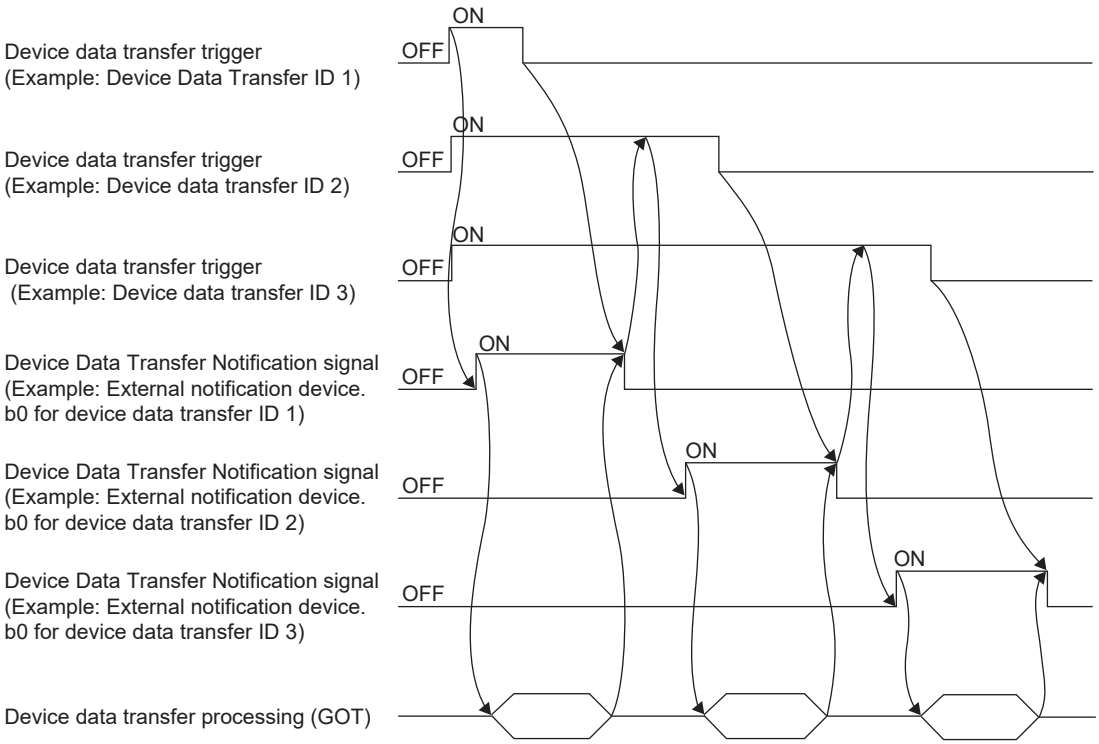
The device data transfer trigger (Device Data Transfer ID: 1) turns off and the device data transfer trigger (Device Data Transfer ID: 2) turns on.

3. Following the completion of the device data transfer processing and the off status of the device data transfer trigger (Device Data Transfer ID: 1), the Device Data Transfer Notification signal (Device Data Transfer ID: 1) turns off.

4. The next device data transfer is allowed to be processed and the device data trigger (Device Data Transfer ID: 2) which turned on in step 2 is enabled.

When trigger conditions for different device data transfer IDs are satisfied simultaneously

The device data transfer with the smallest ID is prioritized.



However, if multiple device data transfers satisfy the trigger conditions by the time one transfer is completed, the next transfer to be executed is the one with the smallest ID.

For example, if device data transfer triggers (Device Data Transfer ID: 1, 3) are satisfied by the time the device data transfer (Device Data Transfer ID: 1) is completed (device data transfer trigger: OFF → ON), the device data transfer (Device Data Transfer ID: 3) is executed next.

70.3 How to use device data transfer

GT37 SoftGOT3000

70.3.1 Setting procedure

The following shows the procedure for registering a device data transfer setting.

1. Select [Common] → [Device Data Transfer] from the menu.

The [Device Data Transfer List] dialog appears.

☞ Page 2514 [Device Data Transfer List] dialog

2. Click the [New] button.

The [Device Data Transfer] dialog appears. A device data transfer setting can be registered.

☞ Page 2515 [Device Data Transfer] dialog

3. For the [Basic] tab in [Trigger Type], set the timing with which device data transfers are triggered.

☞ Page 2515 [Basic] tab

4. Set [Source Device] and [Destination Device] in the [Device] tab.

☞ Page 2517 [Device] tab

5. Click the [OK] button.

The [Device Data Transfer] dialog closes.

6. Click the [Close] button.

The [Device Data Transfer List] dialog closes and the registration of the device data transfer setting is complete.

Point

When setting device data transfers, make sure that the data size does not exceed the available space in the user area for the GOT.

Depending on the settings, not all the set values (such as the number of devices) can be set to their maximum.

For example, if comments are set for each device, the setting size becomes larger.

For the available space in the GOT user area, refer to the following.

☞ Page 81 Drive configuration and capacity of the GOT

PART 13

70.3.2 Operations of device data transfers

Transferring device data

When a set trigger condition is satisfied, the values in the source device values are transferred to the destination devices.

Precautions

■Device data transfers and the status of the GOT

Depending on the GOT status, no device data transfer is executed.

The following lists the operations with which no device data transfer is executed.

- When writing BootOS, package data
- When restarting the GOT

If a device data transfer is interrupted by the above operations, the value in a source device cannot be synchronized with that in the destination device.

If a device data transfer is interrupted, execute the device data transfer again after the processing of the above operations has been completed.

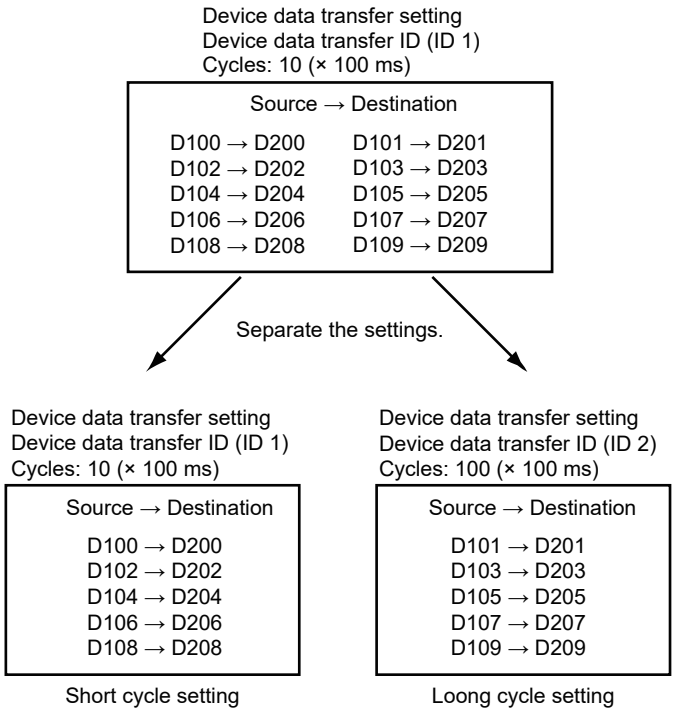
■If device data are not transferred as intended

In the following cases, device data may not be transferred normally.

- The communication between the GOT and controllers takes a long time because a large number of devices have been set.
- The intervals for a device data transfer trigger are short. (In a case where the trigger condition is satisfied while the device data transfer is still in the process of being made)
- Other functions (such as logging and recipe) have also been set.

Take one of the following countermeasures against the above situations.

- When selecting [Sampling] for the trigger type, reduce the number of devices per device data transfer setting of device data transfers made at short intervals (If there are device data transfers that do not require short intervals, set them for another device data transfer setting for which long intervals are set.)



- While the Device Data Transfer Notification signal is off, satisfy the trigger condition.

☞ Page 2509 Outputting the status of device data transfers to a device

- If the baud rate can be changed, increase the baud rate with controller settings.

■Overlap of source and destination devices

If source devices and destination devices overlap in the same device data transfer setting, the device data may not be transferred normally.

If the devices need overlapping, set the overlapping devices for different device data transfer settings.

The following shows an example of settings.

Ex.

Setting method for transferring the device values of D100, D105, D110 to D110, D115, D120 respectively (D110 overlaps.)

Device Data Transfer ID	Trigger type	Trigger device	Number of blocks	Source device	Destination device
1	Sampling	D1000.b0	1	D110	D120
2	Sampling	D1000.b0	2	D100	D110
				D105	D115

If the same trigger device (D1000.b0) is set for multiple device data transfer settings, transfer is executed from the one with the smallest device data transfer ID.

By transferring D110 prior to D100, the device value in D110 that has yet to be overwritten with the value in D100 can be transferred to D120.

Device Data Transfer ID	Trigger type	Trigger device	Number of blocks	Source device	Destination device
1	Sampling	D1000.b0	3	D110	D120
				D100	D110
				D105	D115

If the device data transfers are set for the same device data transfer setting, the value in D100 is transferred prior to D110 and the device value in D110 is overwritten with that in D100.

Then the device value in D110 is transferred to D120, which means that the device value in D100 is transferred to D120 as a result.

Reversing the data transfer direction (Switching the relation between the source device and destination device)

By switching the status of the transfer inverting flag device between on and off, the data transfer direction can be reversed accordingly. (The relation between the source and destination is reversed).

Therefore, data transfers in both directions (from the source to the destination and the other way around) can be made with one device data transfer setting.

The following shows the procedure for setting the transfer inverting flag device.

1. Select [Common] → [Device Data Transfer] from the menu.

The [Device Data Transfer List] dialog appears.

☞ Page 2514 [Device Data Transfer List] dialog

2. Click the [New] button or the [Edit] button.

The [Device Data Transfer] dialog appears.

☞ Page 2515 [Device Data Transfer] dialog

3. Set a device for [External Control Device] in the [Basic] tab.

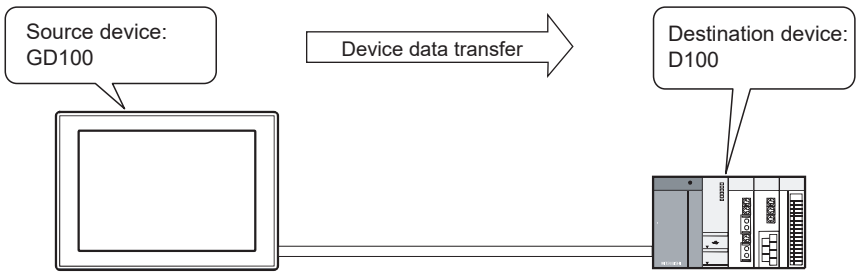
☞ Page 2515 [Basic] tab

Bit 1 of the set device is assigned as the transfer inverting flag device.

The following shows the relation between the transfer inverting flag device and source/destination.

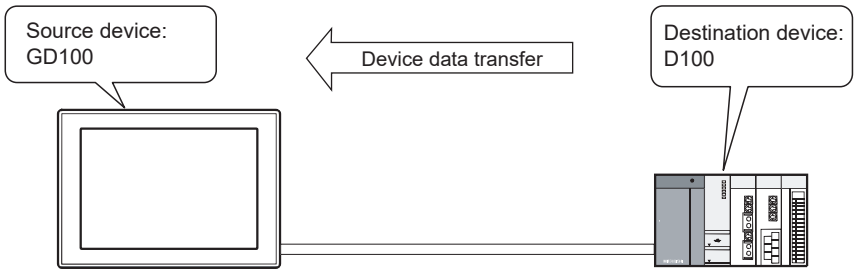
• When the transfer inverting flag device is off

Device data are transferred from the source device to the destination device.



• When the transfer inverting flag device is on

Device data are transferred from the destination device to the source device.



Turn on transfer inverting flag device before turning on the trigger device or simultaneously with the trigger device by writing a value to the word device.

Point

Using device data transfers instead of scripts

Instead of bmov, the function of scripts, device data transfers can be used.

The device data transfer communication is established only when the corresponding conditions are satisfied. On the other hand, the devices in a script require continuous communication. Hence, if device data transfers are used, the load due to the continuous communication is not imposed.

For scripts, refer to the following.

☞ Page 2325 Controlling operations with scripts ([Script])

70.3.3 Outputting the status of device data transfers to a device

When the external notification device is set, the status of device data transfers (such as the status in which a transfer is in the process of being made and presence/absence of an error) can be externally notified.
The following shows the procedure for setting the external notification device.

1. Select [Common] → [Device Data Transfer] from the menu.

The [Device Data Transfer List] dialog appears.

☞ Page 2514 [Device Data Transfer List] dialog

2. Click the [New] button or the [Edit] button.

The [Device Data Transfer] dialog appears.

☞ Page 2515 [Device Data Transfer] dialog

3. Select [External Notification Device] in the [Basic] tab then set a device.

☞ Page 2515 [Basic] tab

Signals are assigned as shown below.

- Bit 0: Device Data Transfer Notification signal
- Bit 14: BCD Conversion Error Notification signal
- Bit 15: Device Data Transfer Error Notification signal

Device Data Transfer Notification signal (external notification device.b0)

Notifies that a device data transfer is in the process of being made.

- The device data transfer trigger condition is satisfied → the external notification device.b0 turns on.
- No device data transfer trigger condition is satisfied and the device data transfer is complete → the external notification device.b0 turns off.

Even if this signal is on, a device data transfer can be made as long as the previous device data transfer has been completed.

BCD Conversion Error Notification signal (external notification device.b14)

Notifies whether an error has occurred or not during BCD conversion.

- An error occurs during BCD conversion → the external notification device.b14 turns on.

Even if an error occurs, device data are transferred.
However, the device values are not what you intend to transfer. Check the data before restarting the device data transfer.

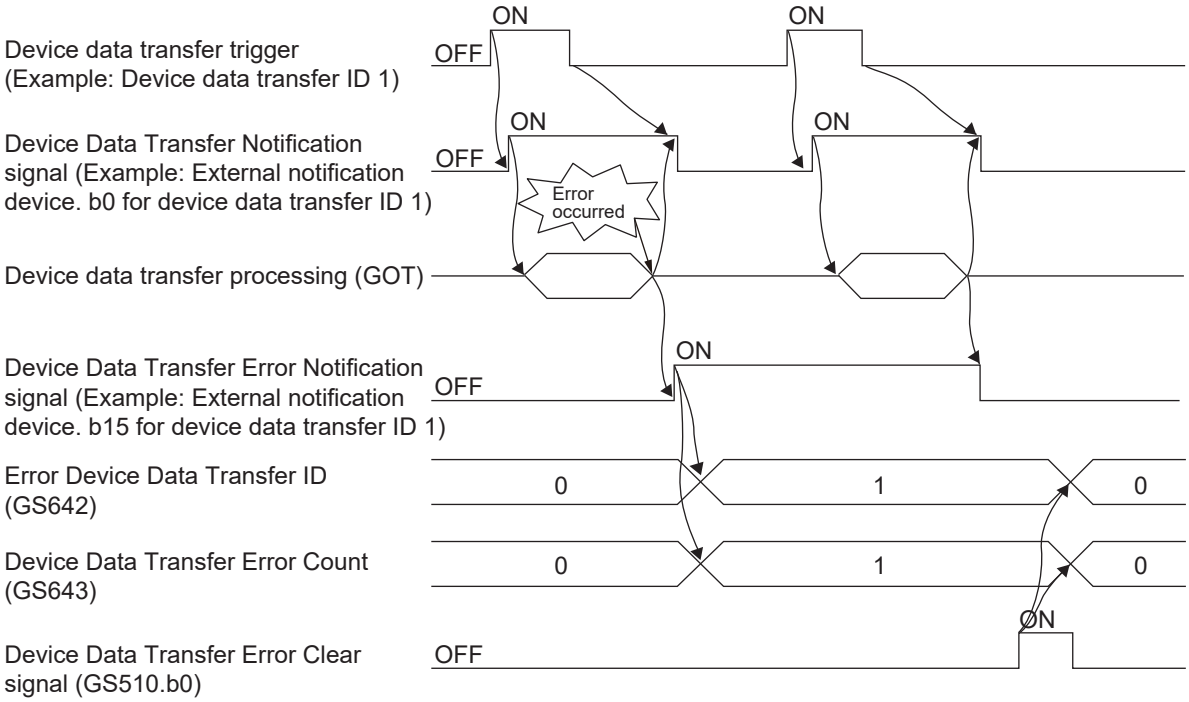
Device Data Transfer Error Notification signal (external notification device.b15)

Notifies whether an error has occurred or not during a device data transfer.

- An error occurs during a device data transfer → the external notification device.b15 turns on.
- The device data transfer which was executed after an error occurred is normally completed → the external notification device.b15 turns off.

The following shows the operations performed when an error occurs and corrective actions for the error.

When an error occurs, the following operations are performed.



1. The Device Data Transfer Error Notification signal (external notification device.b15) turns on.

2. The ID of the device data transfer with the error is stored in Error Device Data Transfer ID (GS642).

3. The value in Device Data Transfer Error Count (GS643) is incremented by one every time an error occurs.

4. A system error occurs.

After checking the message, identify the cause of the error and eliminate the error.

5. The device data transfer is restarted.

6. The device data transfer is successfully made and the Device Data Transfer Error Notification signal (external notification device.b15) turns off.

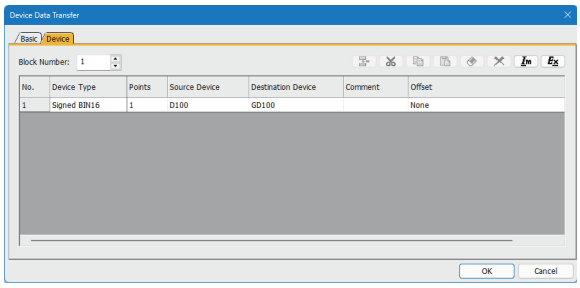
To clear Error Device Data Transfer ID (GS642) and Device Data Transfer Error Count (GS643), turn on the Device Data Transfer Error Clear signal (GS510.b0).

☞ Page 3581 GOT special register (GS)

70.3.4 Importing/exporting settings

You can edit exported Unicode text files and CSV files by using spreadsheet software.
Edited Unicode text files and CSV files can be imported to GT Designer3.

Ex.
Example of a CSV file



Export to a CSV file.

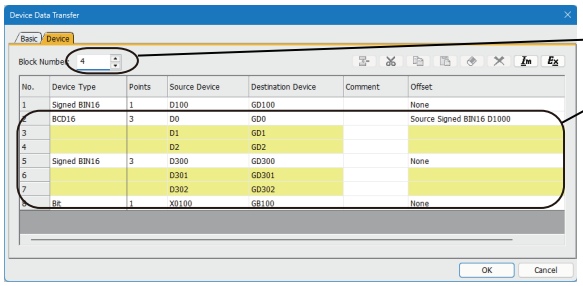
Device Data Transfer					
Block Numl	1				
Device Typ	Points	Source Dev	Destination	Comment	Offset
Signed BIN	1	D100	GD100		None

Edit the exported file.

Device Data Transfer					
Block Num	4				
Device Ty	Points	Source De	Destinatior	Comment	Offset
Signed BIN	1	D100	GD100		None
BCD16	3	D0	GD0		Source Signed BIN16 D1000
Signed BIN	3	D300	GD300		None
Bit	1	X0100	GB100		None

Add the settings
using applications
such as spreadsheet software.

Import to GT Designer3.



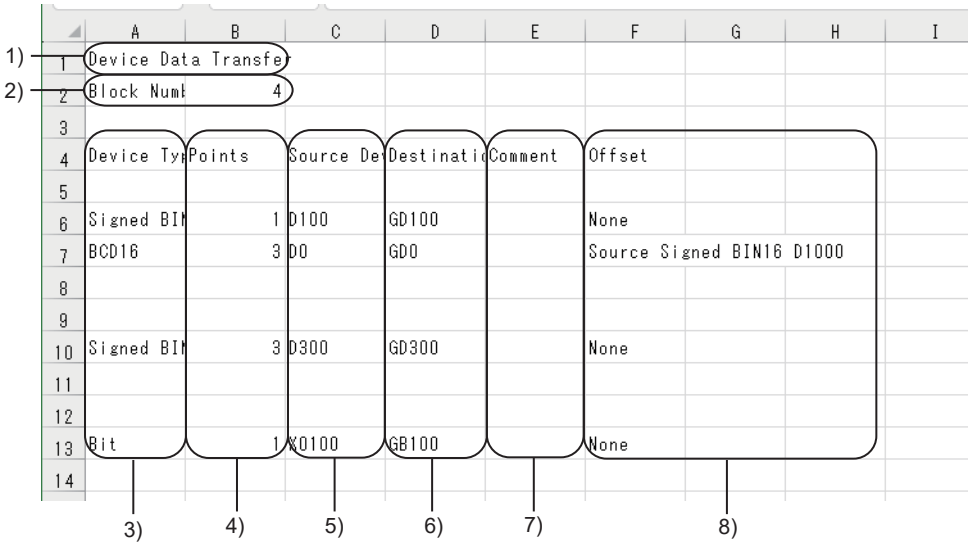
The added settings
are reflected.

Format of text files for device data transfers

The format of text files for device data transfers is common to both Unicode text files and CSV files.
However, use the following delimiters for each item.

- Unicode text file: Tab (\t)
- CSV file: Comma (,)

The following shows the format.



Item		Description
1)	Title	Displays "Device Data Transfer".
2)	Number of blocks	Set the number of blocks for device data transfers. The setting range is [1] to [2048].
3)	Device type	Set the data type of the device. The following shows the setting range. • Bit • Signed 8-bit binary • Unsigned 8-bit binary • Signed 16-bit binary • Unsigned 16-bit binary • Signed 32-bit binary • Unsigned 32-bit binary • Signed 64-bit binary • Unsigned 64-bit binary • BCD16 • BCD32 • BCD64 • Real number (32 bits) • Real number (64 bits)
4)	Points	Set the number of the target devices for the transfer by block. When a start device is set, consecutive devices are automatically specified according to the set number. The number of the specified devices including the start device is the same as the number set for this item.
5)	Source device	Set a device from which the value is read.
6)	Destination device	Set a device to which the value read from the source device is written.
7)	Comment	Set a comment. Up to 32 characters can be set.
8)	Offset	Set the target for an offset and the offset device. The following shows the range of settings for the offset target. • None • Source • Destination • Both When setting the source, destination, or both, input the offset device. Insert a one-byte space between the offset target and the offset device. If incorrectly input data are imported, GT Designer3 regards it as [None].

Point

• Using characters of multiple languages

When importing or exporting files in the multiple-language input environment, use Unicode text files.

The characters of multiple languages can be imported or exported normally by using Unicode text files.

For the precautions for using Unicode text files, refer to the following.

☞ Page 3669 Precautions for using Unicode text file

• Editing exported files

For the precautions for using a CSV file or Unicode text file, refer to the following.

☞ Page 3668 Precautions for using CSV file

☞ Page 3669 Precautions for using Unicode text file

70.4 [Device Data Transfer List] dialog

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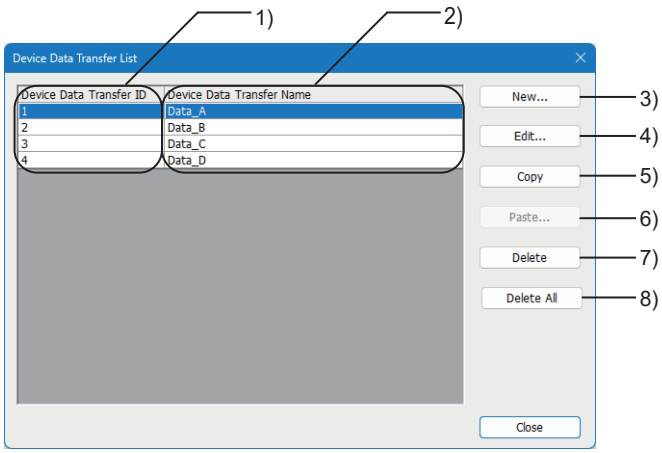
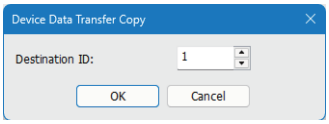
When device data transfers are made, values are read from specified devices and are written to other devices with a trigger or at intervals.

Select [Common] → [Device Data Transfer] from the menu to display the [Device Data Transfer List] dialog.

The dialog displays the settings of device data transfers in a list and manages them.



Item		Description
1)	[Device Data Transfer ID]	The number to identify each device data transfer setting.
2)	[Device Data Transfer Name]	Displays the names of device data transfer settings.
3)	[New] button	Creates a new device data transfer setting. ☞ Page 2515 [Device Data Transfer] dialog
4)	[Edit] button	Changes the settings of a selected device data transfer setting. ☞ Page 2515 [Device Data Transfer] dialog
5)	[Copy] button	Copies a selected device data transfer setting.
6)	[Paste] button	Pastes a copied device data transfer setting.  • [Destination ID] Set a Device Data Transfer ID.
7)	[Delete] button	Deletes a selected device data transfer setting.
8)	[Delete All] button	Deletes all the device data transfer settings.

70.5 [Device Data Transfer] dialog

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Set device data transfer settings.

☞ Page 2515 [Basic] tab

☞ Page 2517 [Device] tab

This dialog appears when the [New] button or [Edit] button in the [Device Data Transfer List] dialog is clicked.

☞ Page 2514 [Device Data Transfer List] dialog

70.5.1 [Basic] tab

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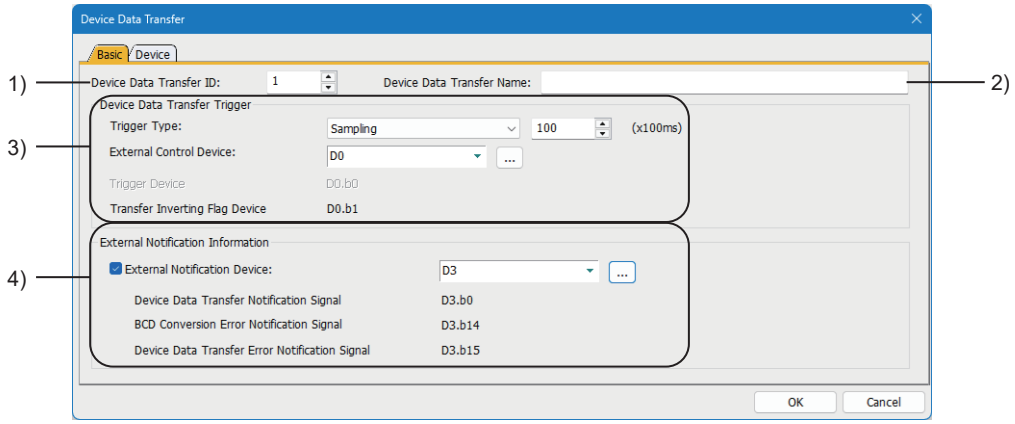
Set the device data transfer trigger and external notification information.



Item			Description
1)	[Device Data Transfer ID]		Set a number to identify the device data transfer setting. The setting range is [1] to [255]. ☞ Page 2500 Data structure of device data transfer settings
2)	[Device Data Transfer Name]		Set the name of the device data transfer setting. Up to 32 characters can be set.
3)	[Device Data Transfer Trigger]	—	Set a condition under which device values are transferred. ☞ Page 2506 Operations of device data transfers
		[Trigger Type]	Select an operating condition that triggers device value transfers. The following shows selectable items. • [Rise] • [Fall] • [Sampling] When selecting [Sampling], set a cycle in which transfers are executed. The setting range of [Sampling] is [1] to [36000].
		[External Control Device]	Set the target device for the operating condition of [Trigger Type]. ☞ Page 834 How to set devices, labels, and tags In the following cases, set this item. • When selecting [Rise] or [Fall] • When selecting [Sampling] and using [Transfer Inverting Flag Device]
		[Trigger Device]	When the value in a set device satisfies a set condition, the values in source devices are transferred to destination devices. Bit 0 of the device set for [External Control Device] is specified. This item is used when [Rise] or [Fall] is selected.
		[Transfer Inverting Flag Device]	When a set condition is satisfied, reverses the direction in which device values are transferred. (Device values are transferred from the destination to the source.) Bit 1 of the device set for [External Control Device] is specified.

Item			Description
4)	[External Notification Information]	—	Set a device that notifies the status of transfers. ☞ Page 2509 Outputting the status of device data transfers to a device
		[External Notification Device]	Set a device that receives notifications of the status of device value transfers. ☞ Page 834 How to set devices, labels, and tags
		[Device Data Transfer Notification Signal]	Notifies that device values are in the process of being transferred. Bit 0 of the device set for [External Notification Device] is specified.
		[BCD Conversion Error Notification Signal]	When an error occurs while a device value in BCD is being transferred, notifies the error. Bit 14 of the device set for [External Notification Device] is specified.
		[Device Data Transfer Error Notification Signal]	When an error occurs during a device value transfer, notifies the error. Bit 15 of the device set for [External Notification Device] is specified.

70.5.2 [Device] tab

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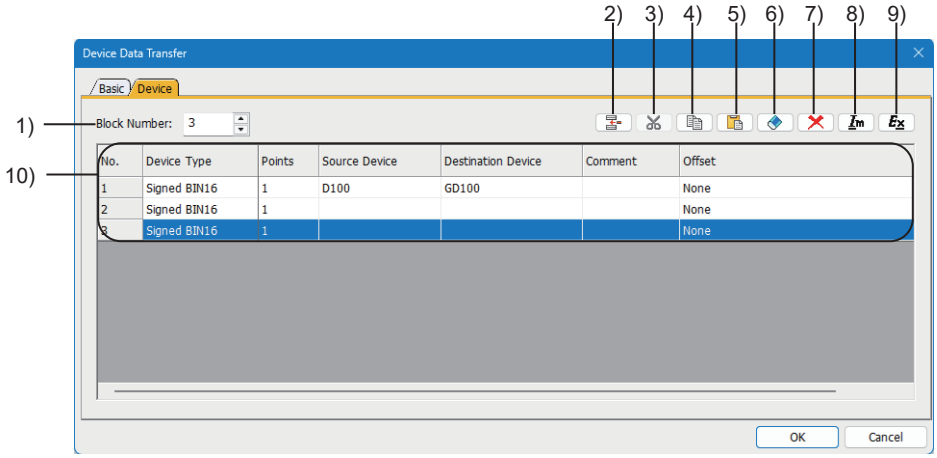
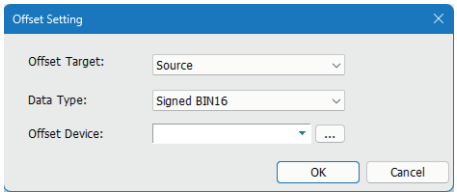
Displays set source devices and destination devices in a list and manages them.



Item		Description
1)	[Block Number]	Set the number of blocks for device data transfers. The setting range is [1] to [2048]. ☞ Page 2500 Data structure of device data transfer settings
2)	[Insert Block] button	Inserts a block above a selected block.
3)	[Cut] button	Cuts a selected block.
4)	[Copy] button	Copies a selected block.
5)	[Paste] button	Pastes a copied block.
6)	[Clear] button	Clears a comment.
7)	[Delete] button	Deletes a selected block.
8)	[Import] button	Imports the settings that were edited in a Unicode text file or CSV file to GT Designer3.
9)	[Export] button	Saves the settings made in this tab as a Unicode text file or CSV file.

Item			Description
10)	Device list	—	Lists set devices.
		[No.]	Displays the numbers that show the number of set devices.
		[Device Type]	Select the data type of the device to be set. The following shows selectable items. • [Bit] • [Signed BIN8] • [Unsigned BIN8] • [Signed BIN16] • [Unsigned BIN16] • [Signed BIN32] • [Unsigned BIN32] • [Signed BIN64] • [Unsigned BIN64] • [BCD16] • [BCD32] • [BCD64] • [Real(32bit)] • [Real(64bit)] Set this item prior to the device setting. When the device type is changed to another one that has a different data length, the device setting is cleared.*1*2
		[Points]	Set the number of the target devices for the transfer by block. When a start device is set, consecutive devices are automatically specified according to the set number. The number of the specified devices including the start device is the same as the number set for this item.
		[Source Device]	Set a device from which the value is read. ☞ Page 834 How to set devices, labels, and tags
		[Destination Device]	Set a device to which the value read from the source device is written. ☞ Page 834 How to set devices, labels, and tags
		[Comment]	Set a comment. A set comment is displayed in Unicode text file and CSV file. Up to 32 characters can be set.
		[Offset]	Displays the target for an offset and the offset device. ☞ Page 963 Offset  • [Offset Target] Select an offset target. The following shows selectable items. [None] [Source] [Destination] [Both] • [Data Type] Select the data type of the device to be set. The following shows selectable items. [Signed BIN16] [Signed BIN32] • [Offset Device] Set an offset device. When selecting [Destination], [Source], or [Both] for [Offset Target], set this item. When [Both] is selected for [Offset Target], a single device can be set for either [Source Device] or [Destination Device].

*1 Example 1) When changing the device type to another one that has a different data length

Before	After	Result
Signed 16-bit binary	Real number (32 bits)	Because the data length changes from 16 to 32 bits, the settings of [Source Device] and [Destination Device] are cleared.

*2 Example 2) When changing the device type to another one that has the same data length

Before	After	Result
Signed 16-bit binary	BCD16	Because the data lengths are the same, the settings of [Source Device] and [Destination Device] are retained.

70.6 Relevant settings

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Configure the relevant settings in addition to the specific settings for device data transfers as required.
The following shows the functions that are available by configuring the relevant settings.

70.6.1 GOT internal devices

☞ Page 3581 GOT special register (GS)

Function	Setting item
Clearing Error Device Data Transfer ID and Device Data Transfer Error Count when turns on (Device Data Transfer Error Clear signal)	GS510.b0
Clearing Device Data Transfer Processing Time, Device Data Transfer Min. Processing Time, and Device Data Transfer Max. Processing Time when turns on (Device Data Transfer Processing Time Clear signal)	GS510.b1
If an error occurs during device data transfer, storing the Device Data Transfer ID of the device data transfer with the error (Error Device Data Transfer ID)	GS642
Storing the number of the errors that occurs due to device data transfers (Device Data Transfer Error Count)	GS643
Storing the processing time of a device data transfer (Device Data Transfer Processing Time)	GS644
When the processing time is stored in Device Data Transfer Processing Time, storing the Device Data Transfer ID of the completed device data transfer (Device Data Transfer ID)	GS645
Storing the shortest processing time ever stored in Device Data Transfer Processing Time (Device Data Transfer Min. Processing Time)	GS646
When the shortest processing time is stored in Device Data Transfer Min. Processing Time, storing the Device Data Transfer ID of the completed device data transfer (Device Data Transfer ID (Min. Processing Time))	GS647
Storing the longest processing time ever stored in Device Data Transfer Processing Time (Device Data Transfer Max. Processing Time)	GS648
When the longest processing time is stored in Device Data Transfer Max. Processing Time, storing the Device Data Transfer ID of the completed device data transfer (Device Data Transfer ID (Max. Processing Time))	GS649

PART 14 Trigger action

71 Operating a device as a trigger ([Trigger Action])

71 Operating a device as a trigger ([Trigger Action])

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☞ Page 2521 Overview of the trigger action function
☞ Page 2522 Specifications of trigger action
☞ Page 2524 How to use trigger action
☞ Page 2528 [Trigger Action] dialog
☞ Page 2530 [Trigger/Action] dialog
☞ Page 2539 [Sound Setting] dialog

71.1 Overview of the trigger action function

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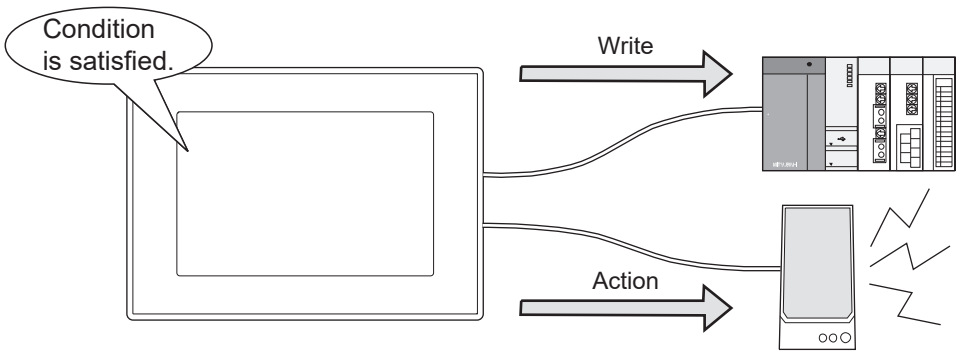
When set conditions are satisfied, various operations can be performed: bit devices are turned on/off, values are written into word devices, screens are switched, and sounds are output.



PART 14

71.2 Specifications of trigger action

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71.2.1 Types of trigger actions

The following two types of trigger actions are provided.

Trigger actions common in a project

These trigger actions are set globally in a project.

All the devices set globally in a project are monitored.

Trigger actions for each screen

These trigger actions are set for each screen.

Base screens and window screens

Set devices are monitored only while the target screens are displayed by the GOT.

If the set overlay screen function calls the screen for which a trigger action is set, the trigger action will be executed on the called screen as well.

71.2.2 Number of trigger actions that can be set

Up to 600 trigger actions common in a project can be set. This also applies to trigger actions for each screen.

Precautions

When setting multiple trigger actions, set [Network No.] and [Station No.], setting items in the [Trigger/Action] dialog, to the same No.

☞ Page 2530 [Trigger/Action] dialog

71.2.3 Number of conditions that can be set

Up to two conditions under which trigger actions are executed can be set.

Select the first condition from the following.

- Ordinary
- Rise
- Fall
- Rise/Fall
- ON
- OFF
- ON Sampling
- OFF Sampling
- Sampling
- Range
- Bit Trigger

Select the second condition from the following.

- ON
- OFF
- Range
- Bit Trigger

However, if [Ordinary] is set for the first condition, the second condition cannot be set.

71.2.4 Actions that can be executed when set conditions are satisfied

- Keeping bit devices on while set conditions are satisfied
- Turning on bit devices
- Turning off bit devices
- Switching the status of bit devices between on and off
- Writing values into word devices
- Switching to a specified screen
- Outputting sounds with an external speaker

Precautions

Operation set for the trigger action is stopped when an error occurs.
The operation of all trigger actions are not executed after it is stopped.

71.2.5 Maximum number of write operations

Bit momentary, bit set, bit reset, bit alternate: 40
Data set (8 bits), data set (16 bits), data set (32 bits), data set (64 bits): 20

71.3 How to use trigger action

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71.3.1 Setting procedure

The following shows the procedure for setting a trigger action.

1. Select [Common] → [Trigger Action] from the menu.

The [Trigger Action] dialog appears.

☞ Page 2528 [Trigger Action] dialog

2. When setting a trigger action common in the project, display the [Project] tab.

☞ Page 2528 [Project] tab

When setting a trigger action for a screen, display the [Screen] tab and select the target screen.

☞ Page 2529 [Screen] tab

3. Click the [Add] button.

The [Trigger/Action] dialog appears. A trigger action can be registered.

☞ Page 2530 [Trigger/Action] dialog

4. In the [Trigger] tab, set a condition (trigger 1) under which the trigger action is executed.

☞ Page 2530 [Trigger] tab

When executing the trigger action when two conditions are satisfied, select [Trigger2] and set one more condition.

5. In the [Action] tab, set the action to be executed when the conditions are satisfied.

☞ Page 2532 [Action] tab

6. Click the [OK] button.

The [Trigger/Action] dialog closes.

7. Click the [OK] button in the [Trigger Action] dialog.

The dialog closes and the registration of the trigger action is complete.

71.3.2 Setting data sets

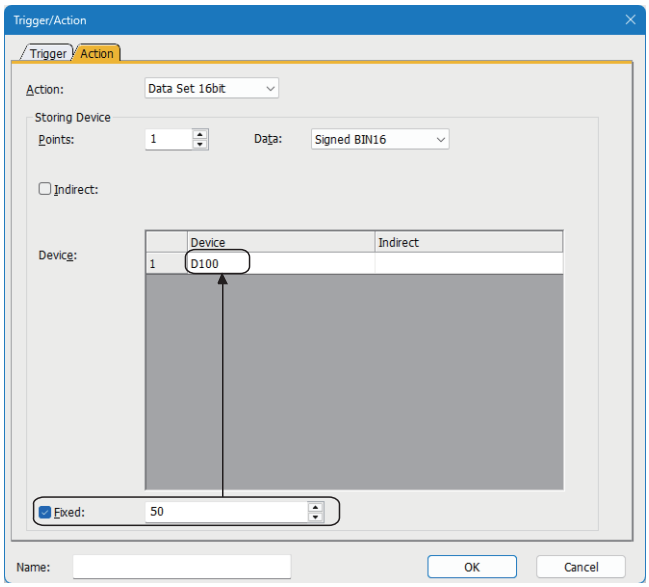
[Fixed] and [Indirect]

If [Fixed] and [Indirect] are set, a fixed value or the value in a word device is written into the target device.

[Fixed] and [Indirect] can be set together.

■[Fixed]

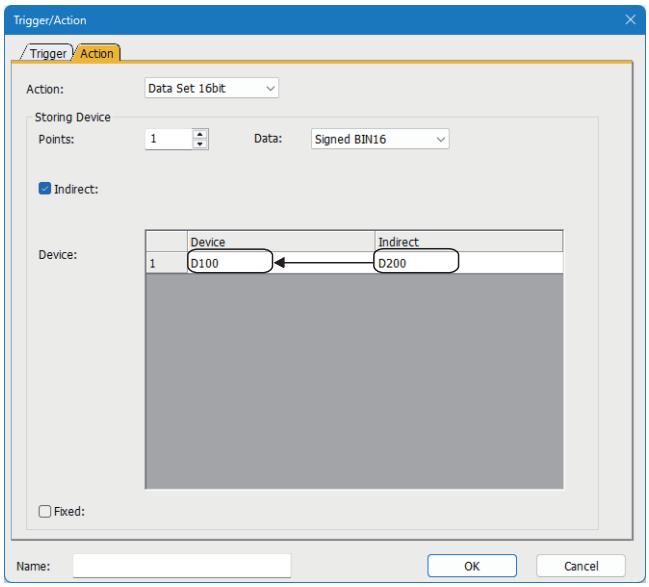
When set conditions are satisfied, the value set for [Fixed] is written into the target device.



When the set conditions are satisfied,
the fixed value (50) is written into D100.

■[Indirect]

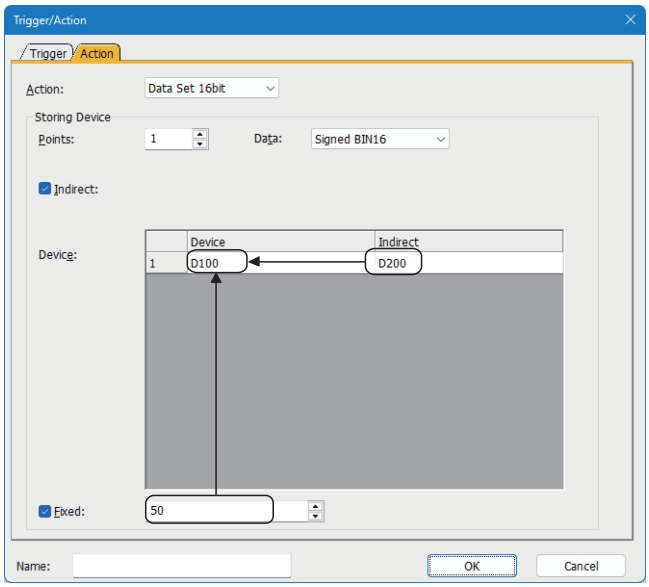
When set conditions are satisfied, the value in the indirect device set for [Indirect] is written into the target device.



When the set conditions are satisfied,
the value in D200 is written into D100.

■[Fixed] + [Indirect]

When set conditions are satisfied, the total of the value in the indirect device set for [Indirect] and the value set for [Fixed] is written into the target device.



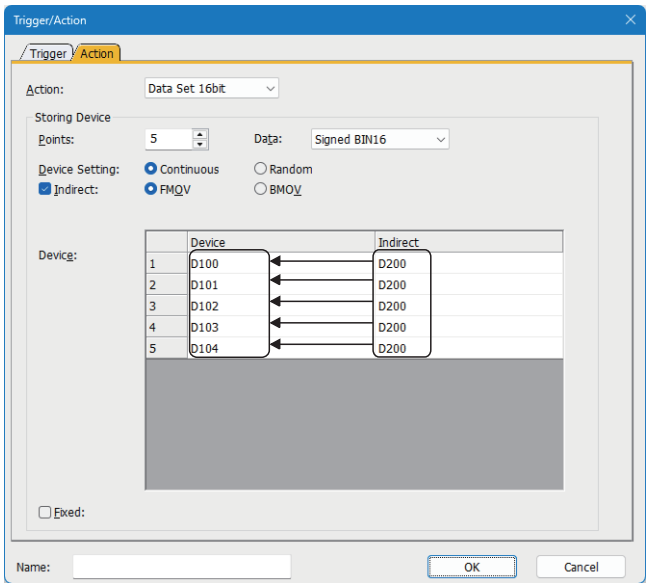
When the set conditions are satisfied, the value in D200 + the fixed value (50) is written into D100.

FMOV and BMOV

When setting two or more devices and selecting [Indirect], select a write operation that writes values to the target devices.

■[FMOV]

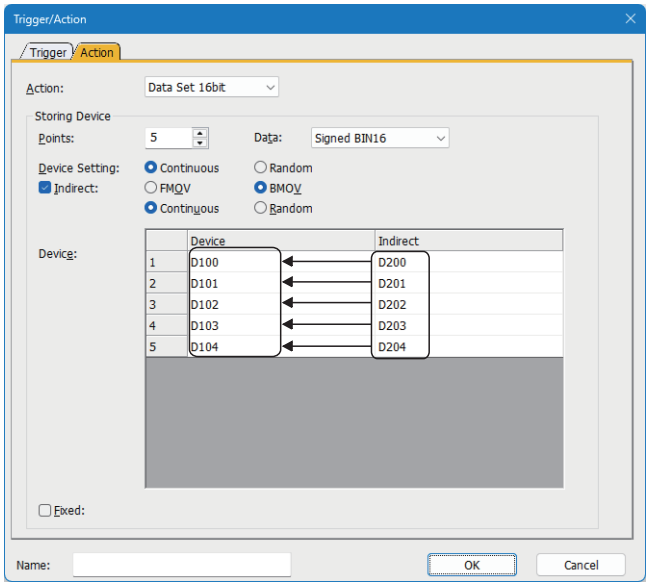
When set conditions are satisfied, the value in the word device set for [Indirect] is written into the target devices.



When the set conditions are satisfied,
the value in D200 is written into D100 to D104.

■[BMOV]

When set conditions are satisfied, the current values in the word devices individually set for [Indirect] is written into the corresponding target devices.



When the set conditions are satisfied, the values
in D200 to D204 are written into D100 to D104.

71.4 [Trigger Action] dialog

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When set conditions are satisfied, trigger actions are executed then various operations can be performed: bit devices are turned on/off, values are written into word devices, screens are switched, and sounds are output.

Select [Common] → [Trigger Action] from the menu.

☞ Page 2528 [Project] tab
☞ Page 2529 [Screen] tab

71.4.1 [Project] tab

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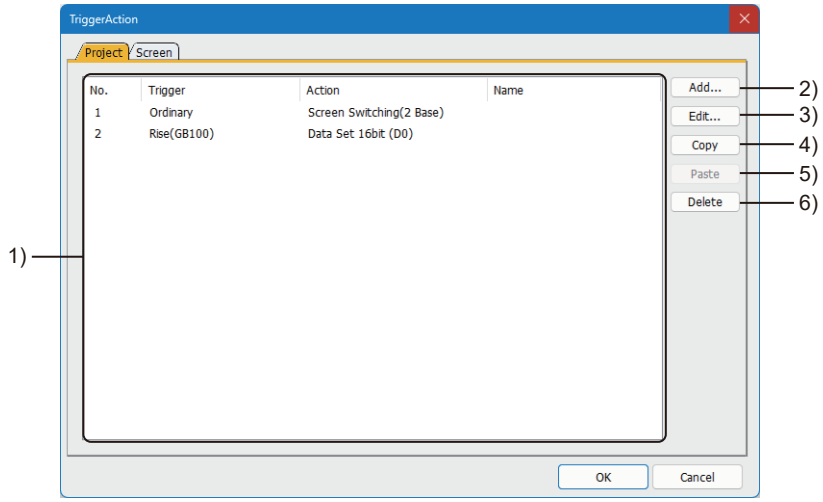
Displays set trigger actions globally set for the project in a list and manages them.



Item			Description
1)	Trigger action list	—	Lists set trigger actions.
		[No.]	Number of a trigger action
		[Trigger]	Trigger condition to execute the corresponding action
		[Action]	Action to be executed when the trigger condition is satisfied
		[Name]	Name of a trigger action
2)	[Add] button		Creates a trigger action. ☞ Page 2530 [Trigger/Action] dialog
3)	[Edit] button		Changes the settings of a selected trigger action. ☞ Page 2530 [Trigger/Action] dialog
4)	[Copy] button		Copies a selected trigger action.
5)	[Paste] button		Pastes a copied trigger action.
6)	[Delete] button		Deletes a selected trigger action.

71.4.2 [Screen] tab

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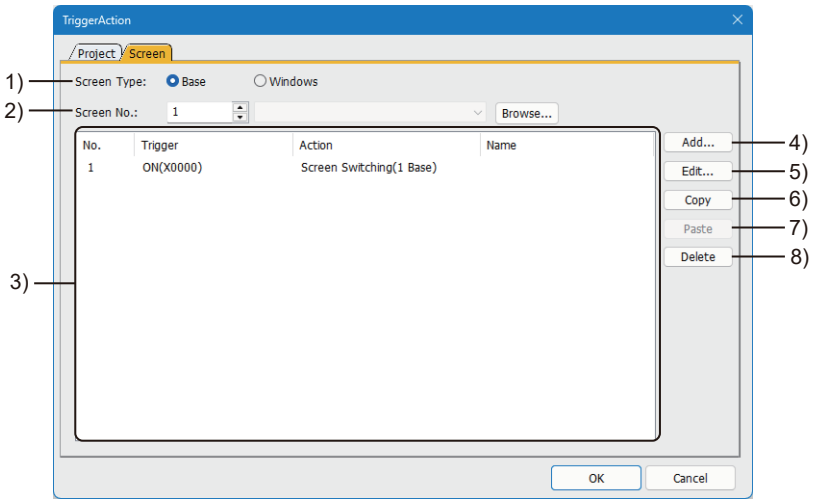
Displays trigger actions set for each screen in a list and manages them.



Item			Description
1)	[Screen Type]		Set the target screen for set trigger actions. The following shows selectable items. • [Base]: Uses a base screen. • [Windows]: Uses a window screen.
2)	[Screen No.]		Set the screen No. that has been assigned to the target screen for set trigger actions. Click the [Browse] button to open the screen image.
3)	Trigger action list	—	Lists set trigger actions.
		[No.]	Number of a trigger action
		[Trigger]	Trigger condition to execute the corresponding action
		[Action]	Action to be executed when the trigger condition is satisfied
		[Name]	Name of a trigger action
4)	[Add] button		Creates a trigger action. ☞ Page 2530 [Trigger/Action] dialog
5)	[Edit] button		Changes the settings of a selected trigger action. ☞ Page 2530 [Trigger/Action] dialog
6)	[Copy] button		Copies a selected trigger action.
7)	[Paste] button		Pastes a copied trigger action.
8)	[Delete] button		Deletes a selected trigger action.

71.5 [Trigger/Action] dialog

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The [Trigger/Action] dialog is displayed when the [Add] button or [Edit] button in the [Trigger Action] dialog is clicked.

☞ Page 2530 [Trigger] tab
☞ Page 2532 [Action] tab

71.5.1 [Trigger] tab

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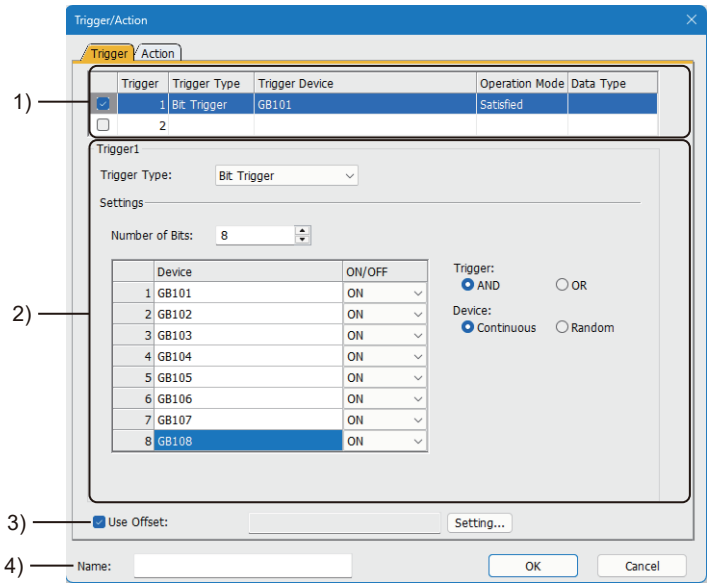
Set conditions under which set trigger actions are executed.



Item			Description
1)	Trigger 1 and trigger 2		Previews set conditions. Up to two conditions can be set. In cases where two conditions are set, trigger actions are executed when both of the conditions are satisfied. When selected, the conditions become valid.
2)	[Trigger1], [Trigger2]	—	Set items for a selected condition.
		[Trigger Type]	Set a condition under which trigger actions are executed. The following shows selectable items. Select the first condition from the following. • [Ordinary] • [Rise] • [Fall] • [Rise/Fall] • [ON] • [OFF] • [ON Sampling] • [OFF Sampling] • [Sampling] • [Range] • [Bit Trigger] Select the second condition from the following. • [ON] • [OFF] • [Range] • [Bit Trigger] However, if [Ordinary] is selected for the first condition, the second condition cannot be set.
		[Settings]	Set necessary items according to the item set for [Trigger Type]. ☞ Page 980 Trigger types of the functions running in the background

Item		Description
3)	[Use offset]	Displays the target for an offset and the offset device. This item can be set when trigger actions for each screen are set.
4)	[Name]	Set the name of a trigger action. Up to 100 characters can be set.

71.5.2 [Action] tab

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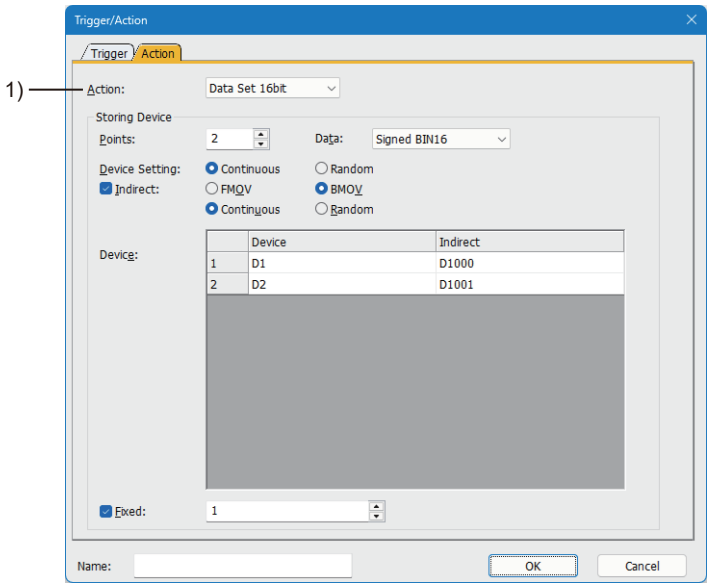
Set actions executed when set conditions are satisfied.



Item		Description
1)	[Action]	Set actions executed when set conditions are satisfied. The following shows selectable items. • [Momentary]: Turns on the target bit devices while the set conditions are satisfied. Turns off the target bit devices while the set conditions are not satisfied. The target bit devices cannot be turned on or off by other operations. • [Set]: Turns on the target bit devices. • [Reset]: Turns off the target bit devices. • [Alternate]: Switches the status of the target bit devices between on and off. • [Data Set 8bit]: Writes values into the target 8-bit devices. • [Data Set 16bit]: Writes values into the target 16-bit word devices. • [Data Set 32bit]: Writes values into the target 32-bit word devices. • [Data Set 64bit]: Writes values into the target 64-bit word devices. • [Screen Switching]: Switches screens. • [Sound Output]: Plays a sound, stops a playback, or mute/unmute the sound.

The setting items vary according to the selected action.

For the setting items for each action, refer to the following.

☞ Page 2533 [Momentary], [Set], [Reset], or [Alternate]

☞ Page 2534 [Data Set 8bit], [Data Set 16bit], [Data Set 32bit], or [Data Set 64bit]

☞ Page 2536 [Screen Switching]

☞ Page 2537 [Sound]

[Momentary], [Set], [Reset], or [Alternate]

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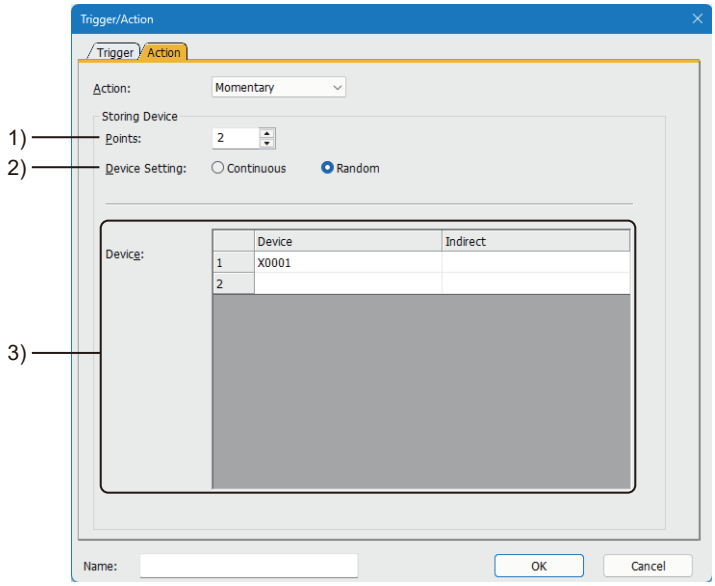

Item		Description
1)	[Points]	Set the number of devices operated when set conditions are satisfied. The setting range is [1] to [40].
2)	[Device Setting]	When setting 2 or more for [Points], select the method of setting devices. The following shows selectable items. • [Continuous]: Automatically inputs consecutive devices in the table of [Device] when a start device is set. • [Random]: Sets devices one by one.
3)	[Device]	Set the devices operated when set conditions are satisfied. In the [Device] columns in the table, set the devices operated when set conditions are satisfied. The [Indirect] columns are not used.

[Data Set 8bit], [Data Set 16bit], [Data Set 32bit], or [Data Set 64bit]

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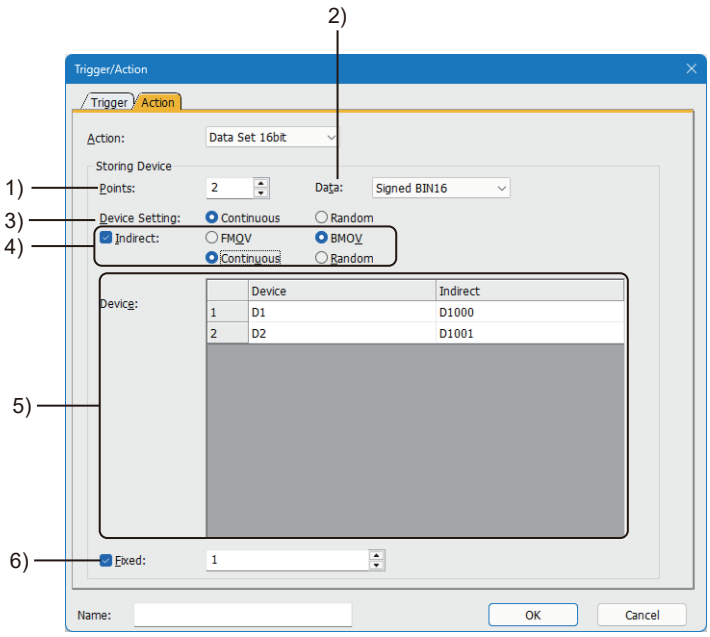

Item		Description
1)	[Points]	Set the number of devices to which values are written when set conditions are satisfied. The setting range is [1] to [20].
2)	[Data]	Select the data type of a value to be written to the target word device. The selectable items vary according to the selection for [Action]. • [Data Set 8bit]: [Signed BIN8], [Unsigned BIN8] • [Data Set 16bit]: [Signed BIN16], [Unsigned BIN16], [BCD16] • [Data Set 32bit]: [Signed BIN32], [Unsigned BIN32], [BCD32], [Real(32bit)] • [Data Set 64bit]: [Signed BIN64], [Unsigned BIN64], [BCD64], [Real(64bit)]
3)	[Device Setting]	When setting 2 or more for [Points], select the method of setting devices. The following shows selectable items. • [Continuous]: Sets consecutive devices starting from a set device. • [Random]: Sets devices one by one.
4)	[Indirect]	Writes the value of an indirect word device to a target word device when the set condition is satisfied. When setting 2 or more for [Points], select the method of setting indirect devices. The following shows selectable items. • [FMOV]: Set one indirect device. ☞ Page 2525 [Fixed] and [Indirect] • [BMOV]: Set indirect devices one by one. Select the method of setting indirect devices. The following shows selectable items. • [Continuous]: Sets consecutive devices starting from a set device. • [Random]: Sets devices one by one. ☞ Page 2527 FMOV and BMOV
5)	[Device]	Set the devices operated when set conditions are satisfied. In the [Device] columns in the table, set word devices into which values are written when set conditions are satisfied. In the [Indirect] columns in the table, set indirect devices. ☞ Page 834 How to set devices, labels, and tags

Item		Description
6)	[Fixed]	Set this item when writing a fixed value into the target word devices when set conditions are satisfied. The setting range depends on the setting of [Data]. • [Signed BIN8]: -128 to 127 • [Unsigned BIN8]: 0 to 255 • [Signed BIN16]: -32768 to 32767 • [Unsigned BIN16]: 0 to 65535 • [BCD16]: 0 to 9999 • [Signed BIN32]: -2147483648 to 2147483647 • [Unsigned BIN32]: 0 to 4294967295 • [BCD32]: 0 to 99999999 • [Real(32bit)]: -999999000000.0 to 999999000000.0 • [Signed BIN64]: -9223372036854775808 to 9223372036854775807 • [Unsigned BIN64]: 0 to 18446744073709551615 • [BCD64]: 0 to 9999999999999999 • [Real(64bit)]: -9999999999999900000000.0 to 9999999999999900000000.0 ☞ Page 2525 [Fixed] and [Indirect]

[Screen Switching]

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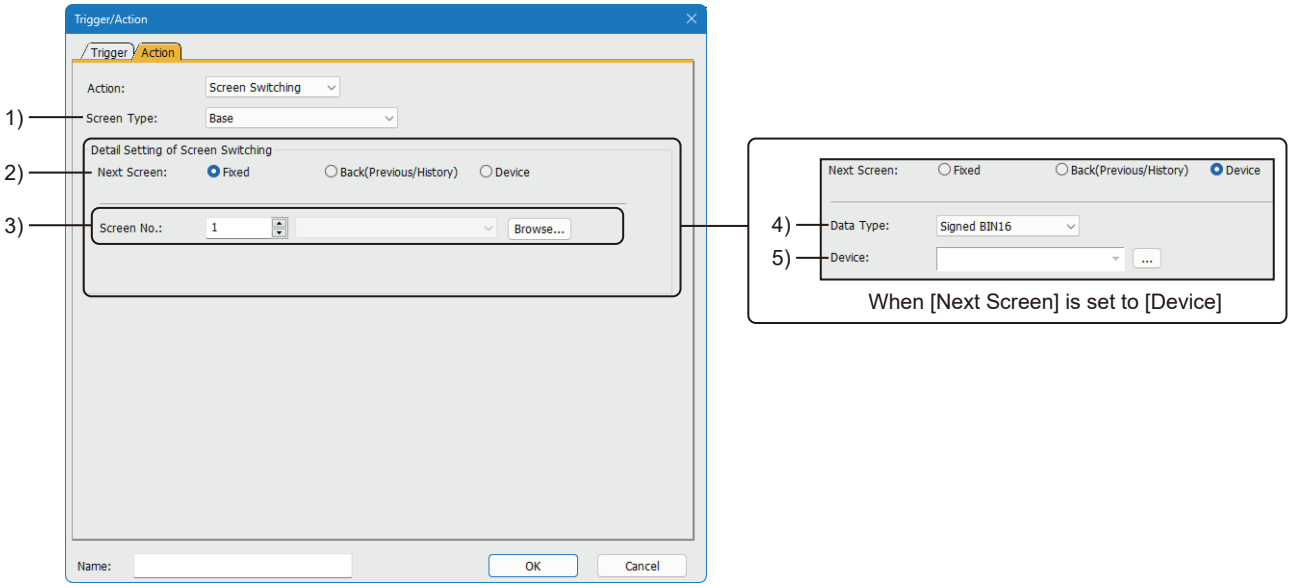

When [Next Screen] is set to [Fixed]

Item		Description
1)	[Screen Type]	Set the type of the destination screen. The following shows selectable items. • [Base] • [Overlap Window1] • [Overlap Window2] • [Overlap Window3] • [Overlap Window4] • [Overlap Window5] • [Superimpose Window1] • [Superimpose Window2] • [Dialog Window]
2)	[Next Screen]	Set the destination screen for switching. The following shows selectable items. • [Fixed] Select this item when switching to the screen that has given a specified screen No. • [Back(Previous/History)] Select this item when switching to the previously displayed screen. The hierarchy mode or history mode is settable in the [Environmental Setting] window ([Screen Switching/Window]). ☞ Page 530 Setting for switching screens to be displayed on the GOT ([Screen Switching/Window]) • [Device] Select this item when specifying the destination screen No. with a set device value.
3)	[Screen No.]	Set the destination screen number. Click the [Browse] button to open the screen image.
4)	[Data Type]	Select the data type of the device value. The following shows selectable items. • [Signed BIN16] • [BCD16]
5)	[Device]	Set a device. ☞ Page 834 How to set devices, labels, and tags

[Sound]

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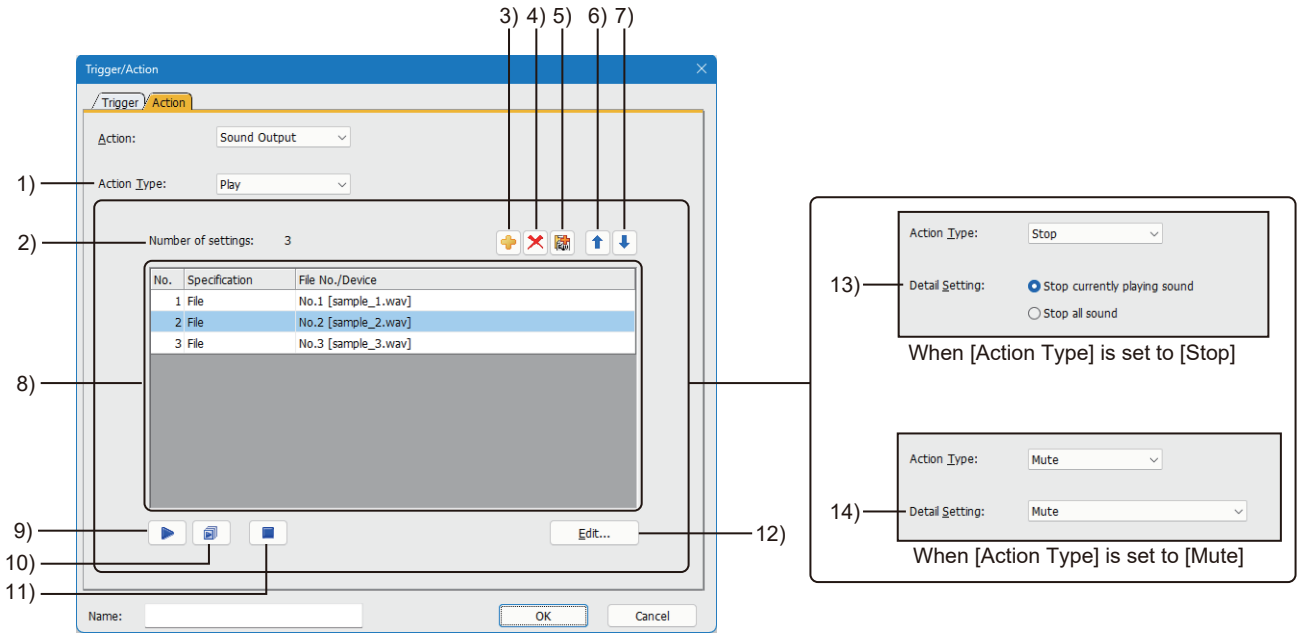

When [Action Type] is set to [Play]

Item			Description
1)	[Action Type]		Select an action of the sound output. The following shows selectable items. • [Play] • [Stop] • [Mute]
2)	[Number of settings]		Total number of the play settings in the playlist.
3)	[Add] button		Adds a new play setting to the playlist.
4)	[Delete] button		Deletes a selected play setting in the playlist.
5)	[Duplicate] button		Copies a selected play setting in the playlist.
6)	[Up] button		Moves the cursor up one row in the playlist.
7)	[Down] button		Moves the cursor down one row in the playlist.
8)	Playlist	—	Lists the play settings of sound files. Up to 16 play settings can be configured. When the trigger condition is satisfied, the sound files specified in the playlist play continuously starting from the top of the list.
		[No.]	Number of a play setting. The corresponding sound files play in order of increasing number.
		[Specification]	Method of specifying a sound file. • [File]: Uses a file number to specify a sound file. • [Device]: Uses an indirect device to specify a sound file.
		[File No./Device]	Sound file number or the device to specify a sound file.
9)	[Play] button		Plays the sound file that corresponds to a selected play setting in the playlist.
10)	[Repeat] button		Plays the sound files specified in the playlist continuously, starting from the top of the list. If [Specification] is set to [Device] in a play setting, the corresponding sound file is skipped.
11)	[Stop] button		Stops the current playback.
12)	[Edit] button		Displays the [Sound Setting] dialog. Edit a selected play setting in the playlist. ☞ Page 2539 [Sound Setting] dialog

Item		Description
13)	[Detail Setting] (when [Action Type] is set to [Stop])	Select the behavior of the target action. • [Stop currently playing sound] Stops the current playback. The standby sound file plays subsequently. • [Stop all sound] Stops the current playback and cancels all standby sound files.
14)	[Detail Setting] (when [Action Type] is set to [Mute])	Select the behavior of the target action. • [Mute] • [Unmute] • [Mute/unmute]

71.6 [Sound Setting] dialog

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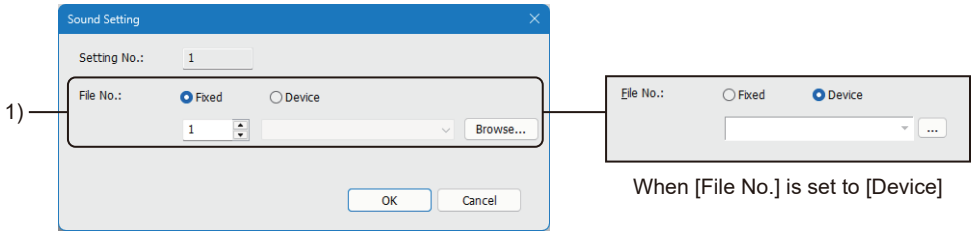
Set a sound file to play when the trigger condition is satisfied.

To display this dialog, in the [Action] tab of the [Trigger/Action] dialog, set [Action] to [Sound Output] and [Action Type] to [Play], and then click the [Edit] button.



When [File No.] is set to [Fixed]

When [File No.] is set to [Device]

Item		Description
1)	[File No.]	Select the method of specifying a sound file. The following shows selectable items. • [Fixed] Uses a sound file number to specify a sound file. After selecting this item, specify the file number of a registered sound file in the [Sound File List] dialog. The setting range is [1] to [500]. Click the [Browse] button to display the [Sound File List] dialog. Register or edit a sound file. ☞ Page 2715 [Sound File List] dialog • [Device] Uses the value of a specified device to specify a sound file. Select this item and set the device. ☞ Page 834 How to set devices, labels, and tags

PART 14

PART 15 Time action

72 Operating the set time as a trigger ([Time Action])

72 Operating the set time as a trigger ([Time Action])

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☞ Page 2541 Overview of the time action function
☞ Page 2543 Specifications of the time action
☞ Page 2543 How to use the time action
☞ Page 2549 [Time Action List] dialog
☞ Page 2551 [Time Action Attribute] dialog

72.1 Overview of the time action function

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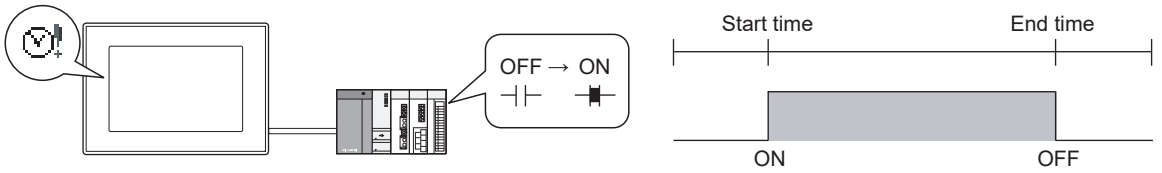
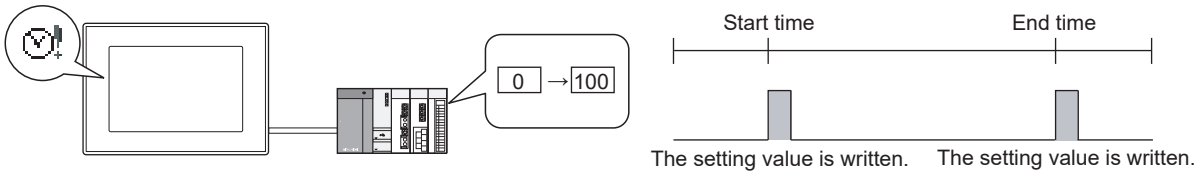
Devices can be turned on/off and write operations on values can be performed at a specified day of the week and time.
This function works based on a day of the week and time the GOT keeps.

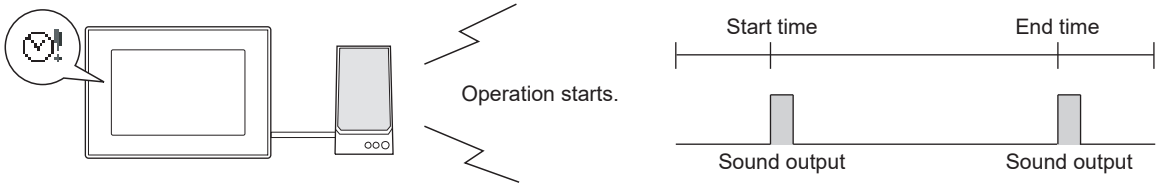
72.1.1 Turning on and off a bit device of a controller



72.1.2 Writing a value into a word device of a controller



72.1.3 Outputting sounds with an external speaker



Precautions

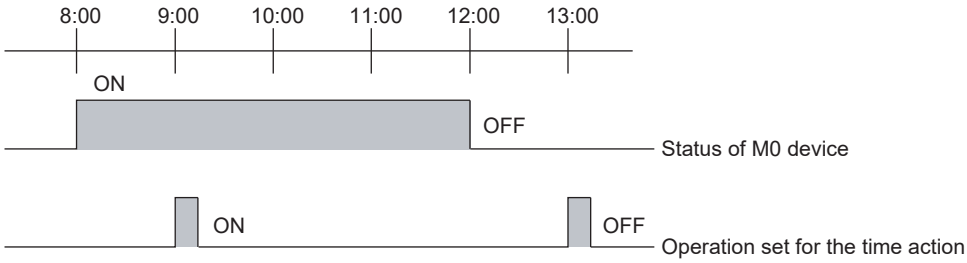
If the GOT's internal clock or the status of the set device is changed, the execution of time actions may be affected.
The following lists the operations that affect time actions.

• Turning on a set bit device before a specified time

Time actions do not start at the specified time.

Ex.

Setting where M0 turns on at 9:00



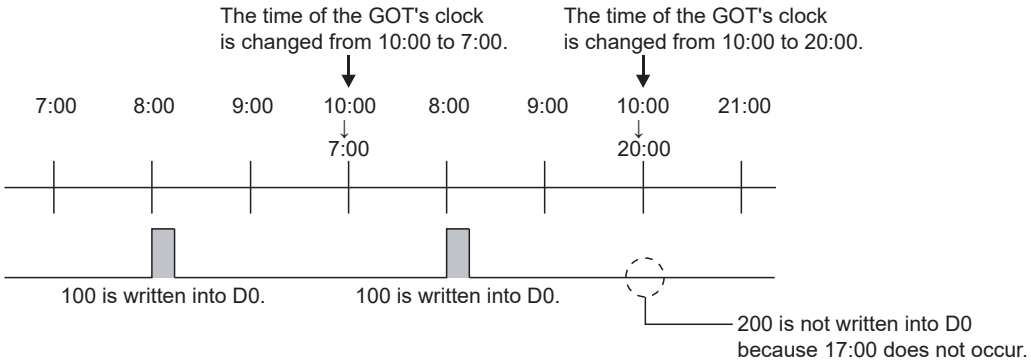
• When the GOT's internal clock is moved ahead/back

When the specified time when the action starts comes, the action starts.
However, if the current time, obtained after the clock has gone forward/back, is ahead of the specified time, the action does not start.
The following lists the operations that move the GOT's internal clock ahead/back.

Cause
When moving ahead/back the GOT's internal clock with the utility [Time setting] (by the time notification)
When the time of the controller is moved ahead/back (by the time setting)
When the clock is moved ahead/back with the GOT internal devices (GS513 to GS516)

Ex.

Setting where 100 is written to D0 at the start time 8:00 and 200 is written to D0 at the end time 17:00



72.2 Specifications of the time action

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72.2.1 Number of time actions that can be set

Up to 32 settings can be configured for one project.

Precautions

When using the same device for multiple time actions, do not make the executions overlap.

72.2.2 Actions that can be executed when set conditions are satisfied

- Turning on/off bit devices
- Writing values into word devices
- Outputting sounds with an external speaker

72.3 How to use the time action

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72.3.1 Setting procedure

The following shows the procedure for setting a time action.

1. Select [Common] → [Time Action] from the menu.

The [Time Action List] dialog appears.

☞ Page 2549 [Time Action List] dialog

2. Select a row in the time action list and click the [Edit] button.

The [Time Action Attribute] dialog appears.

☞ Page 2551 [Time Action Attribute] dialog

3. In the [Time] tab, set the day of the week and time when the time action starts.

☞ Page 2551 [Time] tab

4. In the [Action] tab, set the action executed at the specified day of the week and time.

☞ Page 2552 [Action] tab

5. Click the [OK] button.

The [Time Action Attribute] dialog is closed.

6. Click the [OK] button in the [Time Action List] dialog.

The dialog is closed and the registration of the time action is complete.

72.3.2 Setting the start and end days of the week and time for time actions

When setting the days of the week and time when time actions start and end, select either of the following items.

[Daily]

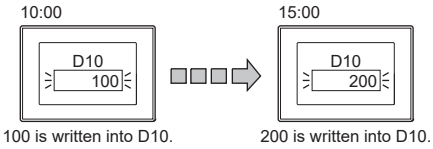
Select this item when setting the time when time actions start by day of the week.

The same action can be executed multiple times a week.

The start time and end time are required to be set in the same day.

Ex.

Writing a value into a word device at a specified time every day



[Through]

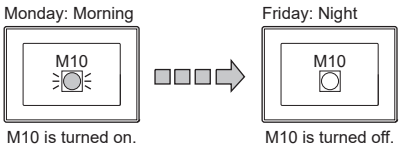
Select this item when the start and end time straddle days.

An action can be executed only once a week.

The start and end time can be set on different days of the week.

Ex.

Turning on a specified bit device on Monday morning and turning off on Friday night

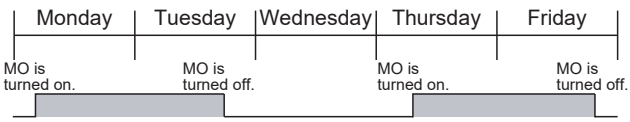


Point

When selecting [Through] for [Mode] and executing the same action twice or more a week, register the time action the number of times that the action is executed.

Example) Setting the same action executed twice a week

- Turing on M0 at a specified time on Monday AM, and turning off M0 at a specified time on Tuesday PM. (the setting of the first action)
- Executing no action on Wednesday
- Turing on M0 at a specified time on Thursday AM, and turning off M0 at a specified time on Friday PM. (the setting of the second action)



72.3.3 Controlling time actions

Time actions can be controlled with devices.
The settings of time actions can be output and changed.
The following shows the procedure for setting an external control.

1. Select [Common] → [Time Action] from the menu.

The [Time Action List] dialog appears.
☞ Page 2549 [Time Action List] dialog

2. Select [Enable External Control] and set a device.

☞ Page 2551 [Time Action Attribute] dialog

3. Select [Separate] or [Continuous] in [Device Setting].

Set an external control device for each time action.
Select a row in the time action list and click the [Edit] button.
The [Time Action Attribute] dialog appears.
☞ Page 2551 [Time Action Attribute] dialog

4. Select [External Control Device (8 Points)] in the [Time] tab and set a device.

☞ Page 2551 [Time] tab

Precautions

When the following operations are performed after the settings of a time action is changed with external control devices, the settings are reset to the original ones set with GT Designer3.

- Transferring package data
- Installing BootOS
- Powering off and restarting the GOT

External control devices

The settings of a time action can be stored in external control devices.

The setting items assigned to the devices depend on the selection for [Device Setting] in the [Time Action List] dialog.

When [Separate] is selected, the following devices are specified as external control devices.

- Three separate devices set in [External Control] in the [Time Action List] dialog
- Eight consecutive devices set for [External Control Device (8 Points)] in the [Time Action Attribute] dialog

If the device value for the day of the week when the time action starts and ends is 0, the setting of the time action is disabled.

Item	Device		Description
	[Separate]	[Continuous]	
Setting No. device	Set device*1	Set device*1	Refer to the following. ☞ Page 2546 [Setting No. Device]
External control signal device	Set device*1	Set device + 1*1	Refer to the following. ☞ Page 2547 [External Control Signal Device]
External control status notification device	Set device*1	Set device + 2*1	Refer to the following. ☞ Page 2547 [External Control Status Notification Device]
Mode	Set device*2	Set device + 3*1	Indicates [Mode] of the time action. • b0: 0 [Daily], 1 [Through] • b2 to b15: Use prohibited
Start day of the week, end day of the week	Set device + 1*2	Set device + 4*1	Indicates the days of the week when the time action starts and ends. When selecting [Daily] for [Mode] of the time action, do not use the device for the end day of the week. Start day of the week • b0: Sunday • b1: Monday • b2: Tuesday • b3: Wednesday • b4: Thursday • b5: Friday • b6: Saturday • b7: Use prohibited End day of the week • b8: Sunday • b9: Monday • b10: Tuesday • b11: Wednesday • b12: Thursday • b13: Friday • b14: Saturday • b15: Use prohibited
Start time (hour)	Set device + 2 *2	Set device + 5 *1	Indicates the time when the time action starts. (Data type: BCD)
Start time (minute)	Set device + 3 *2	Set device + 6 *1	
Start time (second)	Set device + 4 *2	Set device + 7 *1	
End Time (hour)	Set device + 5 *2	Set device + 8 *1	Indicates the time when the time action ends. (Data type: BCD)
End Time (minute)	Set device + 6 *2	Set device + 9 *1	
End Time (second)	Set device + 7 *2	Set device + 10*1	

*1 Devices set in [External Control] in the [Time Action List] dialog
☞ Page 2549 [Time Action List] dialog

*2 Devices set for [External Control Device (8 Points)] in the [Time Action Attribute] dialog
☞ Page 2551 [Time] tab

[Setting No. Device]

Store the setting No. (1 to 32) assigned to the target time action for the external control.

[External Control Signal Device]

Executes an external control.

Turn on the bit corresponding to the required operation.

If multiple bits are turned on, the rightmost is prioritized.

- b0: Output trigger

Outputs the data of the time action to the external control devices.

- b1: Change trigger

Changes the settings of the time action to those of the external control devices.

- b2: Use prohibited
- b3: Time action setting file storage trigger

Saves the time settings of all the time actions as the time action setting file.

- b4: Time action setting file deletion trigger

Deletes the time action setting file.

- b5 to b15: Use prohibited

Point

GOT's operations related to the time action setting file

When there is the time action setting file in the GOT at power on or reset, the GOT reads the time action settings from the time action setting file.

[External Control Status Notification Device]

Notifies the result of the execution of the external control.

After the completion of output or change, this device turns off automatically when the external control signal device is turned off.

- b0: Data were successfully output.
- b1: Data were successfully changed.
- b2: Error

A system error occurs.

- b3: The time action setting file was successfully saved.

Turns on when the time action setting file is successfully saved.

- b4: The time action setting file was successfully deleted.

Turns on when the time action setting file is successfully deleted.

- b5: The time action setting file was successfully read.

Turns on when the time action setting file in the GOT is successfully read out.

- b6 to b15: Use prohibited

Point

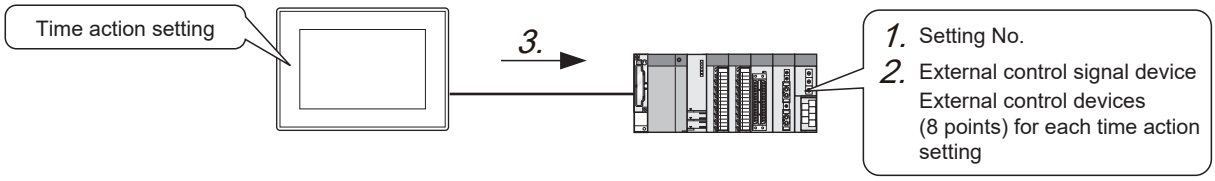
Disabling the time action setting file

To disable the read operation for reading from the time action setting file, perform either of the following operations then restart the GOT.

- Turn on b4 (time action setting file deletion trigger) of the external control device.
- Write the project in which it has become invalid to write the time action setting file to the GOT.

Examples of operations in external control

■Output (outputting the settings of a time action to external devices)

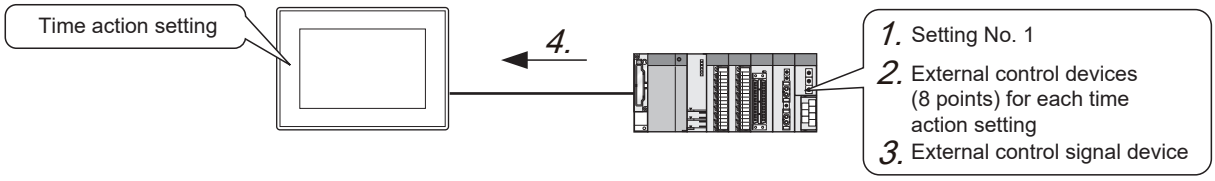


1. Set the setting No. assigned to the target time action for the change of settings.

2. Turn on b0 of the external control signal device.

3. The data of the time action are output to the external control devices.

■Change (changing the settings of the time action to those of the external devices)



1. Set the setting No. assigned to the target time action for the change of settings.

2. To the external control devices, write the values to replace with.

3. Turn on b1 of the external control signal device.

4. The time action is set with the values set above.

72.4 [Time Action List] dialog

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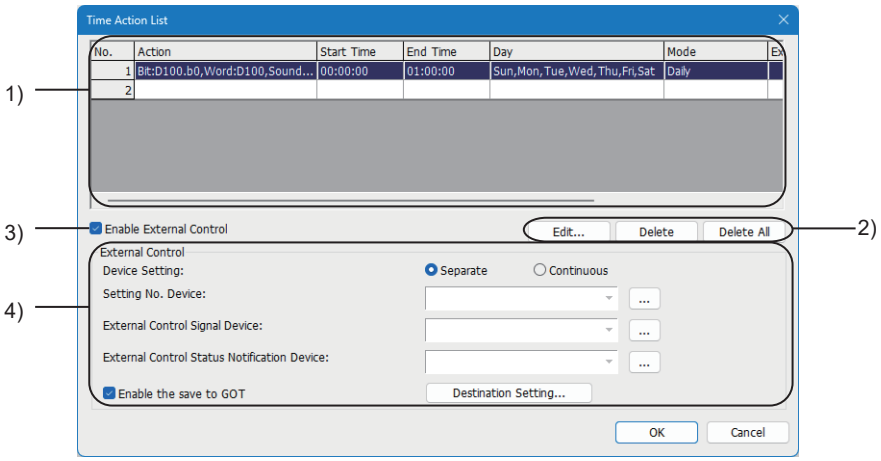
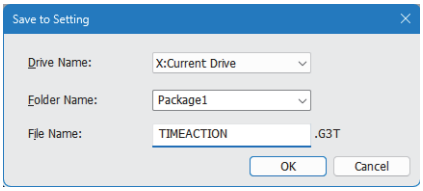
By time actions, devices can be turned on/off and write operations on values can be performed at a specified day of the week and time.

Select [Common] → [Time Action] from the menu to display the [Time Action List] dialog.

Set the operations of time actions, start time, and end time.



Item			Description
1)	Time action list	—	Lists set time actions. ☞ Page 2551 [Time Action Attribute] dialog
		[No.]	Displays the numbers that show the number of time actions.
		[Action]	Action to be executed when the trigger condition is satisfied
		[Start Time]	Displays the time when the time action starts.
		[End Time]	Displays the time when the time action ends.
		[Day]	Displays the day of the week when the time action is executed.
		[Mode]	Displays the mode in which the day of the week and time when the time action starts are specified.
		[External Control]	Displays a set external control device.
2)	[Edit] button	[Edit] button	Changes the settings of a selected time action. ☞ Page 2551 [Time Action Attribute] dialog
		[Delete] button	Deletes a selected time action.
		[Delete All] button	Deletes all the set time actions.
3)	[Enable External Control]		Set this item when controlling time actions with devices.

Item				Description
4)	[External Control]	—		Set each item of an external control.
		[Device Setting]	—	Select the setting method for external control devices.
			[Separate]	Set external control devices by time action. Eight word devices are required per time action. • [Setting No. Device] Set a device that specifies the time actions to be controlled. • [External Control Signal Device] Set a trigger device that executes the control. ☞ Page 2547 [External Control Signal Device] • [External Control Status Notification Device] Set a device that outputs the status of the time action. ☞ Page 2547 [External Control Status Notification Device]
			[Continuous]	Uses the same external control devices for all the set time actions. Eleven word devices are required. • [Setting No. Device(11 points)] Set a device that specifies the time actions to be controlled. Eleven consecutive devices counted from the specified device are set as external control devices.
		[Enable the save to GOT]		Set this item when it is necessary to save the time action setting file in the GOT. Setting this item enables b3 to b4 of the external control signal device and b3 to b5 of the external control status notification device. Setting this item enables the following operations. • Changing the settings of time actions with external control devices • Deleting the time action setting file ☞ Page 2547 [External Control Status Notification Device]
		[Destination Setting] button		Displays the [Destination Setting] dialog. Set items required to save the time action setting file in the GOT.  • [Drive Name] Set the destination drive. For the available drives by GOT model, refer to the following. ☞ Page 81 Drive configuration and capacity of the GOT • [Folder Name] Set the name of the folder where files are stored. For the restrictions on the folder name used on the GOT, refer to the following. ☞ Page 84 Restrictions for folder names and file names used in GOT • [File Name] Set the name of the files to be saved. For the restrictions of the file name used in the GOT, refer to the following. ☞ Page 84 Restrictions for folder names and file names used in GOT

72.5 [Time Action Attribute] dialog

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Click the [Edit] button in the [Time Action List] dialog to display the [Time Action Attribute] dialog.

☞ Page 2551 [Time] tab
☞ Page 2552 [Action] tab

72.5.1 [Time] tab

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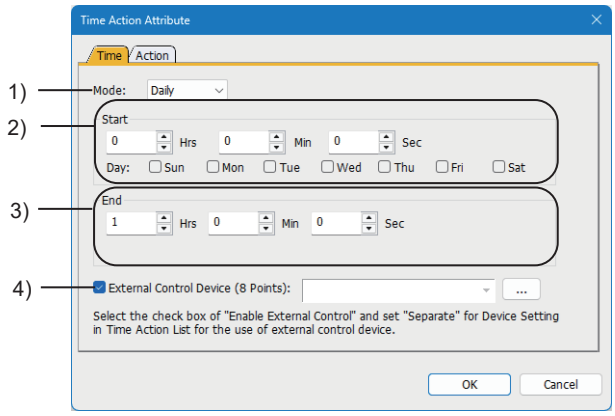
Set the day of the week and time when the time action starts.



Item			Description
1)	[Mode]		Set the mode in which the day of the week and time when the time action starts are specified. The following shows selectable items. • [Daily]: Executes the time action on a specified day of the week. • [Through]: Enables the time action for the period between specified days of the week.
2)	[Start]	[Hrs], [Min], [Sec]	Set the time when the time actions starts.
		[Day]	When selecting [Daily] for [Mode], set the day of the week when the time action starts. Multiple days of the week can be selected. When selecting [Through] for [Mode], set the day of the week when the time action starts.
3)	[End]	[Hrs], [Min], [Sec]	Set the time when the time action ends.
		[Day]	When selecting [Through] for [Mode], set the day of the week when the time action ends.
4)	[External Control Device (8 Points)]		Set a device that controls the time action. ☞ Page 834 How to set devices, labels, and tags Eight consecutive devices counted from the specified device are set as external control devices. Set this item when selecting [Separate] for [Device] in [Time Action List].

72.5.2 [Action] tab

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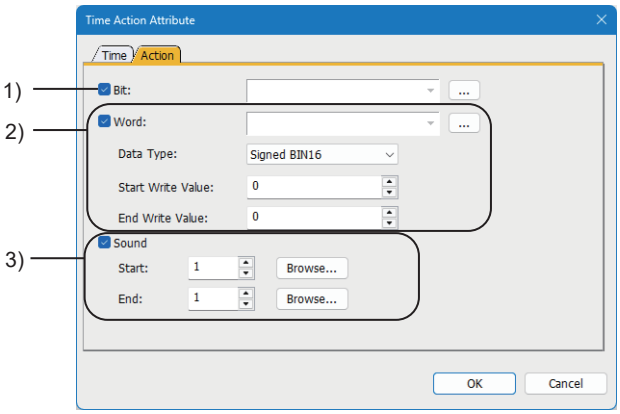
Set the action to execute.



Item			Description
1)	[Bit]		Set this item to turn on a bit device at the start of the time action and to turn off at the end of the action. Set a bit device. ☞ Page 834 How to set devices, labels, and tags
2)	[Word]	—	Set this item to write values to a word device at the start and end of the time action. Set a word device. ☞ Page 834 How to set devices, labels, and tags
		[Data Type]	Set the data type of the word device. The following shows selectable items. • [Signed BIN8] • [Unsigned BIN8] • [Signed BIN16] • [Unsigned BIN16] • [Signed BIN32] • [Unsigned BIN32] • [Signed BIN64] • [Unsigned BIN64] • [BCD 16] • [BCD 32] • [BCD64] • [Real(32bit)] • [Real(64bit)]
		[Start Write Value], [End Write Value]	Set values to write to the word device at the start and end of the time action. The setting range depends on the setting of [Data Type].
3)	[Sound]	—	Set this item to replay a sound at the start and end of the time action. ☞ Page 2707 Outputting sound with the GOT (sound output function)
		[Start], [End]	Set the numbers assigned to the sound files output at the start and end of the time action. The setting range is [1] to [500]. If the [Browse] button is clicked, a sound can be selected from the list. ☞ Page 2715 [Sound File List] dialog

PART 16 Hard copy

73 Capturing the operating screen of the GOT ([Hard Copy])

73 Capturing the operating screen of the GOT ([Hard Copy])

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☞ Page 2554 Overview of the hard copy function
☞ Page 2555 Specifications of the hard copy
☞ Page 2558 How to use the hard copy function
☞ Page 2559 [Hard Copy] dialog

73.1 Overview of the hard copy function

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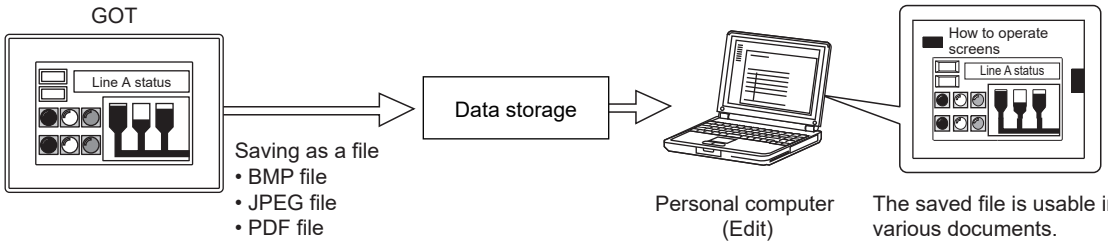
The hard copy function captures the GOT screen image, and saves the image to a data storage as an image file or PDF file.
The monitor screen displayed on the GOT can be captured as it is. Capturing only a specified base screen or overlap window from the displayed screens is also possible.
Even if displayed screens overlap one another, a target screen only can be captured.
A screen not displayed on the GOT screen can also be captured. This allows you to capture a different screen while displaying the operation screen on the GOT.



The screen image output by the hard copy function can be used for creating an operating instruction manual or for troubleshooting.

For a PDF file output, a function that saves multiple screen images to a single PDF file is available, eliminating the need to combine the images as a document.
However, the numbers of the output target screens must be consecutive. Design screens considering that requirement.

73.2 Specifications of the hard copy

GT37 SoftGOT3000

73.2.1 Number of hard copies that can be set

One hard copy setting is available for one project.

73.2.2 Hard copy execution

Execute a hard copy using either of the following functions.

- Start trigger device
- Special function switch

Precautions

While a hard copy operation is being performed, the GOT interrupts its processing of screens being displayed.
The screen processing restarts after the completion of the hard copy.

73.2.3 Specification of the output destination

Specify a file as the output destination of the captured screen image.
For specification of the output file, refer to the following.
☞ Page 2559 [Hard Copy] dialog

73.2.4 Specifying a file format

Specify one of the following file formats for an output to a file.

- BMP file
- JPEG file
- PDF file

For details, refer to the following.
☞ Page 2559 [Hard Copy] dialog

73.2.5 Specifications for image file (BMP, JPEG) save

Maximum number of files to be saved

One screen image is saved to one file and up to 9999 files can be saved.

Precautions

■State of a new trigger while a file save is being executed

If the trigger condition for a file save is satisfied while another file save is being executed, the new trigger is invalid.

Make sure that the trigger condition for a new file save is satisfied after the ongoing file save is complete.

Check the Writing Notification device for completion of a file save.

☞ Page 2559 [Hard Copy] dialog

■To maintain file access performance

It is recommended to format the data storage before using it.

The number of files to be stored in a folder should be less than 500.

If 500 or more files are stored in a folder, the access performance may be degraded.

Repeated writing or deleting of data may degrade access performance, regardless of the number of files.

In such a case, format the data storage.

File name

A file name consists of the file name specified in GT Designer3 and file number.

Ex.

When [File Name] is set to [SNAP], and [Style] is set to [BMP]

Order in which image files are saved	File name
1st	SNAP0001.BMP
2nd	SNAP0002.BMP
:	:
9998th	SNAP9998.BMP
9999th	SNAP9999.BMP

73.2.6 Specifications for PDF file save

Maximum number of files to be saved

Up to 9999 files can be saved.

Saving multiple captured screen images to a single PDF file is available by specifying the number of screen images to be output.

File name

The file name specification is the same as that for image files (BMP, JPEG).

☞ Page 2556 File name

System application (add-on function)

To save a captured screen image as a PDF file, [Hard Copy PDF Output] must be selected from the system applications (add-on functions).

Configuring either of the following settings incorporates the application into the package data automatically.

- In the [Hard Copy] dialog, select [Fixed] - [PDF] for [Style].
- In the [Hard Copy] dialog, select [Device] for [Style], and select [Output PDF file].

Specifications of the page size and orientation

Specify the page size and orientation of the PDF file.

For details, refer to the following.

☞ Page 2559 [Hard Copy] dialog

73.3 How to use the hard copy function

GT37 SoftGOT3000

73.3.1 Setting procedure

The following shows the procedure for saving a captured screen image to a file.

1. Select [Common] → [Hard Copy] from the menu to display the [Hard Copy] dialog.

☞ Page 2559 [Hard Copy] dialog

2. Set [Destination] to [File].

3. In the [File] tab, set necessary items and click the [OK] button.

☞ Page 2559 [Hard Copy] dialog

For the methods of starting a hard copy, refer to the following.

☞ Page 2558 Starting a hard copy

73.3.2 Starting a hard copy

The following shows the procedure for starting a hard copy.

Using a start trigger device

Set the start trigger device for a file save.

1. Select [Common] → [Hard Copy] from the menu to display the [Hard Copy] dialog.

☞ Page 2559 [Hard Copy] dialog

2. In the [File] tab, select [Start Trigger Device].

3. Specify a start trigger device, and click the [OK] button.

To start a hard copy output, use a bit switch or other methods to turn on the start trigger device.

Set the ON and OFF times of the start trigger device to one second or more for each.

If you use the bit switch in which [Action] is set to [Momentary], configure the settings in the [Bit Switch] dialog ([Extended] tab) as shown below.

- Set [Delay] to [OFF].
- Set [Delay Time] to [1] second or more.

☞ Page 1199 [Switch] dialog

Using a special function switch

Configure the settings of a special function switch as shown below.

- Set [Switch Action] to [Start Hard Copy].
- Select [Specify the destination to output hard copies].
- Set [Destination] to [File].

Setting a start trigger device is unnecessary.

To start a hard copy output, touch the set special function switch.

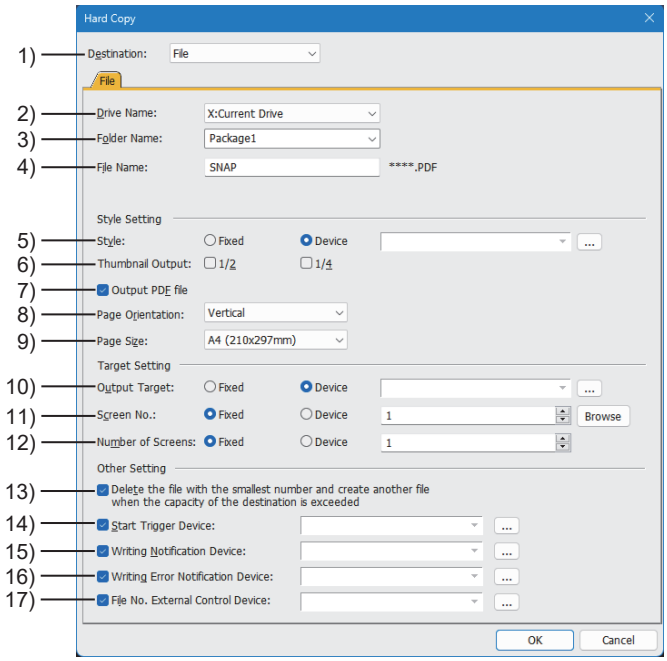
☞ Page 1230 [Special Function Switch] dialog

73.4 [Hard Copy] dialog

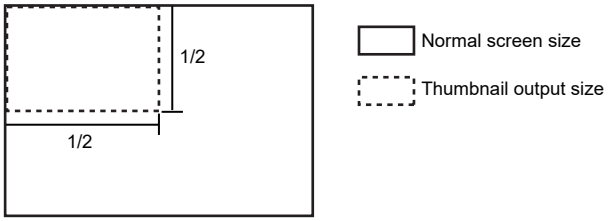
GT37 SoftGOT3000

Configure the hard copy settings.

Select [Common] → [Hard Copy] from the menu to display the [Hard Copy] dialog.



Item			Description
1)	[Destination]		Select [File]. A captured image is output to an image file.
2)	[Drive Name]		Set the destination drive. For the available drives by GOT model, refer to the following. ☞ Page 81 Drive configuration and capacity of the GOT
3)	[Folder Name]		Set the name of the folder where files are stored. Up to 65 characters can be set. When [1/2] or [1/4] is selected for [Thumbnail Output], up to 63 characters can be set. For the restrictions on the folder name, refer to the following. ☞ Page 84 Restrictions for folder names and file names used in GOT
4)	[File Name]		Set the name of the files to be saved. Up to 67 characters can be set. When [1/2] or [1/4] is selected for [Thumbnail Output], up to 65 characters can be set. For the restrictions on the file name, refer to the following. ☞ Page 84 Restrictions for folder names and file names used in GOT
5)	[Style]	—	Set the file format of a file to be saved.
		[Fixed]	Specify the file format of a file to be saved directly.
		[Device]	Specify the file format of a file to be saved using devices. You can specify a word device or word-specified bit device (data type: unsigned 16-bit binary data). The following shows the setting values. • 0: BMP • 1: JPEG • 2: PDF If a value other than the above is set, the hard copy is not executed and system alarm 367 is output. To specify the PDF format, be sure to select [Output PDF file].

Item			Description
6)	[Thumbnail Output]	—	Thumbnail output is not available for PDF files. This item is not displayed when [Fixed] is selected for [Style] and PDF is selected. If [Device] is selected for [Style] and PDF output is selected, any setting for this item will be invalid. Set this item to create a thumbnail of a captured image when the image is saved to a file. Example) [1/2] in size  If the output target is as follows, this item is disabled even though it is set, and system alarm 359 is output at a file output. • Displayed screen: Overlap windows 1 to 5 • Hidden screen: Window screen
		[1/2]	Creates a thumbnail that is half of normal screen size. The following shows the destination folder. • Folder name: Folder set with [Folder Name]\M • File name: Name set for [File Name]
		[1/4]	Creates a thumbnail that is a quarter of normal screen size. The following shows the destination folder. • Folder name: Folder set with [Folder Name]\S • File name: Name set for [File Name]
7)	[Output PDF file]		This item is displayed when [Device] is selected for [Style]. Be sure to select this item to execute a PDF output using a device.
8)	[Page Orientation]		Specify the PDF page orientation. The screen is scaled to fit the page size. Left, right, top, and bottom margins are provided on the page of the outputted PDF file. • [Vertical] Images are all vertically outputted regardless of the aspect ratio of the screen. • [Horizontal] Images are all horizontally outputted regardless of the aspect ratio of the screen. • [Automatic] The page orientation is automatically determined considering the aspect ratio of the output target screen so that the margins will be minimized. [Vertical] is set for square and vertically oriented screens whereas [Horizontal] is set for horizontally oriented screens.
9)	[Page Size]		Specify the PDF page size.
10)	[Output Target]	—	Specify an output target screen. To specify a screen other than the monitor screen being displayed, select [Screen Switching/Windows] and specify a screen not selected for [Take a hard copy of a screen other than the displayed monitor screen]. ☞ Page 542 [Screen Switching/Window]
		[Fixed]	Specify an output target screen directly.
		[Device]	Specify an output target screen using devices. You can specify a word device or word-specified bit device (data type: unsigned 16-bit binary data). The following shows the setting values. • 0: Displayed monitor screen • 1: Displayed base screen • 2: Displayed overlap window 1 • 3: Displayed overlap window 2 • 4: Displayed overlap window 3 • 5: Displayed overlap window 4 • 6: Displayed overlap window 5 • 7: Hidden base screen • 8: Hidden window screen

Item			Description
11)	[Screen No.]	—	Set this item when a hidden screen is specified as the output target. Specify the number of the screen whose image is to be output.
		[Fixed]	The setting range is [0] to [32767]. Click the [Browse] button to display the [Screen Image List] dialog.
		[Device]	You can specify a word device or word-specified bit device (data type: unsigned 16-bit binary data). Set a value within the range from 0 to 32767.
12)	[Number of screens]	—	Set this item when PDF is selected for [Style] and a hidden screen is selected for [Output Target]. If the screen numbers are consecutive, specifying the number of screens enables output of multiple screen images to a PDF file. Specify the number of screens to be output, counting from the screen number specified in [Screen No.].
		[Fixed]	The setting range is [1] to [100].
		[Device]	You can specify a word device or word-specified bit device (data type: unsigned 16-bit binary data). Set a value within the range from 1 to 100.
13)	[Delete the file with the smallest number and create another file when the capacity of the destination is exceeded]		Deletes an existing file and saves a new file when the save destination drive has insufficient free space.*1 If you deselect this item, a new file is not created when the destination drive has insufficient free space or file No. 9999 exists in the destination folder.
14)	[Start Trigger Device]		Set the device to start a hard copy (file save). For the setting method, refer to the following. ☞ Page 834 How to set devices, labels, and tags
15)	[Writing Notification Device]		Set the device to notify that a captured image is being saved to a file. For the setting method, refer to the following. ☞ Page 834 How to set devices, labels, and tags This device is on during an image file output.
16)	[Writing Error Notification Device]		Set the device to notify that saving a captured image to a file has failed. For the setting method, refer to the following. ☞ Page 834 How to set devices, labels, and tags This device turns on when an error occurs during an image file output. The device does not turn off automatically even after error recovery. You need to turn off the device.
17)	[File No. External Control Device]		Set the device that specifies the file number of a file to be saved. The data type of the device is unsigned 16-bit binary. For the setting method, refer to the following. ☞ Page 834 How to set devices, labels, and tags The valid range of the file number is 1 to 9999. If a specified file number exists, the corresponding file is overwritten. If a specified file number is outside the valid range, the file is not saved. This setting overrides the setting of [Delete the file with the smallest number and create another file when the capacity of the destination is exceeded]. (The GOT performs the operation with the latter item deselected.)

*1 Operation varies depending on the amount of free space of the destination drive and the file number of each file in the destination folder.

File number of a file in the destination folder	If the destination drive has enough free space	If the destination drive has insufficient free space
File No. 9999 existent	All existing files in the destination folder are deleted, and a new file is saved with file No. 1.	
File No. 9999 nonexistent	A new file is saved with the largest file number in the destination folder.	The existing files are deleted, starting from the one with the smallest file number in the destination folder, until a new file is saved. A new file is saved with the largest file number in the destination folder.

73.5 Relevant settings

GT37 SoftGOT3000

Configure the relevant settings in addition to the specific settings for the hard copy as required.
The following shows the functions that are available by configuring the relevant settings.

73.5.1 GOT environmental settings (System information)

Select [Common] → [GOT Environmental Setting] → [System Information] from the menu to display the [Environmental Setting] dialog.
☞ Page 576 Setting a device which controls the GOT operations or notifies the GOT status ([System Information])

Function	Setting item
Notifying that data is being output to a file. (Write device: System signal 2-1.b7)	[System Signal 2-1]
Notifying that the number of files in the save destination folder approaches the upper limit (9999) (Write device: System signal 2-1.b12)	[System Signal 2-1]

73.5.2 GOT internal device

☞ Page 3581 GOT special register (GS)

Function	Setting item
Setting a wait time for communication and drawing to complete.	GS526

PART 17 Barcode function

74 Using a barcode reader with the GOT (barcode function)

74 Using a barcode reader with the GOT (barcode function)

GT37 SoftGOT3000

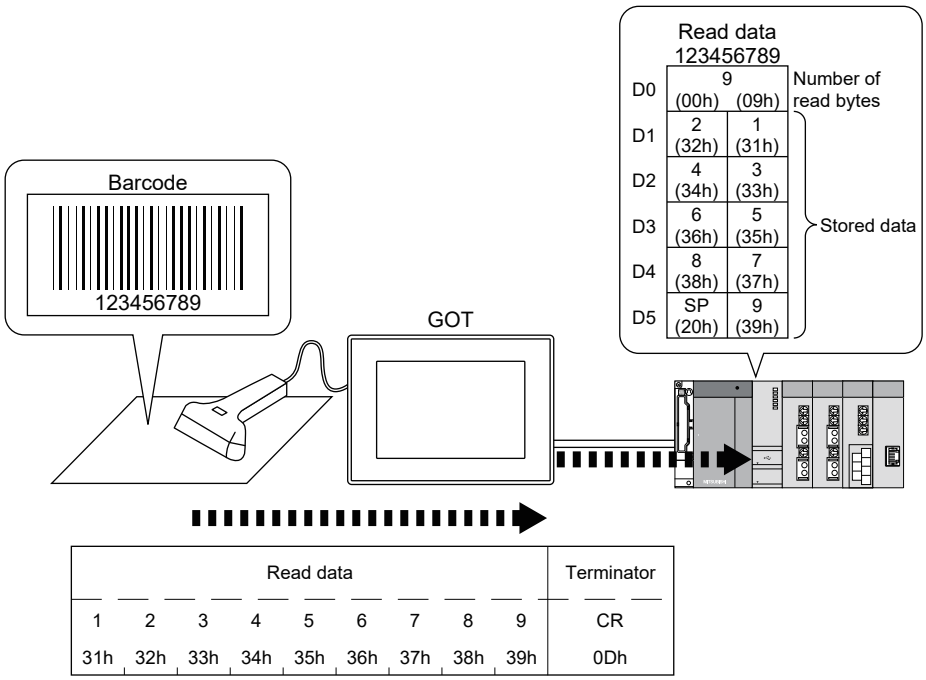
☞ Page 2565 Overview of the barcode function
☞ Page 2566 Specifications of the barcode function
☞ Page 2568 Basic use of the barcode function
☞ Page 2570 Advanced use of the barcode function
☞ Page 2572 [Bar Code] dialog
☞ Page 2578 System information settings
☞ Page 2579 Action of the barcode function
☞ Page 2586 Relevant settings

74.1 Overview of the barcode function

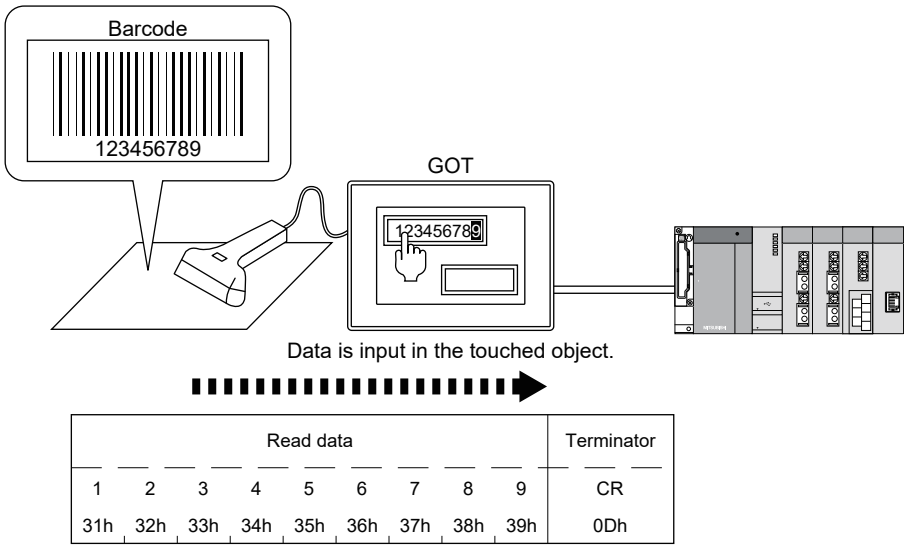
GT37 SoftGOT3000

The barcode function enables the GOT to read the data from a barcode by using a barcode reader.
The read data is processed as follows.

74.1.1 Writing read data into controllers



74.1.2 Directly inputting read data to objects (numerical input and text input)



74.2 Specifications of the barcode function

GT37 SoftGOT3000

74.2.1 System application (add-on function)

Serial barcode reader

To use the barcode function, a system application (add-on function) for [Bar Code (Serial)] is required.
Select [Use Serial Bar Code] in the [Bar Code] dialog ([Serial] tab) to automatically incorporate the system application into the package data.
☞ Page 2572 [Bar Code] dialog
In order to use this function with GT SoftGOT3000, this system application (add-on function) is not required.

USB barcode reader

To use the barcode function, a system application (add-on function) for [Bar Code (USB)] is required.
Select [Use USB Bar Code] in the [Bar Code] dialog ([USB] tab) to automatically incorporate the system application into the package data.
☞ Page 2572 [Bar Code] dialog

74.2.2 Applicable barcode readers

One serial barcode reader and one USB barcode reader are usable simultaneously.

Serial barcode reader

You can use the serial barcode readers that satisfy the header and terminator specifications referred to in the following.

☞ Page 2580 Header and terminator

For information on the validated serial barcode readers, refer to the following Technical Bulletin.

📖List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

USB barcode reader

You can use the USB barcode readers that satisfy the following conditions.

- A USB keyboard interface is provided.
- The Japanese 106 keyboard or the English 101 keyboard is settable as the USB keyboard type.
- "Enter" is settable as the terminator.

When data is input from a USB barcode reader, the GOT only supports the ASCII code characters that can be output using a USB keyboard.

The GOT only recognizes ASCII code characters.

Katakana, Hiragana, and Kanji characters contained in a QR code cannot be read with USB barcode readers.

These characters are readable with serial barcode readers.

For information on the validated USB barcode readers, refer to the following Technical Bulletin.

📖List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

74.2.3 Number of barcode function settings for one project

One setting can be configured per project.

74.2.4 Devices for storing data read by the barcode reader and the devices points

Devices that can store the data

The data can be stored in the word device.

The bit device cannot be specified as the word device.

Maximum number of devices

Up to 2000 device points can be set.

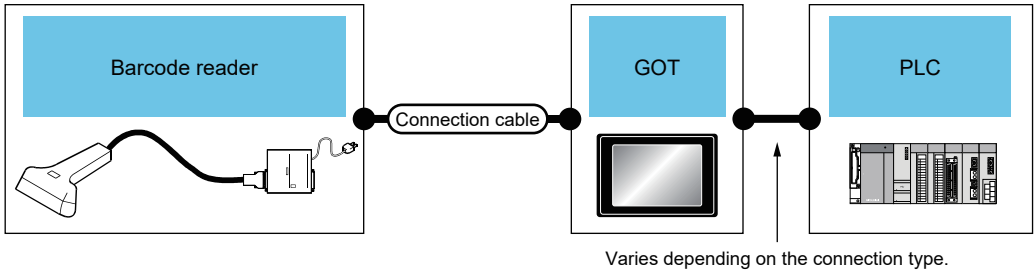
One read byte and up to 1999 read data are stored in the device.

74.3 Basic use of the barcode function

GT37 SoftGOT3000

74.3.1 System configuration

The following shows the system configuration of the barcode reader.



For information on the maximum number of connected devices, refer to the following.

☞ Page 2568 Maximum number of connected devices

Barcode reader	Connection cable	GOT	PLC
For the connectable barcode readers and system devices, the type of the barcode that can be read, and the connection cables, refer to the following Technical Bulletin. 📖List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)	Depending on the specifications of the barcode reader	GT37 SoftGOT3000 *1	For information on the system configuration between the GOT and the PLC, refer to the following. 📖GOT3000 Series User's Manual (Connection)

*1 For GT SoftGOT3000, connect the barcode reader to the interface of the personal computer.
GT SoftGOT3000 does not support USB barcode readers.

Maximum number of connected devices

Only one serial barcode reader or one USB barcode reader can access one GOT at a time.

Installing the barcode reader

The barcode reader can be attached to the GOT at any timing.

74.3.2 Setting procedure

Serial barcode reader

1. Connect a serial barcode reader to the GOT.

☞ Page 2568 System configuration

2. In the [Bar Code] dialog ([Serial] tab), configure the barcode function setting.

☞ Page 2572 [Bar Code] dialog

3. Set the system signal according to the channel number used.

☞ Page 2578 System information settings

4. Write package data to the GOT.

For the communication method between the personal computer and the GOT, refer to the following.

☞ Page 408 Transferring data to the GOT

5. Check that the barcode function is functioning properly.

☞ Page 2579 Action of the barcode function

USB barcode reader

1. Connect a USB barcode reader to the GOT.

☞ Page 2568 System configuration

2. In the [GOT Setup] window ([USB Host]), select [Use USB keyboard/USB bar code] and set [Keyboard Type] according to the setting of the USB barcode reader used.

☞ Page 634 [USB Host]

3. In the [Bar Code] dialog ([USB] tab), configure the barcode function setting.

☞ Page 2572 [Bar Code] dialog

4. Write package data to the GOT.

For the communication method between the personal computer and the GOT, refer to the following.

☞ Page 408 Transferring data to the GOT

5. Check that the barcode function is functioning properly.

☞ Page 2579 Action of the barcode function

74.4 Advanced use of the barcode function

GT37 SoftGOT3000

74.4.1 Directly inputting data to objects (numerical input or text input)

To directly input the data to the object (numerical input or text input), the setting for using the barcode function is required for the object.
When the object (numerical input or text input) is not in the ready state for the data read by the barcode reader to be directly input, the read data is cleared.
To input the data, touch the object (numerical input or text input) input, and read the data with the cursor displayed.

Precautions

When the special interrupt code output is enabled, the special interrupt code (23H) is output after a barcode is read.
When the data is directly input to an object and the barcode read completed signal is disabled, the special interrupt code is not output.
For the special interrupt code output through the microcomputer connection, refer to the following.
GOT3000 Series User's Manual (Connection)

74.4.2 Input completion notification settings

This setting is required when using a serial barcode reader.

When the input completion notification is disabled

Establishing a handshake is not required by using the External Device I/O signal and the External Device I/O Complete signal.
If the data is sequentially read into the object, old data is immediately overwritten by new data in each time.

When the input completion notification is enabled

The data cannot be input to the object until the External Device I/O signal is turned off by the External Device I/O Complete signal.
For the action of the System signal, refer to the following.
Page 2577 [Control Device]

74.4.3 Switching the behavior of the USB barcode reader

The Switch USB Barcode Input signal is usable to switch between the USB keyboard function and the barcode function.
For instruction on setting the Switch USB Barcode Input signal, refer to the following.
☞ Page 2576 [USB] tab

- When the Switch USB Barcode Input signal is on

The USB keyboard function is enabled.
For details on the USB keyboard function, refer to the following.
☞ Page 630 Configuring the settings for a mouse and a keyboard used with the GOT ([USB Host])

- When the Switch USB Barcode Input signal is off

The barcode function is enabled.

Precautions

When you use a USB barcode reader for writing the read data to specified devices, turn off the USB Barcode Input signal and the USB Barcode Read Completed signal before a barcode reading.
If a barcode reading is performed while the signals are on, the read data is deleted.

74.5 [Bar Code] dialog

GT37 SoftGOT3000

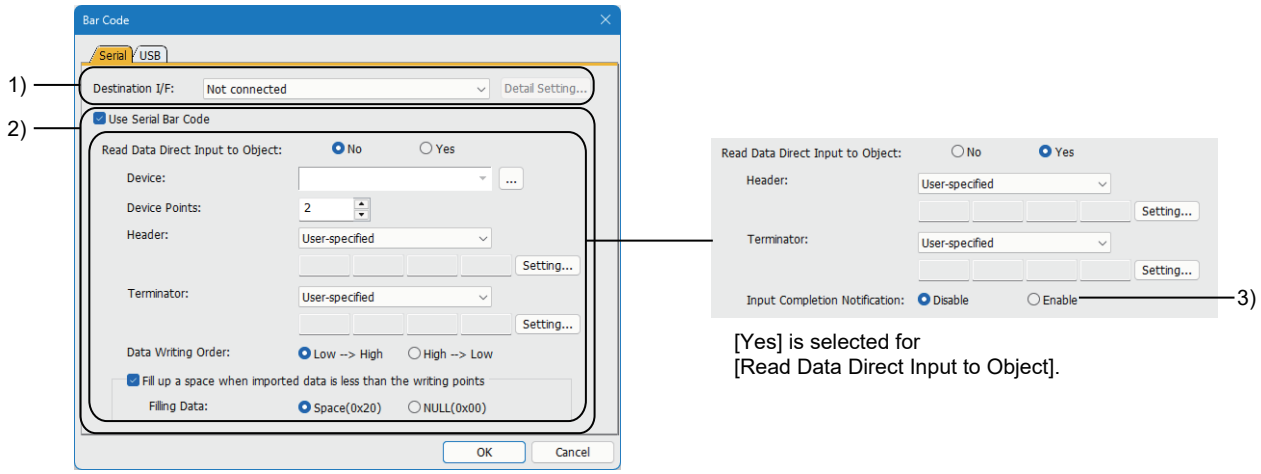
Select [Common] → [Peripheral Setting] → [Bar Code] from the menu to display the setting dialog.

☞ Page 2572 [Serial] tab
☞ Page 2576 [USB] tab

74.5.1 [Serial] tab

GT37 SoftGOT3000

This setting is required when using a serial barcode reader.



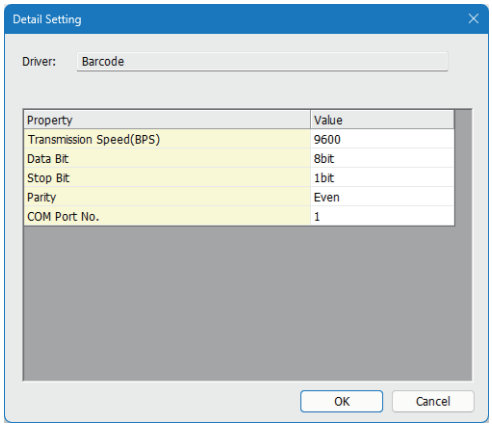
[No] is selected for [Read Data Direct Input to Object].

[Yes] is selected for [Read Data Direct Input to Object].

Item			Description
1)	[Destination I/F]	—	Set the interface of the GOT. The selectable items vary depending on the GOT model. • GT37 [RS422/485] [RS232] [Extend Unit] [Not connected] • GT SoftGOT3000 [Serial 1] [Serial 2] [Not connected]
		[Detail Setting] button	Configure the advanced settings in the [Detail Setting] window. For details, refer to the following. ☞ Page 2574 [Detail Setting] window (barcode)

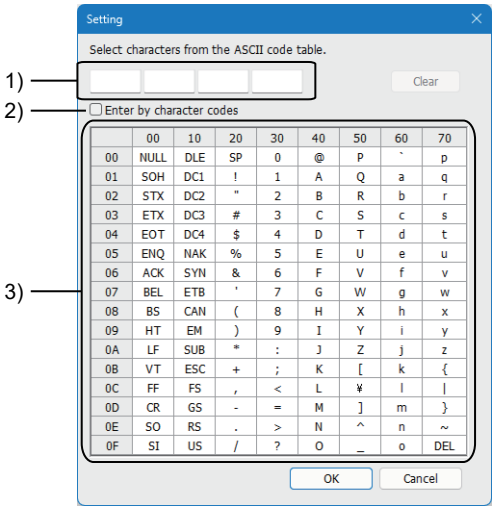
Item			Description
2)	[Use Serial Bar Code]	—	Enables the barcode function setting.
		[Read Data Direct Input to Object]	Select whether to write the data read by a serial barcode reader into controller devices, or to input the read data to an object (numerical input or text input). • [No]: Writes the data into the controller. • [Yes]: Directly inputs the data to the numerical input or text input. To directly input the data to the object (numerical input or text input), the setting for using the barcode reader is required for the object. ☞ Page 1328 [Numerical Input] dialog ☞ Page 1362 [Text Input] dialog
		[Device]	Set the start device of consecutive devices that store the data read by a serial barcode reader.
		[Device Points]	Set the number of devices that store the data read by the barcode reader. The setting range is [2] to [2000].
		[Header]	Select a header for the barcode read by a serial barcode reader. The following shows selectable items. • [None] • [STX] • [ENQ] • [User-specified]: Up to four bytes are settable. Specify a value for a byte in the range of 0x00 to 0xFF. When you select [User-specified], refer to the following. ☞ Page 2575 [Setting] dialog (for setting the header or terminator)
		[Terminator]	Select a terminator for the barcode read by a serial barcode reader. The following shows selectable items. • [ETX] • [LF] • [CR] • [CR+LF] • [User-specified]: Up to four bytes are settable. Specify a value for a byte in the range of 0x00 to 0xFF. When you select [User-specified], refer to the following. ☞ Page 2575 [Setting] dialog (for setting the header or terminator)
		[Data Writing Order]	Select the order of writing the data into the controller device. • [Low → High]: The data is written to the controller device from the lower 8 bits to the upper 8 bits. • [High → Low]: The data is written to the controller device from the upper 8 bits to the lower 8 bits.
		[Fill up a space when imported data is less than the writing points]	Select this item to fill blank devices with spaces or NULLs when the number of bytes of the data read by the barcode reader is less than the set device points. • [Space]: Fills the blank device with spaces (20H). • [NULL]: Fills the blank device with NULLs (00H).
3)	[Input Completion Notification]		Select whether to enable or disable the completion notification of data input processing by the System signal (External Device I/O signal and External Device I/O Complete signal). The setting range is [Disable] or [Enable]. ☞ Page 576 Setting a device which controls the GOT operations or notifies the GOT status ([System Information])

[Detail Setting] window (barcode)



Item	Description
[Transmission Speed(BPS)]	Select the transmission speed. The following shows selectable items. • [4800] • [9600] • [19200] • [38400] • [57600] • [115200]
[Data Bit]	Select the data length. The following shows selectable items. • [7bit] • [8bit]
[Stop Bit]	Select the stop bit length. The following shows selectable items. • [1bit] • [2bit]
[Parity]	Select the type for a parity check. The following shows selectable items. • [None] • [Even] • [Odd]
[COM Port No.]	This item is displayed only for GT SoftGOT3000. Set the COM port number. The setting range is [1] to [63].

[Setting] dialog (for setting the header or terminator)

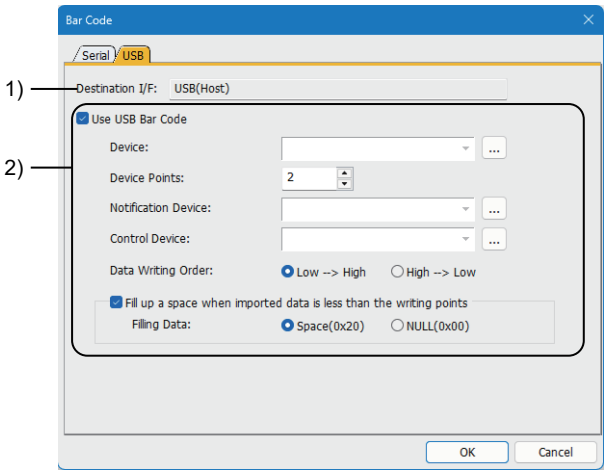


Item		Description
1)	Header/terminator entry field	Enter values for the header or terminator. A cell where an entry is made is counted as a valid byte.
2)	[Enter by character codes]	Enter values in hexadecimal.
3)	ASCII code table	Lists the selectable ASCII codes. Click a character to enter it into the header/terminator entry field.

74.5.2 [USB] tab

GT37 SoftGOT3000

This setting is required when using a USB barcode reader.



Item			Description
1)	[Destination I/F]		Displays the GOT interface to be used. The interface cannot be changed from [USB (Host)].
2)	[Use USB Bar Code]	—	Enables the barcode function setting.
		[Device]	Set the start device of consecutive devices that store the data read by a USB barcode reader.
		[Device Points]	Set the number of devices that store the data read by the barcode reader. The setting range is [2] to [2000].
		[Notification Device]	Set the device that notifies the processing status of the data read by a USB barcode reader. ☞ Page 834 How to set devices, labels, and tags A word device can be set. For the function of each bit of the device, refer to the following. ☞ Page 2576 [Notification Device]
		[Control Device]	Set the device that controls the processing of the data read by a USB barcode reader. ☞ Page 834 How to set devices, labels, and tags A word device can be set. For the function of each bit of the device, refer to the following. ☞ Page 2577 [Control Device]
		[Data Writing Order]	Select the order of writing the data into the controller device. • [Low → High]: The data is written to the controller device from the lower 8 bits to the upper 8 bits. • [High → Low]: The data is written to the controller device from the upper 8 bits to the lower 8 bits.
		[Fill up a space when imported data is less than the writing points]	Select this item to fill blank devices with spaces or NULLs when the number of bytes of the data read by the barcode reader is less than the set device points. • [Space]: Fills the blank device with spaces (20H). • [NULL]: Fills the blank device with NULLs (00H).

[Notification Device]

The following shows the function of each bit of the set device.

Bit number	Signal name	Function
b0 to b5	Use prohibited	—
b6	USB Barcode Input signal	Turns on when the data read by a USB barcode reader is stored to specified devices. Turns off when the USB Barcode Read Completed signal (b6 of the control device) turns on.
b7 to b15	Use prohibited	—

[Control Device]

The following shows the function of each bit of the set device.

Bit number	Signal name	Function
b0	Switch USB Barcode Input signal	Switches the behavior of the USB barcode reader. This signal is disabled when the Enable Operator Authentication signal (Control device.b1) is turned on and the GOT displays the screen for login with an external authentication device. • ON The USB keyboard function is enabled. For details on the USB keyboard function, refer to the following. ☞ Page 630 Configuring the settings for a mouse and a keyboard used with the GOT ([USB Host]) • OFF The barcode function is enabled.
b1	Enable Operator Authentication signal	Turn on this signal and display the screen for login with an external authentication device on the GOT to enable the operator authentication with a USB device. For details on the operator authentication, refer to the following. ☞ Page 2989 Restricting GOT screen operations and access from external devices (operator authentication (Mode 2)) ☞ Page 3038 Restricting display and operation on the GOT (Screen security)
b2	Enable USB Device Input During Operator Authentication signal	Turn on this signal to enable the operator authentication data read by a USB device to be saved into devices. For details on the operator authentication, refer to the following. ☞ Page 2989 Restricting GOT screen operations and access from external devices (operator authentication (Mode 2)) ☞ Page 3038 Restricting display and operation on the GOT (Screen security)
b3 to b4	Use prohibited	—
b5	Disable USB Barcode Input signal	The control is enabled when the Enable Operator Authentication signal (Control device.b1) is turned on and the GOT displays the screen for login with an external authentication device. Turn on this signal to disable the barcode function.
b6	USB Barcode Read Completed signal	Turn on this signal for the GOT to recognize that the stored barcode data has been transferred from the specified devices to different devices. Turn on this signal to turn off the USB Barcode Input signal (b6 of the notification device).
b7 to b15	Use prohibited	—

Precautions

If you switch between the ON and OFF states of the Switch USB Barcode Input signal while a USB barcode reader is reading data, unintended behavior may result.

Do not switch the ON and OFF states of the signal while a USB barcode reader is reading data.

74.6 System information settings

GT37 SoftGOT3000

This setting is required when using a serial barcode reader.

If you use a USB barcode reader, set [Notification Device] and [Control Device] in the [Bar Code] dialog ([USB] tab).

☞ Page 2576 [USB] tab

74.6.1 Setting the system information

Make sure to set one of the following System signals according to the channel No. you use.

For GT SoftGOT3000, set the System signal used for channel No. 5 of the GOT.

The barcode function is not available without the setting.

Channel No.	System signal
Channel No. 8	System signal 1-1, System signal 2-1
Channel No. 5	System signal 1-2, System signal 2-3
Channel No. 6	
Channel No. 7	

For details on system information, refer to the following.

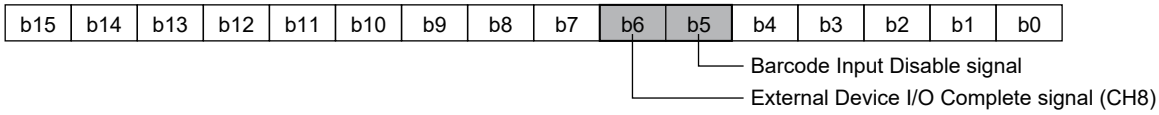
☞ Page 576 Setting a device which controls the GOT operations or notifies the GOT status ([System Information])

74.6.2 Action of the barcode function according to the System signal status

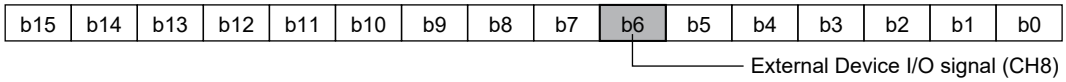
While the following System signals are on, the data read by the barcode reader is not written into the controller.

Use a sequence program or other methods to turn off the External Device I/O signal and the External Device I/O Complete signal.

System signal 1-1



System signal 2-1



74.7 Action of the barcode function

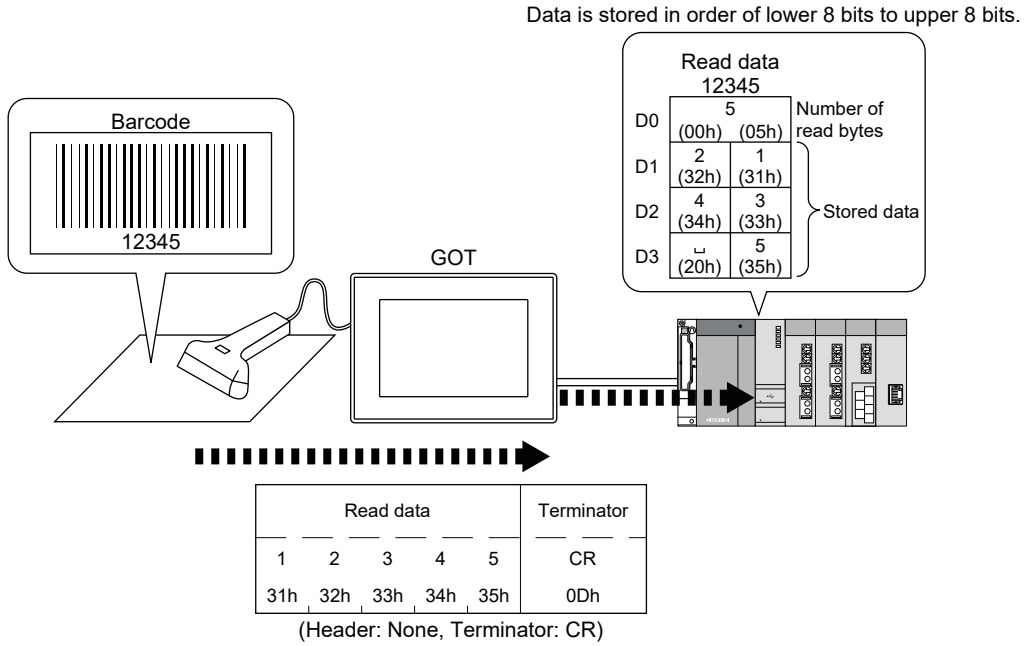
GT37 SoftGOT3000

74.7.1 Order of writing data into the controller

Set the order of writing the data read by the barcode reader into the controller.

Low → high

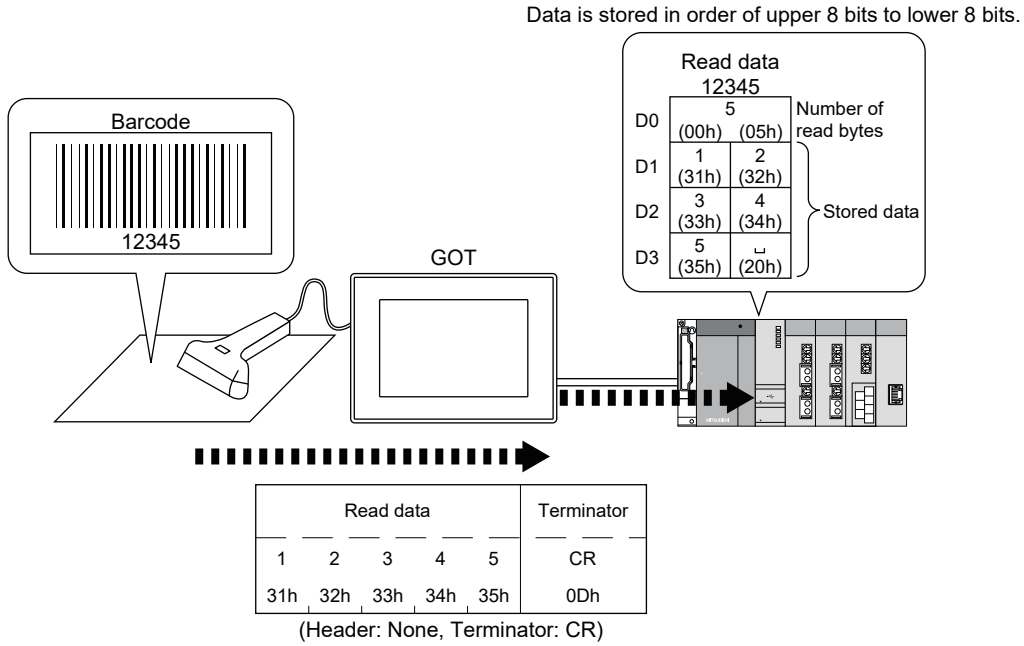
The data is written to the controller device from the lower 8 bits to the upper 8 bits.



(Header: None, Terminator: CR)

High → low

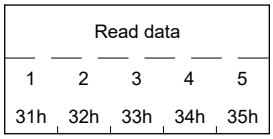
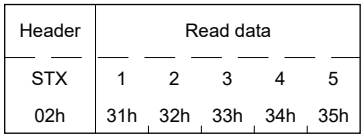
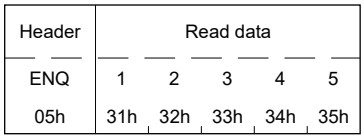
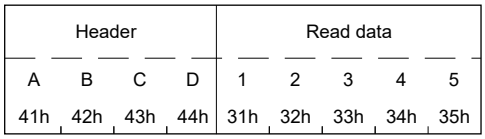
The data is written to the controller device from the upper 8 bits to the lower 8 bits.

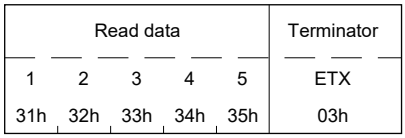
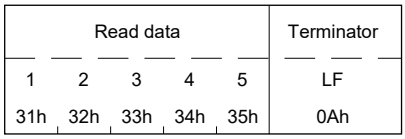
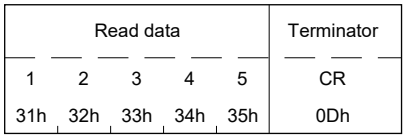
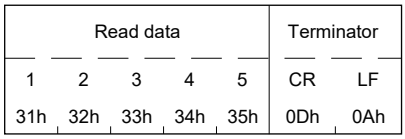
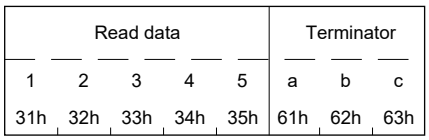


(Header: None, Terminator: CR)

74.7.2 Header and terminator

If you use a serial barcode reader, set the header and terminator for the read barcode.

Item		Description
Header	None (Default)	The read data is as follows when the header is not added to the head of data. 
	STX	The read data and STX are set as follows when STX is added to the head of data. 
	ENQ	The read data and ENQ are set as follows when ENQ is added to the head of data. 
	User-specified	The user-specified values are prepended to the read data. Example) When 41h, 42h, 43h, and 44h are specified 

Item		Description
Terminator	ETX	The read data and ETX are set as follows when ETX is added to the end of data. 
	LF	The read data and LF are set as follows when LF is added to the end of data. 
	CR (Default)	The read data and CR are set as follows when CR is added to the end of data. 
	CR+LF	The read data and CR+LF are set as follows when CR+LF is added to the end of data. 
	User-specified	The user-specified values are prepended to the read data. Example) When 61h, 62h, and 63h are specified 

74.7.3 Data to be stored in devices

The data read by the barcode reader is written into the controller device as the string data.

Ex.

Read data and order of writing the data

- Read data: 123456789
- Order of writing data: Low → high

When the number of read data is less than the set device points

Settings (Storage device: D0, Data points: 8)

Write device	Stored data	String data	
D0	0009h	-	The GOT writes the bytes of the read data.
D1	3231h	21	The GOT writes the read data sequentially from the lower byte.
D2	3433h	43	
D3	3635h	65	
D4	3837h	87	
D5	2039h	␣9	If the number of bytes of the read data is less than the set device points, select whether to fill the remaining devices with spaces (20h) or NULLs (00h).
D6	2020h	␣␣	
D7	2020h	␣␣	

␣: Space

When the number of read data is more than the set device points

Settings (Storage device: D0, Data points: 4)

Write device	Stored data	String data	
D0	0009h	-	The GOT writes the bytes of the read data.
D1	3231h	21	The GOT writes the read data sequentially from the lower byte.
D2	3433h	43	
D3	3635h	65	
			The data that exceeds the set device points is not written.

74.7.4 Operation example of the barcode function (Serial barcode reader)

The following shows the action timing of the barcode function.

Ex.

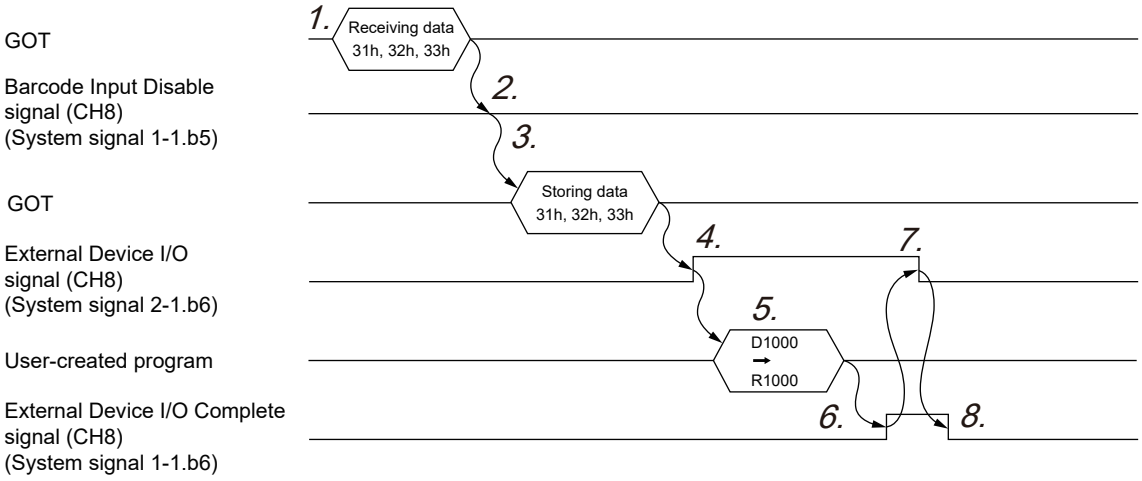
Settings in GT Designer3

- The barcode reader is connected to the GOT by using channel No.8.
- [No] is selected for [Read Data Direct Input to Object].
- System signal 1-1: D11
- System signal 2-1: D12
- Device: D1000
- Data points: 8

Control devices

Device	Item
System information	External Device I/O Complete signal (CH8) (System signal 1-1.b6), External Device I/O signal (CH8) (System signal 2-1.b6) ☞ Page 576 Setting a device which controls the GOT operations or notifies the GOT status ([System Information])

Handshake



1. The GOT receives data from a serial barcode reader.

2. When the Barcode Input Disable signal is off, the process proceeds to the next step.

3. The received data is stored to specified devices.

4. The External Device I/O signal (CH8) turns on upon storage of the data.

5. A user-created program transfers the stored data from the specified devices to different devices.

6. The user-created program turns on the External Device I/O Complete signal (CH8).

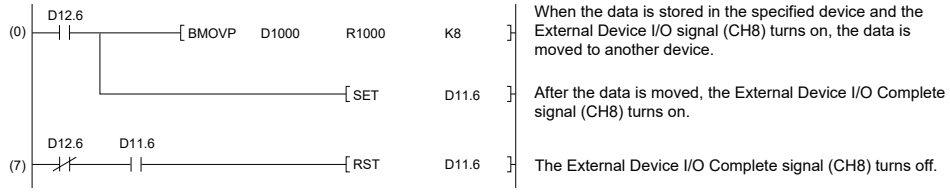
7. The External Device I/O signal (CH8) turns off upon turn-on of the External Device I/O Complete signal (CH8).

8. The user-created program turns off the External Device I/O Complete signal (CH8).

Example of the sequence program (When the GOT is connected to RCPU by using channel No. 8)

While the External Device I/O Complete signal and the External Device I/O signal are on, the data read by the barcode reader is not written into the controller.

Create a sequence program so that the External Device I/O Complete signal and the External Device I/O signal are turned off.



74.7.5 Operation example of the barcode function (USB barcode reader)

The following shows the action timing of the barcode function.

Ex.

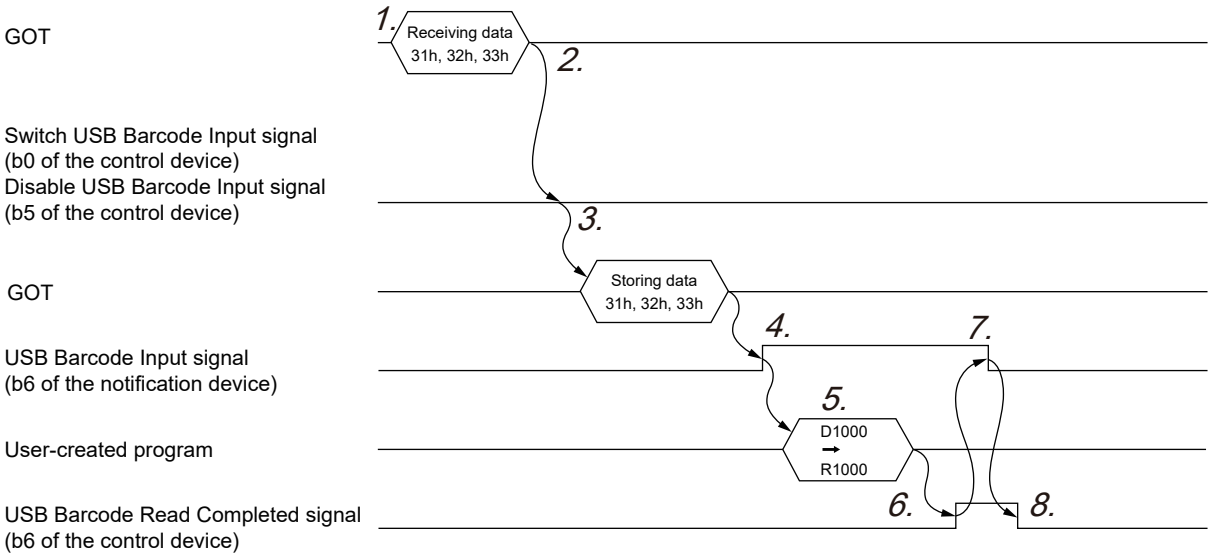
Settings in GT Designer3

- [Notification Device]: D11
- [Control Device]: D12
- Device: D1000
- Data points: 8

[Notification Device], [Control Device]

Device	Item
[Notification Device]	• USB Barcode Input signal (b6 of the notification device)
[Control Device]	• Switch USB Barcode Input signal (b0 of the control device) • Disable USB Barcode Input signal (b5 of the control device) • USB Barcode Read Completed signal (b6 of the control device)

Handshake



1. The GOT receives data from a USB barcode reader.

2. When the Switch USB Barcode Input signal and the Disable USB Barcode Input signal are off, the process proceeds to the next step.

3. The received data is stored to specified devices.

4. The USB Barcode Input signal turns on upon storage of the data.

5. A user-created program transfers the stored data from the specified devices to different devices.

6. The user-created program turns on the USB Barcode Read Completed signal.

7. The USB Barcode Input signal turns off upon turn-on of the USB Barcode Read Completed signal.

8. The user-created program turns off the USB Barcode Read Completed signal.

While the USB Barcode Input signal or the USB Barcode Read Completed signal is on, the read barcode data is not stored to the specified devices.

Create a sequence program so that the USB Barcode Input signal and the USB Barcode Read Completed signal are turned off.

74.8 Relevant settings

GT37 SoftGOT3000

Configure the relevant settings in addition to the specific settings for the barcode function as required.
The following shows the functions that are available by configuring the relevant settings.

74.8.1 GOT environmental settings (System information)

These settings are unavailable when a USB barcode reader is used.
Select [Common] → [GOT Environmental Setting] → [System Information] from the menu to display the [Environmental Setting] dialog.
☞ Page 576 Setting a device which controls the GOT operations or notifies the GOT status ([System Information])

Target channel	Function	Setting item
CH5	Switching the barcode function between enabled and disabled. (Read device: System signal 1-2.b2)	[System Signal 1-2]
	Turning on this signal turns off the External Device I/O signal (System signal 2-3.b0). (Read device: System signal 1-2.b3)	[System Signal 1-2]
	Notifying that the data read by the barcode reader is stored in the specified device. (Write device: System signal 2-3.b0)	[System Signal 2-3]
CH6	Switching the barcode function between enabled and disabled. (Read device: System signal 1-2.b5)	[System Signal 1-2] (Not available for GT SoftGOT3000.)
	Turning on this signal turns off the External Device I/O signal (System signal 2-3.b1). (Read device: System signal 1-2.b6)	[System Signal 1-2] (Not available for GT SoftGOT3000.)
	Notifying that the data read by the barcode reader is stored in the specified device. (Write device: System signal 2-3.b1)	[System Signal 2-3] (Not available for GT SoftGOT3000.)
CH7	Switching the barcode function between enabled and disabled. (Read device: System signal 1-2.b8)	[System Signal 1-2] (Not available for GT SoftGOT3000.)
	Turning on this signal turns off the External Device I/O signal (System signal 2-3.b2). (Read device: System signal 1-2.b9)	[System Signal 1-2] (Not available for GT SoftGOT3000.)
	Notifying that the data read by the barcode reader is stored in the specified device. (Write device: System signal 2-3.b2)	[System Signal 2-3] (Not available for GT SoftGOT3000.)
CH8	Switching the barcode function between enabled and disabled. (Read device: System signal 1-1.b5)	[System Signal 1-1] (Not available for GT SoftGOT3000.)
	Turning on this signal turns off the External Device I/O signal (System signal 2-1.b6) (Read device: System signal 1-1.b6)	[System Signal 1-1] (Not available for GT SoftGOT3000.)
	Notifying that the data read by the barcode reader is stored in the specified device. (Write device: System signal 2-1.b6)	[System Signal 2-1]

74.8.2 GOT internal device

☞ Page 3581 GOT special register (GS)

Function	Item
Notifying that the object is ready for receiving an direct input with a barcode reader or RFID. (Write device)	GS243.b15

PART 18 RFID function

75 Using an RFID with the GOT (RFID function)

75 Using an RFID with the GOT (RFID function)

GT37 SoftGOT3000

☞ Page 2589 Overview of the RFID function
☞ Page 2590 Specifications of the RFID function
☞ Page 2592 Basic use of the RFID function
☞ Page 2593 Advanced use of the RFID function
☞ Page 2595 [RFID] dialog
☞ Page 2598 System information settings
☞ Page 2599 Action of an RFID
☞ Page 2611 Relevant settings

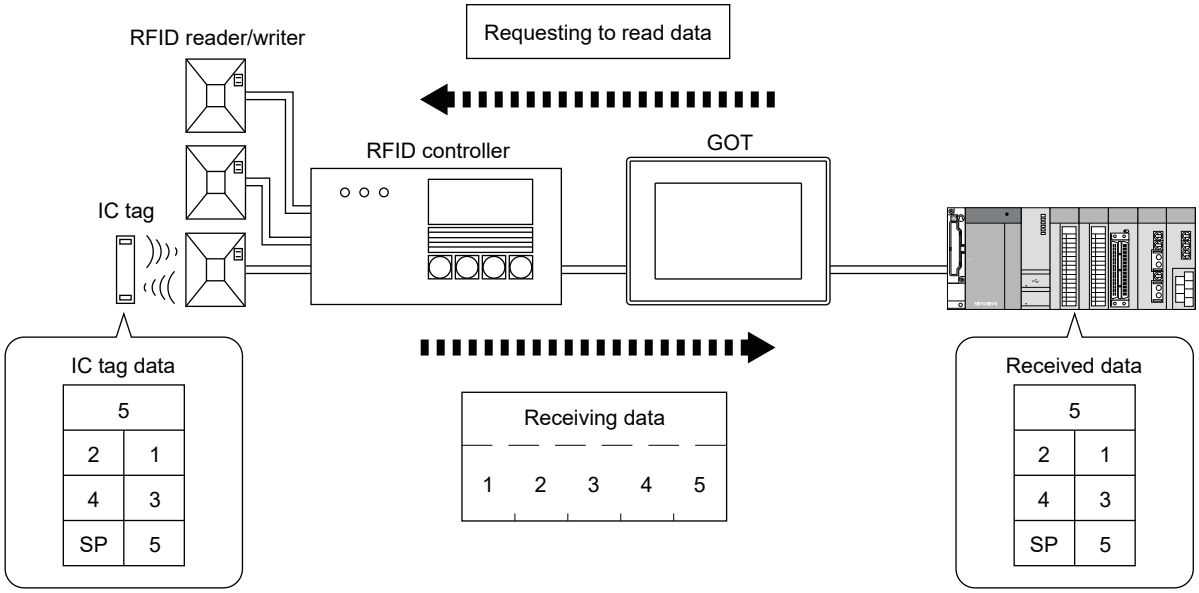
75.1 Overview of the RFID function

GT37 SoftGOT3000

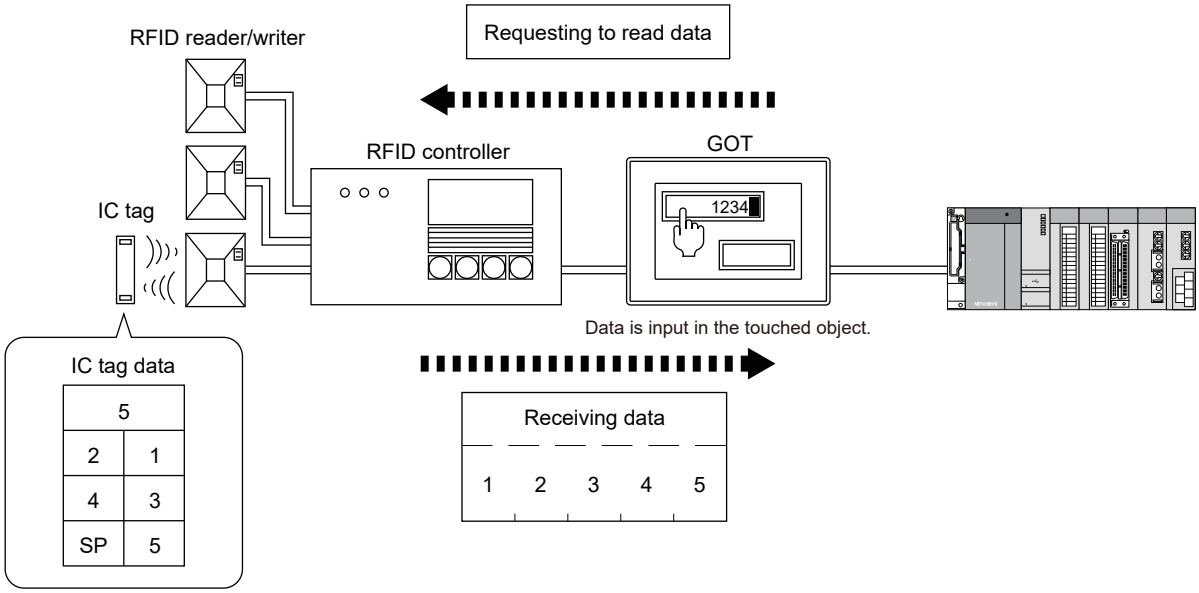
This function is used to send and receive data with the RFID controller reader/writer connected to the GOT, and to read the data received.

The read data is processed as follows.

75.1.1 Writing read data into controllers



75.1.2 Directly inputting read data to objects (numerical input and text input)



75.2 Specifications of the RFID function

GT37 SoftGOT3000

75.2.1 System application (add-on function)

To use the RFID function, a system application (add-on function) for [RFID] is required.

Select [Use RFID] in the [RFID] dialog to incorporate the application into the package data automatically.

☞ Page 2595 [RFID] dialog

In order to use this function with GT SoftGOT3000, this system application (add-on function) is not required.

75.2.2 Applicable RFID controllers

Applicable RFID controllers should meet the specifications of the dedicated protocol and nonprocedural protocol as shown below.

Protocol	Reference
Dedicated protocol (LSRF manufactured by LS ELECTRIC Co., Ltd.)	☞ Page 2604 When using a dedicated protocol (LSRF manufactured by LS ELECTRIC Co., Ltd.)
Dedicated protocol (ICU-60S manufactured by MARS TOHKEN SOLUTION CO.LTD.)	☞ Page 2604 When using a dedicated protocol (ICU-60S manufactured by MARS TOHKEN SOLUTION CO.LTD.) or a nonprocedural protocol
Nonprocedural protocol	☞ Page 2609 Nonprocedural protocol

Select the dedicated protocol that corresponds to the RFID controller to be used.

When no dedicated protocol corresponds to the RFID controller to be used, select the nonprocedural protocol.

For selecting the protocol, refer to the following.

📖GOT3000 Series User's Manual (Connection)

The following shows devices used for each protocol and a handshake example.

☞ Page 2599 Action of an RFID

For information on the validated RFID Controller, refer to the following Technical Bulletin.

📖List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

75.2.3 Connecting the RFID controller for the operator authentication

To use an RFID controller for the operator authentication, the controller can only be connected via RS-232 communication to the RS-232/422/485 interface built into the GOT.

75.2.4 Number of RFID function settings for one project

One setting can be configured per project.

75.2.5 Devices for storing data read by RFID reader/writer and the number of device points

Devices that can store the data

The data can be stored in the word device.

The bit device cannot be specified as the word device.

Maximum number of devices

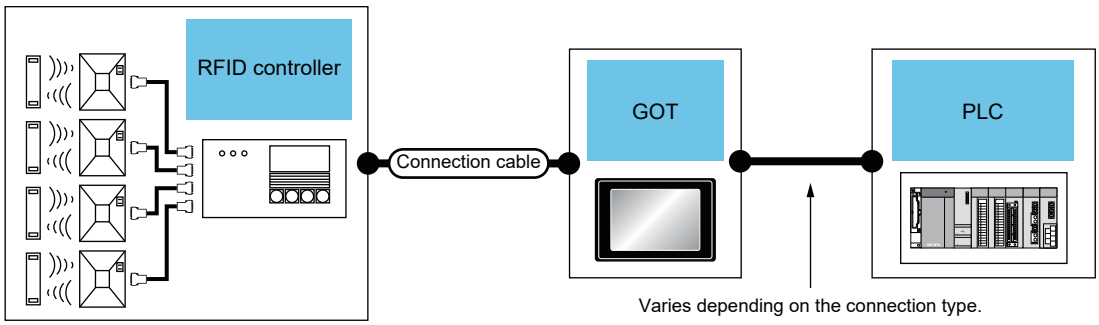
Up to 10000 devices can be set for the sent data and the received data in total.

75.3 Basic use of the RFID function

GT37 SoftGOT3000

75.3.1 System configuration

The following shows the system configuration of RFID.



For information on the maximum number of connected devices, refer to the following.

☞ Page 2592 Maximum number of connected devices

RFID controller Model	Connection cable	GOT	PLC
For the connectable RFID controllers and system devices, refer to the following Technical Bulletin. List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)	Depending on the specifications of the RFID controller	GT37 SoftGOT3000 *1	For information on the system configuration between the GOT and the PLC, refer to the following. GOT3000 Series User's Manual (Connection)

*1 For GT SoftGOT3000, connect the RFID controller to the interface of the personal computer.

Maximum number of connected devices

Only one RFID controller can access one GOT at a time.

Installing the RFID controller

The RFID controller can be attached to the GOT at any timing.

75.3.2 Setting procedure

1. Connect the GOT and the RFID.

☞ Page 2592 System configuration

2. Configure the settings for the RFID function in the [RFID] dialog.

☞ Page 2595 [RFID] dialog

3. Set the system signal according to the channel number used.

☞ Page 2598 System information settings

4. Write the package data to the GOT.

For the communication method between the personal computer and the GOT, refer to the following.

☞ Page 408 Transferring data to the GOT

5. Operate the RFID function.

☞ Page 2599 Action of an RFID

75.4 Advanced use of the RFID function

GT37 SoftGOT3000

75.4.1 Directly inputting data to objects (numerical input or text input)

To directly input the data to the object (numerical input or text input), the setting for using the RFID function is required for the object.

Precautions

Do not store or change the send data after starting communication with the RFID controller.
Otherwise, a communication error may occur.

Action when the GOT receives an error

When the GOT receives an error from an RFID reader/writer, the received error is directly input to the object (numerical input or text input).
For details on errors, refer to the following.
☞ Page 2604 Errors during communication

Receiving data that is divided into segments

When the data that is divided into segments is received, the segments of the received data are not combined in one.
When the segments of data are received, each segment of data is directly input to the object (numerical input or text input) in each time.

Timing of starting communication

The RFID Request signal is not used for directly inputting data to the numerical input or text input.
The GOT starts communication with the RFID controller after the object (numerical input or text input) is touched and a cursor appears.
Set the data to be used for the communication with the RFID controller before displaying the cursor on the object (numerical input or text input).
The following shows the data used for each protocol communication.

Protocol	Data to be used for the communication with the RFID controller
Dedicated protocol (LSRF manufactured by LS ELECTRIC Co., Ltd.)	RFID Controller signal (IC tag communication time, RFID reader/writer No.)
Nonprocedural protocol	Send data area

For the RFID Controller signal and send data area, refer to the following.
☞ Page 2603 RFID Controller signal, send data area, and receive data area

RFID controllers that cannot directly input data

When the following RFID controllers are used, data cannot be directly input to the object.

■Communication using dedicated protocols

- ICU-60S manufactured by MARS TOHKEN SOLUTION CO.LTD.

■Communication using nonprocedural protocols

- RFID controllers that receive data for the first time after sending or receiving data in multiple times

Input completion notification

■When the input completion notification is disabled

Establishing a handshake is not required by using the External Device I/O signal and the External Device I/O Complete signal.
While the cursor is displayed, data is sequentially read to the object, and old data is immediately overwritten by new data in each time.

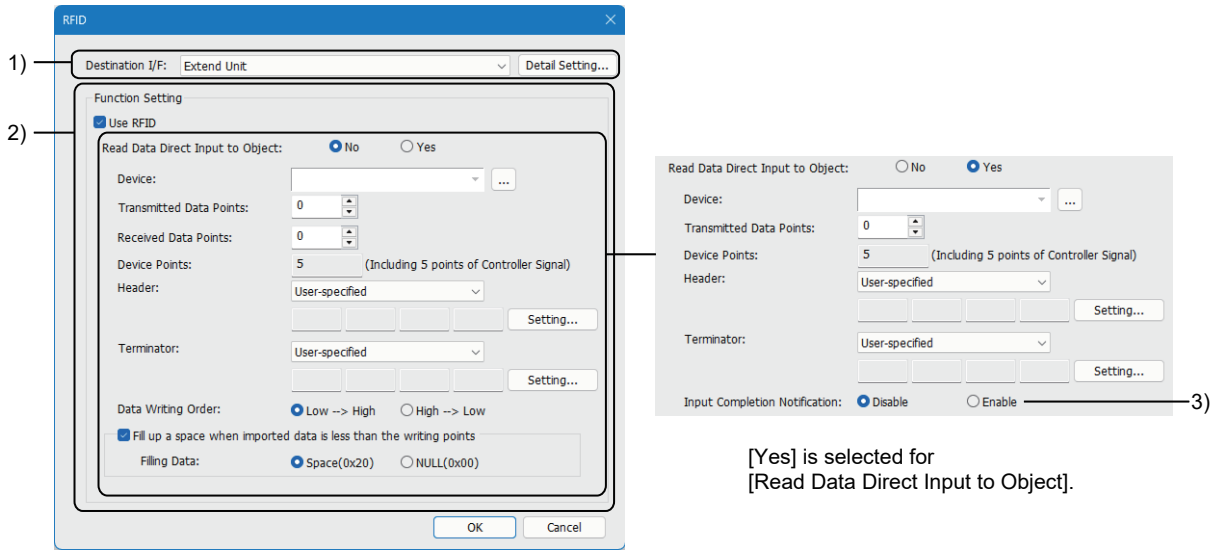
■When the input completion notification is enabled

The data cannot be input to the object until the External Device I/O Signal is turned off by the External Device I/O Complete signal.
For communication using nonprocedural protocols, turn off the RFID Receive signal before starting the following communication.
If the data input starts while the RFID Receive signal is turned on, the GOT cannot determine whether the data input is completed.
For the actions of the System signal and RFID Controller signal, refer to the following.
☞ Page 2604 When using a dedicated protocol (LSRF manufactured by LS ELECTRIC Co., Ltd.)

75.5 [RFID] dialog

GT37 SoftGOT3000

Select [Common] → [Peripheral Setting] → [RFID] from the menu to display the setting dialog.



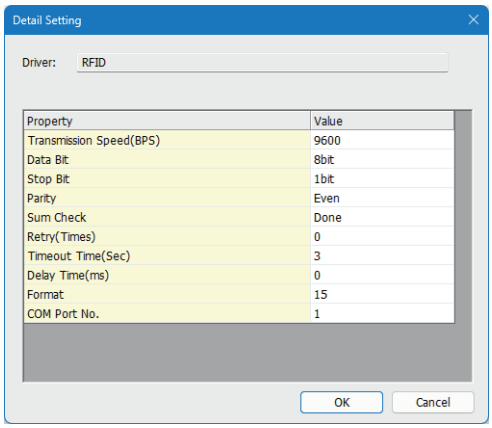
[No] is selected for [Read Data Direct Input to Object].

[Yes] is selected for [Read Data Direct Input to Object].

Item			Description
1)	[Destination I/F]	—	Set the interface of the GOT. The selectable items vary depending on the GOT model. • GT37 [RS-422/485] [RS-232] [Extend Unit] [Not connected] • GT SoftGOT3000 [Serial 1] [Serial 2] [Not connected]
		[Detail Setting] button	Configure the advanced settings in the [Detail Setting] window. For details, refer to the following. ☞ Page 2597 [Detail Setting] window (RFID)

Item			Description
2)	[Use RFID]	—	Select this item to enable the RFID setting.
		[Read Data Direct Input to Object]	Select whether to write the data read by the RFID reader/writer into the controller, or to directly input the read data to the object (numerical input or text input). • [No]: Writes the data into the controller. • [Yes]: Directly inputs the data to the numerical input or text input. To directly input the data to the object (numerical input or text input), the setting for using the RFID is required for the object. ☞ Page 1328 [Numerical Input] dialog ☞ Page 1362 [Text Input] dialog
		[Device]	Select a device to be used for the RFID function. Devices equivalent to 5 points starting from the selected device are set as the RFID Controller signal.
		[Transmitted Data Points]	Set this item when using a dedicated protocol (ICU-60S manufactured by MARS TOHKEN SOLUTION CO.LTD.) or a nonprocedural protocol. Set the number of pieces of data to be sent. The following shows the setting range. • [0] to [10000] If [No] is selected for [Read Data Direct Input to Object], the total number of [Transmitted Data Points] and [Received Data Points] must be 10000 or less.
		[Received Data Points]	Set the number of pieces of received data. The following shows the setting range. • [0] to [10000] The total number of [Transmitted Data Points] and [Received Data Points] must be 10000 or less.
		[Device Points]	The total of device points for [Transmitted Data Points], [Received Data Points], and the RFID Controller signal (5 points) is indicated.
		[Header]	Select this item when using the nonprocedural protocol. Select either of the following headers suitable for the protocol of the RFID controller to be used. The following shows selectable items. • [None] • [STX] • [ENQ] • [User-specified]: Up to four bytes are settable. Specify a value for a byte in the range of 0×00 to 0×FF. When you select [User-specified], refer to the following. ☞ Page 2575 [Setting] dialog (for setting the header or terminator)
		[Terminator]	Select this item when using the nonprocedural protocol. The following shows selectable items. • [ETX] • [LF] • [CR] • [CR+LF] • [User-specified]: Up to four bytes are settable. Specify a value for a byte in the range of 0×00 to 0×FF. When you select [User-specified], refer to the following. ☞ Page 2575 [Setting] dialog (for setting the header or terminator)
		[Data Writing Order]	Select the order of writing data into the controller device. • [Low → High]: The data is written to the controller device from the lower 8 bits to the upper 8 bits. • [High → Low]: The data is written to the controller device from the upper 8 bits to the lower 8 bits.
		[Fill up a space when imported data is less than the writing points]	Select this item to fill blank devices with spaces or NULLs when the number of bytes of the received data by the RFID reader/writer is less than the device points set for [Received Data Points]. After selecting this item, select the data to fill in blank devices. • [Space]: Fills the blank device with spaces (20H). • [NULL]: Fills the blank device with NULLs (00H).
3)	[Input Completion Notification]		Select whether to enable or disable the completion notification of data input processing by the System signal (External Device I/O signal and External Device I/O Complete signal) and the RFID Controller signal (RFID Receive signal). The following shows selectable items. • [Disable] • [Enable] ☞ Page 576 Setting a device which controls the GOT operations or notifies the GOT status ([System Information])

75.5.1 [Detail Setting] window (RFID)



Item	Description
[Transmission Speed(BPS)]	Select the transmission speed. The following shows selectable items. • [4800] • [9600] • [19200] • [38400] • [57600] • [115200]
[Data Bit]	Select the data length. The following shows selectable items. • [7bit] • [8bit]
[Stop Bit]	Select the stop bit length. The following shows selectable items. • [1bit] • [2bit]
[Parity]	Select the type for a parity check. The following shows selectable items. • [None] • [Even] • [Odd]
[Sum Check]	Select whether to perform a sum check. The following shows selectable items. • [Done] • [None]
[Retry(Times)]	Set the number of retries to be performed when a communication error occurs. When no response is received after the retries, the communication times out. The range to be selected is [0] to [5].
[Timeout Time(Sec)]	Set a communication timeout period. The setting range is [3] to [30].
[Delay Time(ms)]	Set the send delay time to lower the load of the network and the connected PLCs. The setting range is [0] to [3000].
[Format]	Select the communication format. The following shows selectable items. • [10]: Dedicated protocol (LSRF manufactured by LS ELECTRIC Co., Ltd.) • [11]: Dedicated protocol (ICU-60S manufactured by MARS TOHKEN SOLUTION CO.LTD.) • [15]: Nonprocedural protocol
[COM Port No.]	This item is displayed only for GT SoftGOT3000. Set the COM port number. The setting range is [1] to [63].

75.6 System information settings

GT37 SoftGOT3000

75.6.1 Setting the system information

Make sure to set one of the following System signals according to the channel No. you use.
For GT SoftGOT3000, set the System signal used for channel No. 8 of the GOT.
The RFID function is unavailable without the settings.

Channel No.	System signal
Channel No. 8	System signal 1-1, System signal 2-1
Channel No. 5	System signal 1-2, System signal 2-3
Channel No. 6	
Channel No. 7	

For details on system information, refer to the following.
☞ Page 576 Setting a device which controls the GOT operations or notifies the GOT status ([System Information])

75.6.2 Action of the RFID function according to status of the control device

Depending on status of the control device to be used for communication, the GOT may not send or receive data to/from the RFID controller.
For control devices for each protocol, refer to the following.
☞ Page 2605 Example of the RFID action

75.7 Action of an RFID

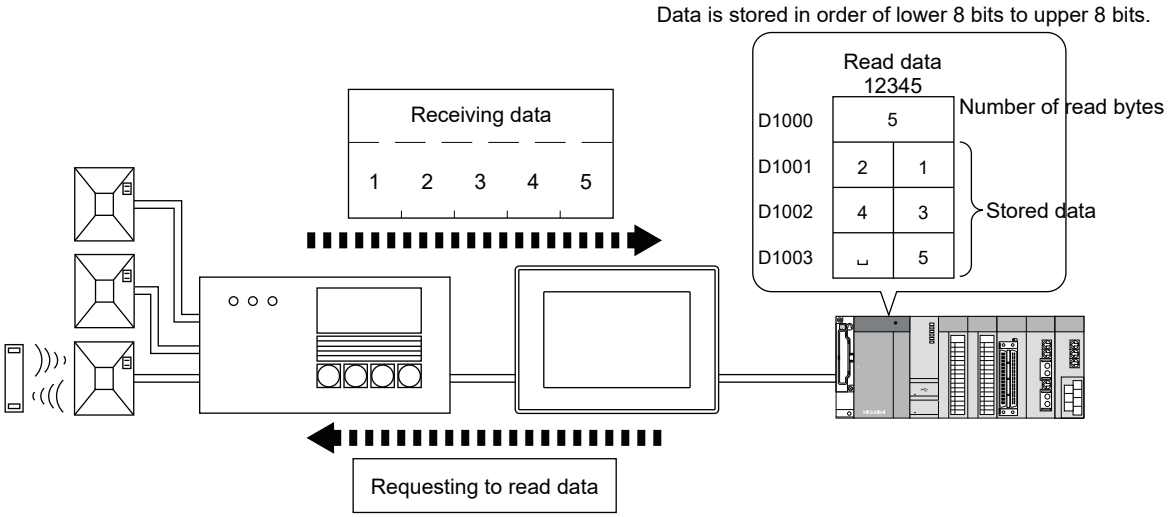
GT37 SoftGOT3000

75.7.1 Order of writing data into the controller

Set the order of writing the data read by the RFID reader/writer into the controller devices.

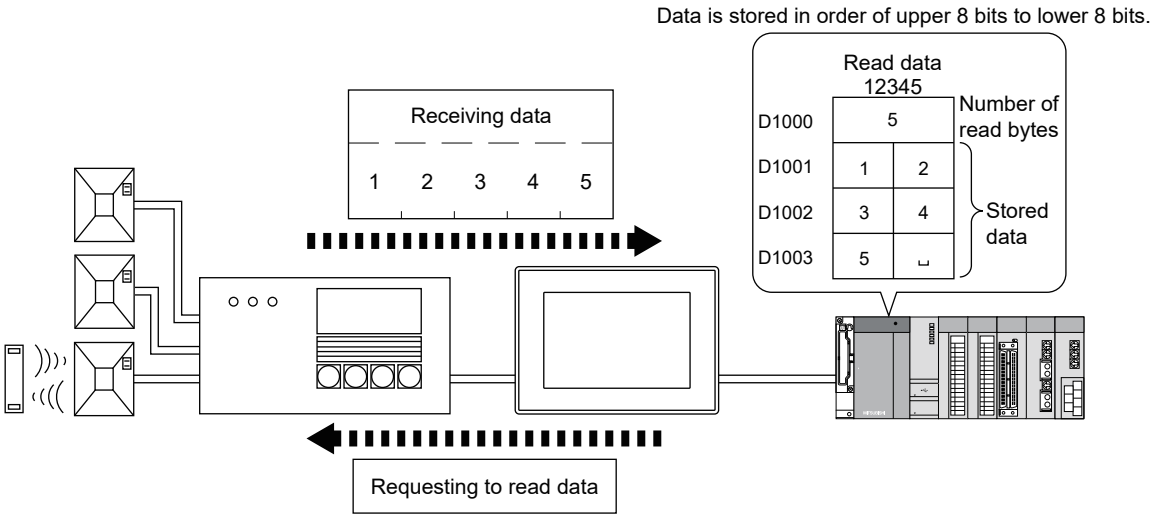
Low → high

The data is written to the controller device from the lower 8 bits to the upper 8 bits.



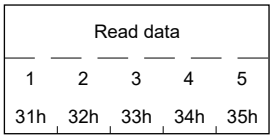
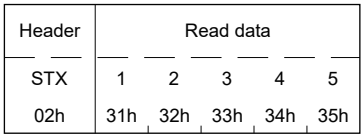
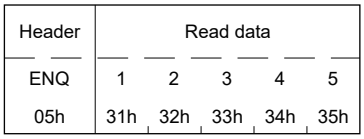
High → low

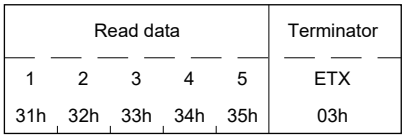
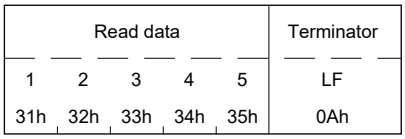
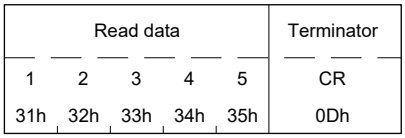
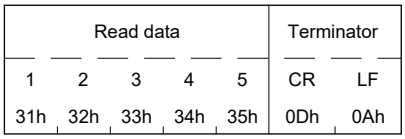
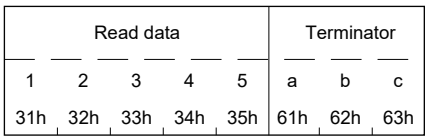
The data is written to the controller device from the upper 8 bits to the lower 8 bits.



75.7.2 Header and terminator

Set the header and terminator of the RFID read by the RFID.

Item		Description
Header	None (Default)	The read data is as follows when the header is not added to the head of data. 
	STX	The read data and STX are set as follows when STX is added to the head of data. 
	ENQ	The read data and ENQ are set as follows when ENQ is added to the head of data. 
	User-specified	The user-specified values are prepended to the read data. Example) When 41h, 42h, 43h, and 44h are specified

Item		Description
Terminator	ETX	The read data and ETX are set as follows when ETX is added to the end of data. 
	LF	The read data and LF are set as follows when LF is added to the end of data. 
	CR (Default)	The read data and CR are set as follows when CR is added to the end of data. 
	CR+LF	The read data and CR+LF are set as follows when CR+LF is added to the end of data. 
	User-specified	The user-specified values are prepended to the read data. Example) When 61h, 62h, and 63h are specified 

75.7.3 Data to be stored in devices

The following shows how the GOT writes data to be sent or received by the RFID reader/writer into controller devices as string data.

Ex.

Received data and order of writing the data

- Received data: 123456789
- Order of writing data: Low → high

When the number of read data is less than the set device points

Settings (Storage device: D1005, Data points: 8)

Write device	Stored data	String data	
D1005	0009h	-	The GOT writes the bytes of the read data.
D1006	3231h	21	The GOT writes the read data sequentially from the lower byte.
D1007	3433h	43	
D1008	3635h	65	
D1009	3837h	87	
D1010	2039h	␣9	If the number of bytes of the read data is less than the set device points, select whether to fill the remaining devices with spaces (20h) or NULLs (00h).
D1011	2020h	␣␣	
D1012	2020h	␣␣	

␣: Space

When the number of read data is more than the set device points

Settings (Storage device: D1005, Data points: 4)

Write device	Stored data	String data	
D1005	0006h	-	The GOT writes the bytes of the read data.
D1006	3231h	21	The GOT writes the read data sequentially from the lower byte.
D1007	3433h	43	
D1008	3635h	65	
			The data that exceeds the set device points is not written.

75.7.4 RFID Controller signal, send data area, and receive data area

Set the RFID Controller signal for controlling data transmissions with the RFID function.

Set [Device] in the RFID dialog to automatically set the RFID Controller signal.

☞ Page 2595 [RFID] dialog

The following shows a setting example of the RFID Controller signal, send data points, and receive data points.

Ex.

RFID settings

- Device: D1000
- Send data points: 4
- Receive data points: 8

RFID Controller signal

Device	Bit number	Item	Description
D1000	b0	RFID Receive signal	The bit turns on when the GOT receives data from the RFID controller, when the nonprocedural protocol is used.
	b1 to b14	—	—
	b15	Error signal	The bit turns on when the GOT receives an Error signal.
D1001	b0 to b7	IC tag communication time	The time (seconds) that the RFID reader/writer sends or receives data to/from an IC tag is stored in the bits when the dedicated protocol (LSRF manufactured by LS ELECTRIC Co., Ltd.) is used.
	b8 to b15	RFID reader/writer No.	The RFID reader/writer No. of the device that sends or receives data to/from an IC tag is stored in the bits when the dedicated protocol (LSRF manufactured by LS ELECTRIC Co., Ltd.) is used.
D1002	b0 to b15	—	—
D1003	b0 to b7	Error No.	Error codes are stored in the bits when errors occur.
	b8 to b15	Number of errors	The number of error occurrences is stored in the bits.
D1004	b0 to b15	RFID communication time	The communication time for the RFID function is stored in the bits. • With the dedicated protocol The total elapsed time of sending and receiving data is stored. • With the nonprocedural protocol The elapsed time of sending or receiving data is not stored.

Send data area, receive data area

Device	Item	Description
D1005 to D1008	Send data area	The data to be sent to an IC tag is stored in the devices. The number of bytes for data to be sent is stored in the start device.
D1009 to D1016	Receive data area	The received data from an IC tag is stored in the devices. The number of bytes for the received data is stored in the start device.

75.7.5 Errors during communication

The GOT detects errors when the errors occur while the GOT communicates with the RFID controller.
For the RFID Controller signal, refer to the following.
☞ Page 2603 RFID Controller signal, send data area, and receive data area

When using a dedicated protocol (LSRF manufactured by LS ELECTRIC Co., Ltd.)

When an error occurs, the Error signal of the RFID Controller signal turns on, the number of error occurrences is counted, and an error code is stored in the error No.
Check if an error occurs with the Error signal of the RFID Controller signal.
The following shows error codes to be stored in the error No.

Error code	Description	Corrective action
FFh	Time out	Check if the cable is unplugged and check the RFID controller status. Take the following corrective actions. • Connect the cable again. • Correctly wire the cable. • Turn on the RFID controller.
FEh	SIO error	Check the communication settings and communication environments surrounding controllers. Set the communication settings for the RFID controller suitable for those for the GOT.
FDh	Send setting error	Set the station No. and time within the setting range.
FCh	Receive overflow	Set the receive data area suitable for the received data size.
14h	Time out or no IC tags	Make the GOT send a data read request when communications are available between an RFID controller and an IC tag.

For error codes and corrective actions other than the above, refer to the manual for the RFID controller.
After removing error causes, manually turn off the Error signal and send data again.

When using a dedicated protocol (ICU-60S manufactured by MARS TOHKEN SOLUTION CO.LTD.) or a nonprocedural protocol

When an error occurs, an error code is stored in the receive data area or the error No. of the RFID Controller signal.

■When the GOT receives an error reply from the RFID controller

When the GOT receives the error replay from the RFID controller, an error code is stored in the receive data area.
Check if an error occurs with the Error signal of the RFID Controller signal.
For errors and corrective actions, refer to the manual for the RFID controller.
After removing error causes, send data again.

■When the GOT receives no error reply from the RFID controller

When the GOT receives no error reply from the RFID controller, the GOT turns on the Error signal of the RFID Controller signal, and the error code is stored in the error No.
Check if an error occurs with the Error signal of the RFID Controller signal.
The following shows error codes to be stored in the error No.

Error code	Description	Corrective action
FFh	Time out	Check if the cable is unplugged and check the RFID controller status. Take the following corrective actions. • Connect the cable again. • Correctly wire the cable. • Turn on the RFID controller.
FEh	SIO error	Check the communication settings and communication environments surrounding controllers.
FDh	Send setting error	Correctly set the send data length.
FCh	Receive overflow	Set the receive data area suitable for the received data size.

After removing error causes, manually turn off the Error signal and send data again.

75.7.6 Example of the RFID action

Dedicated protocol (LSRF manufactured by LS ELECTRIC Co., Ltd.)

Ex.

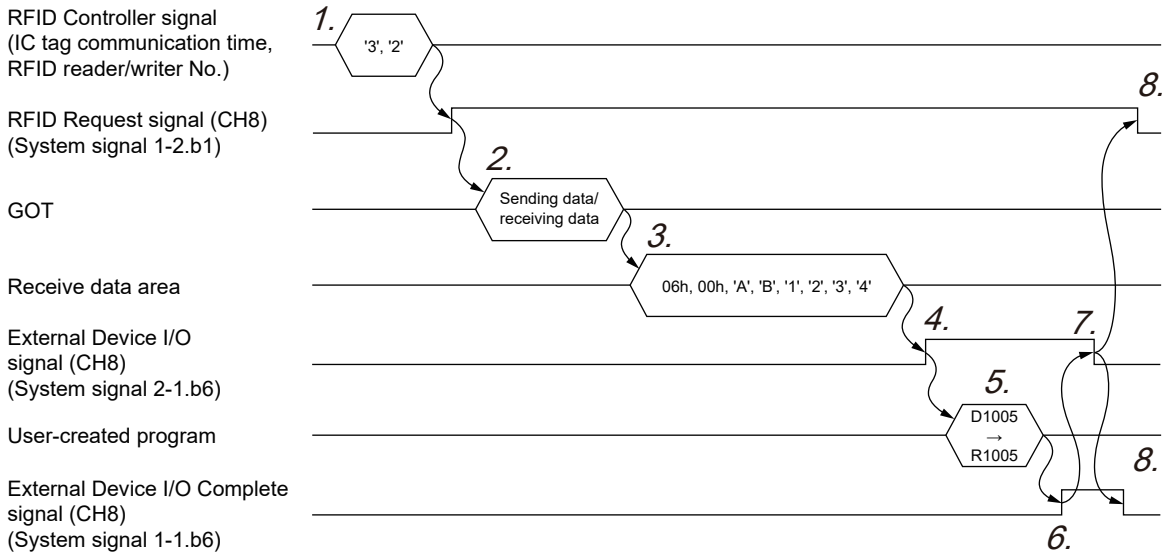
Settings with GT Designer3 (When the GOT is connected to the RFID controller by using channel No. 8)

- System signal 1-1: D10, System signal 1-2: D11, System signal 2-1: D12
- Device: D1000, Receive data points: 4

■Control devices

Device	Item
System information	External Device I/O Complete signal (CH8) (System signal 1-1.b6), RFID Request signal (CH8) (System signal 1-2.b1), External Device I/O signal (CH8) (System signal 2-1.b6) ☞ Page 576 Setting a device which controls the GOT operations or notifies the GOT status ([System Information])
RFID Controller signal	IC tag communication time, RFID reader/writer No. ☞ Page 2603 RFID Controller signal, send data area, and receive data area

■Handshake



1. Set the RFID reader/writer No. and the time that the RFID reader/writer sends data to an IC tag.

Example) RFID reader/writer No.: 3, Time to send data to IC tag: 2 seconds

2. Turn on the RFID Request signal, and then the RFID reader/writer communicates with an IC tag.

3. Data of the IC tag read by the RFID reader/writer is stored in the receive data area.

4. After data is stored in the receive data area, the GOT turns on the External Device I/O signal (CH8).

5. Move the data stored in the receive data area to any of the other devices.

6. Check that the data is moved, and then turn on the External Device I/O Complete signal (CH8).

7. The GOT turns off the External Device I/O Complete signal (CH8).

8. Turn off the External Device I/O Complete signal (CH8) and the RFID Request signal (CH8).

■Example of the sequence program (When the GOT is connected to RCPU by using channel No. 8)

After the GOT receives data from the RFID controller, make sure to turn off the External Device I/O Complete signal and the RFID Request signal.

When the External Device I/O Complete signal and the RFID Request signal are on, the GOT cannot read the data.

Create a sequence program so that the External Device I/O Complete signal and the RFID Request signal turn off.

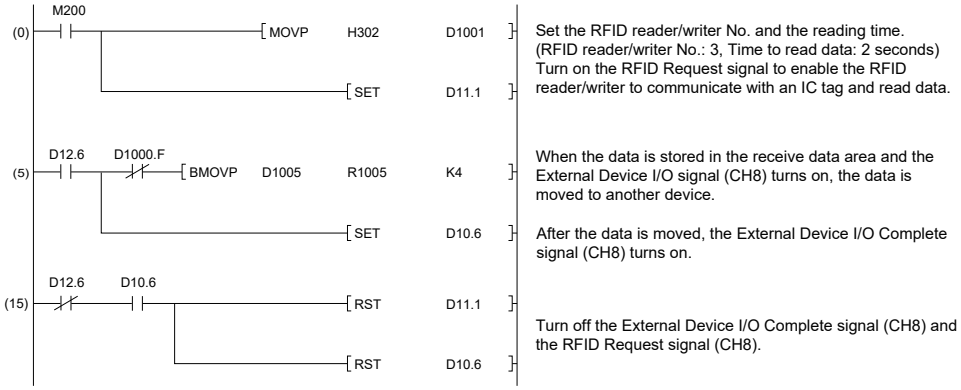
Point

Before using example programs

For applying the example programs in this manual to the actual system, make sure that the target system has no troubles on the control.

Signal to be used in a sequence program

- RFID reader/writer No. 3 read command: M200



Dedicated protocol (ICU-60S manufactured by MARS TOHKEN SOLUTION CO.LTD.)

Ex.

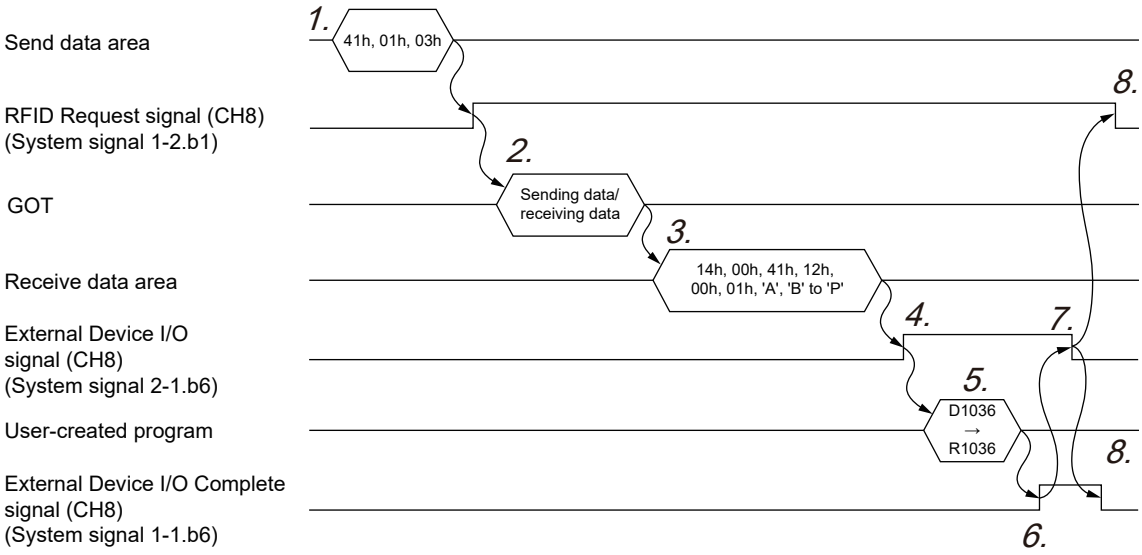
Settings with GT Designer3 (When the GOT is connected to the RFID controller by using channel No. 8)

- System signal 1-1: D10, System signal 1-2: D11, System signal 2-1: D12
- Device: D1000, Send data points: 30, Receive data points: 30

■Control devices

Device	Item
System information	External Device I/O Complete signal (CH8) (System signal 1-1.b6), RFID Request signal (CH8) (System signal 1-2.b1), External Device I/O signal (CH8) (System signal 2-1.b6) ☞ Page 576 Setting a device which controls the GOT operations or notifies the GOT status ([System Information])

■Handshake



1. Set the data to be sent to the RFID controller in the send data area.

Set the data suitable for the protocol of the RFID controller to be used.

Example) Reading record No.3 by "rf_read" command

2. Turn on the RFID Request signal, and then the RFID reader/writer communicates with an IC tag.

3. Data of the IC tag read by the RFID reader/writer is stored in the receive data area.

4. After data is stored in the receive data area, the GOT turns on the External Device I/O signal (CH8).

5. Move the data stored in the receive data area to any of the other devices.

6. Check that the data is moved, and then turn on the External Device I/O Complete signal (CH8).

7. The GOT turns off the External Device I/O Complete signal (CH8).

8. Turn off the External Device I/O Complete signal (CH8) and the RFID Request signal (CH8).

■Example of the sequence program (When the GOT is connected to RCPU by using channel No. 8)

After the GOT receives data from the RFID controller, make sure to turn off the External Device I/O Complete signal and the RFID Request signal.

When the External Device I/O Complete signal and the RFID Request signal are on, the GOT cannot read the data.

Create a sequence program so that the External Device I/O Complete signal and the RFID Request signal turn off.

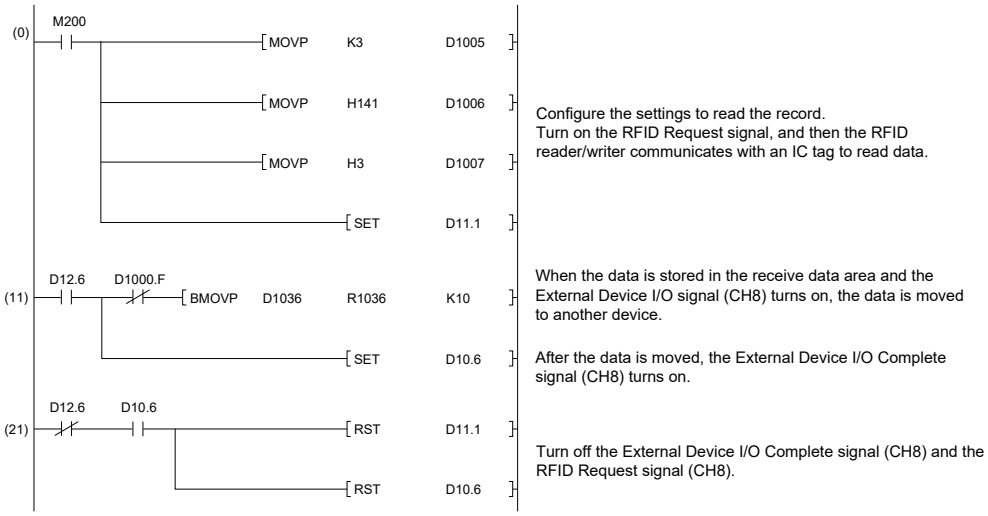
Point

Before using example programs

For applying the example programs in this manual to the actual system, make sure that the target system has no troubles on the control.

Signal to be used in a sequence program

- Record No.3 read command: M200



Nonprocedural protocol

Ex.

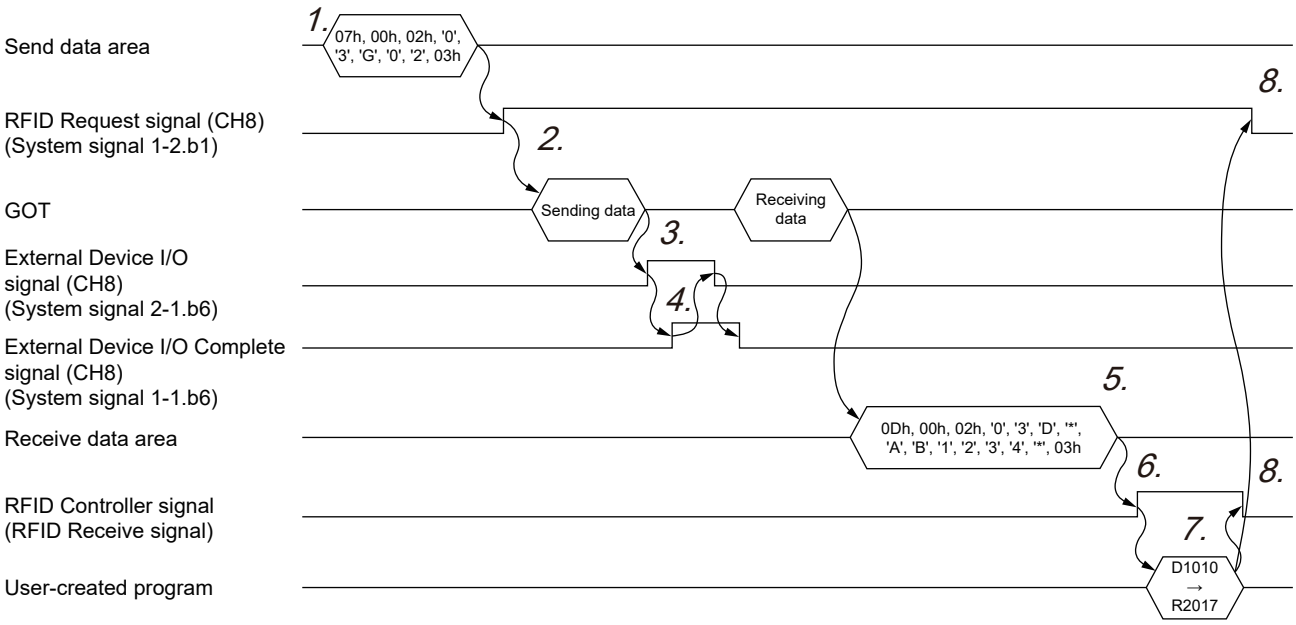
Settings with GT Designer3 (When the GOT is connected to the RFID controller by using channel No. 8)

- System signal 1-1: D10, System signal 1-2: D11, System signal 2-1: D12
- Device: D1000, Send data points: 5, Receive data points: 8

■Control devices

Device	Item
System information	External Device I/O Complete signal (CH8) (System signal 1-1.b6), RFID Request signal (CH8) (System signal 1-2.b1), External Device I/O signal (CH8) (System signal 2-1.b6) ☞ Page 576 Setting a device which controls the GOT operations or notifies the GOT status ([System Information])
RFID Controller signal	IC tag communication time, RFID reader/writer No. ☞ Page 2603 RFID Controller signal, send data area, and receive data area

■Handshake



1. Set the data to be sent to the RFID controller in the send data area.

Set the data suitable for the protocol of the RFID controller to be used.

Example) "07h, 00h, 02h, '0', '3', 'G', '0', '2', 03h"

2. Turn on the RFID request signal (CH8), and then the RFID reader/writer sends the data stored in the send data area to the IC tag.

3. The GOT turns on the External Device I/O signal (CH8).

4. Check that the External Device I/O signal (CH8) is on, and then turn on the External Device I/O Complete signal (CH8).

The GOT turns off the External Device I/O Complete signal (CH8).

Turn off the External Device I/O Complete signal (CH8).

5. The IC tag sends data to the RFID reader/writer, and the data is stored in the receive data area.

6. The GOT turns on the RFID Receive signal.

7. Move the data stored in the receive data area to any of the other devices.

8. Turn off the RFID Request signal (CH8) and the RFID Receive signal.

■Example of the sequence program (When the GOT is connected to RCPU by using channel No. 8)

Be sure to turn off the RFID Request signal and the RFID Receive signal before the GOT sends the next data read request to the RFID controller.

When the RFID Request signal and the RFID Receive signal are on, the GOT cannot communicate with the RFID controller. Create a sequence program so that the RFID Request signal and the RFID Receive signal turn off.

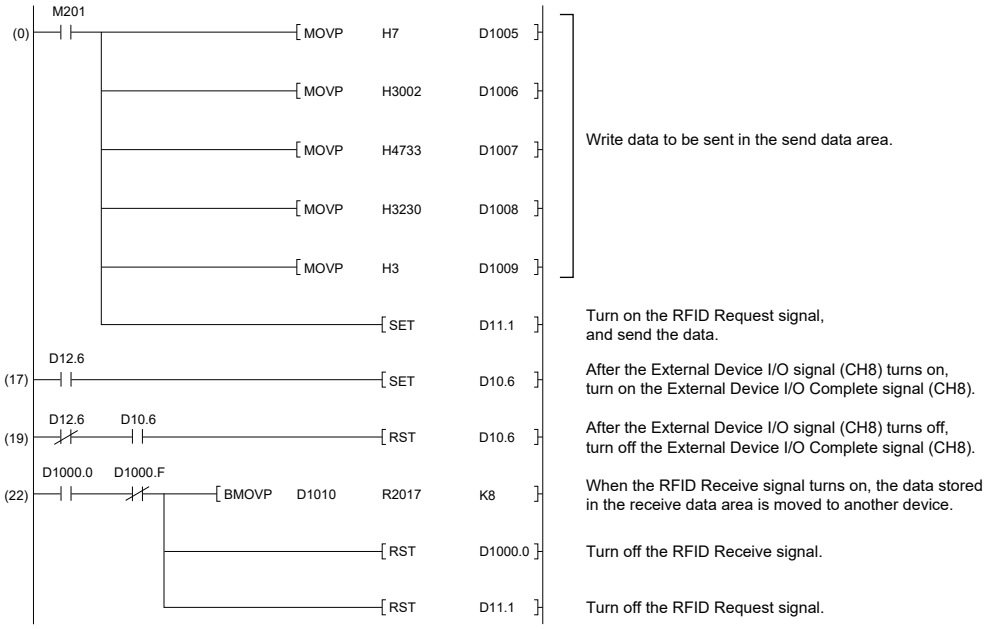
Point

Before using example programs

For applying the example programs in this manual to the actual system, make sure that the target system has no troubles on the control.

Signal to be used in a sequence program

- Data send command: M201



75.8 Relevant settings

GT37 SoftGOT3000

Configure the relevant settings in addition to the specific settings for the RFID function as required.
The following shows the functions that are available by configuring the relevant settings.

75.8.1 GOT environmental settings (System information)

Select [Common] → [GOT Environmental Setting] → [System Information] from the menu to display the [Environmental Setting] dialog.

☞ Page 576 Setting a device which controls the GOT operations or notifies the GOT status ([System Information])

Target channel	Function	Setting item
CH5	Turning on this signal requests the RFID controller to read data. (Read device: System signal 1-2.b4)	[System Signal 1-2] (Not available for GT SoftGOT3000.)
	Turning on this signal turns off the External Device I/O signal (System signal 2-3.b0). (Read device: System signal 1-2.b3)	[System Signal 1-2]
	Notifying that the data read by the RFID reader/writer is stored in the specified device when the dedicated protocol is used. Notifying that sending data to the RFID controllers is completed when the nonprocedural protocol is used. (Write device: System signal 2-3.b0)	[System Signal 2-3]
CH6	Turning on this signal requests the RFID controller to read data. (Read device: System signal 1-2.b7)	[System Signal 1-2] (Not available for GT SoftGOT3000.)
	Turning on this signal turns off the External Device I/O signal (System signal 2-3.b1). (Read device: System signal 1-2.b6)	[System Signal 1-2] (Not available for GT SoftGOT3000.)
	Notifying that the data read by the RFID reader/writer is stored in the specified device when the dedicated protocol is used. Notifying that sending data to the RFID controllers is completed when the nonprocedural protocol is used. (Write device: System signal 2-3.b1)	[System Signal 2-3] (Not available for GT SoftGOT3000.)
CH7	Turning on this signal requests the RFID controller to read data. (Read device: System signal 1-2.b10)	[System Signal 1-2] (Not available for GT SoftGOT3000.)
	Turning on this signal turns off the External Device I/O signal (System signal 2-3.b2). (Read device: System signal 1-2.b9)	[System Signal 1-2] (Not available for GT SoftGOT3000.)
	Notifying that the data read by the RFID reader/writer is stored in the specified device when the dedicated protocol is used. Notifying that sending data to the RFID controllers is completed when the nonprocedural protocol is used. (Write device: System signal 2-3.b2)	[System Signal 2-3] (Not available for GT SoftGOT3000.)
CH8	Turning on this signal requests the RFID controller to read data. (Read device: System signal 1-2.b1)	[System Signal 1-2]
	Turning on this signal turns off the External Device I/O signal (System signal 2-1.b6) (Read device: System signal 1-1.b6)	[System Signal 1-1]
	Notifying that the data read by the RFID reader/writer is stored in the specified device when the dedicated protocol is used. Notifying that sending data to the RFID controllers is completed when the nonprocedural protocol is used. (Write device: System signal 2-1.b6)	[System Signal 2-1]

75.8.2 GOT internal device

☞ Page 3581 GOT special register (GS)

Function	Setting item
Notifying that external authentication of operator authentication function succeeds. (Write device)	GS240.b0
Notifying that external authentication of operator authentication function fails. (Write device)	GS240.b1
Notifying that the login screen for the external authentication of operator authentication function is displayed. (Write device)	GS240.b14
Notifying that the object is ready for receiving an direct input with a barcode reader or RFID. (Write device)	GS243.b15

PART 19 Remote personal computer operation (Ethernet) function

76 Operating a personal computer by using the GOT (remote personal computer operation function (Ethernet))

76 Operating a personal computer by using the GOT (remote personal computer operation function (Ethernet))

GT37 SoftGOT3000

☞ Page 2614 Overview of the remote personal computer operation function (Ethernet)
☞ Page 2615 Specifications of the remote personal computer operation function (Ethernet)
☞ Page 2619 How to use the remote personal computer operation function (Ethernet)
☞ Page 2622 [PC Remote Operation] dialog
☞ Page 2623 Personal computer settings
☞ Page 2633 Remote personal computer screen
☞ Page 2636 Relevant settings

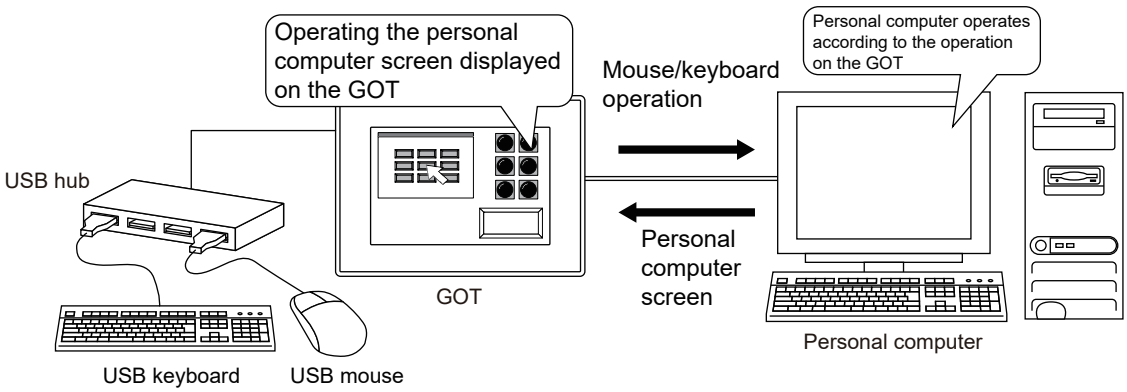
PART 19

76.1 Overview of the remote personal computer operation function (Ethernet)

GT37 SoftGOT3000

The remote personal computer operation (Ethernet) enables you to operate the personal computer by using the GOT via Ethernet.

76.1.1 Operating the personal computer on the GOT screen.



Using the USB mouse/keyboard function enables you to use the USB mouse and USB keyboard for the remote personal computer operation (Ethernet).

For details on the USB mouse/keyboard function, refer to the following.

☞ Page 630 Configuring the settings for a mouse and a keyboard used with the GOT ([USB Host])

76.2 Specifications of the remote personal computer operation function (Ethernet)

GT37 SoftGOT3000

☞ Page 2615 System application (add-on function)
☞ Page 2615 Remote personal computer operation function (Ethernet) to be set for one project
☞ Page 2615 Resource for the system window
☞ Page 2615 License number registration
☞ Page 2616 Required software to be installed
☞ Page 2616 Display modes of the remote personal computer screen
☞ Page 2617 Switching the remote personal computer screen
☞ Page 2618 SSH connection

76.2.1 System application (add-on function)

To use the remote personal computer operation function (Ethernet), a system application (add-on function) of [PC Remote Operation (Ethernet)] is required.
The system application is automatically incorporated into the package data when you select [Use PC Remote Operation (Ethernet)] in the [PC Remote Operation] dialog.
☞ Page 2622 [PC Remote Operation] dialog

76.2.2 Remote personal computer operation function (Ethernet) to be set for one project

One remote personal computer operation function is available for one project.

76.2.3 Resource for the system window

The remote personal computer operation function (Ethernet) displays windows as system windows.
Use two overlap windows as a resource to display a system window.
For the resource of the system window, refer to the following.
☞ Page 536 Using an overlap window as the system window

76.2.4 License number registration

To use the remote personal computer operation (Ethernet), register a license number on the GOT.
For information on how to register the license number, refer to the following.
☞ Page 3686 License registration method
When the license number is not registered, the 30 minutes of trial for the function is available upon connection to the VNC server.
Up to 30 trials are available.
To start a trail again, turn off and then on the GOT.
After 30 trials, you must register the license number to use the function.

76.2.5 Required software to be installed

Download UltraVNC (Win32 Full version) from the following website.

http://www.uvnc.com/

Note that the above website may be changed without notification.

The following UltraVNC versions have been validated by our company.

Name	Manufacturer	Version
UltraVNC	UltraVNC team	1.3.8.1

76.2.6 Display modes of the remote personal computer screen

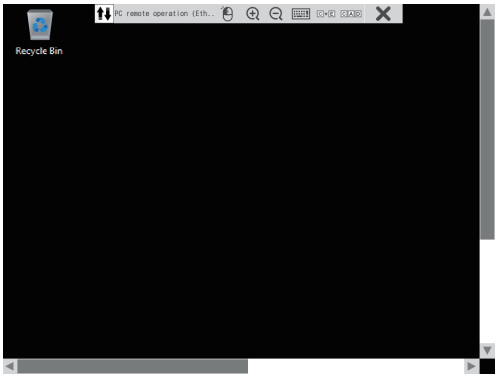
The remote personal computer screen is displayed in window display mode or full screen mode.

Use GS465.b8 to switch between the display modes.

☞ Page 3644 Remote Personal Computer Operation (Ethernet) Common Control (GS465)

If you do not set GS465.b8, the remote personal computer screen opens in window display mode.

Window display mode

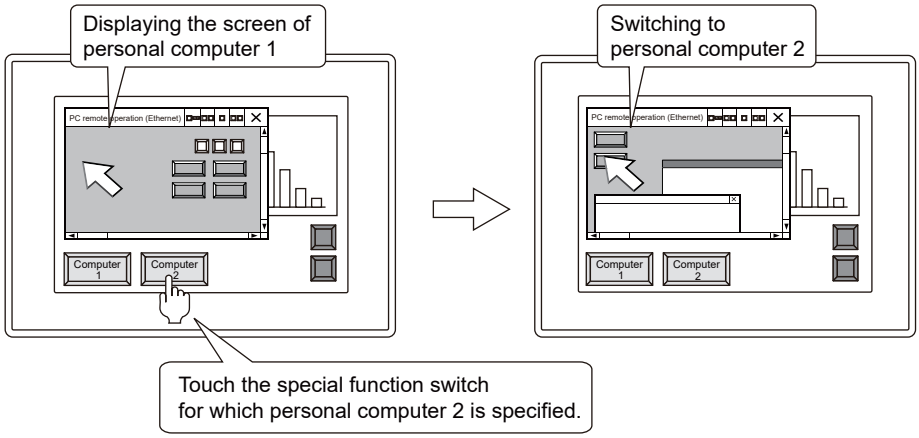


Full screen mode

Mode	Description
Window display mode	In window display mode, the remote personal computer screen appears over part of the base screen. The toolbar is always displayed at the top of the remote personal computer screen.
Full screen mode	The screen is displayed on the entire base screen. The toolbar is displayed when you open the remote personal computer screen or touch the toolbar display area (top). When the resolution is the same between the GOT and the personal computer, hiding the scroll bars with GS465.b7 displays the entire personal computer screen on the GOT.

76.2.7 Switching the remote personal computer screen

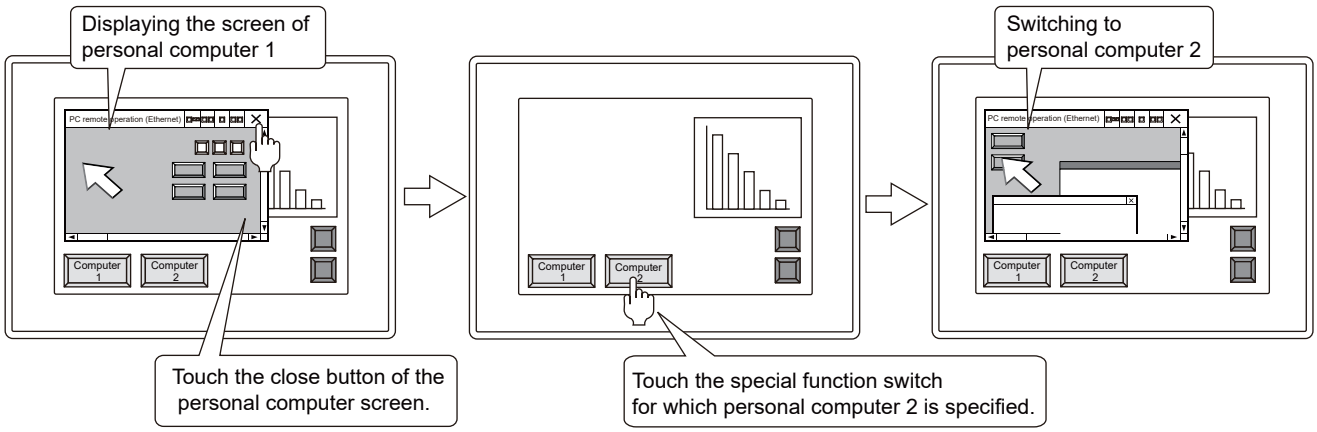
When the GOT is connected to multiple personal computers and displaying a remote screen, tuning on GS465.b10 allows switching between the connected personal computers without closing the remote screen.



While the remote screen is displayed, touching the function switch assigned to another connected personal computer switches the connection destination without closing the remote screen.

If GS465.b10 is turned off, an error message is displayed and the remote screen does not switch.

Touch the close button to close the remote screen, then touch the special function switch assigned to another connected personal computer to start its remote screen.



When the connected personal computer is switched without closing the remote screen, only the operation log [Touch switch: Application switching] is output.

76.2.8 SSH connection

The SSH connection encrypts communication and prevents information leakage.
To use SSH connection, install and configure an SSH server on a personal computer used for remote operation, and enable SSH connection in GT Designer3.

SSH server

This chapter provides an example of OpenSSH server setup on Windows 11.
☞ Page 2628 How to install and configure the SSH server

Enabling SSH connection in GT Designer3

For the special function switch to start the remote personal computer screen (remote personal computer operation (Ethernet)), select [Use SSH connection to encrypt communication path] on the [SP Function] tab and set the information of the SSH server.
☞ Page 1230 [Special Function Switch] dialog

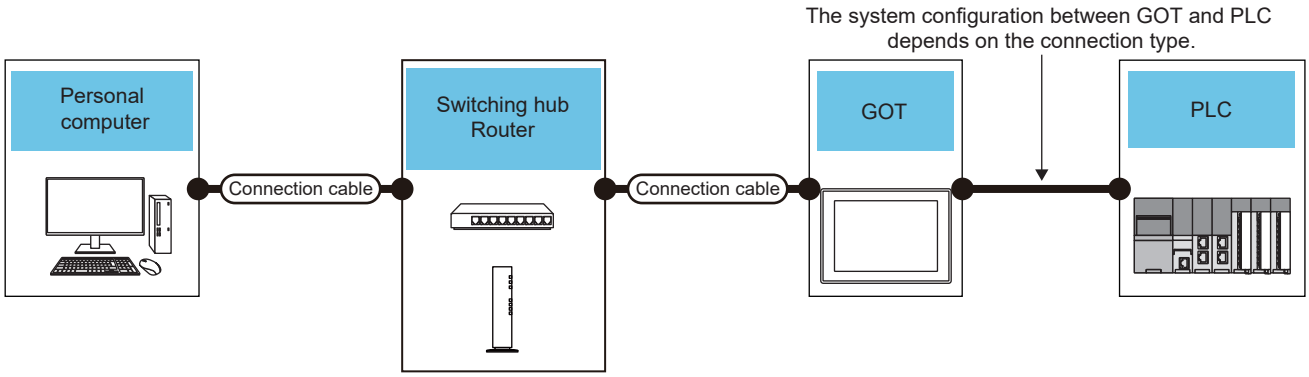
76.3 How to use the remote personal computer operation function (Ethernet)

GT37 SoftGOT3000

☞ Page 2619 System configuration
☞ Page 2621 Setting procedure

76.3.1 System configuration

The following shows the system configuration of the personal computer.



For details on the connection cable and maximum segment length, refer to the following.

☞ Page 2619 Connection cable
☞ Page 2620 Maximum segment length

For information on the maximum number of connected devices, refer to the following.

☞ Page 2620 Maximum number of connected devices

Personal computer (VNC server)	Connection cable	GOT (VNC client)		PLC
		Interface	Model	
Selected by users	Twisted pair cable	Built-in Ethernet interface of the GOT	GT37 SoftGOT3000	For information on the system configuration between the GOT and PLC, refer to the following. 📖GOT3000 Series User's Manual (Connection)

Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

A straight cable is usable.

When the GOT is directly connected to the personal computer via Ethernet cable, a cross cable is applicable.

The destination device connected with the twisted pair cable varies with the configuration of the Ethernet network system used.

Connect the cable to the Ethernet module, hub, or other system equipment corresponding to the Ethernet network system used.

Use cables, connectors, and hubs that meet the IEEE802.3 10BASE-T/100BASE-TX/1000BASE-T standards.

Maximum segment length

The maximum segment length (length between a hub and a node) is 100 m.
The maximum length depends on the Ethernet equipment used.
The following shows the number of connectable hubs when a repeater hub is used.

- 10BASE-T: Up to 4 cascade-connected hubs (within 500 m)
- 100BASE-TX: Up to 2 cascade-connected hubs (within 205 m)
- 1000BASE-T: The number differs depending on the hub to be used.

When switching hubs are used, there is no theoretical limit to the number of cascade connections between switching hubs.
For the limit, contact the switching hub manufacturer.

Precautions

When multiple network devices (including GOTs) are connected in the same segment, the network load increases and the transmission speed between the GOT and PLC may be reduced.
The following actions may improve the communication performance.

- Use a switching hub compatible with 1000BASE-T (1 Gbps) or more.
- Reduce the number of devices monitored by the GOT.

Maximum number of connected devices

One VNC server can be accessed from one GOT at a time.

76.3.2 Setting procedure

The following shows how to configure the settings for the remote personal computer operation (Ethernet).

1. Connect the personal computer to the GOT.

☞ Page 2619 System configuration

2. Set the destination I/F for the Ethernet download in [Destination I/F] in [Ethernet Download] in the peripheral device setting ([PC (Data Transfer)] dialog).

☞ Page 450 [PC (Data Transfer)] dialog

3. Configure the settings for the remote personal computer operation (Ethernet) in the [PC Remote Operation] dialog.

☞ Page 2622 [PC Remote Operation] dialog

4. Set the GOT Ethernet interface.

☞ Page 713 Setting the GOT Ethernet interface ([GOT Ethernet Setting])

5. Place a special function switch on the GT Designer3 screen and set [Switch Action] to [PC Remote Operation (Ethernet)].

To encrypt communication, select [Use SSH connection to encrypt communication path].

For the special function switch settings, refer to the following.

☞ Page 1230 [Special Function Switch] dialog

6. Install the software on the personal computer.

☞ Page 2623 Personal computer settings

7. Write package data to the GOT.

For the communication method between the personal computer and the GOT, refer to the following.

☞ Page 408 Transferring data to the GOT

8. Register the license number to the GOT.

For the registration method, refer to the following.

☞ Page 3686 License registration method

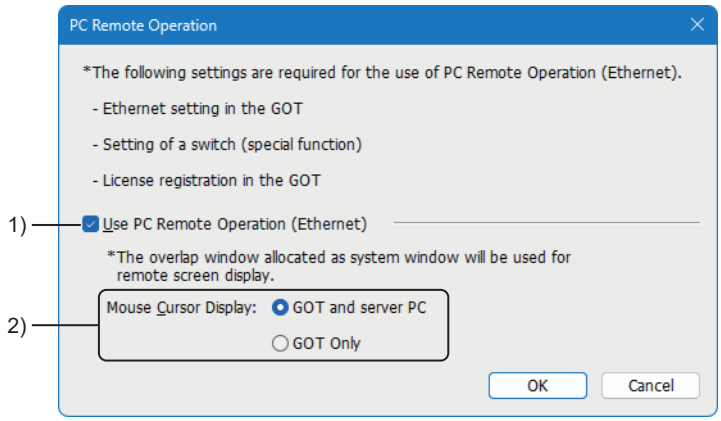
9. Open the personal computer screen on the GOT.

☞ Page 2633 Remote personal computer screen

76.4 [PC Remote Operation] dialog

GT37 SoftGOT3000

Select [Common] → [Peripheral Setting] → [PC Remote Operation] from the menu to display the setting dialog.



Item		Description	
1)	[Use PC Remote Operation (Ethernet)]	Select this item to enable the remote personal computer operation (Ethernet).	
2)	[Mouse Cursor Display]	—	Select how to display the mouse cursor on the GOT when the USB mouse is used.
		[GOT and server PC]	Select this item to display the mouse cursor on the GOT and the mouse cursor on the personal computer.
		[GOT Only]	Select this item to display only the mouse cursor on the GOT. The mouse cursor on the personal computer is not displayed.

76.5 Personal computer settings

GT37 SoftGOT3000

☞ Page 2624 How to install UltraVNC
☞ Page 2625 UltraVNC settings
☞ Page 2628 How to install and configure the SSH server

Precautions

Install the UltraVNC server using a user account with administrator privileges on the destination personal computer. Installation by a user without administrator privileges may result in issues such as settings not being applied correctly or the server not operating properly.

76.5.1 How to install UltraVNC

1. Download UltraVNC from the following website.

http://www.uvnc.com/

Note that the above website may be changed without notification.

2. Execute the downloaded file, and start the installer.

3. The setup window appears.

Click the [Next] button until the [License Agreement] screen is displayed.

Confirm the description in the screen, and then select [I accept the agreement].

4. Click the [Next] button until the [Select Destination Location] screen is displayed.

In the screen, enter the installation destination and click the [Next] button.

5. The [Select Components] screen appears.

Select [Full installation] or [UltraVNC Server Only], and click the [Next] button.

6. The [Select Start Menu Folder] screen appears.

Select the start menu folder to create a shortcut, and click the [Next] button.

7. The confirmation window appears to confirm whether to download the following software.

(For Windows 10 or later, the confirmation window does not appear. Proceed to Step 8.)

Software	Description
Optional non-GPL Mirror Driver 1.0.5	Select this item.
Optional non-GPL addons recommended for Vista	Select as needed. Since it depends on the personal computer used, use your own judgment.

8. The [Select Additional Tasks] screen appears.

Configure the settings as shown below, and click the [Next] button.

Setting item	Description
[Register UltraVNC Server as a system service]	Select this item. UltraVNC is registered in the system service.
[Start or restart UltraVNC service]	Select this item. The UltraVNC service becomes available.
[Create UltraVNC desktop icons]	Select this item to create a shortcut icon on the desktop.
[Associate UltraVNC Viewer with the .vnc file extension]	Select this item to open files with the .vnc extension using UltraVNC Viewer.

When [Full installation] is selected in the [Select Components] screen, setting items other than the above are also displayed.

Since the additional setting items depend on the personal computer you use, configure the settings as required.

9. The confirmation screen for installation appears.

Confirm the description in the screen, and then click the [Install] button.

Installation of UltraVNC starts.

10. Click the [Next] button until the [Completing the UltraVNC Setup Wizard] screen appears.

11. Click the [Finish] button to complete the installation.

76.5.2 UltraVNC settings

The following shows the setting method using UltraVNC version 1.3.8.1 as an example.

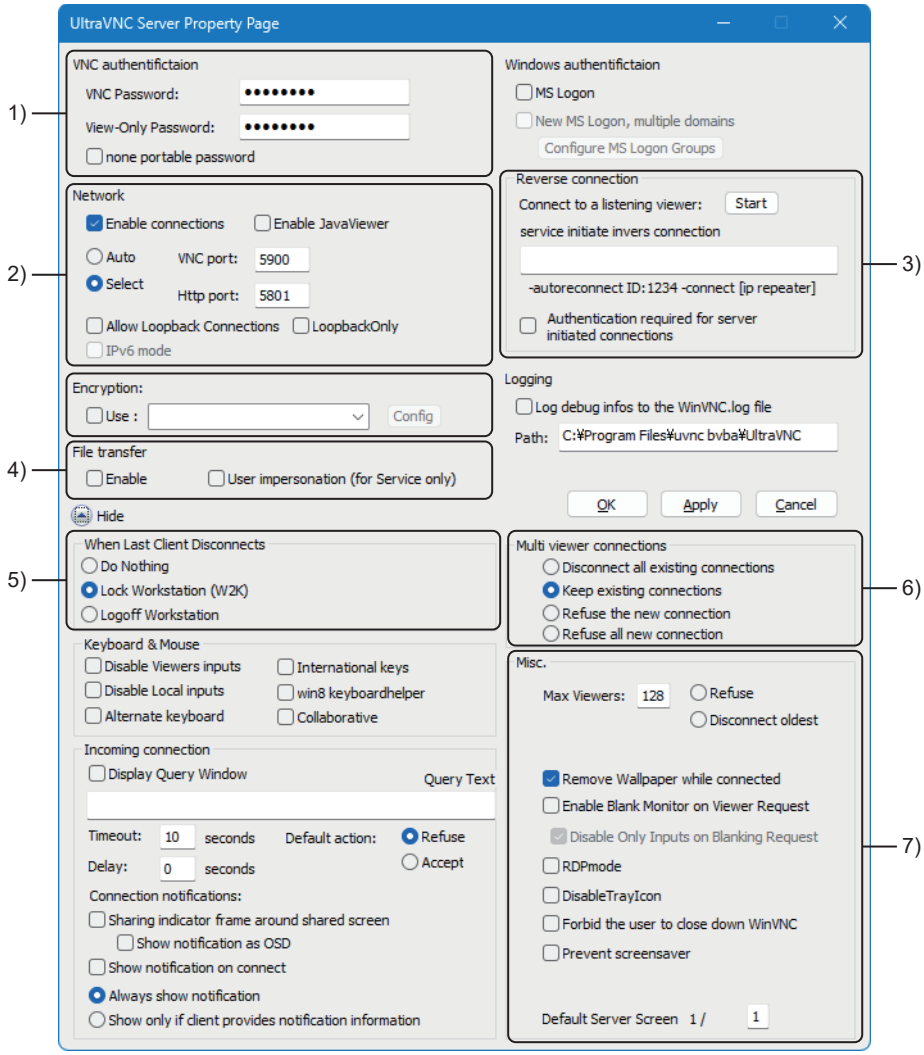
1. When UltraVNC is not started, click [UltraVNC] → [UltraVNC Server] from the start menu to start UltraVNC.

2. Right-click the UltraVNC icon on the system tray, and select [Admin Properties].

When the setting window appears, configure the settings as shown below.

The items to be displayed differ depending on the UltraVNC version.

No settings are required for the items not explained below.

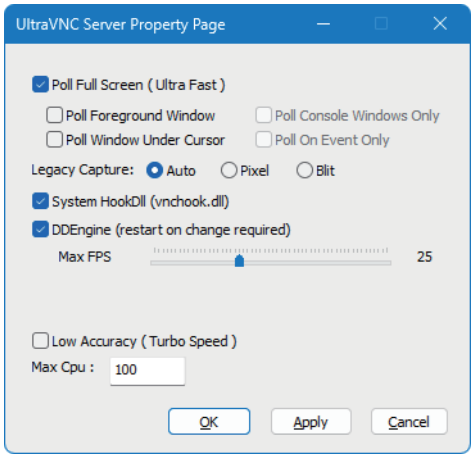


Item			Required setting
1)	[VNC authentification]	[VNC Password]	Set the VNC server password.
		[View-Only Password]	Set the VNC server (view only) password.
2)	[Network]	[Enable connections]	Keep this item selected, then click [Select].
		[Enable JavaViewer]	Deselect this item.
		[VNC port]	Set 5900 as the port number to be used for VNC connection.
		[Allow Loopback Connection]	Deselect this item.
3)	[Reverse connection]	[Authentication required for server initiated connections]	Deselect this item.
4)	[File Transfer]	[Enable]	Deselect this item.
		[User impersonation (for Service only)]	Deselect this item.
5)	[When Last Client Disconnects]		Select [Lock Workstation(W2K)].
6)	[Multi viewer connections]		Select [Keep existing connections].

Item			Required setting
7)	[Misc.]	[Max Viewers]	Set a value for the maximum number of viewers and select [Disconnect oldest].
		[Remove Wallpaper for Viewers]	Select this item.
		[Enable Blank Monitor on Viewer Request]	Deselect this item.
		[Disable Only Inputs on Blanking Request]	Select this item.

3. Right-click the UltraVNC icon on the system tray, and select [Properties].

The following shows the recommended settings in the displayed settings window.



Item	Recommended setting
[Poll Full Screen (Ultra Fast)]	Select this item.
[Poll Foreground Window]	Deselect this item.
[Poll Window Under Cursor]	Deselect this item.
[Poll Console Windows Only]	Deselect this item.
[Poll On Event Only]	Deselect this item.
[Legacy Capture]	Select [Auto].
[System HookDll]	Select this item.
[DDEngine (restart on charge required)]	Select this item.
[Max FPS]	Set a value.
[Low Accuracy (Turbo Speed)]	Deselect this item.
[Max Cpu]	Set a value.

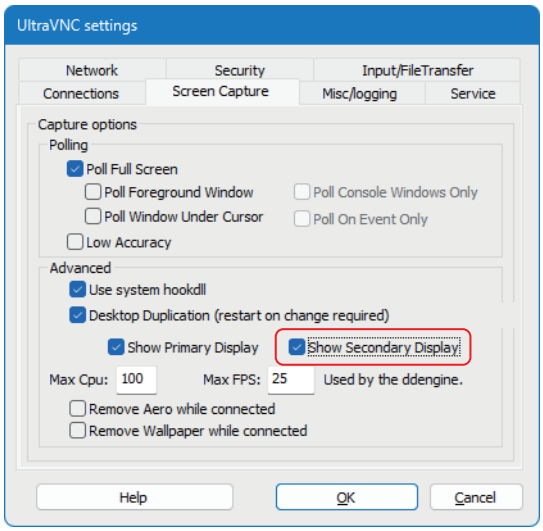
Precautions

■Behavior after pressing Ctrl + Alt + Delete

If [Show Secondary Display] is deselected on the UltraVNC server (Ver.1.3.8.1), pressing Ctrl + Alt + Delete and clicking the [Cancel] button on the displayed screen will disconnect the GOT from the UltraVNC server.

To select [Show Secondary Display] on the UltraVNC server (Ver.1.3.8.1), follow the steps below.

1. Select [All] → [UltraVNC] → [UltraVNC Server Settings] from the Windows start menu to display the [UltraVNC settings] dialog.
2. Select the [Screen Capture] tab, select [Show Secondary Display], and click the [OK] button.



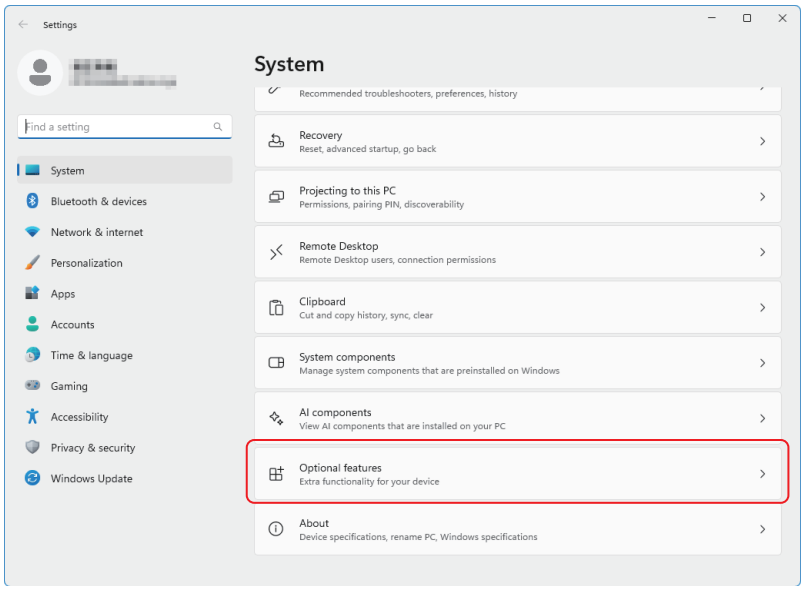
76.5.3 How to install and configure the SSH server

To use SSH connection, install and configure an SSH server on a personal computer used for remote operation.
This chapter provides an example of OpenSSH server setup on Windows 11.

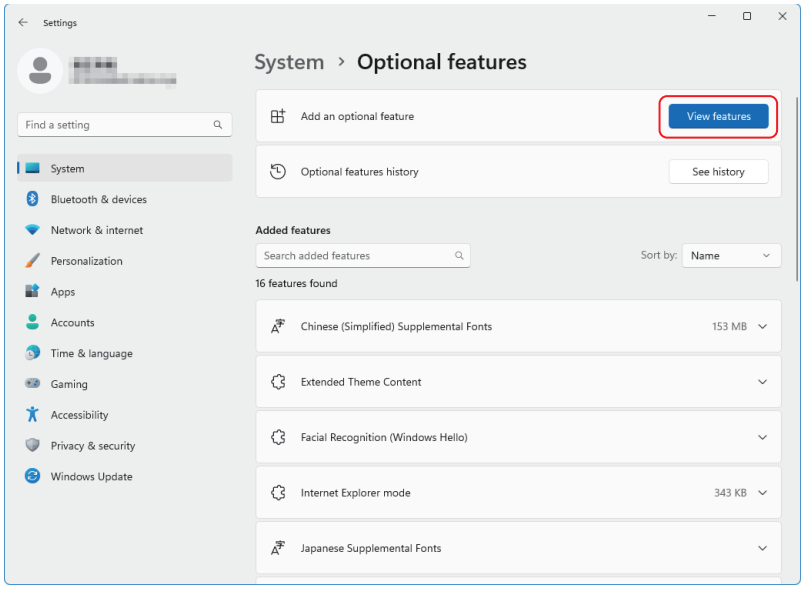
☞ Page 2628 How to install the OpenSSH server
☞ Page 2630 OpenSSH server settings and startup
☞ Page 2632 Creating an account for the OpenSSH server

How to install the OpenSSH server

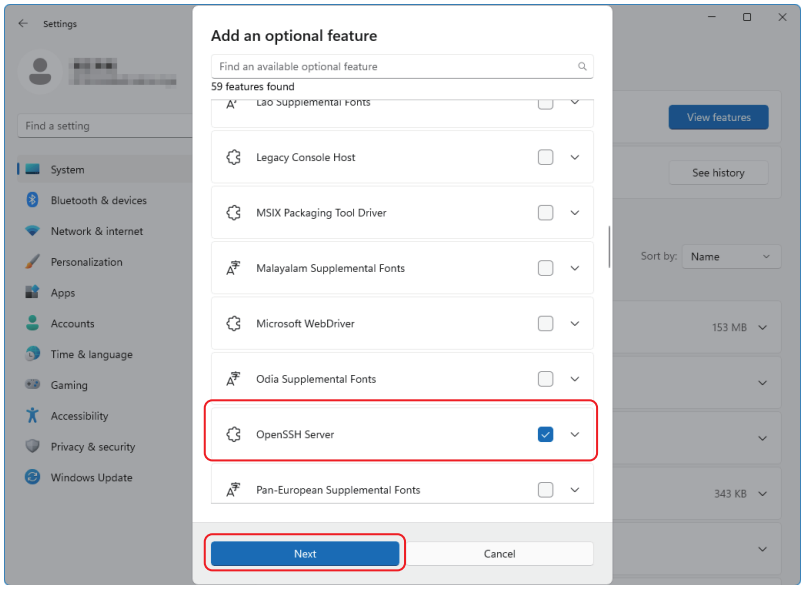
1. Click [All] → [Settings] from the Windows start menu to display the [Settings] window.
2. Click the [Option features] button.



3. Click the [View features] button.



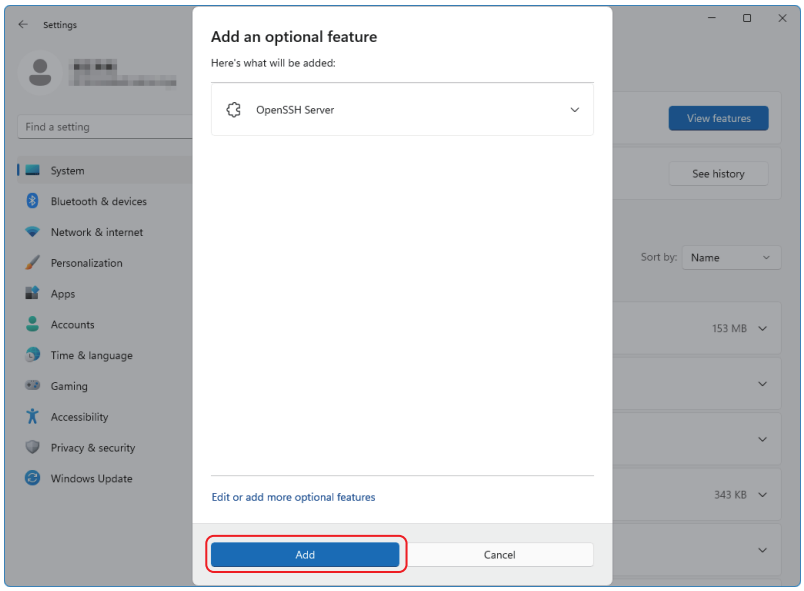
4. Select [OpenSSH Server] and click the [Next] button.



5. Click the [Add] button to start installation.

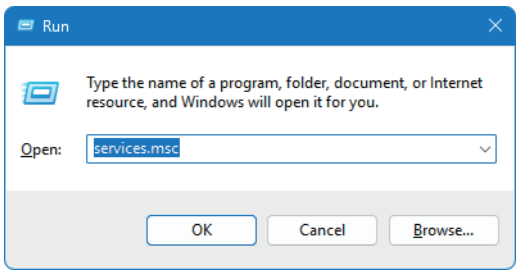
After the installation is completed, configure the settings.

☞ Page 2630 OpenSSH server settings and startup

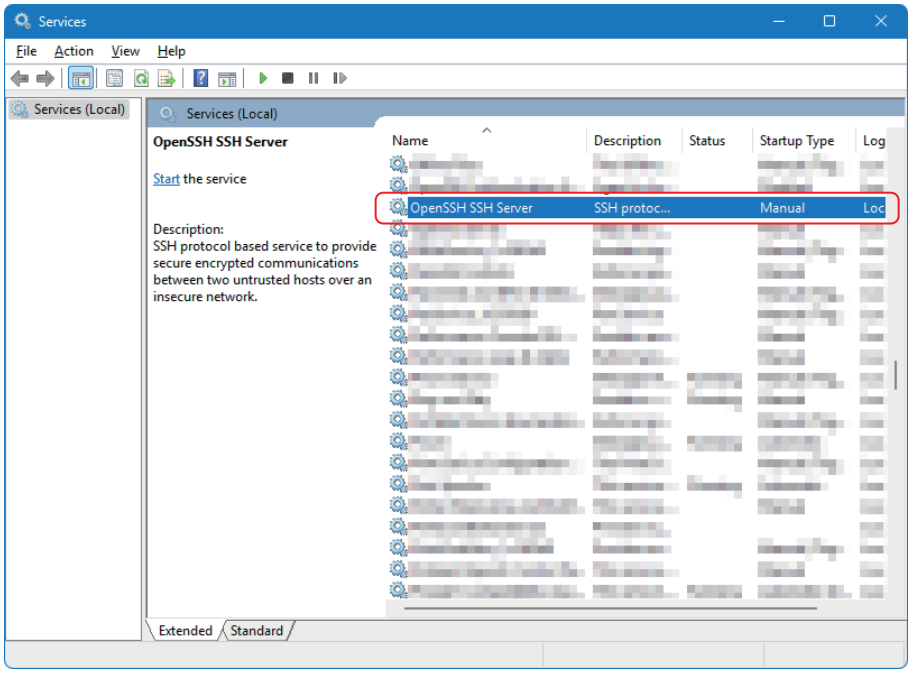


OpenSSH server settings and startup

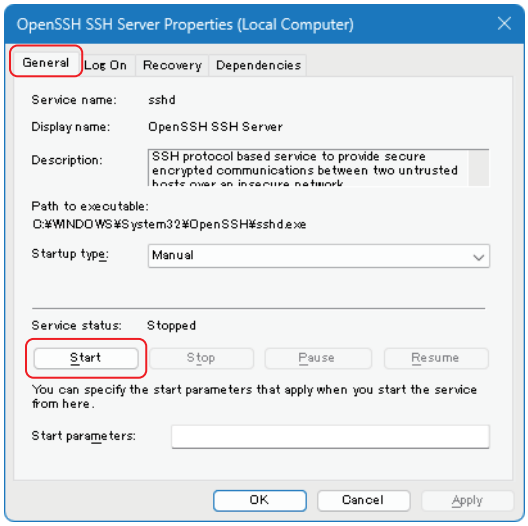
1. From the Windows start menu, select [All] → [Windows Tools], and double-click [Run] in the displayed [Windows Tools] window.
2. In the displayed [Run] dialog, type [services.msc] for [Open] and click the [OK] button to open the [Services] window.



3. Double-click the [OpenSSH SSH Server] to display its properties.



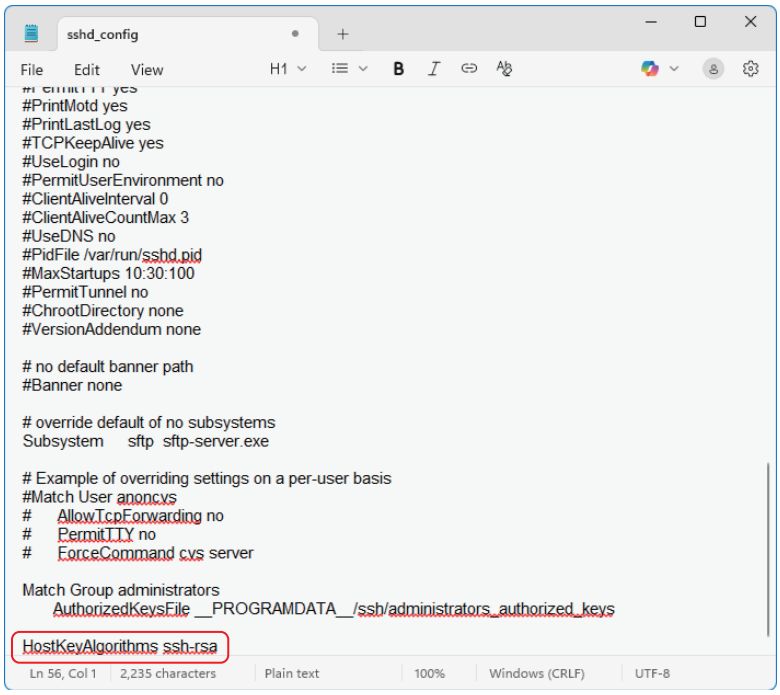
4. Click the [Start] button on the [General] tab to start the OpenSSH server.



5. When the OpenSSH server is started, a setting file is created in the following folder.

C:\ProgramData\ssh\sshd_config

Open the setting file with a text editor, add HostKeyAlgorithms ssh-rsa, and save the file.



6. Follow steps 1 through 3 to view the OpenSSH server properties.

7. Click the [Stop] button on the [General] tab to stop the OpenSSH server.

8. Click the [Start] button on the [General] tab to restart the OpenSSH server.

If you need to add an account for the OpenSSH server, refer to the following.

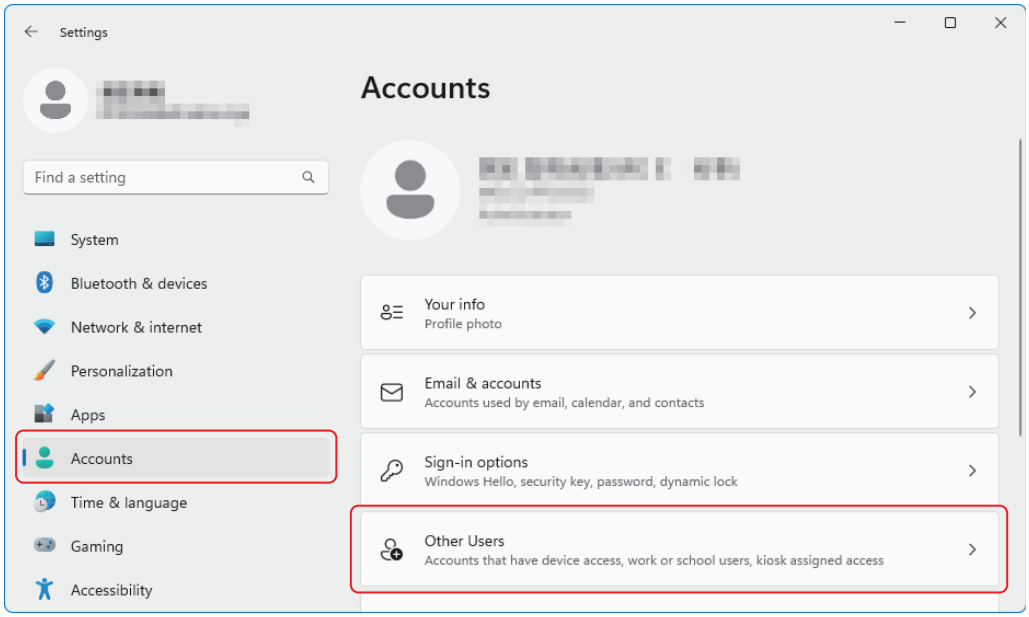
☞ Page 2632 Creating an account for the OpenSSH server

Creating an account for the OpenSSH server

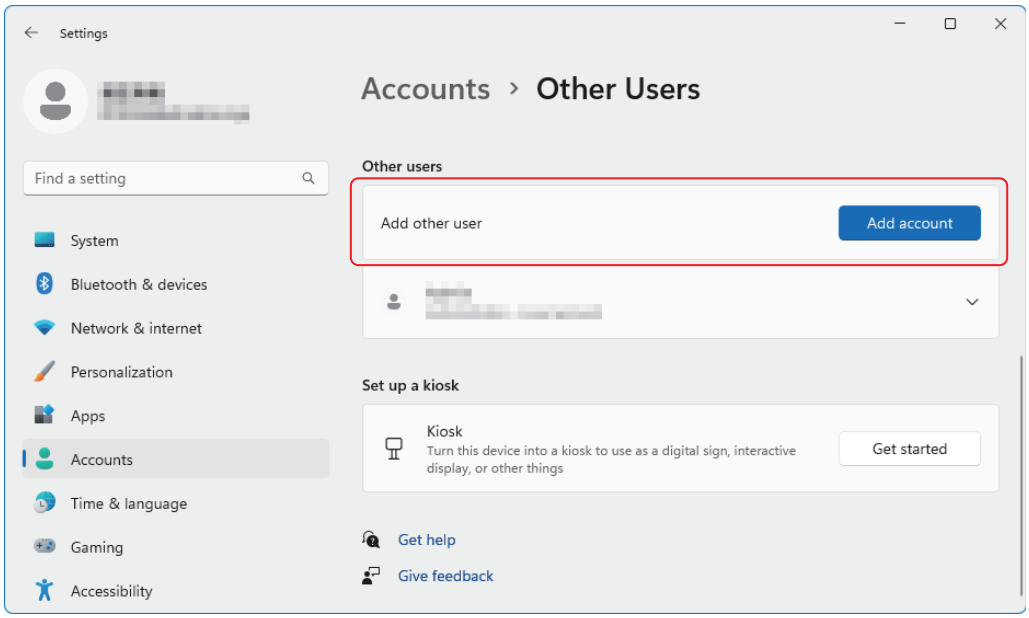
Use your Windows account to log in to the OpenSSH server.

If you need to add an account for the OpenSSH server, use the following steps.

1. Click [All] → [Settings] from the Windows start menu to display the [Settings] window.
2. Click [Accounts], then click [Other Users].



3. Click the [Add account] button for [Add other user].



4. Follow the prompts to add an account.

76.6 Remote personal computer screen

GT37 SoftGOT3000

☞ Page 2633 How to open the remote personal computer screen
☞ Page 2633 Changing the display mode
☞ Page 2634 How to operate the remote personal computer screen

76.6.1 How to open the remote personal computer screen

The remote personal computer screen opens using a special function switch with [Action] set to [PC Remote Operation (Ethernet)].
For the special function switch settings, refer to the following.
☞ Page 1230 [Special Function Switch] dialog

Precautions

■Display position of the remote personal computer screen (only in window display mode)
When all the following conditions are satisfied, the remote personal computer screen is displayed outside the GOT screen and cannot be moved or closed.

- [Display windows beyond the screen area] in the [Environmental Setting] window is selected.
- The maximum value is set to [Window Position] in the [Special Function Switch] dialog

76.6.2 Changing the display mode

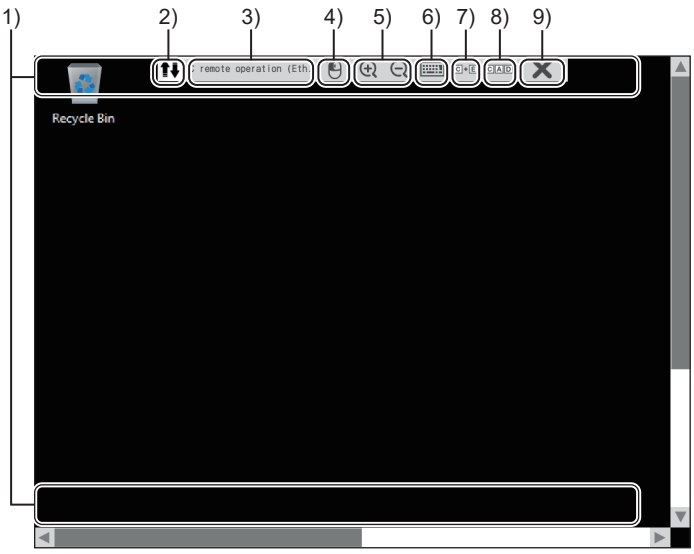
Use GS465.b8 to switch the display mode of the remote personal computer screen.

- When GS465.b8 is on: Full screen mode
- When GS465.b8 is off: Window display mode

Switch the display mode before opening the remote personal computer screen.

76.6.3 How to operate the remote personal computer screen

Window display mode



Full screen mode

Item		Description
1)	Toolbar display area (top) Toolbar display area (bottom)	Areas where toolbars are displayed. The display position (top or bottom of the screen) can be changed using the toolbar display position switch button. If no operation is performed on the toolbar for a specified time period, the toolbar is hidden. When the toolbar is hidden, touch the toolbar display area (top) to display the toolbar in the location it was previously displayed. The size of the areas is as follows. • Height: 40 dots • Width: The area excluding 32 dots from the right edge of the screen The size of the toolbars displayed within the area is 640 × 40 dots regardless of the screen resolution.
2)	Toolbar display position switching button	Switches the toolbar display position either at the top or at the bottom of the screen.
3)	Title bar	Displays the window title set for the special function switch.
4)	Click switching button	Touch this button to switch the click operation to the right-click. After switching, clicking any part of the screen cancels the right-click.
5)	Zoom in button Zoom out button	Changes the display magnification of the screen.
6)	[KBD] button	Displays the soft keyboard set for the special function switch. ☞ Page 2635 Soft keyboard operation
7)	[C+E] button	Executes the simultaneous press of the Ctrl and E keys.
8)	[CAD] button	Executes the simultaneous press of the Ctrl, Alt, and Delete keys.
9)	Close button	Closes the remote screen.

Precautions

■Forced close of the remote personal computer screen

The remote personal computer screen is forcedly closed in the following cases.

- When starting the utility
- When starting system applications (add-on functions) such as sequence program monitors, using a special function switch

To use the remote personal computer operation (Ethernet) after the monitor screen appears, reopen the remote personal computer screen using a special function switch.

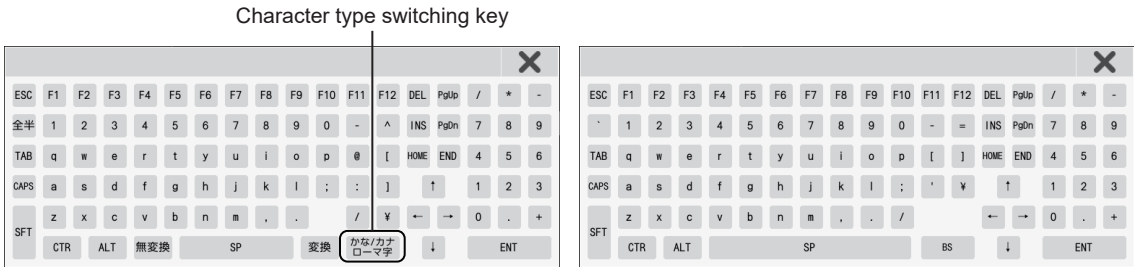
■Mouse cursor display when the USB mouse is installed or removed

When a USB mouse is connected or disconnected while the remote personal computer screen is displayed, the mouse cursor appears as shown below.

To display mouse cursors according to the GT Designer3 settings, close the remote personal computer screen and then reopen it.

Mouse cursor display setting	Mouse cursor display method	
GOT and server PC	Installed	Both the mouse cursor on the GOT and the mouse cursor on the personal computer are displayed.
	Removed	Only the mouse cursor on the personal computer is displayed. (The mouse cursor on the GOT is not displayed.)
GOT Only	Installed	Both the mouse cursor on the GOT and the mouse cursor on the personal computer are displayed.
	Removed	The mouse cursors are not displayed. (Neither the mouse cursor on the GOT nor the mouse cursor on the personal computer are displayed.)

Soft keyboard operation



Japanese 106 keyboard

English 101 keyboard

Touching and holding a key on the soft keyboard results in continuous input, equivalent to repeated key presses.
(The [SFT] key, the [ALT] key, the [CTR] key, and the [CAPS] key are excluded.)

Touching the [SFT] key, the [ALT] key, or the [CTR] key once keeps the state of holding down the key.
To release the key, perform one of the following operations.
Touch the same key again.
Touch any key other than the [SFT] key, the [ALT] key, or the [CTR] key.

The [CAPS] key is held down or released each time the key is touched.

Touching the title bar moves the soft keyboard as well as the key window.

Touching the [×] button closes the soft keyboard.

The Ultra VNC server does not support switching character string using the character type switching key.

Operation of a USB mouse and USB keyboard

For details on the USB mouse and USB keyboard, refer to the following.

☞ Page 630 Configuring the settings for a mouse and a keyboard used with the GOT ([USB Host])

76.7 Relevant settings

GT37 SoftGOT3000

Set the relevant settings other than the specific settings for the remote personal computer operation function (Ethernet) as required.

The following shows the functions that are available by configuring the relevant settings.

76.7.1 GOT environmental settings [Screen Switching/Windows]

Select [Common] → [GOT Environmental Setting] → [Screen Switching/Window] from the menu.

☞ Page 530 Setting for switching screens to be displayed on the GOT ([Screen Switching/Window])

Function	Setting item
Specifying an overlap window to be used as a system window	[Use also as a system window]
Displaying a window that extends beyond the GOT screen (only in window display mode)	[Display windows beyond the screen area]

76.7.2 GOT internal device

☞ Page 3581 GOT special register (GS)

Function	Setting item
Hiding the [CAD] button in the personal computer screen on the GOT	GS465.b0
Hiding the [C+E] button in the personal computer screen on the GOT	GS465.b1
Hiding the [KBD] button in the personal computer screen on the GOT	GS465.b2
Hiding the zoom in button and the zoom out button in the personal computer screen on the GOT, and fixing the display magnification to 100%	GS465.b3
Applying the display magnification specified for the special function switch that calls the personal computer screen. This function is enabled when GS465.b3 is turned on to fix the magnification to 100%.	GS465.b5
Hiding the click switching button of the personal computer screen on the GOT	GS465.b6
Hiding the scroll bars of the personal computer screen on the GOT	GS465.b7
Switching the display mode of the personal computer screen on the GOT	GS465.b8
Enabling the switching between personal computer screens while keeping the remote screen window displayed on the GOT connected to multiple personal computers.	GS465.b10

PART 20 VNC server function

77 Viewing the GOT from a personal computer (VNC server function)

77 Viewing the GOT from a personal computer (VNC server function)

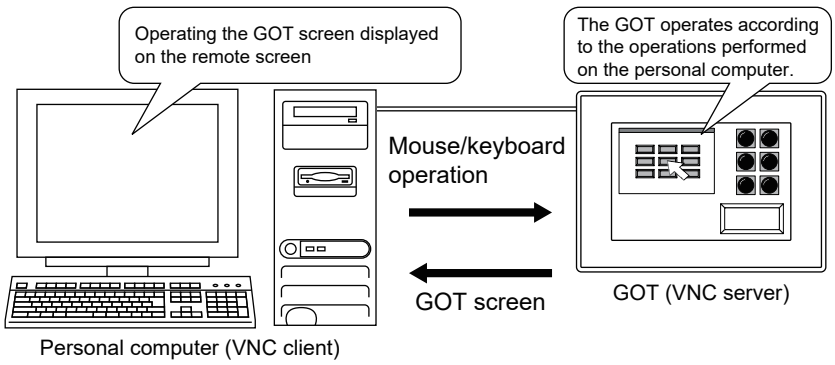
GT37 SoftGOT3000

☞ Page 2638 Overview of the VNC server function
☞ Page 2639 Specifications of the VNC server function
☞ Page 2647 How to use the VNC server function
☞ Page 2650 [VNC Server] dialog
☞ Page 2652 Personal computer setting
☞ Page 2658 Relevant settings

77.1 Overview of the VNC server function

GT37 SoftGOT3000

The VNC server function enables you to remotely operate the GOT from the personal computer at a distant location via Ethernet by using Virtual Network Computing (VNC).



77.2 Specifications of the VNC server function

GT37 SoftGOT3000

☞ Page 2639 System application (add-on function)
☞ Page 2639 Number of VNC server function settings for one project
☞ Page 2639 Specifications of the VNC server and VNC client
☞ Page 2639 License number registration
☞ Page 2640 Required software for the equipment that is used to remotely operate the GOT
☞ Page 2641 Authorization control
☞ Page 2646 SSH connection

77.2.1 System application (add-on function)

To use the VNC server function, a system application (add-on function) for [VNC Server] is required.
Selecting [Use VNC Server] in the [VNC Server] dialog automatically incorporates the system application into the package data.

☞ Page 2650 [VNC Server] dialog

77.2.2 Number of VNC server function settings for one project

One setting can be configured per project.

77.2.3 Specifications of the VNC server and VNC client

The GOT and the personal computer are used as a VNC server and a VNC client, respectively.

• VNC server

The VNC server is the GOT that is remotely operated from the personal computer by using this function.

☞ Page 2653 How to start and operate the remote screen

• VNC client

The VNC client is the personal computer or other equipment that is used to remotely operate the GOT by using this function.
VNC client software must be installed on the personal computer.
For the installation instructions, refer to the following.

☞ Page 2652 Personal computer setting

77.2.4 License number registration

To use the VNC server function, register a license number on the GOT.
For information on how to register the license number, refer to the following.

☞ Page 3686 License registration method

When the license number is not registered, the 30 minutes of trial for the function is available upon connection to the VNC server.
Up to 30 trials are available.
To start a trail again, turn off and then on the GOT.
After 30 trials, you must register the license number to use the function.

77.2.5 Required software for the equipment that is used to remotely operate the GOT

When the GOT is used as the VNC server, the VNC client software must be installed on the equipment that is used to remotely operate the GOT.
Install the either of the following VNC client software according to the equipment that is used to remotely operate the GOT.

For personal computer

• Applicable VNC client software

Name	Manufacturer	Version
UltraVNC	UltraVNC team	1.3.8.1 recommended

• Operating environment

For the operating environment of the software, refer to the following website.
☞ http://www.uvnc.com/

Precautions

Even while the USB mouse is used on the GOT with the USB mouse/keyboard function, the mouse cursor is not displayed on the remote screen of the personal computer.

For smartphone or tablet

• Applicable VNC client software

For the VNC client software whose operations have been validated, refer to the following Technical Bulletin.
📖VNC client software that can be used with the GOT3000 series VNC server function(GOT-A-0234)

• Operating environment

Depends on the smartphone or tablet you use.
Refer to the website of the smartphone or tablet.

• How to obtain the software

Depends on the smartphone or tablet you use.
How to obtain the software depends on the software which is applicable to the smartphone or tablet you use.

Precautions

The VNC client software may not operate properly depending on the OS on a smartphone or tablet, VNC client software version, and usage environment.
Conduct a comprehensive test of the software under real conditions before use.

77.2.6 Authorization control

Enabling the authorization control disables the simultaneous operation from the personal computer and the GOT.
To enable the authorization control, select [Restrict simultaneous operations of PC and GOT] in the [VNC Server] dialog.
☞ Page 2650 [VNC Server] dialog

Precautions

■Authorization control setting

Without the authorization control setting, do not operate the GOT and the remote screen of the personal computer simultaneously.
Doing so causes a malfunction, resulting in an accident.

■GOT internal device setting

When placing the touch switch that turns on the VNC Client Communication Control signal (GS1792.b0) or the VNC Client Operation Control signal (GS1792.b1) on the screen, set the touch switch not to be operated from the personal computer. (Example: Set the trigger condition so that the touch switch is disabled while the GOT communicates with the personal computer.)
If the signals are turned on while the GOT communicates with the personal computer, the following status is caused.

- When the VNC Client Communication Control signal is turned on

The communication with the personal computer is disconnected, and the GOT cannot communicate with the personal computer until the signal is turned off on the GOT.

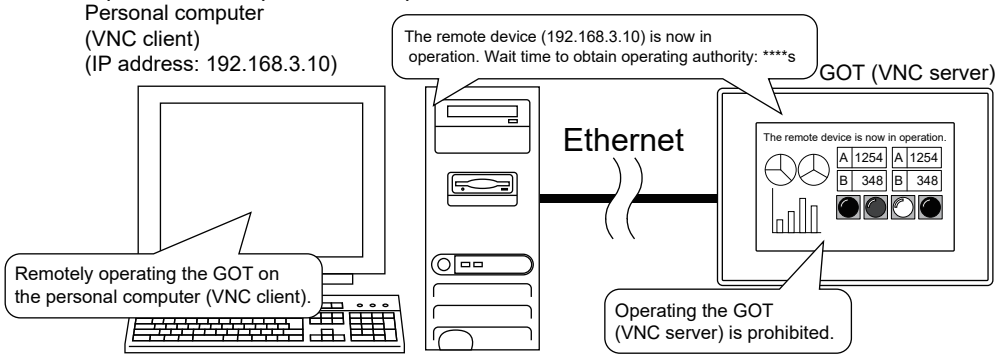
- When the VNC Client Operation Control signal is turned on

Though the communication with the personal computer is not disconnected, the personal computer cannot remotely operate the GOT.
For the GOT internal devices, refer to the following.
☞ Page 2658 GOT internal device

Obtaining the authorization

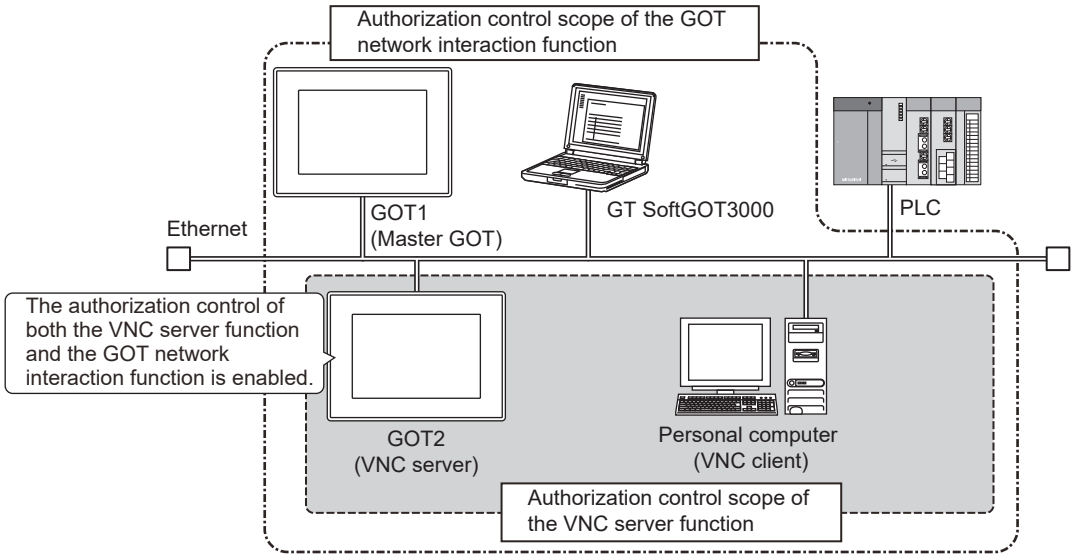
Enabling the authorization control allows you to operate the GOT on only the equipment (personal computer or GOT) that holds the authorization.
The equipment, whose popup display is clicked or touched when the authorization guarantee time is 0, obtains the authorization.
Once the personal computer or the GOT obtains the authorization, the authorized equipment holds the authorization until the authorization guarantee time is passed.
While the personal computer holds the authorization, [The remote device (###.###.###.###) is now in operation.] and [Wait time to obtain operating authority: ****s)] are alternately displayed on the screens of both equipment.
While the GOT holds the authorization, [The GOT is now in operation.] and [Wait time to obtain operating authority: ****s] are alternately displayed on the screens of both equipment.
###.###.###.### indicates the IP address of the personal computer as the VNC client.
The asterisks **** indicate the authorization guarantee time (second).
Set the authorization guarantee time in GT Designer3 or using the utility.
☞ Page 649 [VNC Server]
📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

Example: When the personal computer holds the authorization



Controlling the authorization among pieces of equipment

To control the authorization among pieces of equipment, use the VNC server function in combination with the GOT network interaction function.



The following shows the differences when the two functions are used in combination.

- To perform operations on the VNC server or VNC client, the authorization of both the VNC server function and the GOT network interaction function is required.
- The setting of [Guaranteed time of operational authority after the last operation] in the [GOT Setup] window becomes invalid. The authorization guarantee time set in the [GOT Network Interaction] dialog becomes valid.
- The popup display of the GOT network interaction function is applied to the VNC server or VNC client screen.

For details on the GOT network interaction function, refer to the following.

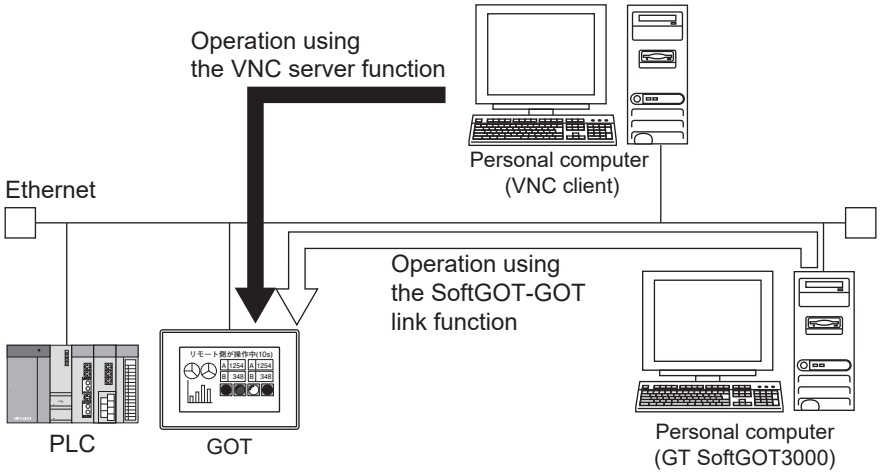
☞ Page 762 Setting the interaction function for equipment on Ethernet ([GOT Network Interaction])

Authorization control when the SoftGOT-GOT link function is used

When the GOT network interaction function is not used, the VNC server function and the SoftGOT-GOT link function control the authorization independently of each other.

(The authorization control of the SoftGOT-GOT link function is always enabled.)

The following shows the authorization control when the VNC server function and the SoftGOT-GOT link function are used in combination.



○: Available, ×: Not available

Authorization control setting of the VNC server function	Equipment with operation right	Operating the GOT		
		From GOT	From VNC client	From GT SoftGOT3000
Enabled	GOT (VNC server)	○	×	×
	Personal computer (VNC client)	×	○	×
	Personal computer (GT SoftGOT3000)	×	×	○
Disabled	GOT (VNC server)	○	○	×
	Personal computer (VNC client)	○	○	×
	Personal computer (GT SoftGOT3000)	×	×	○

How to identify the authorized equipment

Check the GOT internal device to identify the authorized equipment. (Authorized Equipment Notification signal, GS1230.b2)

☞ Page 2658 GOT internal device

Operation status popup notification function

This function notifies, with a popup display, the authorized equipment and the waiting time for the unauthorized equipment to obtain the authorization.

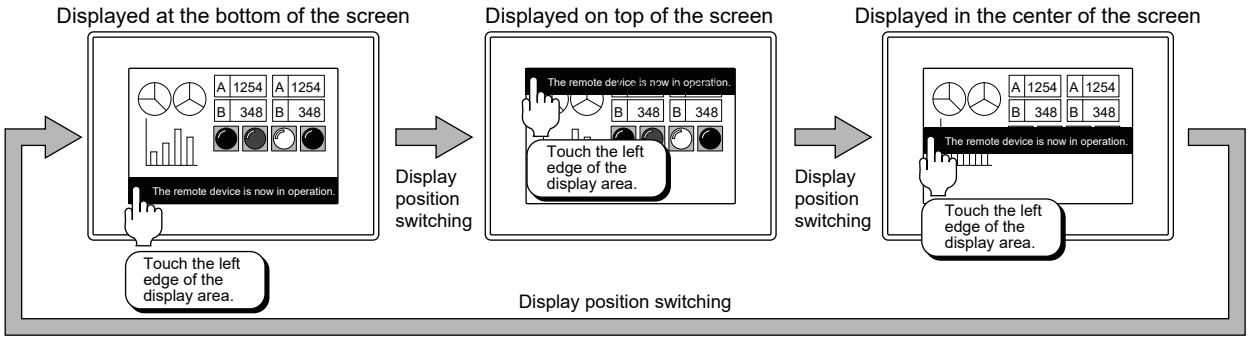
The display position of the operation status popup display is the same as that of the alarm popup display.

(To set the display position, select [Display alarms as popups] in the [Base Screen Property] dialog.)

The operation status popup display appears on the bottom, center, or top of the screen.

When the base screen is switched while the operation status popup display is performed, the operation status popup display appears at the display position of the alarm popup display which is set for the destination base screen.

Each touch of the leftmost portion of the operation status pop-up display switches its display position to the top, center, or bottom, in that order.



Configure the display setting on the GOT utility or GT Designer3.

For instruction on configuring the setting in the utility, refer to the following.

GOT3000 Series User's Manual (Utility & Maintenance Functions)

For instruction on configuring the setting in GT Designer3, refer to the following.

☞ Page 314 [Basic] tab

77.2.7 SSH connection

The SSH connection encrypts the communication and prevents information leakage.
To use the SSH connection, install the SSH connection client software and configure the settings, then configure the settings in the [VNC Server] dialog.

SSH connection client software

The following shows the available SSH connection client software.

Name	Manufacturer	Version
Tera Term	TeraTerm Project	Version 5.2 is recommended.

For information on how to install the SSH connection client software, refer to the following.
☞ Page 2655 How to install Tera Term
☞ Page 2656 Tera Term settings

Settings in the [VNC Server] dialog

Select [Connect using SSH port forwarding] in the [VNC Server] dialog.
For the settings in the [VNC Server] dialog, refer to the following.
☞ Page 2650 [VNC Server] dialog

Precautions

■Settings when not using an SSH connection

When [Connect using SSH port forwarding] is selected, an SSH connection must be used for communications.
To enable communications without using an SSH connection, deselect [Connect using SSH port forwarding].

■Operation when password authentication fails

If authentication of [Operation/Monitoring password] or [Exclusive password for monitoring] fails after SSH connection is established, communication using SSH connection is disconnected.

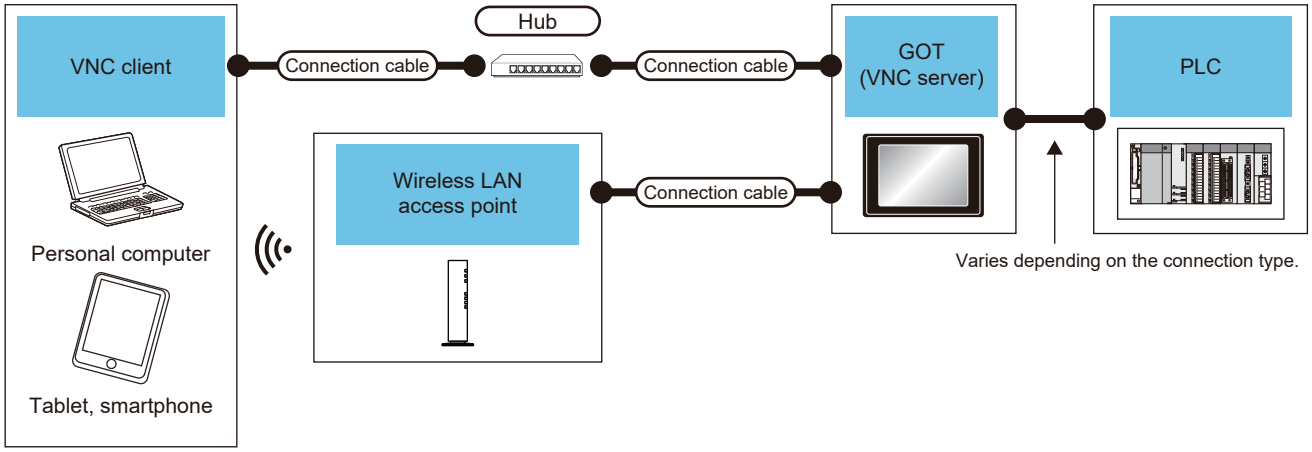
77.3 How to use the VNC server function

GT37 SoftGOT3000

☞ Page 2647 System configuration
☞ Page 2649 Setting procedure

77.3.1 System configuration

The following shows the system configuration of the personal computer.



For details on the connection cables and the maximum segment length, refer to the following.

☞ Page 2648 Connection cable
☞ Page 2648 Maximum segment length

For information on the maximum number of connected devices, refer to the following.

☞ Page 2648 Maximum number of connected devices

VNC client	Connection cable/ wireless LAN access point	GOT (VNC server)		PLC
		Interface	GOT model	
Selected by users	Shielded twisted pair cable Wireless LAN access point For the connectable wireless LAN access points and system devices, refer to the following Technical Bulletin. 📖List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)	Built-in Ethernet interface of the GOT	GT37 SoftGOT3000	For information on the system configuration between the GOT and the PLC, refer to the following. 📖GOT3000 Series User's Manual (Connection)

Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

Straight-through cables can be used.

When the GOT is directly connected to the personal computer via Ethernet cable, a cross cable is applicable.

The destination device connected with the twisted pair cable varies with the configuration of the Ethernet network system used.

Connect the cable to the Ethernet module, hub, or other system equipment corresponding to the applicable Ethernet network system.

Use cables, connectors, and hubs that meet the IEEE802.3 10BASE-T/100BASE-TX/1000BASE-T standards.

Maximum segment length

The maximum segment length (length between a hub and a node) is 100 m.

The maximum length depends on the Ethernet equipment used.

The following shows the number of connectable hubs when a repeater hub is used.

- 10BASE-T: Up to 4 cascade-connected hubs (within 500 m)
- 100BASE-TX: Up to 2 cascade-connected hubs (within 205 m)
- 1000BASE-T: The number differs depending on the hub to be used.

For the cascade connection between the switching hubs, there is no theoretical limit to the number of cascades.

For the limit, contact the switching hub manufacturer.

Precautions

When multiple network devices (including GOTs) are connected in the same segment, the network load increases and the transmission speed between the GOT and PLC may be reduced.

The following actions may improve the communication performance:

- Use a switching hub compatible with 1000BASE-T (1 Gbps) or more.
- Reduce the number of devices monitored by the GOT.

Maximum number of connected devices

Only one VNC client can access one GOT at a time.

77.3.2 Setting procedure

The following shows how to configure the settings for the VNC server function.

1. Connect the personal computer to the GOT.

☞ Page 2647 System configuration

2. Configure the settings for the VNC server function in the [VNC Server] dialog.

☞ Page 2650 [VNC Server] dialog

3. Set the GOT Ethernet interface.

☞ Page 713 Setting the GOT Ethernet interface ([GOT Ethernet Setting])

To control the authorization among devices on a network, set the GOT network interaction function.

☞ Page 762 Setting the interaction function for equipment on Ethernet ([GOT Network Interaction])

4. Write package data to the GOT.

Make sure to set [GOT IP Address] and [Peripheral S/W Communication Port No.] for the GOT in the [Communication Configuration] dialog.

☞ Page 451 [Communication Configuration] dialog

For the communication method between the personal computer and the GOT, refer to the following.

☞ Page 408 Transferring data to the GOT

5. Register the license number to the GOT.

For information on how to register the license number, refer to the following.

☞ Page 3686 License registration method

6. Install the VNC client software on the personal computer or others, and configure the setting.

After the setting is completed, operate the GOT on the remote screen.

☞ Page 2652 How to install the UltraVNC

☞ Page 2653 How to start and operate the remote screen

7. To use an SSH connection, install the SSH connection client software and configure the settings.

☞ Page 2655 How to install Tera Term

☞ Page 2656 Tera Term settings

77.4 [VNC Server] dialog

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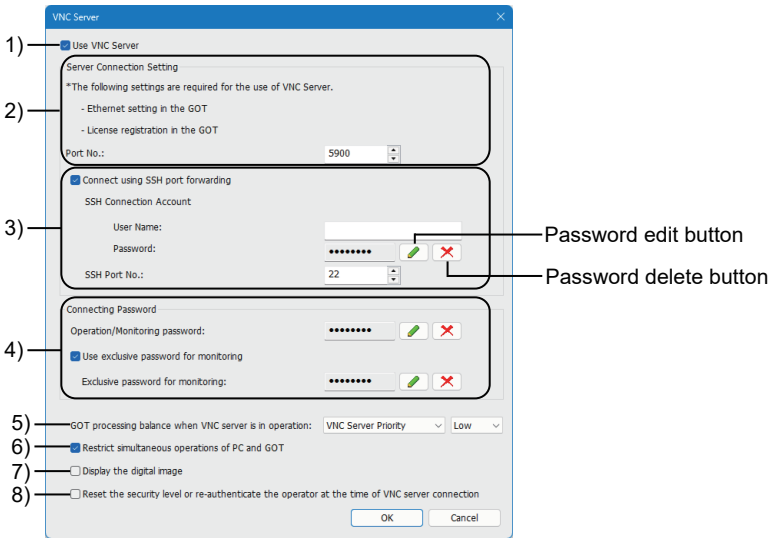
Select [Common] → [Peripheral Setting] → [VNC Server] from the menu to display the setting dialog.



Item			Description
1)	[Use VNC Server]		Select this item to enable the VNC server function.
2)	[Server Connection Setting]	—	Configure the GOT connection settings.
		[Port No.]	Set the port number for the GOT to communicate with a VNC client. The setting range is [1024] to [65534]. Do not set the port number used for the other settings. Duplication of the port number disables communication. To change the number, it is recommended to use a number in the 50000s or higher.
3)	[Connect using SSH port forwarding]	—	Select this item to enable SSH connection.
		[User Name]	1 to 32 characters can be set for the user name. Alphanumeric characters (a to z, A to Z, 0 to 9) and the following symbols are usable for the user name. ! " # $ % & ' ( ) * + , ` - . / : ; < = > ? @ [\ ] ^ _ { | } ~
		[Password]	Clicking the password edit button displays the [Password Edit] dialog. Clicking the password delete button deletes the password.
		[SSH Port No.]	Set the port number used for SSH connection. The setting range is [22] and [1024] to [65534]. Do not set the port number used for the other settings. Duplication of the port number disables communication. To change the number, it is recommended to use a number in the 50000s or higher.
4)	[Connecting Password]	—	Clicking the password edit button displays the [Password Edit] dialog. Clicking the password delete button deletes the password.
		[Operation/Monitoring password]	Set the password to remotely operate and display the GOT on the personal computer.
		[Use exclusive password for monitoring]	Select this item to only remotely display the GOT on the personal computer.
		[Exclusive password for monitoring]	Set the password to only remotely display the GOT on the personal computer.

Item			Description
5)	[GOT processing balance when VNC server is in operation]	—	Set the GOT load balance between the VNC server function processing and the other processing (including displaying the screens, and collecting the alarm data and logging data).
		[Standard]	Select this item to set the standard balance for the balance between the VNC server function processing and the other processing.
		[VNC Server Priority]	Assigns a higher priority to the VNC server function processing. The update rate of the remote screen increases. Select this item when the amount of the other processing is small. The following shows the priority setting range. • [Low] • [Medium] • [High] When the number of monitoring objects is large or the background processing (including the alarm function and logging function) is performed, the delay in GOT behavior may be caused. Consider the number of monitoring objects, alarm function settings, logging function settings, and others, and then set the GOT processing load balance.
		[GOT Monitoring Priority]	Assigns a higher priority to the other processing. The number of the other processing delays caused by the VNC server function decreases. Select this item when the amount of the other processing is large.
6)	[Restrict simultaneous operations of PC and GOT]		Select this item to disable the simultaneous operation from the GOT and the remote screen of the personal computer. Selecting the item enables the authorization control. ☞ Page 2641 Authorization control
7)	[Display the digital image]		Set whether to display an image such as a web camera image displayed on the GOT on the remote screen of the personal computer. The display area for such images displays the object, figure, or other item that is placed behind the image. When the remote screen of the personal computer displays such images displayed on the GOT, the update rate of the remote screen decreases.
8)	[Reset the security level or re-authenticate the operator at the time of VNC server connection]		Resets the security level or performs a forced logout of the GOT at the time of connection between the GOT (VNC server) and the VNC client.

Precautions

■Password setting

If the operation/monitoring password and the exclusive password for monitoring are the same, the password is valid as the operation/monitoring password.

■Load balance setting

Although processing of the VNC server function is prioritized, the speed of remote screen refresh may not change depending on the VNC client setting.

In this case, disconnect and reconnect the communication with the personal computer.

77.5 Personal computer setting

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☞ Page 2652 How to install the UltraVNC
☞ Page 2653 How to start and operate the remote screen
☞ Page 2655 How to install Tera Term
☞ Page 2656 Tera Term settings

77.5.1 How to install the UltraVNC

1. Download UltraVNC from the following website.

http://www.uvnc.com/

Note that the above website may be changed without notification.

2. Execute the downloaded file, and start the installer.

3. The setup window appears.

Click the [Next] button until the [License Agreement] screen is displayed.

Confirm the description in the screen, and then select [I accept the agreement].

4. Click the [Next] button until the [Select Destination Location] screen is displayed.

In the screen, select the location where the software is installed.

5. The [Select Components] screen appears.

Select [Full installation] or [UltraVNC Viewer Only], and click the [Next] button.

6. The [Select Start Menu Folder] screen appears.

Select the start menu folder to create a shortcut, and click the [Next] button.

7. The [Select Additional Tasks] screen appears.

To create the shortcut icon on the desktop, enable [Create UltraVNC desktop icons].

To open the file with the extension of .vnc by using UltraVNC Viewer, select [Associate UltraVNC Viewer with the .vnc file extension].

When [Full installation] is selected in the [Select Components] screen, setting items other than the above are also displayed. Since the additional setting items depend on the personal computer you use, configure the settings as required.

8. The confirmation screen for installation appears.

Confirm the description in the screen, and then click the [Install] button.

Installation of UltraVNC starts.

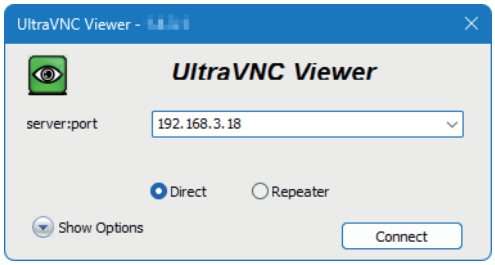
77.5.2 How to start and operate the remote screen

The remote screen of the personal computer is used to display and operate the GOT screen.

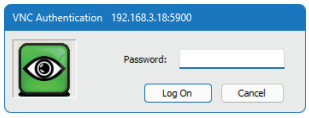
How to display the remote screen

Display the remote screen by using the VNC client software installed on the personal computer.

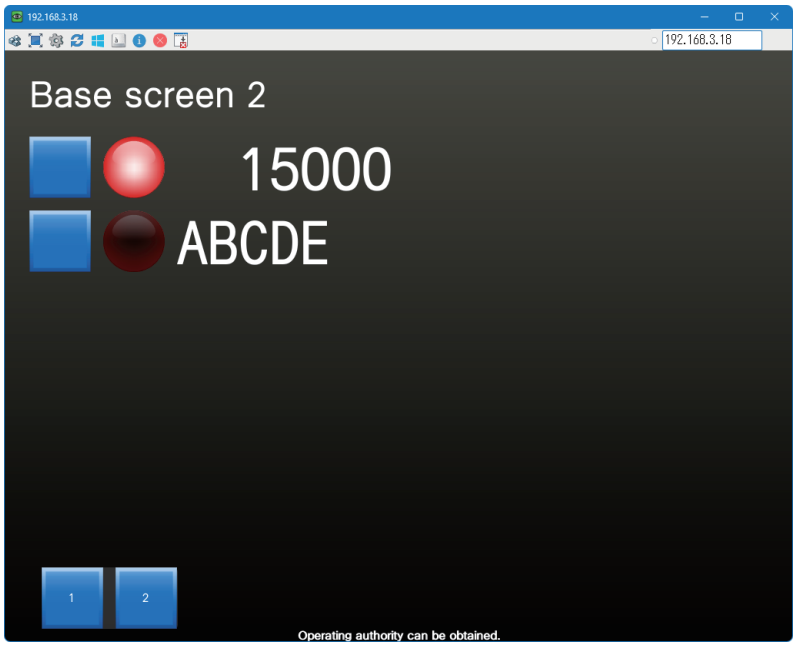
1. From the Windows start menu, select [All] → [UltraVNC], and click [UltraVNC Viewer] to start UltraVNC Viewer.
2. In the setting screen, set the GOT IP address in the [server:port] field and click the [Connect] button.



3. Enter the password (that is set in the [VNC Server] dialog) in the [Password] field, and click the [Log On] button.



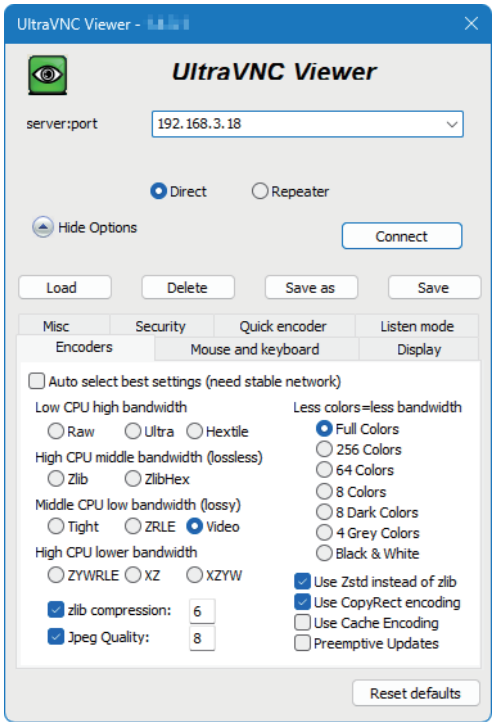
4. The remote screen appears.



■When the remote screen does not display the GOT screen

Even though the VNC client is connected to the VNC server by using the VNC client software, if the remote screen does not display the GOT screen, make sure to configure the setting as shown below.

Start UltraVNC Viewer, and click [Show Options].



Check that [Full Colors] is selected in [Less colors=less bandwidth] of the [Encoders] tab.

When [Full Colors] is not selected, deselect [Auto select best settings (need stable network)] and select [Full Colors].

■Compression format of the transferred image

The VNC server function supports the following image compression formats.

Select the image compression format in the [Encoders] tab.

Usually select [Hextile].

- Raw
- Hextile
- ZRLE

ZRLE provides a high compression rate for the images with many repeated patterns.

However, for the images with few repeated patterns, such as photos, ZRLE provides a low compression rate and a high processing load.

Select the image compression format according to the communication speed and the transferred screen layout.

Operating procedure

Clicking the remote screen of the personal computer is recognized as touching the corresponding position on the GOT.

The keyboard operation on the remote screen of the personal computer is also recognized as the key input on the GOT.

77.5.3 How to install Tera Term

1. Download Tera Term from the following website.

https://teratermproject.github.io/

Note that the above website may be changed without notification.

2. Execute the downloaded file, and start the installer.

3. [Select Setup Language] appears.

Select the language to be used and click the [OK] button.

4. [License Agreement] appears.

Select [I accept the agreement] and click the [Next] button.

5. [Select Destination Location] appears.

Specify the installation destination and click the [Next] button.

6. [Select Components] appears.

Select the components to be installed and click the [Next] button.

7. [Select Language] appears.

Select the language for the user interface and click the [Next] button.

8. [Select Start Manu Folder] appears.

Specify the folder where the program shortcut is to be created, and click the [Next] button.

9. [Select Additional Tasks] appears.

Select the additional task to be executed and click the [Next] button.

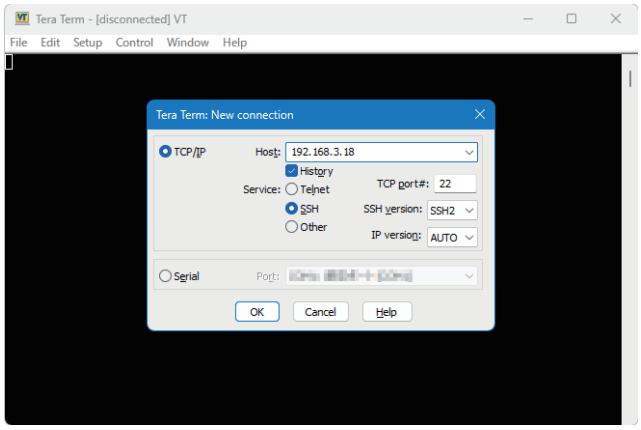
10. [Ready to Install] appears.

Check the details and click the [Install] button.

The Tera Term installation begins.

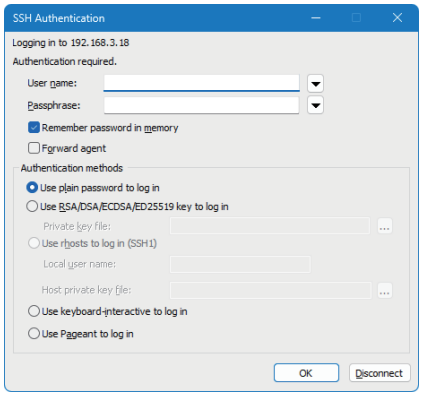
77.5.4 Tera Term settings

1. From the Windows start menu, select [All] → [Tera Term 5], and click [Tera Term] to start Tera Term.
2. The connection settings screen appears. Set [Host] and [TCP port] and click the [OK] button.



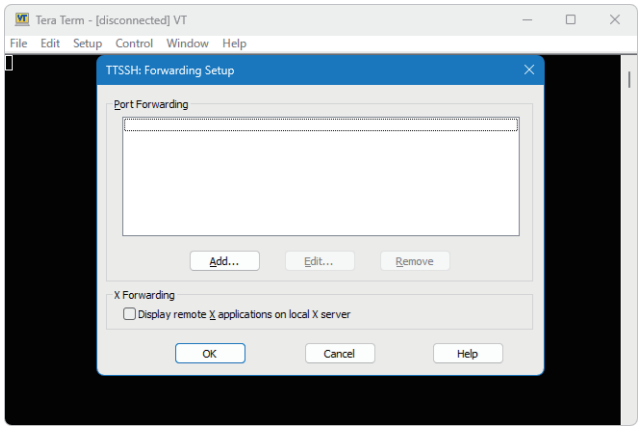
Item	Description
[Host]	IP address of the GOT
[TCP port]	[SSH Port No.] set in the [VNC Server] dialog in GT Designer3

3. The login screen appears. Enter the fields for [User name] and [Passphrase] and click the [OK] button.

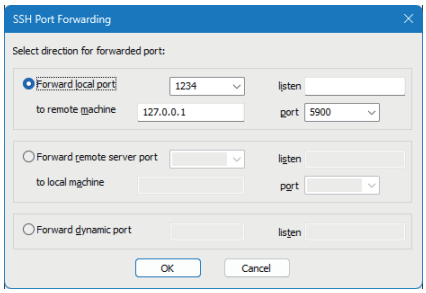


Item	Description
[User name]	[User Name] set in the [VNC Server] dialog in GT Designer3
[Passphrase]	[Password] set in the [VNC Server] dialog in GT Designer3

4. Select [Setup] → [SSH Forwarding] in Tera Term to display the [TTSSH: Forwarding Setup] dialog.

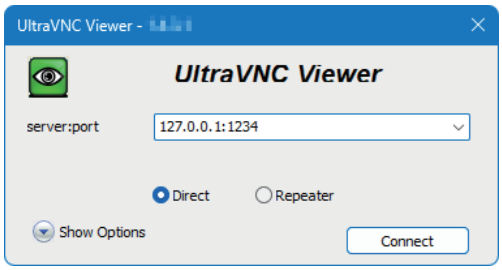


5. Click the [Add] button to display [Select direction for forwarded port].
Configure the settings for [Forward local port] and [to remote machine].



Item	Description
[Forward local port]	Port number used on the personal computer
[to remote machine]	127.0.0.1
	[Port No.] set in the [VNC Server] dialog in GT Designer3

6. Start UltraVNC Viewer and establish a VNC connection.



Item	Description
[Server:port]	• Server: IP address (127.0.0.1) entered in the field for [to remote machine] in Tera Term • port: Port number entered in the field for [Forward local port] in Tera Term

77.6 Relevant settings

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Configure the relevant settings in addition to the specific settings for the VNC server function as required.
The following shows the functions that are available by configuring the relevant settings.

77.6.1 GOT internal device

☞ Page 3581 GOT special register (GS)

VNC Server Function Control (GS1792)

Bit number	Signal name	Description
b0	VNC Client Communication Control signal	Enables/disables the communication from the VNC client. • 0: Communication from the VNC client enabled • 1: Communication from the VNC client disabled
b1	VNC Client Operation Control signal	Enables/disables the operation from the VNC client. • 0: Operation from the VNC client enabled • 1: Operation from the VNC client disabled
b2 to b7	Use prohibited	—
b8	Authorization Guarantee Time Cancel signal	Cancels the authorization guarantee time setting of the equipment which last operated the GOT, and enables the other equipment to operate. • 0: Authorization guarantee time valid • 1: Authorization guarantee time invalid
b9 to b15	Use prohibited	—

VNC Server Operation Status Notification (GS1230)

Bit number	Signal name	Description
b0	VNC Client Communication Status Notification signal	Notifies the communication status of the VNC client. • 0: VNC client communication suspended • 1: VNC client communication in operation
b1	VNC Client Operation Mode Notification signal	Notifies the operation mode of the VNC client. • 0: Only remote display enabled • 1: Remote display and operation enabled
b2	Authorized Equipment Notification signal	Notifies the equipment that holds the authorization. • 0: VNC server authorized • 1: VNC client authorized
b3 to b14	Use prohibited	—
b15	VNC Server Authorized Notification signal	Notifies the equipment that holds the authorization. • 0: VNC server authorized • 1: VNC client authorized

Communicating VNC Client Information Notification (GS1231 to GS1232)

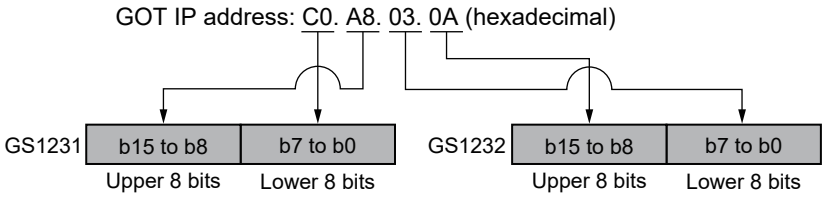
The IP address of the communicating VNC client is stored in hexadecimal.

0 is stored when the VNC client does not communicate with the VNC server.

Ex.

When the IP address of the VNC client is 192.168.3.10, the devices of GS1231 to GS1232 store C0.A8.03.0A.

The IP address is stored as shown below.



VNC Server Authorization Guarantee Status Notification (GS1233)

This device notifies the remaining authorization guarantee time (second).

When the device stores 0, the unauthorized equipment can obtain the authorization.

When the authorization control is set to [Disabled], the device stores 0.

VNC Server GOT Processing Balance Control (GS1798)

Set the load balance between processing of the VNC server function and processing of the other functions on the GOT, regardless of whether or not the GOT is connected with the VNC client.

When multiple bits are turned on, the bit with the smallest number is prioritized.

When all the bits are off, the GOT operates according to the setting of [GOT processing balance when VNC server is in operation].

☞ Page 2650 [VNC Server] dialog

PART 21 Digital image input function

78 Displaying and recording an image from a camera or video device on the GOT (digital image input/ recording function)

78 Displaying and recording an image from a camera or video device on the GOT (digital image input/recording function)

GT37 SoftGOT3000

In this chapter, web cameras and network cameras are collectively referred to as "cameras".

☞ Page 2661 Displaying and recording an image from a camera on the GOT
☞ Page 2679 Displaying the PC image on the GOT
☞ Page 2688 [Digital Image Input/Recording] dialog

78.1 Displaying and recording an image from a camera on the GOT

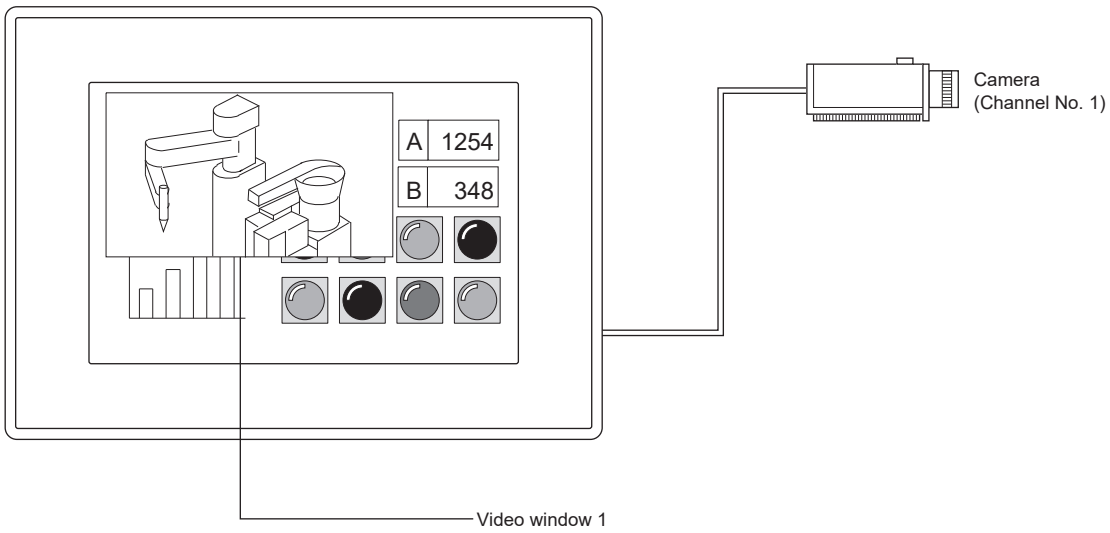
☞ Page 2662 Overview
☞ Page 2663 Specifications
☞ Page 2664 Basic use
☞ Page 2666 Advanced use
☞ Page 2678 Relevant settings

PART 21

78.1.1 Overview

GT37 SoftGOT3000

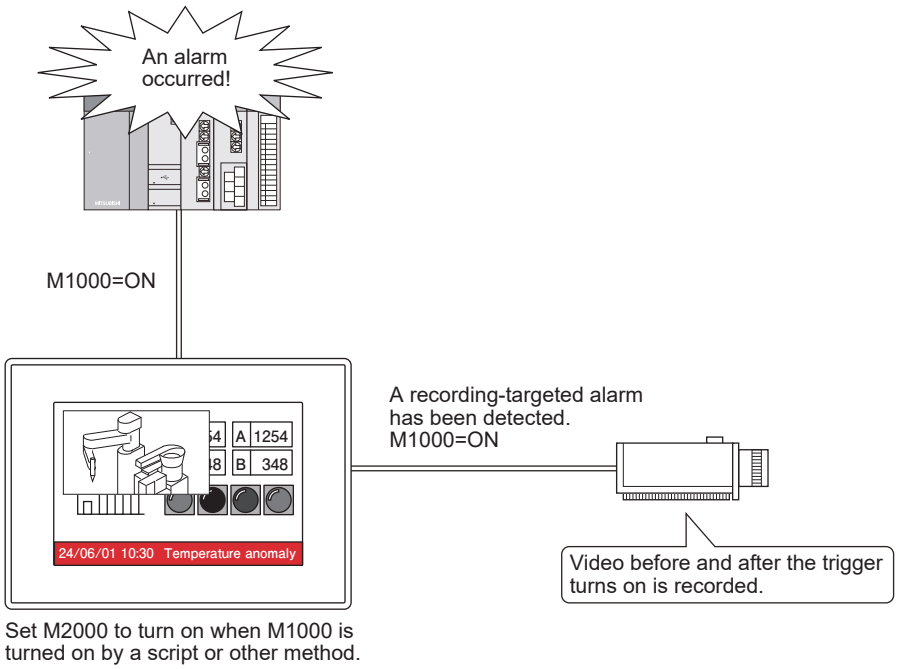
The digital image input/recording function displays or records video images taken by a camera on the video window.
As the video window operates independently of other screens, the base screen can be switched while leaving the video window open.



The recording function allows you to select a recording type: normal, long-time, or pre/post-event recording.
Setting a trigger device and linking it to alarm detection also enable the GOT to record a video image before and after the event when an alarm occurs.

Ex.

Alarm required to be recorded: M1000
Event trigger device: M2000



78.1.2 Specifications

GT37 SoftGOT3000

System application (add-on function)

To input images taken by a camera, the following system applications (add-on function) are required.

• [Digital Image Input(For USB Input)]

Selecting [Use the Digital Image Function] and then selecting [WEB Camera] or [PC Image] for [Input Device] in the [Digital Image Input/Recording] dialog automatically incorporates the system application into the package data.

• [Digital Image Input (Extended)]

Selecting [Use the Digital Image Function] and then selecting [Network Camera] for [Input Device] in the [Digital Image Input/Recording] dialog automatically incorporates the system application into the package data.

☞ Page 2688 [Digital Image Input/Recording] dialog

License number registration

To use a network camera, register a license number on the GOT.

For information on how to register the license number, refer to the following.

☞ Page 3686 License registration method

Version of the BootOS

To register the license number, the compatible version of BootOS is required for the GOT.

For information on the compatible BootOS version, refer to the following.

☞ Page 3732 Functions that require upgrading the versions of BootOS and CoreOS

How to display an image input from a camera

For the display methods of an image input from a camera, the full mode and clip mode are provided.

For details on each display mode, refer to the following.

☞ Page 2668 Displaying video in full mode

☞ Page 2670 Displaying video in clip mode

The following shows the differences between the full mode and clip mode.

Item	Full mode	Clip mode
Overview	Displays the total image.	Displays a part of the image in its original size.
Video window resolution	• Full-HD (1920×1080) • HD (1280×720) • VGA (640×480)	• Full-HD (1920×1080) • HD (1280×720) • VGA (640×480)
Changing the display size	100%, 50%, or 25% of the original size	Unchangeable (fixed at 100%)
Number of screens	1 (video window 1 only)	When the external extended control is enabled: 4 When the external extended control is disabled: 1 (video window 1 only)

Precautions

■Placing the object on the video window

Objects cannot be placed on the video window.

■Displaying a video window or personal computer (PC) image screen

A video window and a PC image screen cannot be displayed simultaneously.

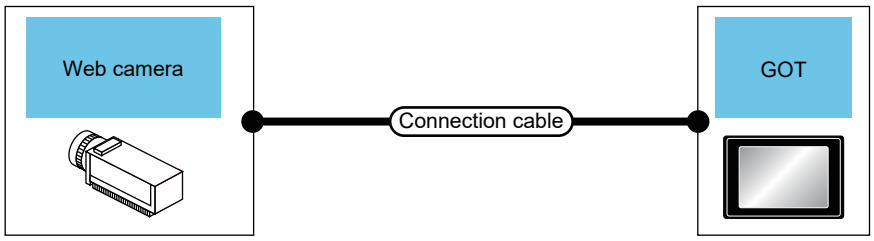
78.1.3 Basic use

GT37 SoftGOT3000

The image input from a camera can be displayed in various ways using the [Digital Image Input Common] device.
For details on the setting, refer to the following.
☞ Page 2666 Advanced use

System configuration

The following shows a system configuration.



For information on the maximum number of connected devices, refer to the following.
☞ Page 2664 Maximum number of connected devices

Connected device		Connection cable, switching hub*4	GOT	
			Interface	GOT model
WEB camera	Devices that satisfy all the following conditions*1*2: • UVC-compatible • JPEG-compatible	USB cable*3	USB interface	GT37 SoftGOT3000
Network camera	Devices that satisfy all the following conditions*1: • H.264 (Baseline profile compatible), JPEG compatible	*5*6	Built-in Ethernet interface of the GOT*7	

*1 For connectable camera types, refer to the following Technical Bulletin.
List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)
*2 Select a vision sensor to be used.
*3 Use a device that supports USB 2.0 or higher.
When using a hub, use a hub that supports USB 2.0 or higher.
When multiple devices are connected to a USB hub, images may not be displayed properly due to insufficient power supply.
*4 The cable length depends on the specifications of the camera used.
*5 For details on the connection method, refer to the manual of the network camera to be used.
*6 When connecting multiple network cameras, connect them to the GOT via a switching hub.
Also, when connecting network cameras that support PoE power supply, use a PoE-compatible switching hub.
*7 The first Ethernet port that successfully connects to a network camera will be enabled.
After establishing a connection with a network camera, any subsequent connections using a different port will be disabled.

■Maximum number of connected devices

The number of cameras that can access one GOT simultaneously is as follows.

- Web camera: 1
- Network camera: 4

Precautions

If a video signal is not input to the specified channel due to cable disconnection or power-off of a camera, a video image is not displayed.

Setting procedure

1. Connect the GOT and camera.

☞ Page 2664 System configuration

2. In GT Designer3, select [Common] → [Peripheral Setting] → [Digital Image Input/Recording] from the menu to display the [Digital Image Input/Recording] dialog.

☞ Page 2688 [Digital Image Input/Recording] dialog

3. In the [Digital Image Input/Recording] dialog, select [WEB Camera] or [Network Camera] for [Input Device], and configure each setting.

☞ Page 2688 [Digital Image Input/Recording] dialog

4. Once you have configured the setting, click the [OK] button.

5. Write the package data to the GOT.

For the communication method between the personal computer and the GOT, refer to the following.

☞ Page 408 Transferring data to the GOT

6. When using a network camera, register the license number to the GOT.

For the registration method, refer to the following.

☞ Page 3686 License registration method

7. Display the video image on the GOT.

78.1.4 Advanced use

GT37 SoftGOT3000

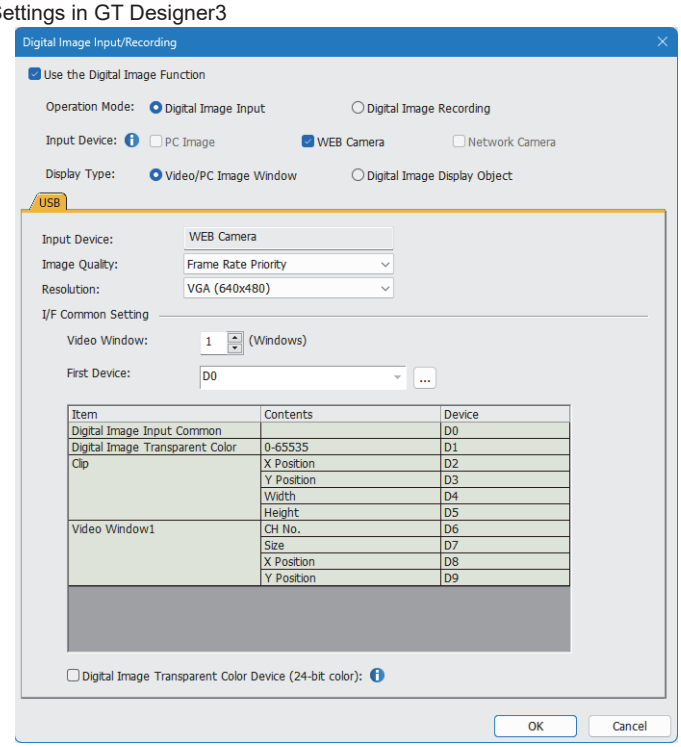
The following shows advanced display settings.

Displaying the video window

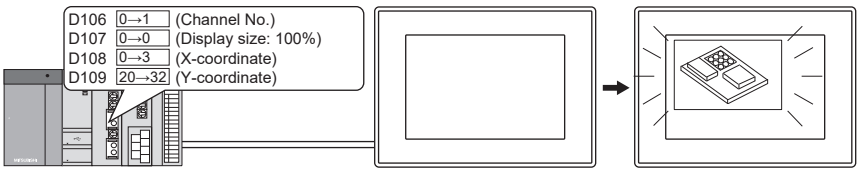
The video window is displayed when 1 is stored in the video window-channel number device.
(The video window does not have the close button)
The [Digital Image Input Common] device controls full mode display, clip mode display, transparent processing, and other operations.
Size and position of the video window can be controlled according to the values set at the corresponding devices (video window-size device, video window-X and Y coordinates devices).

Ex.
Displaying the image of channel number 1 on video window 1

Settings in GT Designer3



Operation



Video window 1 is displayed according to the specified channel No., size, and coordinates.

Display position of the video window

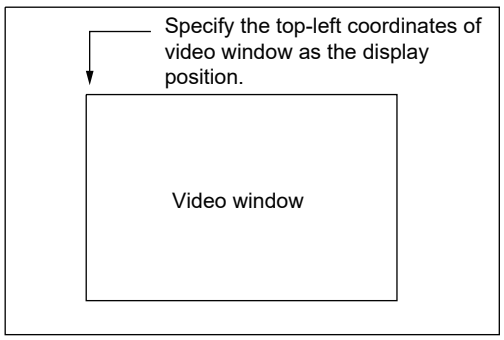
The video window is placed on the base screen or overlap window 1.

The video window display position is specified with the coordinates of the window upper left corner.

The base point is the upper left coordinate (0, 0) of the screen where the video window is placed.

The smallest of the following resolutions is set as the maximum size of the video window.

- Resolution of the input image
- GOT resolution



■Setting the display position

Set the display position with a multiple of 2 (dots).

Even if the display position is set with a value other than a multiple of 2 (dots), the position is automatically adjusted to a multiple of 2 (dots).

■Video window placed beyond the screen

If the video window is placed beyond the screen, display position of the video window is automatically adjusted to fit to the screen.

■Order of displaying the video window

The video window can be displayed over or behind the overlap window (1 or 2) or test window according to the setting for the [Digital Image Input Common] device.

☞ Page 2688 [Digital Image Input/Recording] dialog

However, the following items are displayed over the video window.

- Alarm popup display
- Key window
- Comment window
- Confirmation or similar message displayed on the GOT

Precautions

If a window with transparency is placed on a video window, the video window is invisible.

Moving the video window

The video window does not have the move button.

To move the video window, change the device values set for the display position (X and Y coordinates).

If multiple video windows are moved frequently, the overlap window may not be moved even when the window is touched.

In this case, move the overlap window by changing the device values or move it after moving the video window is completed.

Placing the video window on the overlap window

- The video window can be placed on the overlap window 1 only.
- Each window displayed on the front of the overlap window 1 is displayed over the video window.

For the display order of each window, refer to the following.

☞ Page 58 Screen types and specifications

- When the video window is placed on the overlap window 1, transparent processing will be automatically executed for the video window.

☞ Page 2673 Transparent processing

If figures or objects are set on the overlap window, figures or objects may be visible in the background of the video window.

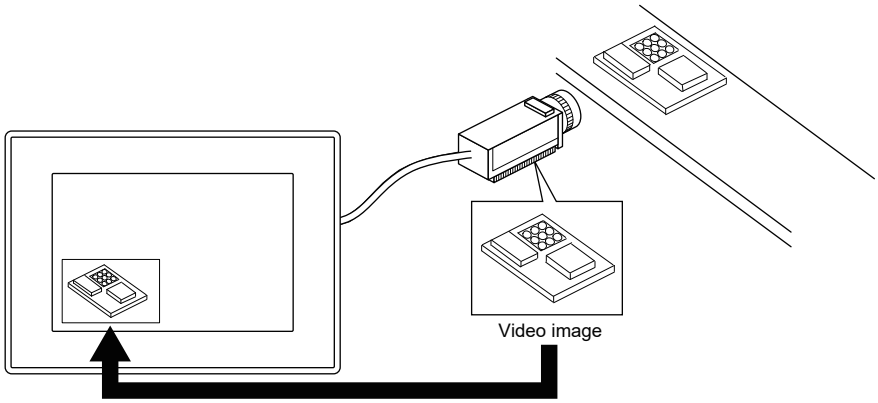
- If the display position (base screen or overlap window 1) is switched while the video window is displayed, the video window is closed temporarily and then opened at the specified position (base screen or overlap window 1).
- The size of the video window placed on the overlap window is not changed even when the video window is touched.

To change the size of the video window, change the value of the device set for window size change.

☞ Page 2688 [Digital Image Input/Recording] dialog

Displaying video in full mode

In full mode, an image taken by a camera is displayed on the GOT in the actual size.



The image taken by a web camera is displayed at actual size.

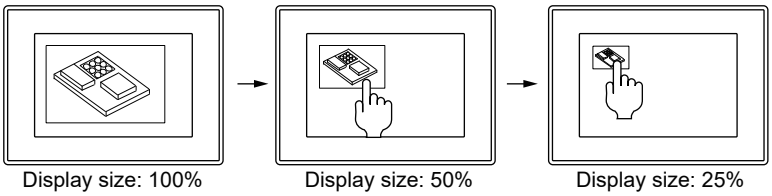
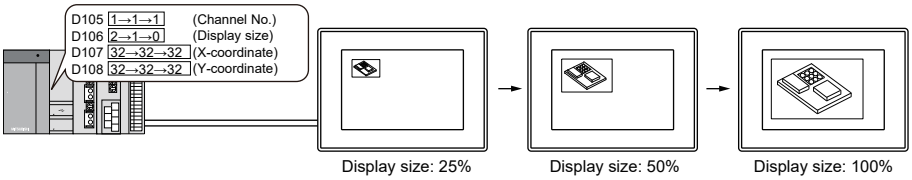
■Resolution and display size of the video window

In full mode, video windows are displayed in a size according to the camera resolution.

The display size of each video window can be changed in three levels (100%, 50%, or 25%).

■Changing the display size

The following shows changing the display size of the video window.

Method	Description
Changing the size by touching the video window	Changing the size by touching the video window can be disabled by turning on b4 of the [Digital Image Input Common] device. ☞ Page 2672 Settings of [Digital Image Input Common] device  When the video window display size is changed by touching, the window size changes as follows. • Display size change Display size: 100% → Display size: 50% → Display size: 25% → Display size: 50% → Display size: 100%
Changing the size by writing a value to the display size setting device	The following shows the window display sizes corresponding to values to be written. • 0: 100% • 1: 50% • 2: 25% 

■Displaying the multiple video windows

Do not display the same image (taken by the same channel) in multiple video windows.

If you display the same image in multiple video windows, the image is displayed only in the video window assigned with the smallest number and not displayed in other video windows.

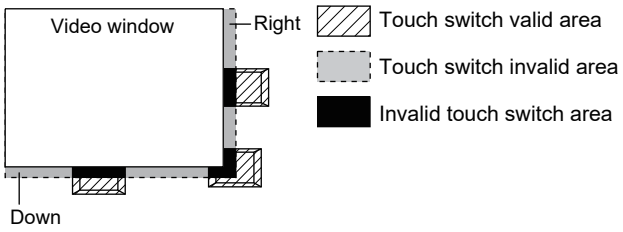
Precautions

The number of video windows that can be displayed simultaneously depends on the resolution of the video window.

Combination of video window resolutions	Number of windows that can be displayed
Full-HD (1920×1080)	1
HD (1280×720)	2
HD (1280×720) VGA (640×480)	4
VGA (640×480)	4

■Invalid area of a touch switch around the video window

Depending on the resolution of the video window after the display size is changed, some areas may become invalid for the touch switch.



The following shows the setting combination that results in invalid areas for the touch switch.

Resolution of video windows (dots)	Display size	Resolution of video windows (dots) after the display size is changed and invalid area of a touch switch
640×480	25%	160 × 120 Invalid area: Lower 8 dots

Precautions

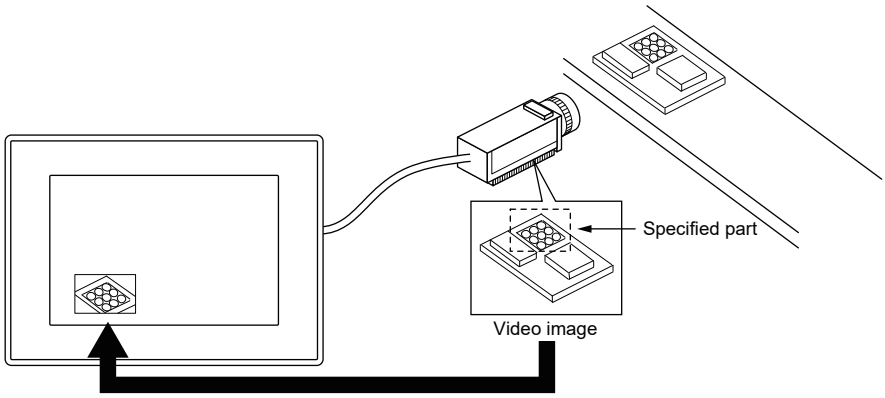
When the display size of the video window is returned to the previous display size by touch operation, the display position is also returned to the position when the video screen was displayed.

Displaying video in clip mode

This mode is used to specify a part (clip area) of the image taken by a camera and display it in the original size on the GOT. With this mode, the video window display area can be reduced without reducing the size of the image to be displayed.

The clip mode can be used only in video window 1.

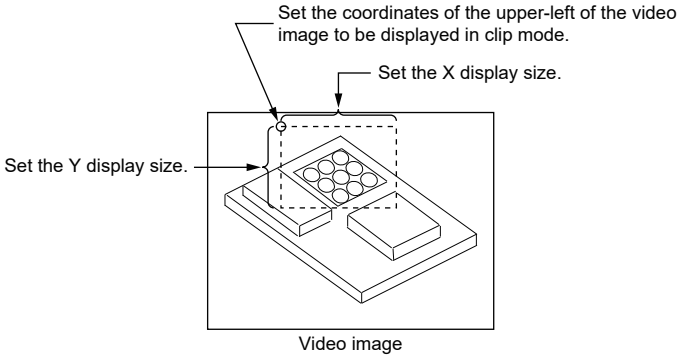
The clip mode cannot be used in video window 2 to 4.



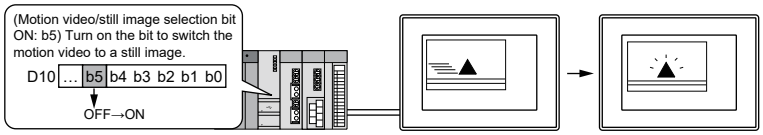
■Selecting a clip area

To set a clip area, specify the upper left corner of the video image to be displayed using the coordinate values, and specify the vertical size and horizontal size.

The minimum vertical/horizontal size is 64 dots.



■Operations of video windows 2 to 4 in the clip mode

Method	Description
Switching from full mode to clip mode	If the mode is switched from the full mode to the clip mode while any or all of video windows 2 to 4 are open, these video windows are erased forcibly.
Switching from clip mode to full mode	When the mode is switched back from the clip mode to the full mode, any or all of video windows 2 to 4 are displayed according to the channel number, display position, and display size specified at that timing.
Displaying a still image	The video image displayed in the full or clip mode can be switched to a still image. When multiple video windows are displayed in the full mode, the video images displayed on the multiple video windows are all switched to still images. 

Precautions

■Operations that are invalid during still image display

The operations indicated below are disabled during still image display.

To enable these operations, switch the mode back to the motion video mode.

- Changing the video window channel
- Changing the display size
- Changing the display position
- Erasing the video window
- Displaying the video window

■Video window on the overlap window

When the image in the video window placed on the overlap window is switched to a still image, do not move the overlap window.

If the overlap window is moved, the still image is not displayed.

■Turning the GOT ON

When a still image is displayed (motion video/still image selection bit: ON), do not power on the GOT.

If the GOT is powered on while the bit is on, the video window cannot be displayed.

PART 21

Settings of [Digital Image Input Common] device

The device specified for [Digital Image Input Common] stores the data shown below.

Turning on or off each bit device controls the operation of the video window or PC image screen.

The settings for the video window are used in common to video windows 1 to 4.

Bit number	Description	Bit status	Remarks
b0*1	Selecting full mode or clip mode	ON: Clip mode OFF: Full mode	Valid when the video window is displayed. Bit status can be changed while the video window is displayed.
b1	Selecting the screen for placing the video window	ON: Overlap window 1 OFF: Selects the base screen.	Transparent processing is executed automatically when b1 is on.
b2	Selecting the transparent processing	ON: Executes the transparent processing. OFF: Does not execute the transparent processing.	☞ Page 2673 Transparent processing
b3	Selecting how to specify the transparent color	ON: Makes colors other than the specified color transparent. OFF: Makes the specified color transparent.	
b4	Selecting whether the display size of the video window is changed or not when the video window is touched	ON: Does not change the size. OFF: Changes the size.	Valid when the video window is displayed. Bit status can be changed while the video window is displayed.
b5	Selecting a motion video or still image*2	ON: Selects a still image. OFF: Selects a motion video.	☞ Page 2673 Transparent processing
b6*3	Selecting display priority for video windows (When b2 (selecting the transparent processing) is off)	ON: Displays the video window over the overlap window or test window. OFF: Displays the video window behind the overlap window or test window.	Valid when the video window is displayed. Bit status can be changed while the video window is displayed.
	Selecting transparent processing target screen (When b2 (selecting the transparent processing) is on)	ON: Base screen and overlap window OFF: Base screen	—
b7*4	Extended control	ON: Extended control enabled OFF: Extended control disabled	☞ Page 2676 Video window or PC image screen when the extended control is enabled
b8 to b9	Use prohibited	—	—
b10	Selecting the number of transparent colors	ON: 65536 colors mode OFF: 256 colors mode	☞ Page 2673 Transparent processing
b11 to b12	Use prohibited	—	—
b13*4	Display position of the PC image screen	ON: Displays on the middle side. OFF: Displays on the upper left side.	☞ Page 2673 Transparent processing
b14	Use prohibited	—	—
b15	Selecting whether to display the PC image screen (CH1)*5	ON: Displays the PC image screen OFF: Displays the GOT monitor screen.	☞ Page 2673 Transparent processing

*1 When b7 is on, b0 is disabled and the mode is fixed to the clip mode.

*2 When this bit is turned on with other bits at the same time, the contents of other bits are disregarded. (b5 has priority.)

*3 The contents of control depend on the setting values for selecting transparent processing (b2).

*4 When b7 is off and GS449.b0 is on, the PC image screen is displayed in the middle.
When b7 is off and GS449.b0 is off, the value set in b13 is enabled.
When b7 is on, the values set in GS449.b0 and b13 are disabled and the Extended Control signal determines the display position of the video window.
☞ Page 2676 Video window or PC image screen when the extended control is enabled

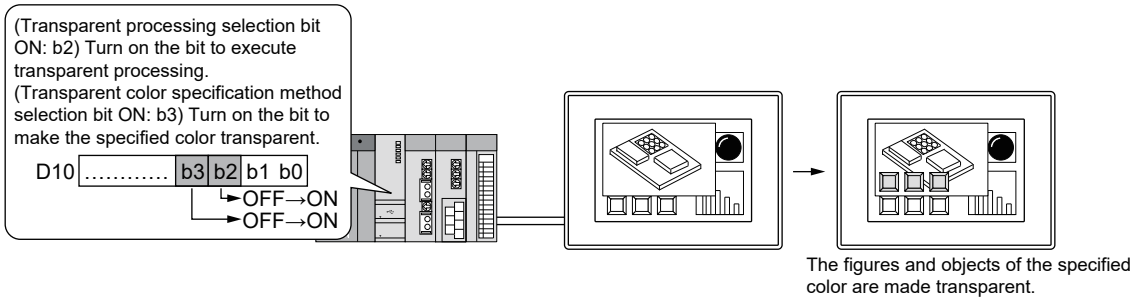
*5 When a user-created screen is displayed on the GOT, the PC image screen is displayed when the bit turns on.

Transparent processing

■Displaying transparent processing

Specify the transparent color to display objects or figures located behind the video window.

Select the transparent color from the specified color or the colors other than the specified color.



Ex.

When 0 (black) is selected for the transparent color

Transparent color specification method selection bit: b3	Transparent color	Display
OFF (makes the specified color transparent)	0 (black)	Figures or objects of colors other than black are visible on the video window.
ON (makes colors other than the specified color transparent)	0 (black)	Figures or objects in black color are visible on the video window.

Point

• Placing the video window on the overlap window

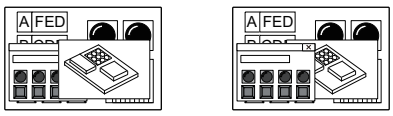
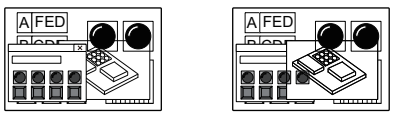
When the video window is placed on the overlap window 1, the transparent processing is automatically executed even if the transparent processing selection bit (b2) is OFF.

• Touch switches, numerical input, and text input behind the video window

By executing the transparent processing, objects such as touch switches, numerical input, and text input functions behind the video window are made visible.

(While the transparent processing is applied, the video window size does not change even if the video window is touched.)

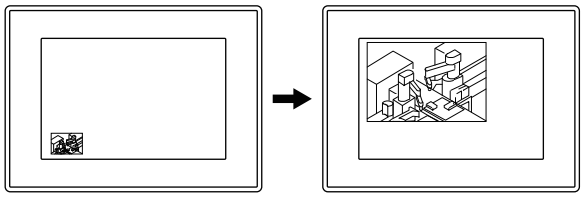
■Display examples (with and without transparent processing)

Method	Description
When transparent processing is not executed	The video window is displayed above the base screen. For overlap and test windows, it is selectable whether the video window is placed over or behind an overlap or test window.  Front display Back display
When transparent processing is executed	The video window is displayed behind the base screen. If the target of transparent processing is only the base screen, the overlap window is not made visible. If both the base screen and the overlap window are set as the target of transparent processing, both of them are made visible.  Transparent target: Base screen Transparent target: Base screen, overlap window

Usage examples of the video window

The following shows the usage examples of video window.

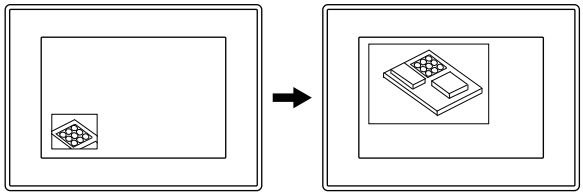
■ Small-size video windows are normally displayed at the bottom of the screen and the video windows are enlarged as necessary. (The size can be changed using the sequence program or the touch switch.)



The following shows the example of the setting when D100 is set in the start device.

Item		Device	Setting
[Video Window1]	[CH No.]	D106	1
	[Size]	D107	2→0
	[X Position]	D108	32
	[Y Position]	D109	480→0

■Small-size video windows are normally displayed at the bottom of the screen, and the video image is switched to the display of the full size as necessary. (The video display mode can be switched between full mode and clip mode using the sequence program or the touch switch.)



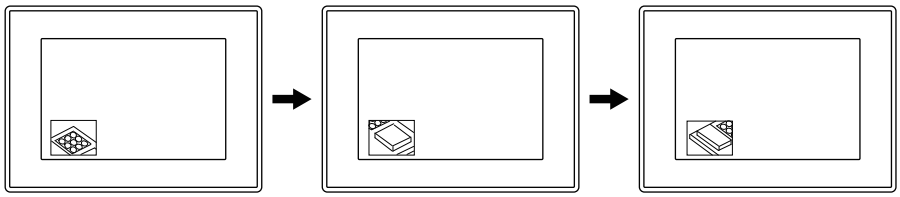
The following shows the example of the setting when D100 is set in the start device.

Item		Device	Setting
[Digital Image Input Common]		D100	Selecting full mode or clip mode D100.b0: ON → OFF
[Digital Image Transparent Color]	[0 to 65535]	D101	Selecting a transparent color
	[0(Black) to 255(White)]*1		
[Clip]	[X Position]	D102	70
	[Y Position]	D103	50
	[Width]	D104	256
	[Height]	D105	256
[Video Window1]	[CH No.]	D106	1
	[Size]	D107	0
	[X Position]	D108	32
	[Y Position]	D109	400→32

*1 When b10 is turned on by the [Digital Image Input Common] device, [0 to 65535] is set. When the bit is turned off, [0(Black) to 255(White)] is set.

■Changing the display position of video image

A part of a video image is displayed at the bottom of the screen and the display position is switched as necessary. (The X and Y coordinates of the area to be clipped can be switched by the sequence program or the touch switch.)



The following shows the example of the setting when D100 is set in the start device.

Item		Device	Setting
[Digital Image Input Common]		D100	Selects the clip mode.
[Digital Image Transparent Color]	[0 to 65535]	D101	Selecting a transparent color
	[0(Black) to 255(White)]*1		
[Clip]	[X Position]	D102	70 → 90 → 80
	[Y Position]	D103	50 → 60 → 20
	[Width]	D104	256
	[Height]	D105	256
[Video Window1]	[CH No.]	D106	1
	[Size]	D107	0
	[X Position]	D108	112
	[Y Position]	D109	112

*1 When b10 is turned on by the [Digital Image Input Common] device, [0 to 65535] is set. When the bit is turned off, [0(Black) to 255(White)] is set.

Video window or PC image screen when the extended control is enabled

When b7 (Extended Control signal) of the digital image input common device is turned on, the video window is always displayed in clip mode.

The value of the full mode or clip mode selection (b0) specified for the digital image input common device is invalid.

To disable the extended control function, refer to the following.

☞ Page 2672 Settings of [Digital Image Input Common] device

When the extended control is enabled, the following functions are available.

■Full-screen display

Specify the video window or PC image screen to be displayed in full-screen size for the Full-screen Display Control signal Import Window (GS1998).

☞ Page 3665 Full-screen Display Control signal (GS1998)

The hard copy function is not available during full-screen display.

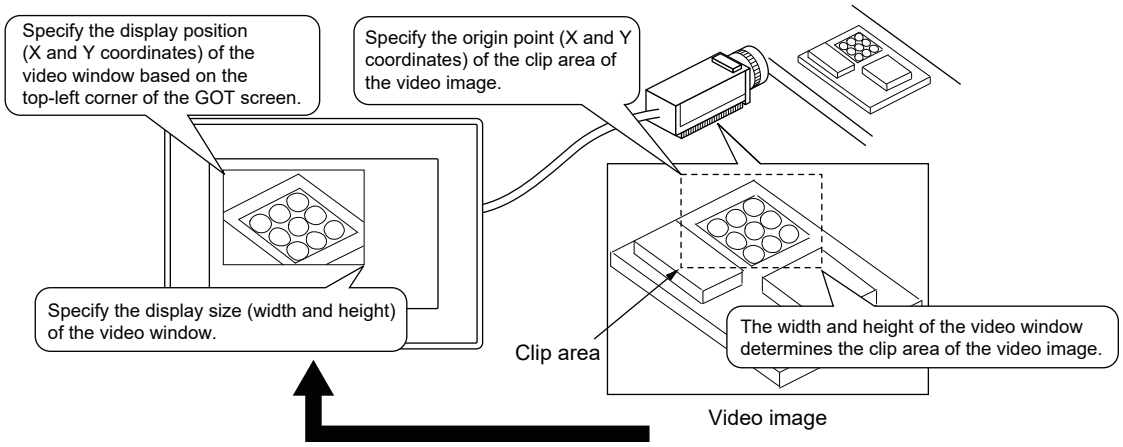
■Display setting of the video window

To display the video window or PC image screen on the GOT in full-screen mode or clip mode, configure the following settings.

The default display position of the video window or PC image screen is the upper left corner of the GOT screen.

Device					Function
Video window 1	Video window 2	Video window 3	Video window 4	PC image screen	
GS1999	GS2009	GS2019	GS2029	—	Specifies the channel number to be displayed on the video window. ☞ Page 3666 Video Window 1 to 4 and PC Image Extended Control signal (GS1999 to GS2006, GS2009 to GS2016, GS2019 to GS2026, GS2029 to GS2036, GS2039 to GS2045) To display the channel number on the PC image screen, specify it using b15 of the [Digital Image Input Common] device. ☞ Page 2672 Settings of [Digital Image Input Common] device
GS2000	GS2010	GS2020	GS2030	GS2039	Specifies the display magnification of the video window or PC image screen. ☞ Page 3666 Video Window 1 to 4 and PC Image Extended Control signal (GS1999 to GS2006, GS2009 to GS2016, GS2019 to GS2026, GS2029 to GS2036, GS2039 to GS2045)
GS2001	GS2011	GS2021	GS2031	GS2040	Specifies the display size (width) of the video window or PC image screen in dots. ☞ Page 3666 Video Window 1 to 4 and PC Image Extended Control signal (GS1999 to GS2006, GS2009 to GS2016, GS2019 to GS2026, GS2029 to GS2036, GS2039 to GS2045)
GS2002	GS2012	GS2022	GS2032	GS2041	Specifies the display size (height) of the video window or PC image screen in dots. ☞ Page 3666 Video Window 1 to 4 and PC Image Extended Control signal (GS1999 to GS2006, GS2009 to GS2016, GS2019 to GS2026, GS2029 to GS2036, GS2039 to GS2045)
GS2003	GS2013	GS2023	GS2033	GS2042	Specifies the display position (X-coordinate) of the video window or PC image screen in dots based on the upper left corner of the GOT screen. ☞ Page 3666 Video Window 1 to 4 and PC Image Extended Control signal (GS1999 to GS2006, GS2009 to GS2016, GS2019 to GS2026, GS2029 to GS2036, GS2039 to GS2045)
GS2004	GS2014	GS2024	GS2034	GS2043	Specifies the display position (Y-coordinate) of the video window or PC image screen in dot based on the upper left corner of the GOT screen. ☞ Page 3666 Video Window 1 to 4 and PC Image Extended Control signal (GS1999 to GS2006, GS2009 to GS2016, GS2019 to GS2026, GS2029 to GS2036, GS2039 to GS2045)
GS2005	GS2015	GS2025	GS2035	GS2044	Specifies the origin (X-coordinate) of the clip area of the input image using a value based on the coordinate for 100% display. ☞ Page 3666 Video Window 1 to 4 and PC Image Extended Control signal (GS1999 to GS2006, GS2009 to GS2016, GS2019 to GS2026, GS2029 to GS2036, GS2039 to GS2045)
GS2006	GS2016	GS2026	GS2036	GS2045	Specifies the origin (Y-coordinate) of the clip area of the input image using a value based on the coordinate for 100% display. ☞ Page 3666 Video Window 1 to 4 and PC Image Extended Control signal (GS1999 to GS2006, GS2009 to GS2016, GS2019 to GS2026, GS2029 to GS2036, GS2039 to GS2045)

■Displaying the video image with the clip display by controlling the devices

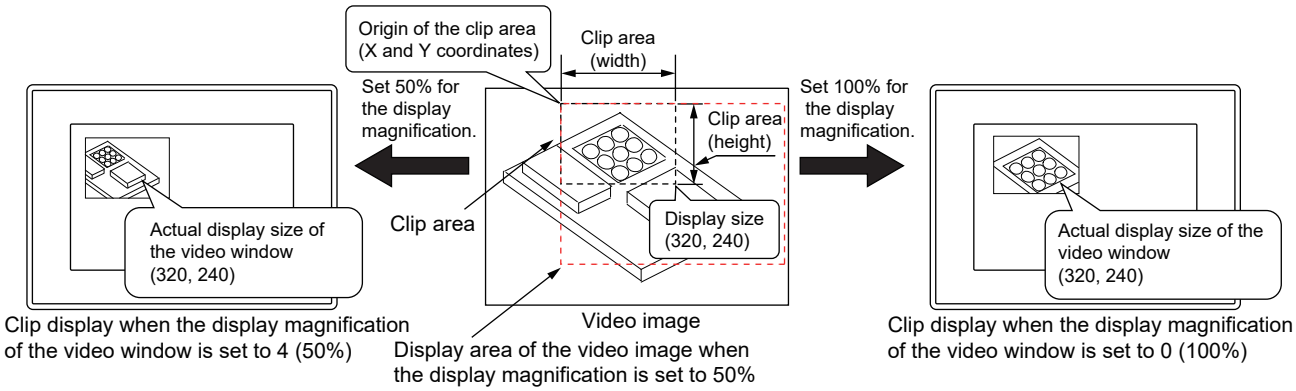


Displaying the video image by controlling it with the GOT internal devices.

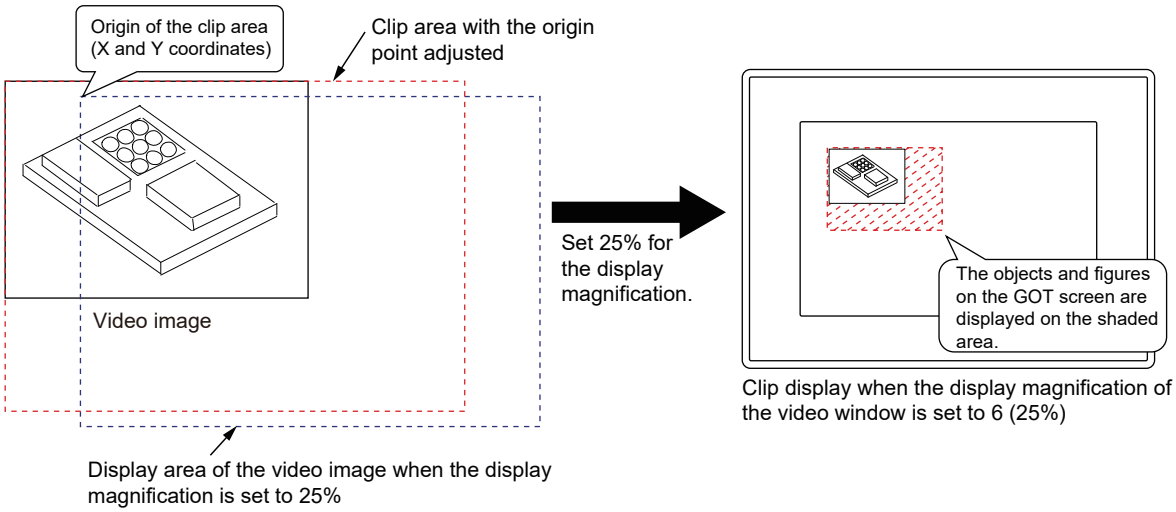
■Clip display when the display magnification is changed

If any other than 100% is set for the display magnification, the size of the video window displayed on the GOT is enlarged or reduced according to the set display magnification.

- Display example when the display magnification is 100% or 50%



- Display example when the display magnification is 25%



PART 21

78.1.5 Relevant settings

GT37 SoftGOT3000

Configure the relevant settings in addition to the specific settings for camera image input as required.
The following shows the functions that are available by configuring the relevant settings.

GOT internal devices

Enabling b7 of the device specified in [Digital Image Input Common] enables the extended control.
Use the extended control to display the video window with the full-screen display or the clip display on the GOT.
For details on the devices, refer to the following.
☞ Page 3581 GOT special register (GS)
☞ Page 2676 Video window or PC image screen when the extended control is enabled

Function	Setting item
Checking if the input status of the video signal for CH1 is recognized	GS252.b8
Notifying that data storage usage has reached a certain percentage during pre- and post-event recording	GS1022.b0 to b1
Notifying that the number of files stored in the data storage reaches a certain number during recording before and after the event	GS1022.b2 to b7
Notifying that the data storage usage has reached a certain percentage during pre- and post-event recording	GS1022.b8 to b9
Notifying that the number of files stored in the data storage has reached a certain number during normal recording	GS1022.b10 to b15
Specifying the video window or PC image screen to be displayed in full screen when extended control is enabled	GS1998
Controlling video window 1 with the GOT internal devices when extended control is enabled	GS1999 to GS2006
Controlling video window 2 with the GOT internal devices when extended control is enabled	GS2009 to GS2016
Controlling video window 3 with the GOT internal devices when extended control is enabled	GS2019 to GS2026
Controlling video window 4 with the GOT internal devices when extended control is enabled	GS2029 to GS2036
Notifying the error status of the connected web camera	GS2070.b0
Notifying the information related to video signal input	GS2071.b0 GS2071.b2 to b5
Notifying the status of the network camera connected to channel 1	GS2073.b0 to b1 GS2073.b3 to b4
Notifying the status of the network camera connected to channel 2	GS2074.b0 to b1 GS2074.b3 to b4
Notifying the status of the network camera connected to channel 3	GS2075.b0 to b1 GS2075.b3 to b4
Notifying the status of the network camera connected to channel 4	GS2076.b0 to b1 GS2076.b3 to b4
Notifying the number of image reception errors from the network camera connected to channel 1	GS2077
Notifying the number of image reception errors from the network camera connected to channel 2	GS2078
Notifying the number of image reception errors from the network camera connected to channel 3	GS2079
Notifying the number of image reception errors from the network camera connected to channel 4	GS2080
Notifying the error when the number of video/PC image windows that can be displayed simultaneously has exceeded	GS2085.b0 to b4 GS2085.b6

78.2 Displaying the PC image on the GOT

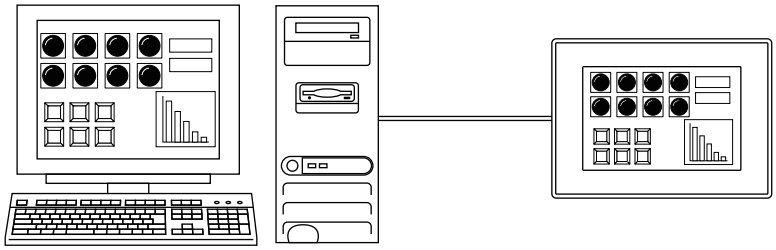
GT37 SoftGOT3000

☞ Page 2679 Overview
☞ Page 2680 Specifications
☞ Page 2681 Basic use
☞ Page 2682 Advanced use
☞ Page 2687 Relevant settings

78.2.1 Overview

GT37 SoftGOT3000

The image output from a video device, such as a personal computer, is displayed on the GOT.



PART 21

78.2.2 Specifications

GT37 SoftGOT3000

System application (add-on function)

Inputting the PC image requires [Digital Video Input] of the system application (add-on function).

Selecting [Use Digital Image Input] in the [Digital Image Input] dialog automatically incorporates the system application into the package data.

☞ Page 2688 [Digital Image Input/Recording] dialog

Specifications of the PC image to be input

■Resolution of the PC image

The following resolutions are supported.

- Full HD (1920 × 1080 dots)
- XGA (1024 × 768 dots)
- SVGA (800 × 600 dots)
- VGA (640 × 480 dots)

■Frame rate

Among the frame rates compatible with USB converters, the highest frame rate up to 30 fps will be applied.

For information on the supported USB converter, refer to the following Technical Bulletin.

📖List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

For information on the frame rate of the USB converter, refer to the USB converter manual.

Precautions

When the resolution and frame rate are set outside the range for the video device, the image is not displayed properly.

78.2.3 Basic use

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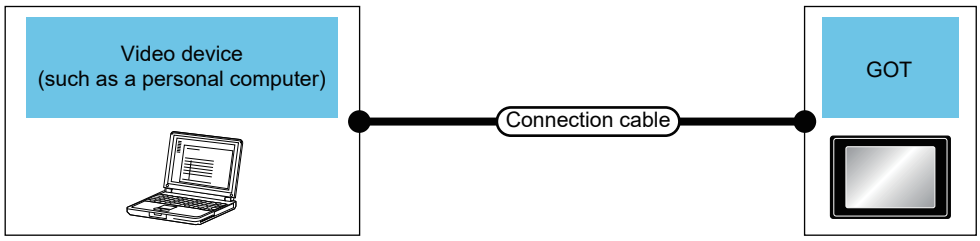
Various display methods are available for the PC image input through the device set in [Digital Video Input Common].
For details on the setting, refer to the following.
☞ Page 2682 Advanced use

System configuration

The following shows a system configuration.



For information on the maximum number of connected devices, refer to the following.
☞ Page 2681 Maximum number of connected devices

Connected device	Connection cable*1*2	GOT		
		Option	Interface	GOT model
For information on connectable video devices, refer to the following Technical Bulletin. 📖List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)	GT15-C50VG (5 m) or HDMI cable	USB converter*3	USB interface	GT37 SoftGOT3000

*1 The cable length depends on the specifications of the video device used.
*2 When using a hub, use a hub that supports USB 2.0 or higher.
When multiple devices are connected to a USB hub, images may not be displayed properly due to insufficient power supply.
*3 Use a USB converter that supports USB 2.0 or higher.
The USB converter must support the resolution and frame rate of the video device.
If a USB converter that does not support the resolution and frame rate of the video device is used, images may not be displayed properly.

■Maximum number of connected devices

Only one video device can access one GOT at a time.

Setting procedure

1. Connect the GOT and the video device.
☞ Page 2681 System configuration
2. Select [Common] → [Peripheral Setting] → [Digital Image Input] from the menu to display the [Digital Image Input] dialog.
☞ Page 2688 [Digital Image Input/Recording] dialog
3. In the [Digital Image Input] dialog, select [PC Image] for [Input Device], and configure each setting.
☞ Page 2688 [Digital Image Input/Recording] dialog
4. Once you have configured the setting, click the [OK] button.
5. Write the package data to the GOT.

For the communication method between the personal computer and the GOT, refer to the following.
☞ Page 408 Transferring data to the GOT

6. Display the PC image screen on the GOT.

78.2.4 Advanced use

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The following shows advanced display settings.

How to display the PC image screen

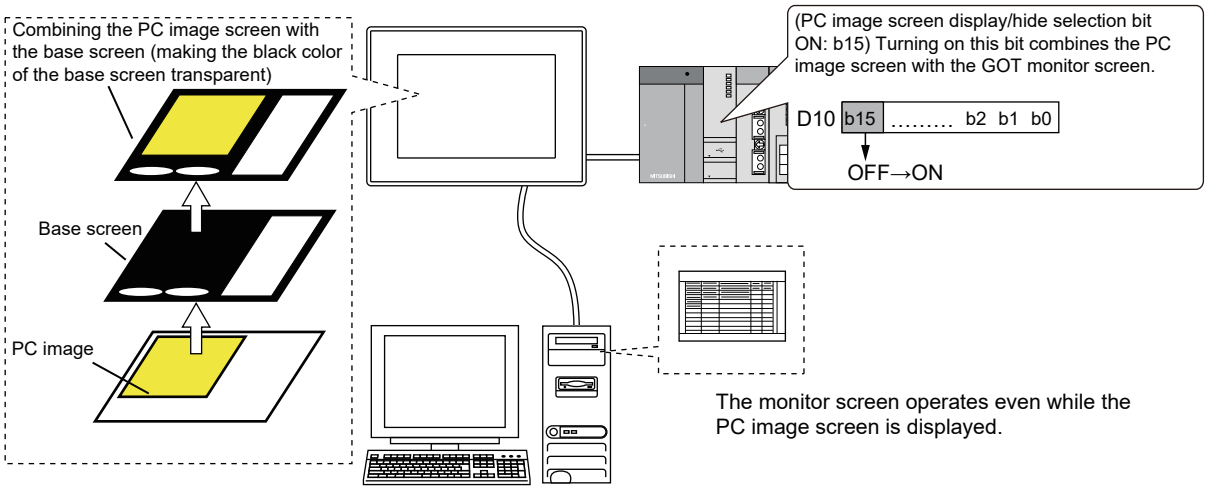
The PC image screen is combined with the GOT monitor screen according to the on or off setting of the PC image screen display/hide selection bit (bit device in the word device).

The PC image screen is combined with the base screen, with its black part made transparent.

Set the background color of the base screen on which to display the PC image screen to black.

For instruction on the screen color setting, refer to the following.

☞ Page 313 Base screen properties



Precautions	Description
Object function when the PC image screen is being displayed	Each object operates when the PC image screen is being displayed.
Restrictions when the PC image screen extends beyond the GOT screen	If the PC image screen extends beyond the GOT screen, the PC image may not be displayed correctly. Make sure that the PC image screen does not extend beyond the GOT screen.
Displaying a video window or PC image screen	A video window and a PC image screen cannot be displayed simultaneously.
Function unavailable in full screen mode	The hard copy function is not available during full-screen display.

■PC image display position

If the screen displaying the PC image is smaller than the resolution of the GOT screen, the image display position can be set to the upper left or center.

The display size can also be changed.

Set the display position and size of the PC image using [Digital Image Input Common] in the [Digital Image Input] dialog.

For the setting method, refer to the following.

☞ Page 2688 [Digital Image Input/Recording] dialog

■Screens that support PC image display

PC image display is available only for user-created screens.

PC image screens are not combined with screens other than user-created screens, such as utility screens and device monitor screens.

■Displaying a window screen

The overlap window and test window are displayed over the RGB screen after composition.

A superimpose window is displayed as a part of the base screen.

Precautions

If a window with transparency configured is placed in front of the PC image screen, the PC image screen is not displayed.

■Displaying video in clip mode

Specify a part of the PC image screen (clip area) to display it on the GOT in its original size.

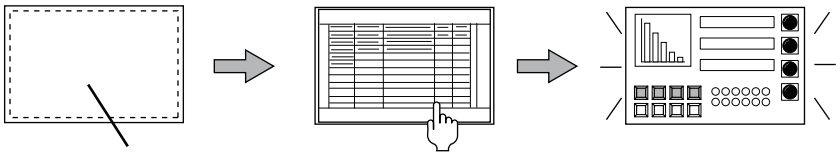
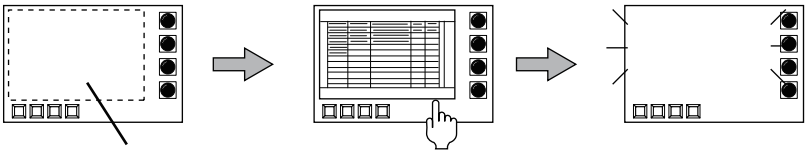
To display the PC image screen in clip mode, configure the settings in [Digital Image Input Common] in the [Digital Image Input] dialog.

For the setting method, refer to the following.

☞ Page 2688 [Digital Image Input/Recording] dialog

■Efficient use of the PC image screen

It is convenient to create a touch switch without a shape at the position where the PC image screen is displayed. Configure the touch switch settings to hide the PC image screen or to display the monitor screen after hiding the PC image screen.

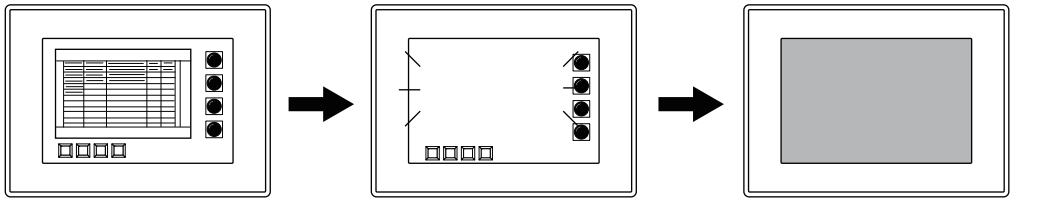
Usage	Description
Hiding the PC image screen	Configure the touch screen settings to turn off the PC image screen display/hide selection bit.
Displaying the monitor screen after hiding the PC image screen	Configure the touch switch settings to turn off the PC image screen display/hide selection bit and to display the monitor screen. Example) Displaying the monitor screen after hiding the PC image screen  Touch switch without a shape (PC image screen display/hide selection bit OFF + screen switching) Touch the screen while the PC image screen is displayed (touch the touch switch). The PC image screen is hidden and the monitor screen is displayed. Example) Hiding the PC image screen  Touch switch without a shape (PC image screen display/hide selection bit OFF) Touch the screen while the PC image screen is displayed (touch the touch switch). The PC image screen is hidden.

Screen save function of the PC image screen

While the PC image screen is displayed, the power saving function of the personal computer display is activated, followed by the GOT screen saver function.

When the power saving function of the personal computer display is not active, the GOT screen save function is disabled even if it is set on the GOT.

The PC image screen save function operates as shown below.



The PC image screen is displayed.

When the GOT detects the power saving state of the personal computer display, the PC image screen is hidden and only the monitor screen is displayed. (Turn on the GOT internal device (GS252.b15).)

When the screen save time set on the GOT has passed, the GOT enters screen save mode.

Relation between the personal computer status and the validity of the GOT screen save function

Personal computer status	Validity of GOT screen save function
Personal computer screen displayed	Invalid (Personal computer screen displayed)
Screen saver operating	
Display power saving function operating	Valid (Personal computer screen → Monitor screen → GOT screen save mode)

■Screen save operation while monitoring

While the PC image screen is hidden, the GOT screen save function operates independently of the power saving function of the personal computer display.

For details on the GOT screen save function, refer to the following.

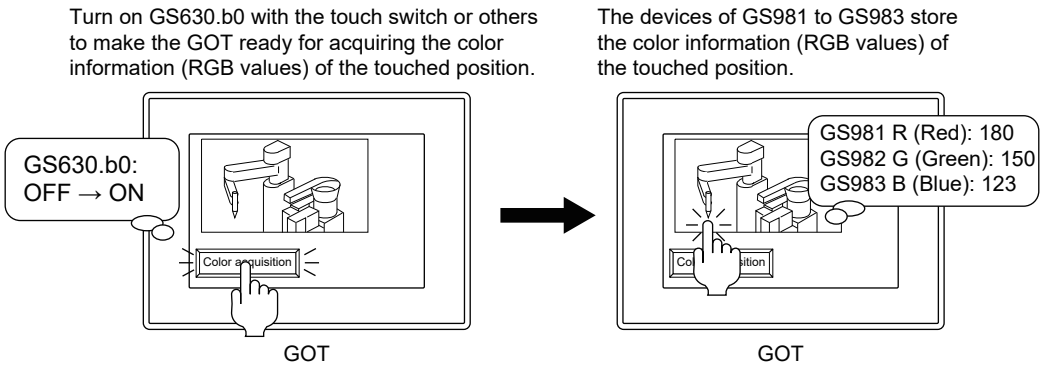
GOT3000 Series User's Manual (Utility & Maintenance Functions)

■When no PC image signal is input to the GOT

When no PC image signal is input to the GOT due to cable disconnection or other reasons, the GOT internal device (GS252.b15) turns on in the same way as when the power saving status of the personal computer display is detected.

Acquiring the color information of the touched position

By using the GOT special registers (GS devices), the color information of the touched position can be acquired.



The following shows the procedure to acquire the color information of the touched position.

1. Use the touch switch or others to turn on the Touched Position Color Acquisition Ready signal (GS630.b0).

Turning on the signal makes the GOT be ready for acquiring the color information of the touched position.

The Touch Position Color (GS981 to GS983) stores -1.

2. Touch the position where you acquire the color information.

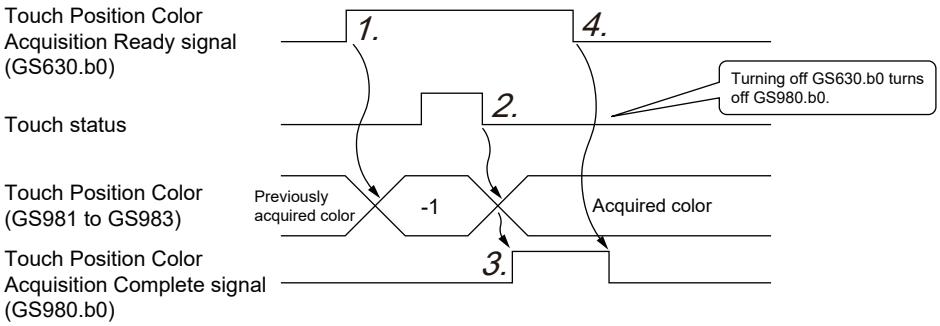
The Touch Position Color (GS981 to GS983) stores the color information of the touched position.

3. After the acquisition of the color information of the touched position, the Touch Position Color Acquisition Complete signal (GS980.b0) turns on.

Then, the GOT stops to acquire the color information.

4. Use the touch switch or others to turn off the Touch Position Color Acquisition Ready signal (GS630.b0).

Turning off the signal also turns off the Touched Position Color Acquisition Complete signal.



■Color information that can be acquired

Depending on the liquid crystal display, camera, or others, the acquired color information may not be exactly the same as the color of the real image.

■Timing when the color information cannot be acquired

The color information cannot be stored in the Touch Position Color (GS981 to GS983) during the following processes.

- Displaying a dialog window
- Moving a window screen
- Returning from the screen save mode
- Screen switching with the operation timing of [When a finger is touched (ON synchronous)]
- Touch operation
- Executing the hard copy function
- The Key-in Disable signal (System signal 1-1.b9) ON
- Acquiring the color information of the touched position

Short touch of the screen may cause the GOT not to recognize the touch operation.

Use the Touch Position Color Acquisition Complete signal (GS980.b0) to check whether the color information has been acquired.

When the signal does not turn on, the GOT has not acquired the color information.

Touch the screen again to acquire the color information.

■Influences on other functions

Acquiring the color information of the touched position may require a maximum of three seconds.

Therefore, it may cause delay in the processes of the other functions.

The hard copy function is also unavailable while the color information of the touched position is acquired.

78.2.5 Relevant settings

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Configure the relevant settings in addition to the specific settings for PC image input as required.
The following shows the functions that are available by configuring the relevant settings.

GOT internal devices

Enabling b7 of the device specified in [Digital Image Input Common] enables the extended control.
Use the extended control to display the PC mage screen in full-screen mode or clip mode on the GOT.
For details on the devices, refer to the following.
☞ Page 3581 GOT special register (GS)
☞ Page 2676 Video window or PC image screen when the extended control is enabled

Function	Setting item
Checking if the PC image signal on CH1 is recognized	GS252.b15
Controlling the display position of the PC image screen	GS449.b0
Making the GOT be ready for acquiring the color information of the touched position	GS630.b0
Checking if the acquisition of the color information of the touched position is completed	GS980.b0
Acquiring the color information of the touched position	GS981 to GS983
Checking the input status of the PC image signal	GS1025
Checking the horizontal resolution of the PC image signal	GS1026
Checking the vertical resolution of the PC image signal	GS1027
Checking the frame rate of the PC image signal	GS1028
Specifying the video window or PC image screen to be displayed in full screen when extended control is enabled	GS1998
Notifying the error status of the connected USB converter	GS2070.b0
Notifying the error when the number of video/PC image windows that can be displayed simultaneously has exceeded	GS2085.b0 to b4 GS2085.b6

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78.3 [Digital Image Input/Recording] dialog

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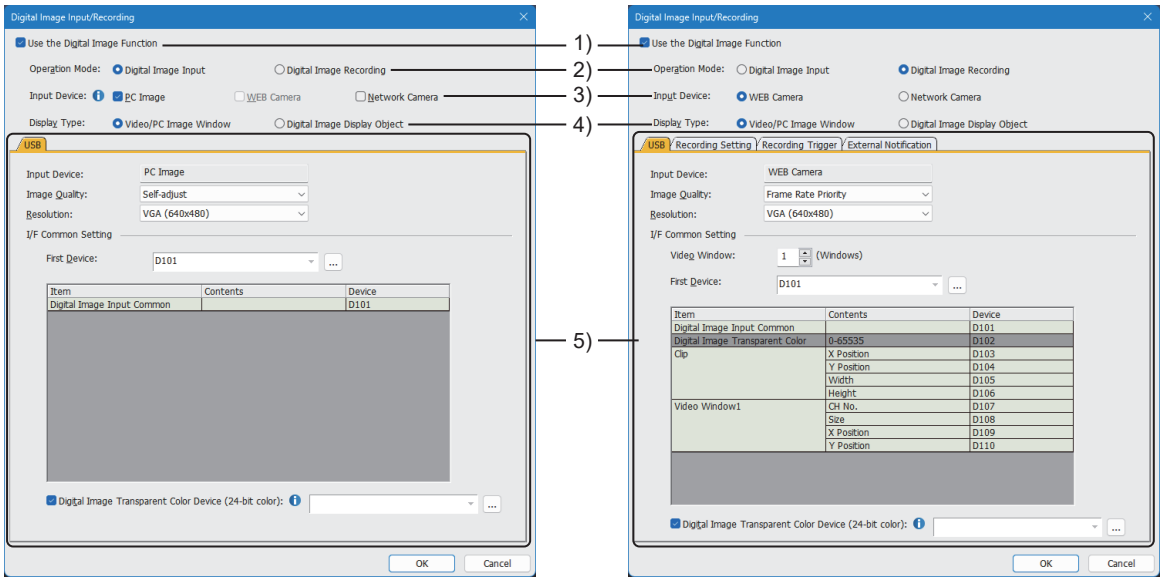
Select [Common] → [Peripheral Setting] → [Digital Image Input/Recording] from the menu to display the setting dialog.
This dialog is common to the following functions.

- Digital image display object
- Digital image input/recording function



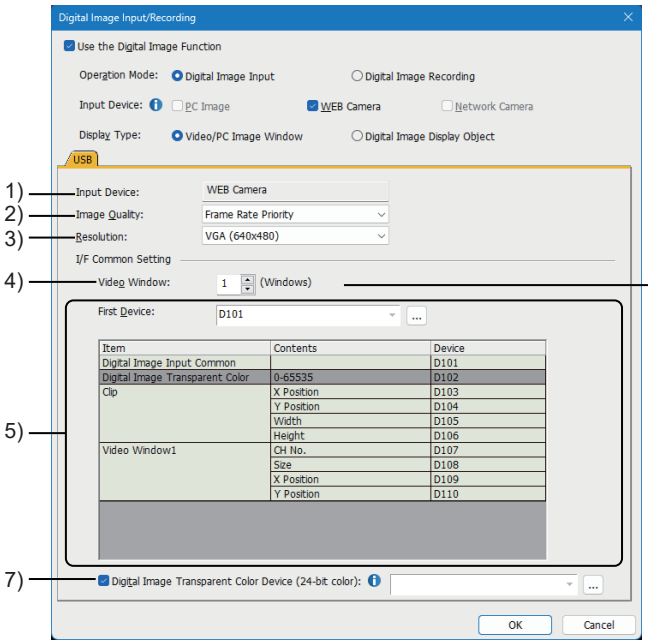
When [Operation Mode] is [Digital Image Input]

When [Operation Mode] is [Digital Image Recording]

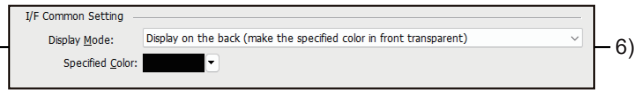
Item		Description
1)	[Use Digital Image Input]	Enables the following functions. • Digital image display object • Digital image input/recording function
2)	[Operation Mode]	Select the operation mode. The following shows selectable items. • [Digital Image Input] • [Digital Image Recording]
3)	[Input Device]	When the operation mode is set to [Digital Image Recording], [PC Image] is not displayed. Select an input device according to the function used. The following shows selectable items. • [PC Image] • [WEB Camera] • [Network Camera] [WEB Camera] and [PC Image] or [Network Camera] cannot be selected simultaneously.
4)	[Display Type]	Select the display type of the image. The following shows selectable items. • [Video/PC Image Window] • [Digital Image Display Object]
5)	Tab	The tab to be displayed depends on the combination of [Operation Mode], [Input Device], and [Display Type]. ☞ Page 2689 [USB] tab ☞ Page 2691 [Ethernet] tab ☞ Page 2693 [Recording Setting] tab ☞ Page 2695 [Recording Trigger] tab ☞ Page 2696 [External Notification] tab

78.3.1 [USB] tab

This item is displayed when [PC Image] or [WEB Camera] is selected for [Input Device].



When [Display Type] is [Video/PC Image Window]



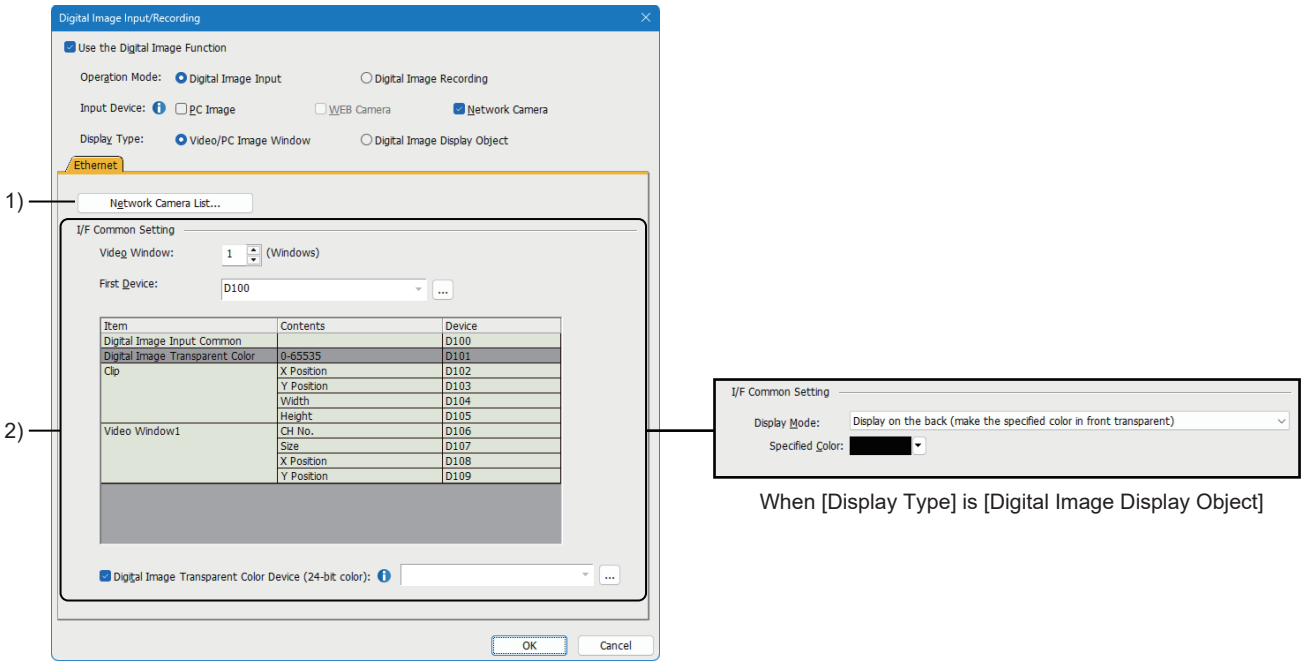
When [Display Type] is [Digital Image Display Object]

Item		Description
1)	[Input Device]	Displays the selected input device.
2)	[Image Quality]	Select the quality of the video to be displayed. The following shows selectable items. • [Self-adjust] • [Frame Rate Priority] • [Image Quality Priority] This item is fixed to [Frame Rate Priority] when [WEB Camera] is selected for [Input Device].
3)	[Resolution]	Set the resolution of the image to be displayed.
4)	[Video Window]	This item is displayed when [WEB Camera] is selected for [Input Device] and [Video/PC Image Window] is selected for [Display Type]. Specify the channel number to be displayed on the video window.

Item			Description
5)	[First Device]		This item is displayed when [Video/PC Image Window] is selected for [Display Type]. Set a start device of the devices to be used. By setting the first device, consecutive devices are automatically assigned to the following items.
	[Digital Image Input Common]		Displays the devices used to display the video window or PC image screen. The values of the device used to display the video window or PC image screen are processed as 16-bit binary values. ☞ Page 2672 Advanced use
	[Digital Image Transparent Color]		Appears when [WEB Camera] is selected for [Input Device]. Specify the transparent color for the transparent processing. The transparent color depends on the bit device set by b10 of [Digital Image Input Common]. • When b10 is on: 0 to 65535 • When b10 is off: 0 (Black) to 255 (White) ☞ Page 2672 Advanced use
	[Clip]		Appears when [WEB Camera] is selected for [Input Device]. • [X Position]: Specify the X coordinate to display a video image when the clip mode is used. • [Y Position]: Specify the Y coordinate to display a video image when the clip mode is used. • [Width]: Specify the width of a clipped image. • [Height]: Specify the height of a clipped image.
	[Video Window1] [Video Window2] [Video Window3] [Video Window4]		Appears when [WEB Camera] is selected for [Input Device]. The related setting items appear for each video window according to the set value of [Video Window]. • [CH No.]: Specify the channel number displayed on a video window. The setting range is [1]. • [Size]: Specify the display size of the video window. The following shows the setting range for the display size. 0: 100% 1: 50% 2: 25% When the display size of the video window is changed by touching the window, the value of the set device remains unchanged. • [X Position]: Specify the X coordinate of the video window. • [Y Position]: Specify the Y coordinate of the video window.
6)	[Display Mode]	—	Appears when [Use Digital Image Display Object] is selected. Set the GOT display mode for the digital image display object. For details on [Display Mode], refer to the following. ☞ Page 1853 Display mode
		[Display on the foreground]	Displays a digital image display object in front of the other figures and objects on the same screen. Overlapped figures and objects are hidden under the digital image display object. The transparent function is disabled.
		[Display on the specified color area]	Displays a digital image display object behind the other figures and objects on the same screen. The transparent function is enabled. Select a color to become transparent. ☞ Page 988 Color settings When setting [Background Color] for digital image display objects, select the same color for [Front Layer Transparent Color] and [Background Color]. Otherwise, the digital image display object is hidden under the background color.
		[Display on the area of other colors]	Displays a digital image display object behind the other figures and objects on the same screen. The transparent function is enabled. Select a color not to become transparent so that other colors become transparent. ☞ Page 988 Color settings When setting [Background Color] for digital image display objects, select the same color for [Front Layer Transparent Color] and [Background Color]. Otherwise, the digital image display object is hidden under the background color.
7)	[Digital Image Transparent Color Device (24-bit color)]		This item is displayed when [Video/PC Image Window] is selected for [Display Type]. Specify the transparent color for the transparent processing from 16770000 colors in a double-word device. To specify the color, use 8 bits (256 levels) for R, G, and B respectively, 24 bits in total. When this item is set, the following settings are invalid: • b10 and b11 of the [Digital Image Input Common] device • [Digital Image Transparent Color]

78.3.2 [Ethernet] tab

This item is displayed when [Network Camera] is selected for [Input Device].

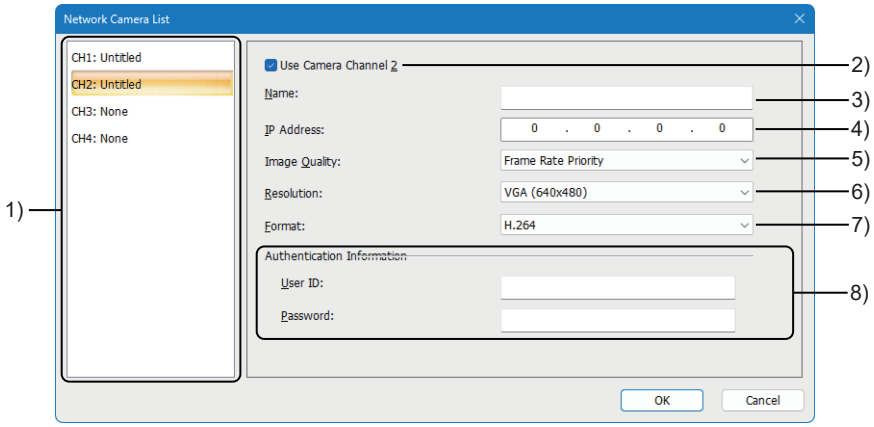


When [Display Type] is [Video/PC Image Window]

When [Display Type] is [Digital Image Display Object]

Item		Description
1)	[Network Camera List] button	Clicking this button displays the [Network Camera List] dialog. ☞ Page 2692 [Network Camera List] dialog
2)	[I/F Common Setting]	Setting items are the same as those in the [USB] tab. For details, refer to the following. ☞ Page 2689 [USB] tab

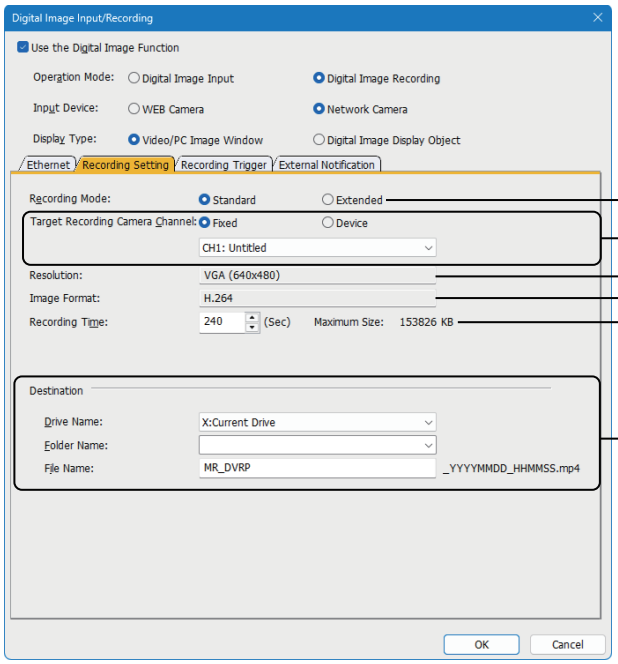
[Network Camera List] dialog



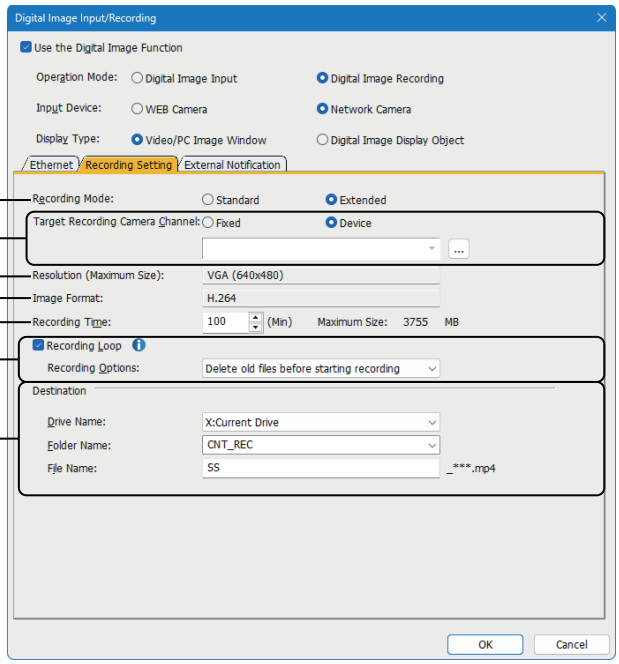
Item			Description
1)	Channel list		Displays the use status and name of each channel.
2)	[Use Camera Channel 2] [Use Camera Channel 3] [Use Camera Channel 4]		These items are displayed when CH2 to 4 are selected. Selecting each item enables the setting.
3)	[Name]		Set the name of the network camera. Up to 100 characters can be set.
4)	[IP Address]		Set the IP address of the network camera to be connected. The setting range is [0].[0].[0].[0] to [255].[255].[255].[255].
5)	[Image Quality]		Select the quality of the video to be displayed. The following shows selectable items. • [Frame Rate Priority] • [Image Quality Priority]
6)	[Resolution]		Set the resolution of the image to be displayed.
7)	[Format]		Set the format of the image.
8)	[Authentication Information]	[User ID]	Set the user ID of the network camera. Up to 64 uppercase and lowercase alphabetic characters, numbers, one-byte spaces, and the symbols below are usable for a user ID. ! " # $ % & ' ( ) * + , ` - . / : ; < = > ? @ [\ ] ^ _ { | } ~
		[Password]	Set the password for the network camera. Up to 64 uppercase and lowercase alphabetic characters, numbers, one-byte spaces, and the symbols below are usable for a password. ! " # $ % & ' ( ) * + , ` - . / : ; < = > ? @ [\ ] ^ _ { | } ~

78.3.3 [Recording Setting] tab

This item is displayed when [Digital Image Recording] is selected for [Operation Mode].



When [Recording Mode] is [Standard], and
[Target Recording Camera Channel] is set to [Fixed]



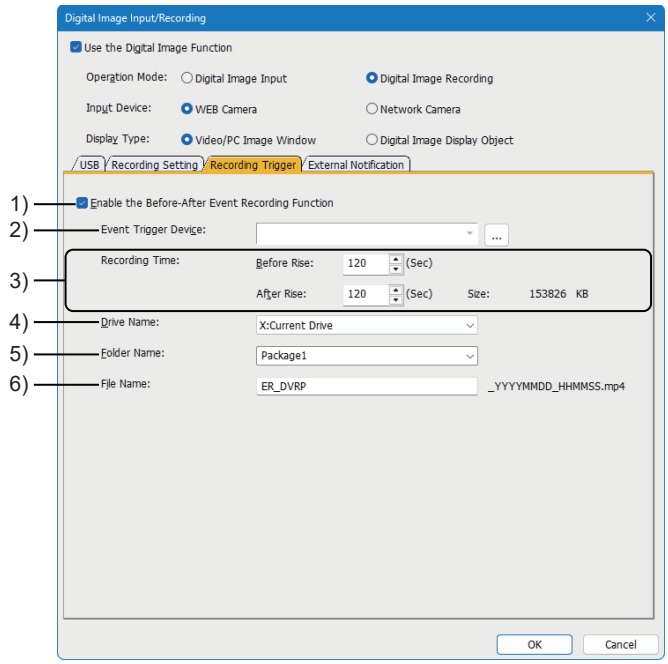
When [Recording Mode] is [Extended], and
[Target Recording Camera Channel] is set to [Device]

Item			Description
1)	[Recording Mode]		Set the recording mode. The following shows selectable items. • [Standard] • [Extended]
2)	[Target Recording Camera Channel]		Set the camera channel to be recorded. • [Fixed] Specify the camera channel to be recorded directly. • [Device] Specify the camera channel to be recorded with a device. Select this item and set the device.
3)	[Resolution] [Resolution (Maximum Size)]		The item name depends on the setting of [Target Recording Camera Channel]. Displays the resolution or the maximum size of the resolution.
4)	[Image Format]		Displays the format of the image to be recorded.
5)	[Recording Time]		Set the recording time. The setting range depends on the setting of [Recording Mode]. • [Standard]: [10] to [240] seconds • [Extended]: [15] to [3000] minutes The maximum size of the recording data is displayed based on the set recording time.
6)	[Recording Loop]	—	This item is displayed when [Extended] is selected for [Recording Mode]. Select this item to repeat recording.
		[Recording Options]	Select an option when [Recording Loop] is set. The following shows selectable items. • [Delete old files before starting recording] • [Use consecutive numbers when saving files]

Item			Description
7)	[Destination]	—	Set the destination to save recording data.
		[Drive Name]	Select a drive to store recording data. For the available drives by GOT model, refer to the following. ☞ Page 81 Drive configuration and capacity of the GOT
		[Folder Name]	Set the folder name of the destination to save recording data. For the character type and the number of characters available for folder names, refer to the following. ☞ Page 84 Restrictions for folder names and file names used in GOT
		[File Name]	Set the file name of the recording data. The suffix of the file name depends on the setting of [Recording Mode]. For the character type and the number of characters available for file names, refer to the following. ☞ Page 84 Restrictions for folder names and file names used in GOT

78.3.4 [Recording Trigger] tab

This item is displayed when [Standard] is selected for [Recording Mode] in the [Recording Setting] tab.



Item		Description
1)	[Enable the Before-After Event Recording Function]	Selecting this item enables the recording before and after the event function.
2)	[Event Trigger Device]	Set a trigger device for recording. ☞ Page 834 How to set devices, labels, and tags
3)	[Recording Time]	Set the recording time for [Before Rise] and [After Rise]. The setting range is [10] to [120] seconds. The size of the recording data is displayed based on the set recording time.
4)	[Drive Name]	Select a drive to store recording data. For the available drives by GOT model, refer to the following. ☞ Page 81 Drive configuration and capacity of the GOT
5)	[Folder Name]	Set the folder name of the destination to save recording data. For the character type and the number of characters available for folder names, refer to the following. ☞ Page 84 Restrictions for folder names and file names used in GOT
6)	[File Name]	Set the file name of the recording data. For the character type and the number of characters available for file names, refer to the following. ☞ Page 84 Restrictions for folder names and file names used in GOT

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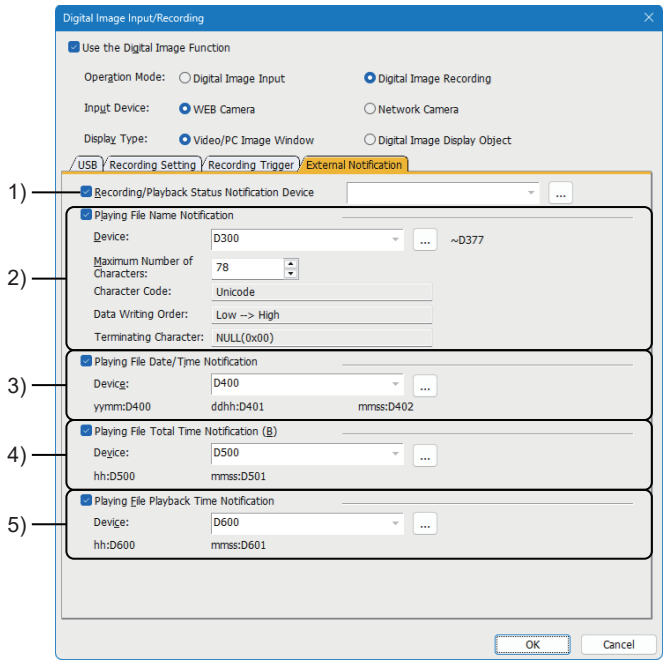
78.3.5 [External Notification] tab

This item is displayed when [Digital Image Recording] is selected for [Operation Mode].



Item			Description
1)	[Recording/Playback Status Notification Device]		Set a device for notifying the status of recording and playback. The data type is unsigned 16-bit binary. The following shows the notification details of each bit. • b0: Notifies the recording status. (0: Stop, 1: Recording) • b1: Notifies the enabled/disabled status of the recording before and after the event. (0: Disabled, 1: Enabled) • b2: Notifies the status of the recording before and after the event (0: Recording before the event, 1: Recording after the event) • b3: Use prohibited • b4 to 6: Notifies the status of the playback. (000: Stop, 001: Normal playback, 010: Pause, 100: Slow playback, 101: Fast-forward playback) • b7 to b15: Use prohibited ☞ Page 834 How to set devices, labels, and tags
2)	[Playing File Name Notification]	—	Selecting this item enables the notification of the playing file name.
		[Device]	Set a device to store the file name. As many devices as the number of characters specified in [Maximum Number of Characters] starting from a specified device are used. ☞ Page 834 How to set devices, labels, and tags
		[Maximum Number of Characters]	Set the maximum number of characters. The setting range is [1] to [78].
		[Character Code]	Displays the character code of the file name to be stored in the device. The character code is fixed to [Unicode].
		[Data Writing Order]	Displays the order in which the data is written into the device. It is fixed to [Low-->High].
		[Terminating Character]	Displays the termination character. It is fixed to [NULL(0x00)].
3)	[Playing File Date/Time Notification]		Set a device for notifying the recording date and time of the file to be played. Devices for three words starting from the set device are used. The data format is BCD. ☞ Page 834 How to set devices, labels, and tags
4)	[Playing File Total Time Notification]		Set a device for notifying the total time of the file to be played. Devices for two words starting from the set device are used. The data format is BCD. ☞ Page 834 How to set devices, labels, and tags
5)	[Playing File Playback Time Notification]		Set a device for notifying the playback time of the file to be played. Devices for two words starting from the set device are used. The data format is BCD. ☞ Page 834 How to set devices, labels, and tags

PART 22 Video output function

79 Displaying the GOT screen on an external display (video output function)

79 Displaying the GOT screen on an external display (video output function)

GT37 SoftGOT3000

☞ Page 2698 Overview of the video output function
☞ Page 2700 Specifications of the video output function
☞ Page 2704 How to use the video output function
☞ Page 2705 Relevant settings

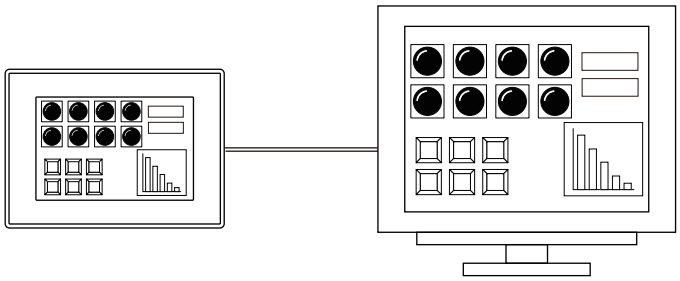
79.1 Overview of the video output function

GT37 SoftGOT3000

This function enables you to output the GOT screen to a commercially available display.

• Outputting the screen image displayed on the GOT

You can monitor the PLC status on the GOT and display the monitoring result on a big screen in a factory.

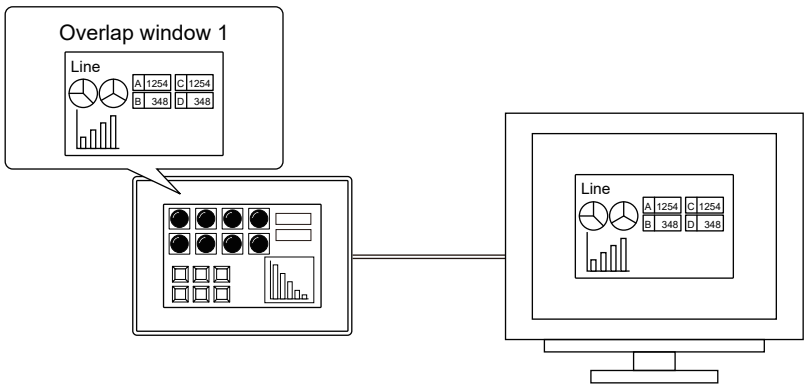


Outputting the screen on the GOT to a commercially available display

• Outputting an overlap window image

The specified overlap window image can be output to the display and used for the ANDON function.

When an overlap window image is output to the display, the window is not displayed on the GOT.



Outputting overlap window 1 to the display

Precautions

■Operation on the display

Even if the display supports touch operation, the objects on the display are cannot be operated via touch.

■When using the digital image input function

The screen output to the display cannot display images that use the digital image input function.

■Sound output

Sound cannot be output even if the sound output is set.

To output sound, use the sound output function.

☞ Page 2707 Outputting sound with the GOT (sound output function)

79.2 Specifications of the video output function

GT37 SoftGOT3000

79.2.1 Overlap window image to be output to the display

Select an overlap window image to be output to the display in the [GOT Setup] window ([Digital Image Output]).

☞ Page 647 [Digital Image Output]

The selected overlap window is not displayed on the GOT.

Disabled functions

The following functions set for the overlap window whose image is to be output to the display are disabled.

- Assignment to a system window
- Display position specification
- Display order specification
- Touch operation on the screens behind the overlap window
- Title bar display
- Automatic closing of the overlap window when the base screen is switched

Switching the screen

To switch the screen displayed on the overlap window, use a screen switching device or Go To Screen switch.

☞ Page 542 [Screen Switching/Window]

☞ Page 1220 [Go To Screen Switch] dialog

When 0 is set to the screen number, a black screen is output to the display.

Precautions

■Changing the screen image to be output to the display

When the project data, where the selection or deselection of [Use the digital image output] is changed in the [GOT Setup] window ([Digital Video Output]), is written, the GOT restarts.

■Precautions when outputting an overlap window image

• Display when transitioning a GOT screen to a screen other than a user-created screen

In this situation, [Monitoring has been stopped.] will appear on the display.

The screen to be displayed on the display at screen transition can be changed using GS633.

☞ Page 3581 GOT special register (GS)

• Effects of GOT screen switching on the displayed overlap windows

When the GOT screen switches to any screen other than a user-created screen (such as a utility screen), the monitoring of the displayed overlap windows also stops.

Switching to a user-created screen from any other screen (such as a utility screen) resumes monitoring of the displayed overlap windows, but data and other unsaved information in memory are deleted.

The following items do not retain their displays when monitoring resumes.

Items that do not retain their displays when monitoring resumes	Setting
Scatter graph	• When [Store Memory] is deselected and [Graph Type] is [Sample] • When [Store Memory] is deselected, [Graph Type] is [Batch], and [Display Mode] is [Locus]
Parts display	• When [Display Mode] is [Overwrite] • When [Display Mode] is [Locus]
Figures freely drawn using the object script	—

• Overlap window when GT Simulator3 is used

An overlap window image to be output to the display appears as a normal overlap window in GT Simulator3.

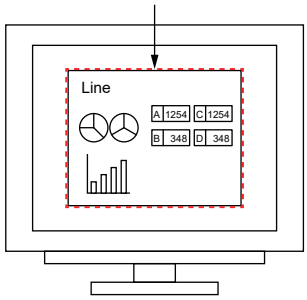
However, the title bar is not displayed. Configure a method to close the window.

79.2.2 Resolution of the screen to be output to the display

The screen image is output to the display in the GOT (output source) screen resolution.

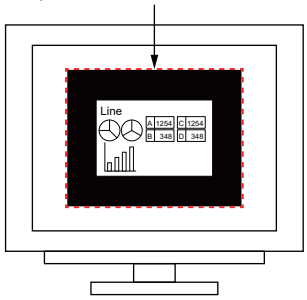
If an overlap window smaller than the GOT screen is output, space (black area) appears around the overlap window.

Red line: GOT screen resolution



Displaying an overlap window created in the same size as the GOT screen

Red line: GOT screen resolution
Black area: Extra space that shows the GOT screen resolution



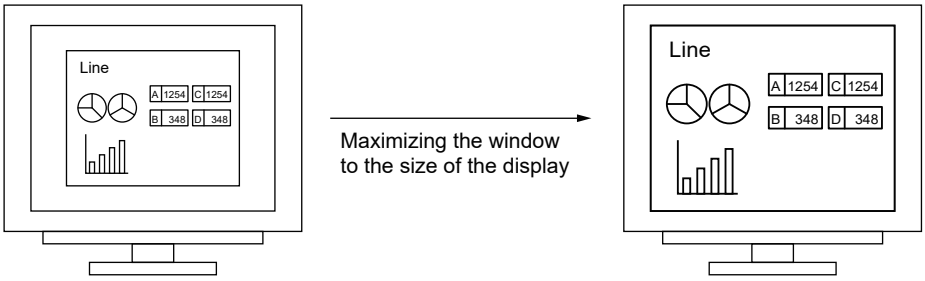
Displaying an overlap window created smaller than the GOT screen

When the screen is changed on the display, the screen, is resized according to the GOT screen resolution.

Since the window has extra space, the screen may not be resized as intended in some situations.

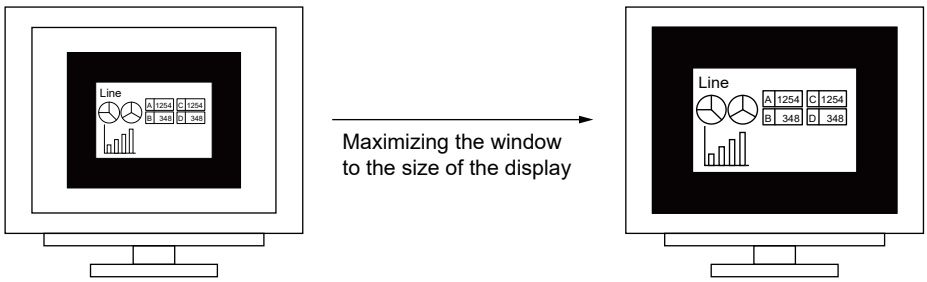
Ex.

Maximizing the screen on the display to the size of the display



Displaying an overlap window created in the same size as the GOT screen

The window without extra space will be expanded to full-screen.



Displaying an overlap window created smaller than the GOT screen

The window with extra space will not be expanded to full-screen.

It is recommended to create an overlap window whose image is to be output according to the screen resolution of the GOT.

Precautions

If you set vertical installation for the GOT and create a screen, use the display vertically.

79.2.3 Display on the external display showing a dialog window when the GOT is in screen saving mode

When the GOT is in screen saver mode, the external display will not enter screen saver mode.

When the GOT displays a dialog window, the display on the external display differs depending on what screen is output to the display.

- Outputting the screen image displayed on the GOT

The external display displays the screen showing a dialog window.

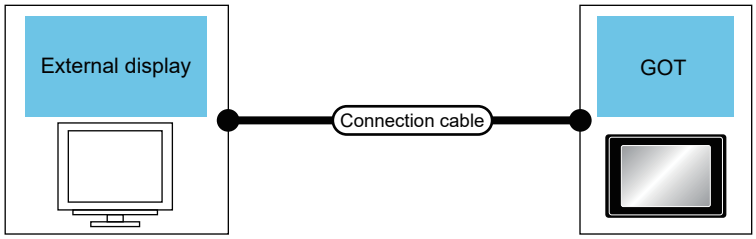
- Outputting an overlap window image

The external display displays the specified overlap window only.

79.3 How to use the video output function

GT37 SoftGOT3000

79.3.1 System configuration



For information on the maximum number of connected devices, refer to the following.

☞ Page 2704 Maximum number of connected devices

External display	Connection cable	Maximum cable length	GOT	
Model	Model		Interface	GOT model
HDMI-compatible display	HDMI cable	*1	Built-in digital image output interface	GT37 SoftGOT3000

*1 The maximum cable length varies depending on the cable specifications.

Maximum number of connected devices

Only one display can be connected to one GOT.

79.3.2 Setting procedure

1. Connect an external display to the GOT.

☞ Page 2704 System configuration

2. In the [GOT Setup] window ([Digital Image Output]), select [Use the digital image output].

☞ Page 647 [Digital Image Output]

3. To display an overlap window on the display, select the overlap window to output its image in the [GOT Setup] window ([Digital Image Output]).

4. Write package data to the GOT.

For the communication method between the personal computer and the GOT, refer to the following.

☞ Page 408 Transferring data to the GOT

5. Display the GOT screen on the external display.

79.4 Relevant settings

GT37 SoftGOT3000

The following shows the functions that are available by configuring the relevant settings.

79.4.1 GOT internal device

☞ Page 3581 GOT special register (GS)

Function	Setting item
Available only when an overlap window is output to the display. Setting a screen to be displayed on the display at transition of a GOT screen to a screen other than a user-created screen	GS633
Setting the screen number of a screen other than an overlap window to be output to the display by setting 1 to GS633	GS634

PART 23 Sound output function

80 Outputting sound with the GOT (sound output function)

80 Outputting sound with the GOT (sound output function)

GT37 SoftGOT3000

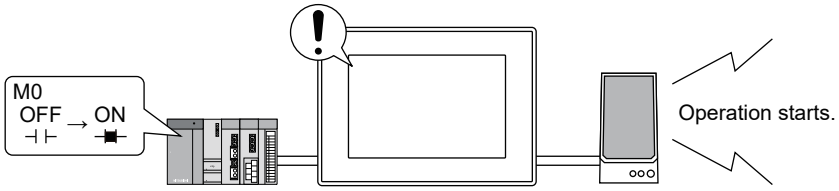
☞ Page 2707 Overview of the sound output function
☞ Page 2708 Specifications of the sound output function
☞ Page 2712 How to use the sound output function
☞ Page 2714 Registration of the speech synthesis license
☞ Page 2715 [Sound File List] dialog
☞ Page 2717 [Create New Sound File] or [Edit Sound File] dialog
☞ Page 2719 [Touch Key Sound Setting] dialog
☞ Page 2720 Relevant settings

80.1 Overview of the sound output function

GT37 SoftGOT3000

The sound output function outputs sounds through the audio equipment (including loudspeakers) that is connected to the GOT.

Ex.
Playing a sound when the condition of a trigger action is satisfied



The specified sound file will play when the set condition is satisfied (M0 is turned on).

80.1.1 Playing a sound

A sound plays when the condition of a trigger action or time action is satisfied or when a relevant switch is touched.

80.1.2 Stopping the playback

The current playback is stopped when the condition of a trigger action is satisfied or when a relevant switch is touched.

80.1.3 Muting or unmuting the sound

The sound is muted or unmuted when the condition of a trigger action is satisfied or when a relevant switch is touched.

Precautions

If you select [Unmute when starting MELSOFT GT SoftGOT3000] in the [Setting] dialog of GT SoftGOT3000, the application is unmuted regardless of the Windows sound settings.
If you deselect the item, the Windows sound settings are applied.
However, if you mute all sounds on Windows, GT SoftGOT3000 remains mute.

80.2 Specifications of the sound output function

GT37 SoftGOT3000

80.2.1 System application (add-on function)

To use the sound output function, a system application (add-on function) for [Sound Output] is required.
Creating one or more sound file in the [Sound File List] dialog automatically incorporates the system application into the package data.
In order to use this function with GT SoftGOT3000, this system application (add-on function) is not required.

80.2.2 Number of sound output function settings for one project

One setting can be configured per project.

80.2.3 Sound file specifications

The following shows the specifications of usable sound files for the sound output function.

Item	Specifications
File format	WAV format (48.000 kHz, 16 bits, mono)
Maximum number of registered sound files	500 files for one project
Maximum size of registered sound files in total	512 MB for one project
Maximum playback time	30 seconds for one file For a sound file with the playback time exceeding 30 seconds, the sound is cut off after 30 seconds.

Precautions

Sound cannot be output if audio equipment that does not support the sampling frequency (48.000 kHz) is connected.

80.2.4 Registrable sound file types

Message

The sound files of the message type are generated by converting the entered text into speech.
The speaker, speed, pitch, and volume of the voice are settable.
No sound file with the playback time exceeding 30 seconds is registrable.
To register or update the sound files of the message type, the speech synthesis license must be registered.
For information on how to register the speech synthesis license, refer to the following.
☞ Page 2714 Registration of the speech synthesis license

Sound effect

The sound files of the sound effect type come with GT Designer3.

Melody

The sound files of the melody type come with GT Designer3.

Precautions

Do not use the sound files of the sound effect type or melody type that are settable in the [Edit Sound File] dialog for any purpose other than the GOT sound output.

File

User-specified WAV sound files are imported to use.
The WAV sound files (48.000 kHz, 16 bits, mono) are imported as they are.
The WAV sound files in the following conditions are converted automatically at import.

- Sampling frequency: Any
- Number of bits: 8 bits or 16 bits
- Channel: Stereo or mono

The files are automatically converted into WAV format (48.000 kHz, 16 bits, mono).
To import any WAV sound file other than the above, convert the file into an applicable WAV sound file by using general-purpose audio editing software.

Precautions

In such a case, import the source file again.
The imported WAV sound file in the [Edit Sound File] dialog is not updated when you make a change to the import source file.

80.2.5 Playback specifications

One sound file plays at a time.

While a sound file is playing, if you specify another sound file to play, operation varies depending on the specified file number.

When the specified sound file differs from the playing one

The specified sound file is held on standby and plays after the current file has finished playing.

If you specify multiple sound files to play, the specified files play in the order in which the files are held on standby.

Up to 16 sound files are held on standby.

When the playing sound file or standby sound file is specified again

The sound file specified again does not play.

80.2.6 Functions working together with the sound output function

The sound output function is usable for the relevant functions shown below.

- Trigger action
- Time action
- Action of the switch (Sound output)
- Touch key sound of the touch switch

The following shows the availability of the operations of the sound output function by relevant function.

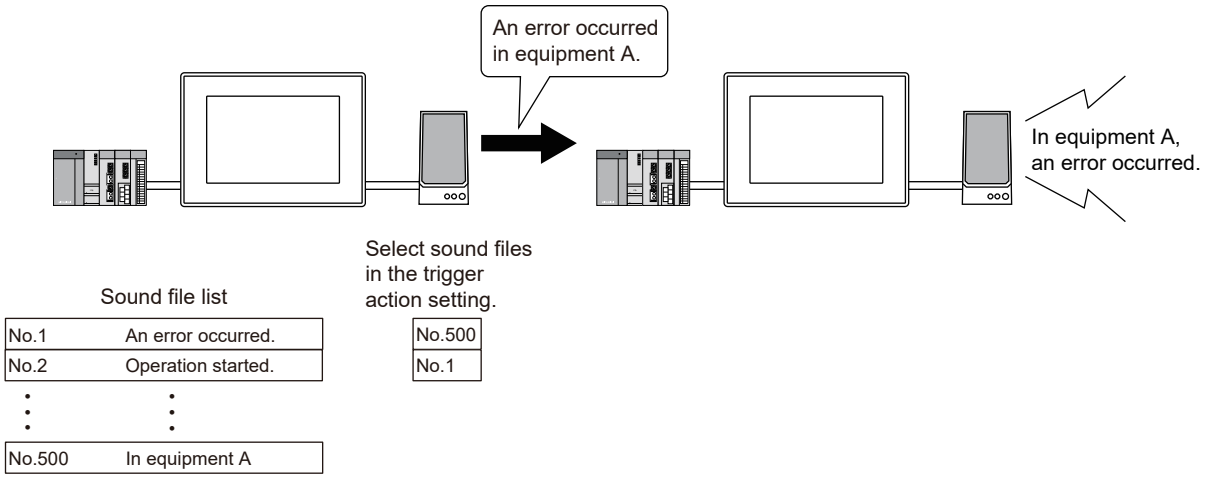
○: Available, —: Not available

Relevant function	Sound output function			
	Play	Stop	Mute or unmute	Continuous play of a playlist
Trigger action	○	○	○	○
Time action	○	—	—	—
Action of the switch (Sound output)	○	○	○	—*1

*1 To play the preselected sound files continuously with a corresponding switch, set the playlist in a trigger action setting and execute the trigger action with the switch.

80.2.7 Playing the preselected sound files continuously

You can select multiple sound files to play them continuously with one trigger action.



Up to 16 sound files are selectable for one trigger action.

The same sound file numbers can be specified for one trigger action.

For the setting method, refer to the following.

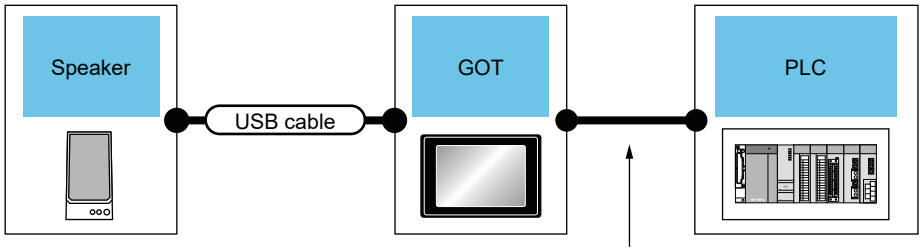
☞ Page 2521 Operating a device as a trigger ([Trigger Action])

Stopping the current playback cancels the other sound files that are selected for the same trigger action.

80.3 How to use the sound output function

GT37 SoftGOT3000

80.3.1 System configuration



For information on the maximum number of connected devices, refer to the following.

☞ Page 2712 Maximum number of connected devices

Speaker	Connection cable	GOT		PLC
Model		Interface	GOT	
Speakers connectable via USB For connectable speakers, refer to the following Technical Bulletin. 📖List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)	USB cable	Built-in USB interface	GT37 SoftGOT3000	For information on the system configuration between the GOT and the PLC, refer to the following. 📖GOT3000 Series User's Manual (Connection)
Built-in personal computer speaker or external speaker (If your personal computer has no sound function, use a sound card.)	Varies according to the specifications of the external speaker used.	Personal computer interface	GT37 SoftGOT3000	

Maximum number of connected devices

Only one speaker can be connected to one GOT.

80.3.2 Setting procedure

1. Connect the GOT and the speaker.

☞ Page 2712 System configuration

2. To import a sound file, convert the file as necessary.

To convert the file, use general-purpose audio editing software.

If you need sample data of sound file, consult your local sales office.

3. Edit or register a sound file in the [Sound File List] dialog.

☞ Page 2715 [Sound File List] dialog

4. Configure the setting of the relevant function to work with the sound output function.

- Trigger action

Set the sound output for a target action.

☞ Page 2530 [Trigger/Action] dialog

- Time action

Set the sound output for a target action.

☞ Page 2551 [Time Action Attribute] dialog

- Action of the switch (Sound output)

Set the sound output for the action of a target switch.

☞ Page 1199 [Switch] dialog

- Touch key sound of the touch switch

Configure the setting to use a specified sound file for the touch key sound.

☞ Page 2719 [Touch Key Sound Setting] dialog

5. Write package data to the GOT.

For the communication method between the personal computer and the GOT, refer to the following.

☞ Page 408 Transferring data to the GOT

80.4 Registration of the speech synthesis license

GT37 SoftGOT3000

To register or update a sound file of the message type in the [Edit Sound File] dialog, purchase and register the speech synthesis license (SW1DND-GTVO-M).

If the speech synthesis license is unregistered, each file is playable only in the [Edit Sound File] dialog.

For purchasing the speech synthesis license, contact your local sales office.

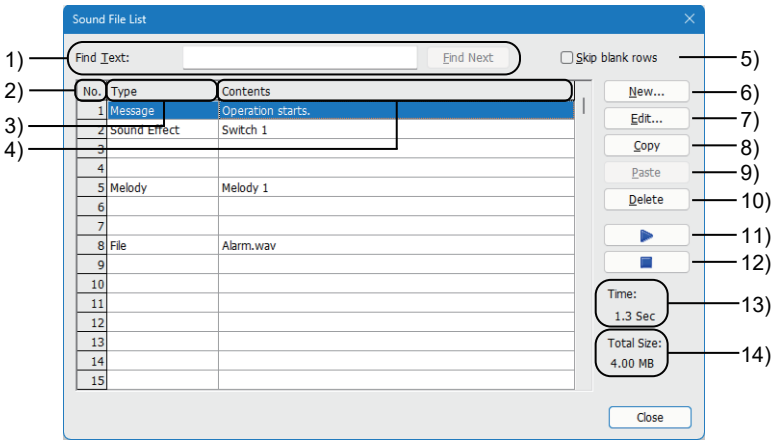
For registering the speech synthesis license, refer to the following.

GT Works Text to Speech License Registration Instructions

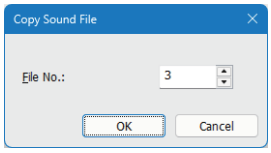
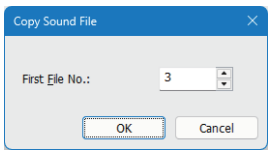
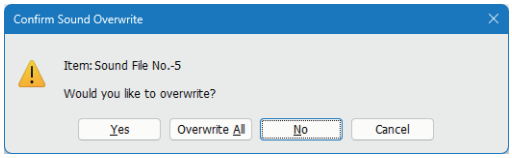
80.5 [Sound File List] dialog

GT37 SoftGOT3000

Select [Common] → [Sound] → [Sound File List] from the menu to display the setting dialog.
Register a sound file to play on the GOT.



Item		Description
1)	[Find Text]	Search the sound file list for a sound file based on the search keyword. The [Contents] column is searched. Up to 512 characters can be entered as the search keyword. Click the [Find Next] button to search for the next occurrence of the keyword.
2)	[No.]	Registered sound file number. Up to 500 sound files are registrable.
3)	[Type]	Sound file type ([Message], [Sound Effect], [Melody], or [File]) that is set in the [Edit Sound File] dialog.
4)	[Contents]	• When [Type] is set to [Message] The contents of a sound file (message) are displayed. • When [Type] is set to [Sound Effect] or [Melody] The title of a sound file is displayed. • When [Type] is set to [File] The file name of a sound file is displayed.
5)	[Skip blank rows]	Displays only the rows where sound files are set.
6)	[New] button	Displays the [Create New Sound File] dialog. ☞ Page 2717 [Create New Sound File] or [Edit Sound File] dialog Set a new sound file.
7)	[Edit] button	Displays the [Edit Sound File] dialog. ☞ Page 2717 [Create New Sound File] or [Edit Sound File] dialog Edit a selected sound file.
8)	[Copy] button	Copies a selected row. Multiple rows can be copied at once.

Item		Description
9)	[Paste] button	Pastes a copied row on a selected row. Multiple rows are pasted on an equal number of consecutive rows, starting from a selected row. When [Skip blank rows] is selected, clicking the [Paste] button displays the [Copy Sound File] dialog.  When one row is copied  When multiple rows are copied • [File No.] Set the file number of the destination row. The setting range is [1] to [500]. • [First File No.] Set the file number of the first destination row. The setting range is [1] to [500]. If the destination row has a sound file setting, the [Confirm Sound Overwrite] dialog appears.  • [Yes] Overwrites the row where the sound file specified in this dialog is set. • [Overwrite All] Overwrites all the rows. • [No] Does not overwrite the row where the sound file specified in this dialog is set. • [Cancel] Cancels the paste on the rows, starting from the one where the sound file specified in this dialog is set.
10)	[Delete] button	Deletes a selected sound file.
11)	[Play] button	Plays a selected sound file.
12)	[Stop] button	Stops the current playback.
13)	[Time]	Displays the playback time of a selected sound file.
14)	[Total Size]	Displays the total size of the registered sound files. Make sure that the total size of the files is 512 MB or less.

80.6 [Create New Sound File] or [Edit Sound File] dialog

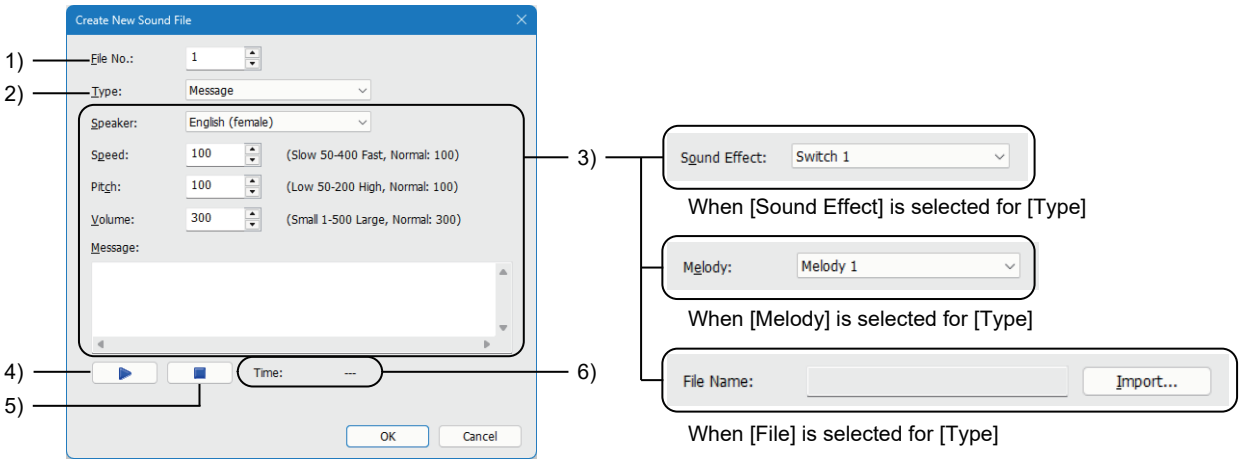
GT37 SoftGOT3000

Create or edit a sound file.

The dialog name varies with the display method.

To display this dialog, perform one of the following operations.

- In the [Sound File List] dialog, click the [New] button.
- In the [Sound File List] dialog, select a target sound file and click the [Edit] button.
- In the [Sound File List] dialog, double-click a target sound file.



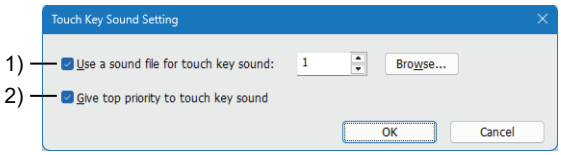
Item		Description
1)	[File No.]	Set a sound file number. The setting range is [1] to [500].
2)	[Type]	Select a sound file type. The following shows selectable items. • [Message]: Sound file that is generated by converting the entered text into speech • [Sound Effect]: Sound file that is supplied with GT Designer3 • [Melody]: Sound file that is supplied with GT Designer3 • [File]: User-specified WAV sound file to be imported To register or update the sound files of the message type, the speech synthesis license must be registered. For information on how to register the speech synthesis license, refer to the following. ☞ Page 2714 Registration of the speech synthesis license

Item			Description
3)	Detail setting	—	Set necessary items according to the selection for [Type].
		[Speaker]	Select the speaker to read aloud a message. The following shows selectable items. • [Japanese (female)] • [Japanese (male)] • [English (female)] • [English (male)] • [Simplified Chinese (female)] • [Simplified Chinese (male)] • [Traditional Chinese (female)] • [Korean (female)] • [Korean (male)] • [Spanish (female)] • [Spanish (male)]
		[Speed]	Set the speed of the synthesized voice. The setting range is [50] (slow) to [400] (fast).
		[Pitch]	Set the pitch of the synthesized voice. The setting range is [50] (low) to [200] (high).
		[Volume]	Set the volume of the synthesized voice. The setting range is [1] (small) to [500] (large).
		[Message]	Enter a message to be read aloud. Up to 1024 characters can be set. A line feed is counted as two characters.
		[Sound Effect]	Select a sound effect to play.
		[Melody]	Select a melody to play.
		[File Name]	Select a sound file to play. Click the [Import] button to display the [Open] dialog. Select a file to be imported to GT Designer3.
4)	[Play] button		Plays the sound file being edited.
5)	[Stop] button		Stops the current playback.
6)	[Time]		Displays the playback time of the sound file being edited. • When [Type] is set to [Message] The sound file whose playback time exceeds 30 seconds is not registrable. The playback time exceeding 30 seconds is displayed in red.

80.7 [Touch Key Sound Setting] dialog

GT37 SoftGOT3000

Select [Common] → [Sound] → [Touch Key Sound Setting] from the menu to display the setting dialog.
Configure the setting to play a sound file when a relevant touch switch is touched.



Item		Description
1)	[Use a sound file for touch key sound]	Plays a sound file when a relevant touch switch is touched. Perform one of the following operations to select a sound file. • Enter a sound file number. • Click the [Browse] button to display the [Sound File List] dialog, and select a sound file.
2)	[Give top priority to touch key sound]	Stops the current playback, cancels all standby sound files and plays the touch key sound when a relevant touch switch is touched.

80.8 Relevant settings

GT37 SoftGOT3000

Configure the relevant settings in addition to the specific settings for the sound output function as required.
The following shows the functions that are available by configuring the relevant settings.

80.8.1 GOT internal device

☞ Page 3581 GOT special register (GS)

Function	Setting item
Stopping the current playback The standby sound file plays subsequently.	GS518.b0
Stopping the current playback and canceling all standby sound files	GS518.b1
Muting or unmuting the sound	GS518.b2
Notifying that a speaker is connected to the USB interface of the GOT	GS668.b14
Outputting the sound file number in execution to a device	GS669

PART 24 External I/O function, operation panel function

81 Using an external I/O device on the GOT (External I/O function and operation panel function)

81 Using an external I/O device on the GOT (External I/O function and operation panel function)

GT37 SoftGOT3000

☞ Page 2723 Overview of the external I/O function and the operation panel function
☞ Page 2724 Specifications of the external I/O function and the operation panel function
☞ Page 2726 How to use the external I/O function and the operation panel function
☞ Page 2730 [External I/O / Operation Panel] dialog
☞ Page 2732 [Action/Key Code Setting] dialog
☞ Page 2734 Relevant settings

81.1 Overview of the external I/O function and the operation panel function

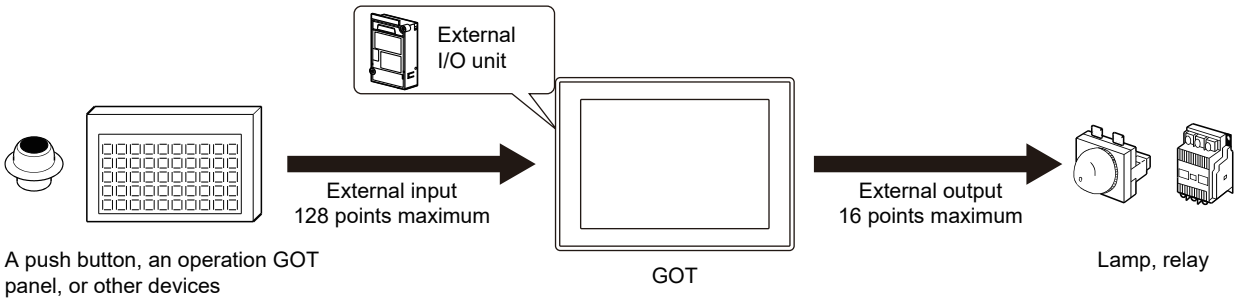
The following two functions are provided for using external I/O devices with the GOT.

External I/O function

The external I/O function enables signal input and output to and from external devices.

The GOT receives signals input from devices such as externally connected push buttons or the operation panel and stores their values in the GOT internal devices.

The GOT outputs the stored value as signals to external devices.



Operation panel function

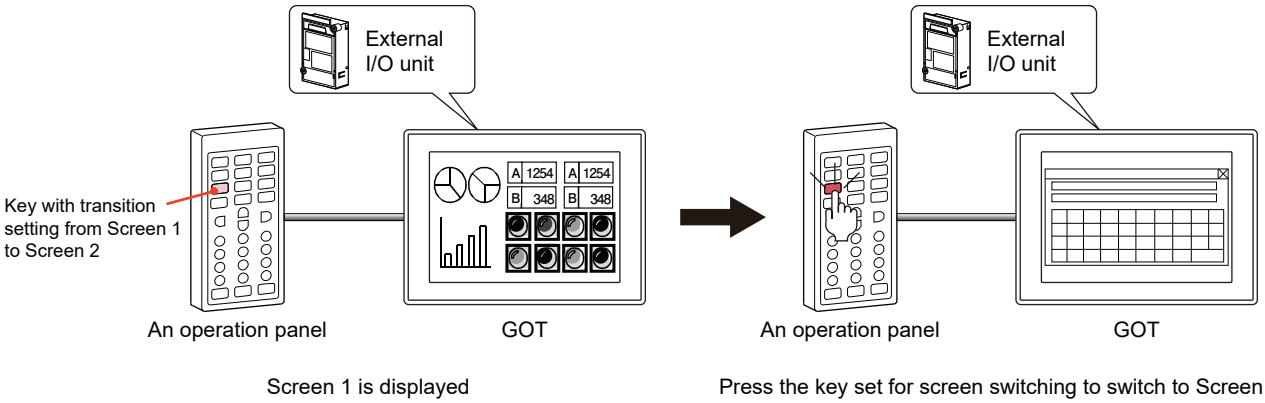
The operation panel function allows for switch operations such as input to numerical input objects and screen switching from an externally connected operation panel.

By assigning the GOT touch switch behavior to a user-created operation panel, input from the operation panel is enabled.

When using GT SoftGOT3000 for input operations, use the keyboard of the personal computer instead of the operation panel.

For details on using the keyboard with GT SoftGOT3000, refer to the following.

GT SoftGOT3000 User's Manual



81.2 Specifications of the external I/O function and the operation panel function

GT37 SoftGOT3000

☞ Page 2724 System application (add-on function)
☞ Page 2724 Number of external I/O function settings for one project
☞ Page 2724 Specifications of the external I/O
☞ Page 2725 Specifications of the operation panel
☞ Page 2725 Operation record (operation log)

81.2.1 System application (add-on function)

To use the external I/O function and the operation panel function, a system application (add-on function) of [External I/O / Operation Panel] is required.
The application is automatically incorporated into the package data by selecting [Destination I/F] in the [External I/O / Operation Panel] dialog.
☞ Page 2730 [External I/O / Operation Panel] dialog

81.2.2 Number of external I/O function settings for one project

One external I/O function setting is available for one project.

81.2.3 Specifications of the external I/O

Externally input signals are stored in the GOT internal devices.
The values in the GOT internal devices are output to the outside as output signals.
☞ Page 576 Setting a device which controls the GOT operations or notifies the GOT status ([System Information])
☞ Page 3577 GOT bit register (GB)
☞ Page 3581 GOT special register (GS)
The external I/O function supports the GOT internal devices and the System signals as shown below.

Item	GOT internal device	System Information
Input signal (X0 to X7)	GB30 to GB37	[External I/O Function Input Information1] The signals correspond to the bit numbers (b0 to b7) of the devices.
Input signal (X8 to XF)	GB50 to GB57	[External I/O Function Input Information2] The signals correspond to the bit numbers (b0 to b7) of the devices.
Input signal (X0 to XF) when the 128-point input is enabled*1	GS658 to GS665 The signals correspond to the bit numbers (b0 to b15) of the devices.	—
Output signal (Y0 to YF)	GB10 to GB25	[External I/O Function Output Information] The signals correspond to the bit numbers (b0 to b15) of the devices.

*1 To enable the 128-point input, turn on GS517.b0 (External I/O Function Notification/External I/O Control Function).

When the 128-point input is used for the external I/O function

If input signals X0 to XF turn on, the corresponding GOT internal devices (GB30 to GB37 and GB50 to GB57) also turn on. (The 128-point input is disabled, and GS517.b0 turns off.)

When the external signal output is controlled with the external I/O function

Do not simultaneously perform the following two operations: specifying the device for [External I/O Function Output Information] and writing the output value into GB10 to GB25.
If doing so, the signals may not be output properly to the external device.

81.2.4 Specifications of the operation panel

☞ Page 2725 Screens operable with the operation panel function
☞ Page 2725 Operation of the operation panel function

Screens operable with the operation panel function

The operation panel function is usable for the following screens.

- User-created screen
- Log-in screen (Operator authentication)
- Password change screen (Operator authentication)

For the key codes for the operation panel keys, which are usable on the log-in screen (operator authentication) and the password change screen (operator authentication), refer to the following.

☞ Page 2726 How to use the external I/O function and the operation panel function

The [OK] button and the [Cancel] button, which are in the messages on the GOT, operate with the following operation panel keys.

- [OK] button: [Enter] key, [Y] key, and [y] key
- [Cancel] button: [ESC] key, [N] key, and [n] key

When using the operation panel function on GT SoftGOT3000, use the function keys on the personal computer keyboard.

Operation of the operation panel function

The keys operate according to the set actions on any screens displayed on the GOT.

When you press a touch switch on the GOT and an operation panel key or a function key simultaneously, the operations are executed in order of detection.

81.2.5 Operation record (operation log)

Operations using the operation panel function are recorded in the operation log.

81.3 How to use the external I/O function and the operation panel function

GT37 SoftGOT3000

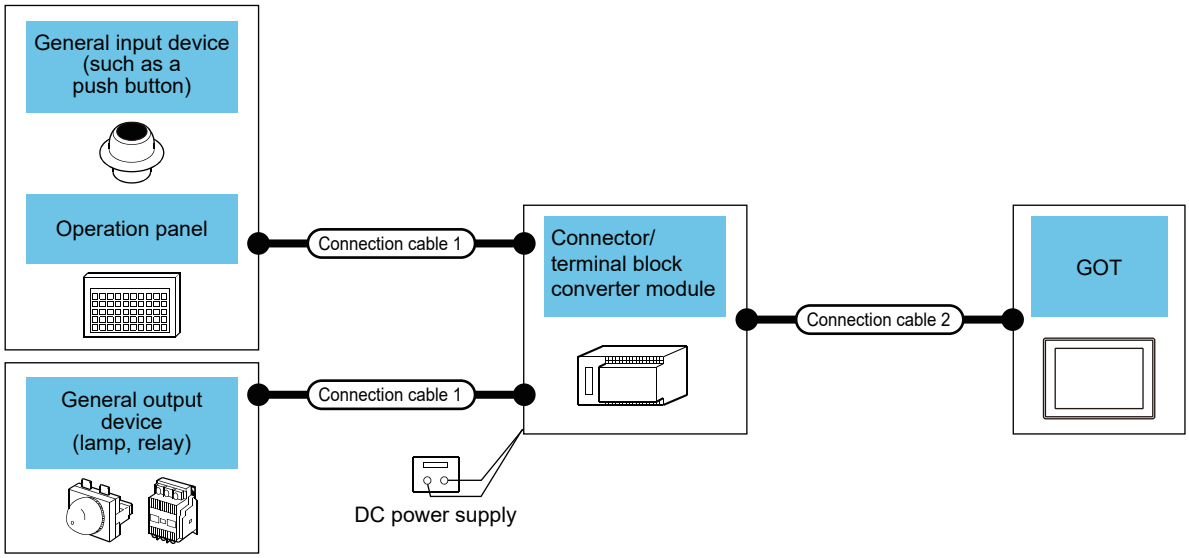
☞ Page 2726 System configuration
☞ Page 2728 Settings of the operation panel keys and the function keys
☞ Page 2729 Setting procedure

81.3.1 System configuration

☞ Page 2726 System configuration of the external I/O device
☞ Page 2727 System configuration of the operation panel

System configuration of the external I/O device

The following shows the system configuration of the external I/O device.



External I/O device	Connection cable 1	Connector/ terminal block conversion unit*2*3	Connection cable 2	GOT*5	
				Option unit	Model
General-purpose input device (such as a push button) Operation panel	User-created cable*1	A6TBY36-E A6TBY54-E *4	A8GT-C30TB	Extension interface converter unit (GT37-IF2000) + Extension unit for the GOT2000 (GT15-DIO, GT15-DIOR)	GT37
General-purpose output device (lamp, relay)					

*1 For information on how to create a cable, refer to the following.
GOT3000 Series User's Manual (Connection)

*2 The 24 V DC power must be supplied for the external I/O unit.
When the power supplied to the external I/O unit cuts off in the operation, the operation panel becomes disabled.
To use the operation panel again, supply the power to the external I/O unit and reset the GOT.

*3 When using the connector/terminal block converter module, you can input signals of up to 64 points.

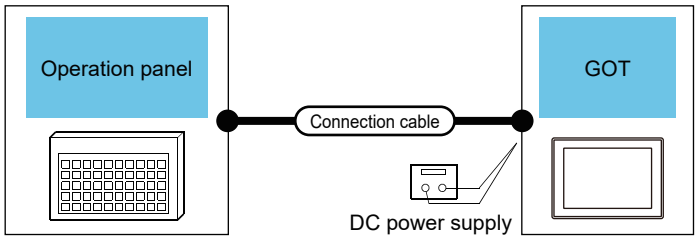
*4 The model of the connector/terminal block converter module depends on the I/O equipment and the operation panel you use.
For details, refer to the following.
GOT3000 Series User's Manual (Connection)

*5 To start the GOT, turn on the external power supply for the external I/O unit, and then turn on the GOT.
When the external power supply is shut off, a system alarm occurs.
When a system alarm occurs, signals cannot be input or output.
Cycle the power of the GOT or reset the GOT.
The GOT reset switch does not function when the bus connection is used.

System configuration of the operation panel

Since GT SoftGOT3000 uses a keyboard, the operation panel connection is not required.

The following shows the system configuration of the operation panel.



Name	Connection cable	GOT*3	
		Option unit	Model
Operation panel	User-created cable*1*2	Extension interface converter unit (GT37-IF2000) + Extension unit for the GOT2000 (GT15-DIO, GT15-DIOR)	GT37

*1 For information on how to create a cable, refer to the following.
GOT3000 Series User's Manual (Connection)

*2 The 24 V DC power must be supplied for the external I/O unit.
When the power supplied to the external I/O unit cuts off in the operation, the operation panel becomes disabled.
To use the operation panel again, supply the power to the external I/O unit and reset the GOT.

*3 To start the GOT, turn on the external power supply for the external I/O unit, and then turn on the GOT.
When the external power supply is shut off, a system alarm occurs.
When a system alarm occurs, signals cannot be input or output.
Cycle the power of the GOT or reset the GOT.
The GOT reset switch does not function when the bus connection is used.

81.3.2 Settings of the operation panel keys and the function keys

The following shows operation settings available for the operation panel keys and the function keys, as well as information on the key codes.

☞ Page 2728 Operation settings
☞ Page 2728 Key code
☞ Page 2729 Other key codes

Operation settings

One or more actions can be assigned to each operation panel key or function key as shown below.

Action type	Maximum settable value	Order of action excution priority for multiple actions*1
Data change	1	High priority
Key code	16	
Word set	20	
Set	20	
Reset	20	
Alternate	20	
Momentary	20	
Base screen switching	1	
Overlap window1	1	
Overlap window2	1	
Overlap window3	1	
Overlap window4	1	
Overlap window5	1	
Superimpose window1	1	
Superimpose window2	1	
Station No. switching	9	
Dialog window	1	Low priority
Total	135	

*1 The order of the actions, excluding the data change and the key code, can be changed on the [Action] tab in the [Action/Key Code Setting] dialog.

Key code

You can assign the following key codes for each object.

Up to 16 key codes are settable for one operation panel key or function key.

- Key codes for inputting alphanumeric characters (Numerical input, text input)
- Key codes for operating the object function

☞ Page 1191 Placing a touch switch

Other key codes

You can operate the following screens by assigning the key codes to the operation panel keys or function keys.

- Log-in screen (Operator authentication)
- Password change screen (Operator authentication)

The following shows the key codes usable on the screens.

Key code (h)	Specifications
0008h	Delete the rightmost character and shift the entire characters to the right by one character.
000Dh	Input the password.
001Bh	Cancel
0030h to 0039h 0041h to 005Ah 0061h to 007Ah	Input a numerical value and a character. For the key codes for numerical values and characters, refer to the following. ☞ Page 1191 Placing a touch switch
0088h	Delete a numerical value and a character being input.
0090h	Move cursor to the right inside object.
0091h	Move cursor to the left inside object.
0092h	Switch character input mode (Value).
0093h	Switch character input mode (Capital letter).
0094h	Switch character input mode (Small letter).

81.3.3 Setting procedure

When using the external I/O function or the operation panel function, configure the following settings.

Operating procedure

1. Connect the GOT to the external I/O device or the operation panel.

☞ Page 2726 System configuration

2. Select [Common] → [Peripheral Setting] → [External I/O /Operation Panel] from the menu to display the [External I/O / Operation Panel] dialog.

3. In the [External I/O / Operation Panel] dialog, configure the settings for the external I/O function and the operation panel function.

☞ Page 2730 [External I/O / Operation Panel] dialog

4. Write package data to the GOT.

For the communication method between the personal computer (GT Designer3) and the GOT, refer to the following.

☞ Page 408 Transferring data to the GOT

5. Operate the external I/O device or the operation panel.

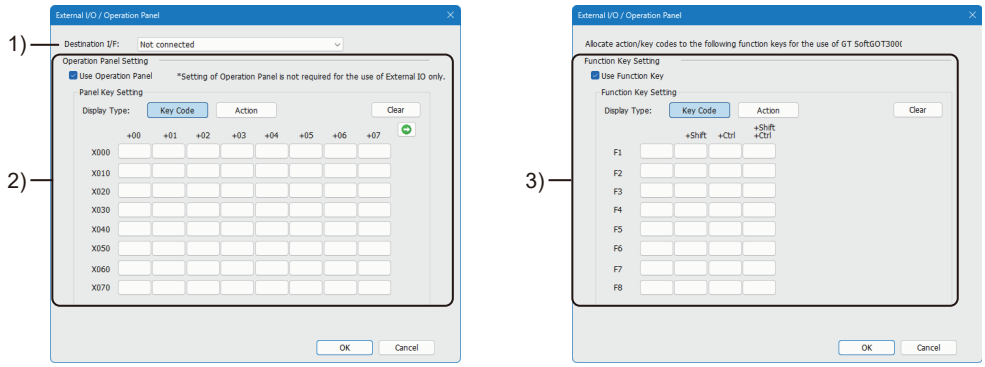
81.4 [External I/O / Operation Panel] dialog

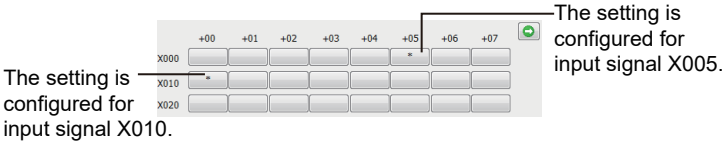
GT37 SoftGOT3000

Set the actions and key codes to the operation panel keys or function keys.

Window

1. Select [Common] → [Peripheral Setting] → [External I/O /Operation Panel] from the menu to display the [External I/O / Operation Panel] dialog.



Item			Description
1)	[Destination I/F]		Not available for GT SoftGOT3000. Select a destination interface.
2)	[Operation Panel Setting]	[Use Operation Panel]	Not available for GT SoftGOT3000. Select this item to enable the operation panel function, and configure the following settings.
		[Panel Key Setting]	Assign actions to be performed at turning on and key codes for input signals. Two screens are displayed: [X000] to [X070] are displayed on the vertical axis, and either [+00] to [+07] or [+08] to [+15] on the horizontal axis. The key buttons correspond to the operation panel input signals (X000 to X07F) respectively. The setting area ([+00] to [+07] or [+08] to [+15]) can be switched with arrow buttons. Click the input signal button to display the [Action/Key Code Setting] dialog, and configure the action, trigger condition, and key code settings. Make sure to configure the proper action setting for each operation panel key button. ☞ Page 2732 [Action/Key Code Setting] dialog 
		[Display Type]	Select the display type. • [Key Code] button Displays the key code set for the operation panel key. Example) [0042] • [Action] button Displays [*] on the operation panel key where the action is assigned. • [Clear] button Clears the setting.

Item			Description
3)	[Function Key Setting]	—	Appears when GT SoftGOT3000 is selected in the GOT type setting.
		[Use Function Key]	Select this item to enable the function key settings for GT SoftGOT3000, and configure the following settings.
		[Display Type]	Select the display type. • [Key Code] button Displays the key codes on the key buttons where the key codes are assigned. Example) [0042] • [Action] button Displays [*] on the key buttons where the actions are assigned. • [Clear] button Clears the setting.
		[Function Key Setting]	Assign actions to be performed at turning on and key codes for function keys. Click the function key setting button to display the [Action/Key Code Setting] dialog, and configure the action, trigger condition, and key code settings. The buttons correspond to keys F1 to F8 of the keyboard. In combination with the Shift key and the Ctrl key, up to 32 patterns are available. Make sure to configure the proper action setting for each function key. ☞ Page 2732 [Action/Key Code Setting] dialog

81.5 [Action/Key Code Setting] dialog

GT37 SoftGOT3000

Configure the operation settings and the trigger conditions for the operation panel keys or function keys.

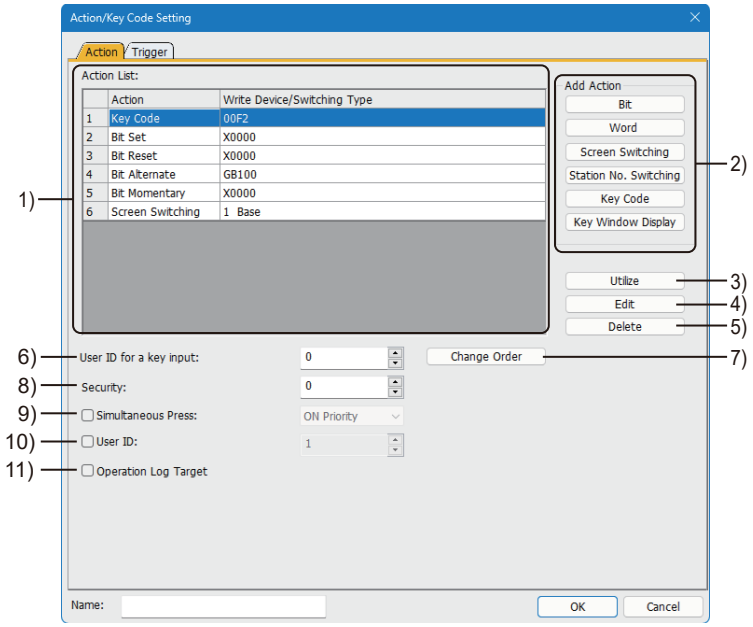
☞ Page 2732 [Action] tab
☞ Page 2733 [Trigger] tab

81.5.1 [Action] tab

Configure the operation settings (actions and key codes) for the operation panel keys or function keys.

For details on operation settings, refer to the following.

☞ Page 1191 Placing a touch switch



Item			Description
1)	[Action List]		Displays the set actions in the list. Actions are executed in the order set in [Action List]. To change the sorting order of actions, click the [Change Order] button and correct the order. The setting of each action can be changed in the edit dialog displayed by double-clicking the action in [Action List]. The setting method and action details (including bit and word) are the same as those for the touch switch.
2)	[Add Action]	[Bit] button	Set the function to turn on and off a bit device.
		[Word] button	Set the function to change a word device value.
		[Screen Switching] button	Configure the settings for the screen switching function. A dialog window cannot be specified for screen switching.
		[Station No. Switching] button	Configure the settings for the station number switching function. A dialog window cannot be specified for the switching mode.
		[Key Code] button	Set the code to be input to a numerical input object or a text input object with keys or code to operate an object.
		[Key Window Display] button	Set the key window display function.
3)	[Utilize] button		Select an action from [Action List] and then click the [Utilize] button to copy the action to [Action List].
4)	[Edit] button		Select an action from [Action List] and then click the [Edit] button to enable you to edit the action setting.
5)	[Delete] button		Select an action from [Action List] and click the [Delete] button to delete the action.
6)	[User ID for a key input]		Specify the user ID of the object to be operated using the key code set in the action list. The setting range is [0] to [65535].
7)	[Change Order] button		To change the order of the actions set in [Action List], click this button to display the [Change Order] dialog and change the order.

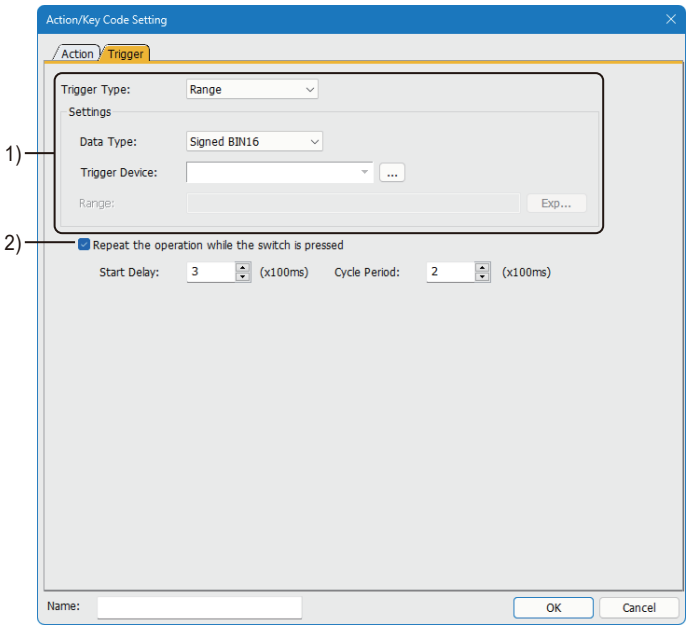
Item		Description
8)	[Security]	When using the security function, set the security level. The setting range is [0] to [15]. If you do not use the security function of the GOT, select [0]. ☞ Page 2989 Restricting GOT screen operations and access from external devices (operator authentication (Mode 2)) ☞ Page 3038 Restricting display and operation on the GOT (Screen security)
9)	[Simultaneous Press]	Select this item to disable the simultaneous press. When this item is selected, select whether to prioritize the on state or off state when multiple touch switches are simultaneously pressed. For details, refer to the following. ☞ Page 1195 Simultaneous press prohibition function ☞ Page 1268 Operation of [Simultaneous Press]
10)	[User ID]	Enables the user ID setting. The setting range is [1] to [65535]. When the user ID is set, you can identify the used operation panel key in the operation log. ☞ Page 1909 Configuring the settings for collecting the GOT operation history ([Operation Log]) When multiple objects are set on the same screen editor, the target object may not operate. To make sure that the target object operates, match the user ID with the user ID of the target object.
11)	[Operation Log Target]	Select this item to record the operation log of the set object. ☞ Page 1909 Configuring the settings for collecting the GOT operation history ([Operation Log])

81.5.2 [Trigger] tab

Set the conditions that trigger the operation of operation panel keys or function keys.

For details on trigger conditions, refer to the following.

☞ Page 614 Configuring the utility settings ([GOT Setup])



Item		Description
1)	[Trigger Type]	Select a trigger condition for the operation panel key or function key. For the details of each item, refer to the following. ☞ Page 968 Trigger type settings
2)	[Repeat the operation while the switch is pressed]	Repeats the set actions while the operation panel key or the function key is pressed.

81.6 Relevant settings

GT37 SoftGOT3000

Set the relevant settings other than the specific settings for the external I/O function and the operation panel function as required.

The following shows the functions that are available by configuring the relevant settings.

81.6.1 GOT environmental settings [Screen Switching/Window]

Select [Common] → [GOT Environmental Setting] → [Screen Switching/Window] from the menu.

☞ Page 530 Setting for switching screens to be displayed on the GOT ([Screen Switching/Window])

Function	Setting item
Setting the screen switching timing when you touch the Go To Screen switch. (OFF synchronous, ON synchronous)	[Operation Timing]

81.6.2 GOT environmental settings (System information)

Select [Common] → [GOT Environmental Setting] → [System Information] from the menu.

☞ Page 576 Setting a device which controls the GOT operations or notifies the GOT status ([System Information])

Function	Setting item
Outputting signals to external devices when the external I/O function is used. (Read device)	[External I/O Function Output Information]
Notifying input signals from external devices or no power supply when the external I/O function is used. (Write device)	[External I/O Function Input Information1], [External I/O Function Input Information2]

81.6.3 GOT internal device

☞ Page 576 Setting a device which controls the GOT operations or notifies the GOT status ([System Information])

Function	Setting item
Notifying input signals from external devices or outputting signals to external devices when the external I/O function is used.	GB10 to GB25, GB30 to GB37, GB50 to GB57
Enabling or disabling 128 signals to be input with the external I/O function.	GS517
Notifying the input status when 128 signals are enabled to be input with the external I/O function	GS658 to GS665

PART 25 GOT Mobile function

82 Monitoring a controller from tablets or other devices (GOT Mobile function)

82 Monitoring a controller from tablets or other devices (GOT Mobile function)

GT37 SoftGOT3000

82.1 Overview of the GOT Mobile function

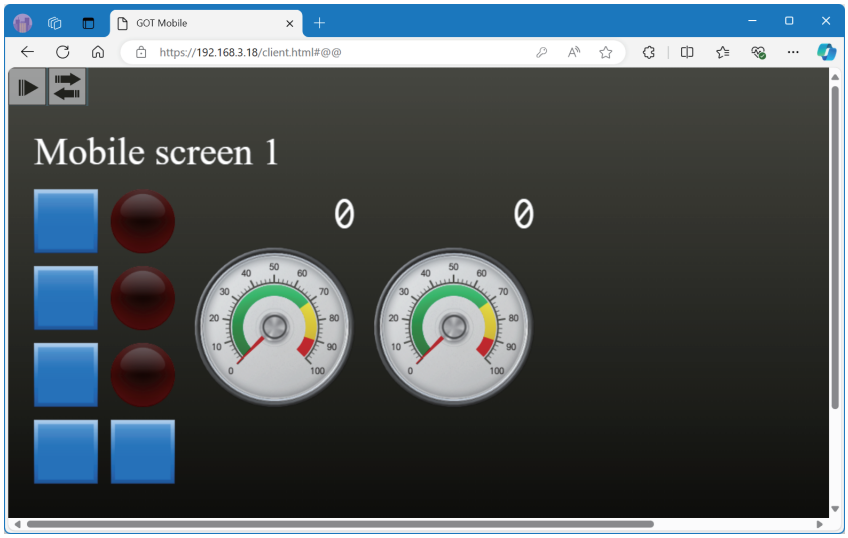
GT37 SoftGOT3000

In this section, the "server" and "client" refer to the server and client of the GOT Mobile function.
The server (GOT) is GT37 or GT SoftGOT3000.

⚠ WARNING

- Remote control is available through a network by using GOT functions, including the SoftGOT-GOT link function, the remote personal computer operation function, the VNC server function, and the GOT Mobile function.
  If these functions are used to perform remote control of control equipment, the field operator may not notice the remote control, possibly leading to an accident.
  In addition, a communication delay or interruption may occur depending on the network environment, and remote control of control equipment cannot be performed normally in some cases.
  Before using the above functions to perform remote control, fully grasp the circumstances of the field site and ensure safety.
- When operating the server (GOT) of the GOT Mobile function to disconnect a client, notify the operator of the client about the disconnection beforehand.
  Not doing so may cause an accident.
- Make sure to fully understand the GOT network interaction function before using this function to control the authorization among pieces of equipment to prevent simultaneous operations.
  The exclusive authorization control of the GOT network interaction function can be enabled or disabled for each screen. (For all screens, the exclusive authorization control is disabled by default.)
  Properly determine the screens for which the exclusive authorization control is required, and set the control by screen.
  A screen for which the exclusive authorization control is disabled can be operated simultaneously from pieces of equipment. Make sure to determine the operation period for each operator, fully grasp the circumstances of the field site, and ensure safety to perform operations.

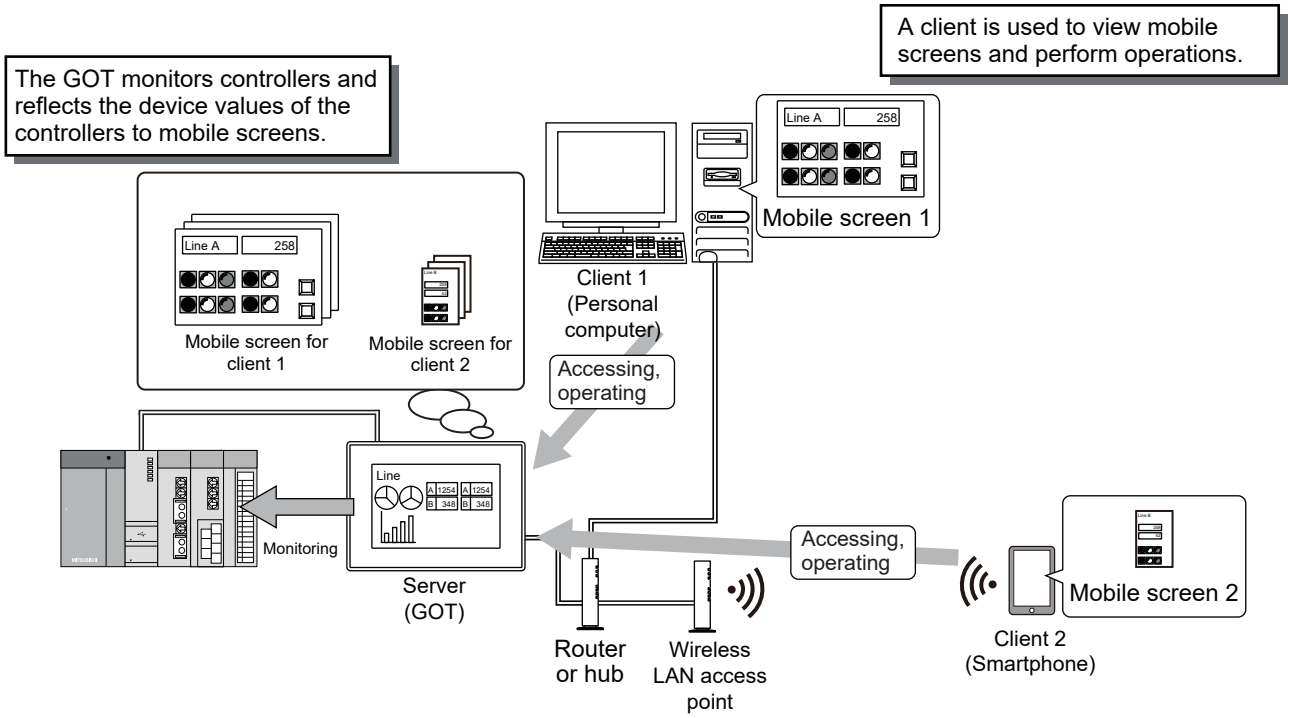
By using the GOT Mobile function, you can monitor a controller through the GOT from an information device, such as a tablet.
In the GOT Mobile function, the GOT operates as a server to provide mobile screens for clients.
Information devices, such as a tablet, use a browser as the GOT Mobile function client to access mobile screens in the server (GOT).



Access to a mobile screen in the server (GOT) from a web browser

After the client accesses a mobile screen, you can perform operations on the mobile screen to monitor a controller through the GOT.

The number of clients that can simultaneously access the server (GOT) differs depending on the model.



Overlap windows and superimpose windows can also be displayed on mobile screens.

On the GOT, base screens are created as [Base Screen] and overlap windows and superimpose windows are created as [Window Screen]. On the mobile application, these screens are created and used as [Mobile Screen].

The window screen is controlled by using a screen switching device.

☞ Page 2822 [Screen Switching/Window]

If an overlap window extends off the mobile screen area, the extended part is hidden (display of an off-screen window).

The overlap window can be displayed off to the right side or to the bottom of the screen.

On a mobile screen, displaying an off-screen overlap window is always enabled.

Displaying an off-screen window can be disabled on the GOT but not on mobile screens.

The following shows the methods of connecting the server (GOT) and clients.

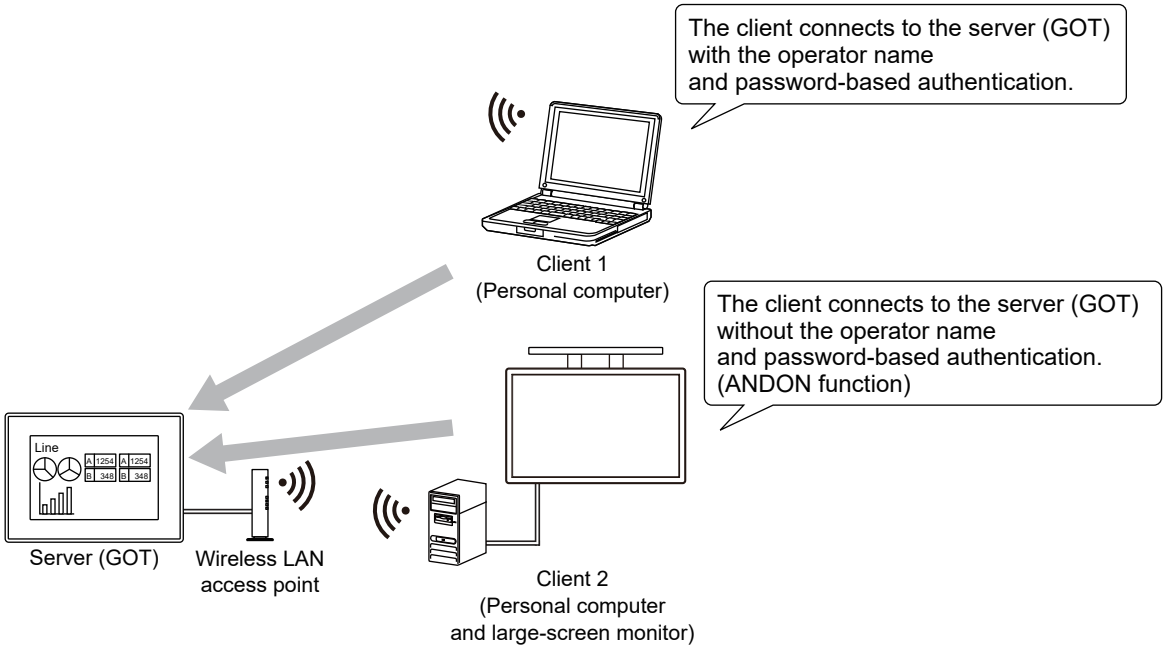
- Connection with the operator name and password-based authentication (The authentication screen appears.)
- Connection without the operator name and password-based authentication—ANDON function (The authentication screen does not appear.)

For the authentication, refer to the following.

☞ Page 2757 Authentication

For the ANDON function, refer to the following.

☞ Page 2812 ANDON function



82.2 Specifications of the GOT Mobile function

GT37 SoftGOT3000

☞ Page 2739 System application (add-on function)
☞ Page 2739 Number of GOT Mobile function settings for one project
☞ Page 2739 License number registration
☞ Page 2740 Operating environment
☞ Page 2742 Usable functions
☞ Page 2753 Mobile screen
☞ Page 2755 GOT Mobile device (VGB and VGD)
☞ Page 2757 Authentication
☞ Page 2759 Encrypted communication
☞ Page 2760 Public folder
☞ Page 2762 File manager
☞ Page 2765 Hard copy function
☞ Page 2765 Client connection using a contactless tag

82.2.1 System application (add-on function)

To use the GOT Mobile function, a system application (add-on function) for [GOT Mobile Setting] is required.
Selecting [Use GOT Mobile function] in the [GOT Mobile Setting] ([Basic Setting]) window automatically incorporates the system application into the package data.
☞ Page 2818 [Basic Setting]

82.2.2 Number of GOT Mobile function settings for one project

One setting can be configured per project.

82.2.3 License number registration

License registration is required to incorporate the GOT with the GOT Mobile function enabled into your product.
For information on how to register the license number, refer to the following.
When the GOT is a server
☞ Page 3686 License registration method
When GT SoftGOT3000 is a server
GT SoftGOT3000 User's Manual
If the license number is not registered, you can try the GOT Mobile function after starting the GOT, until the connection time between the client and the server (GOT) reaches 30 minutes.
During the trial, the mobile screen displays a watermark saying [License unregistration.] and the remaining trail time.
Up to two clients can access the server (GOT) simultaneously.
After 30 minutes, the connection with clients is forcibly disconnected.
The disconnection is performed even while you are operating the client. Therefore, the target controller may exhibit unintended behavior.

82.2.4 Operating environment

☞ Page 2740 Server specifications
☞ Page 2741 Client operating environment

Server specifications

The following shows the server specifications.

Item	GT37	GT SoftGOT3000
Port No.	• HTTPS (SSL) connection port No. 443 (standard), No. 1024 to No. 65535 (user-definable) • HTTP connection port No. 80 (standard), No. 1024 to No. 65535 (user-definable)	• HTTPS (SSL) connection port No. 443 (standard), No. 1024 to No. 65535 (user-definable)*3 • HTTP connection port No. 80 (standard), No. 1024 to No. 65535 (user-definable)*1*2*3
Maximum number of clients connectable simultaneously*4	5	15 per personal computer*5
Http timeout time (Time limit to respond to a request from a browser)	30 seconds	30 seconds
Operating environment of personal computers	—	OS: The following operating systems are compatible with Internet Information Services (IIS) 8.5 or later • Microsoft Windows Server 2019 Standard (64-bit) • Microsoft Windows Server 2016 Standard (64-bit) • Microsoft Windows 11 Enterprise (64-bit) • Microsoft Windows 11 Pro (64-bit) The hardware operating environment, such as CPU, memory, and hard disk space, is the same as that of GT SoftGOT3000. For information of the operating environment of GT SoftGOT3000, refer to the following. 📖GT SoftGOT3000 User's Manual
Other software	—	The following software is required. • Internet Information Services (IIS) 8.5 or later

*1 If firewall settings are configured for port numbers, open the ports as required.
*2 When using port No. 80, display the Internet Information Services (IIS) Manager dialog and click Stop in the Actions panel.
*3 Three consecutive numbers (specified port number and the following two consecutive numbers) are used.
There must be three or more consecutive numbers between the port numbers specified.
Example) When 8080 is specified for the port number, the ports 8081 and 8082 are also used.
*4 Indicates the number of clients (browsers), not the number of information devices, which are connectable to the server simultaneously.
Example) When you use five browsers on a tablet to access the server (GOT), the number of clients being connected is counted as five.
*5 A total of 20 modules are connectable when the Pocket GOT mobile app and GOT Mobile function are used together.

Precautions

A portion of the user area is reserved for the GOT Mobile function, and another portion of the area is reserved for clients according to the setting of [Simultaneous Client Connection].
Consider the available space in the user area, and set [Simultaneous Client Connection].
The GOT reserves 2 MB space for each client.
For the available space in the GOT user area, refer to the following.
☞ Page 81 Drive configuration and capacity of the GOT

Client operating environment

Network environment is required for operation.

Equipment	Item	Operating environment
Smartphone, tablet computer	Supported OS	• Android • iOS
	Recommended browser	Use a browser that supports HTML5, CSS3, JavaScript, and WebSocket Protocol (RFC 6455). • Chrome for Android • Safari • Firefox for Android • Firefox for iOS
Personal computer	Supported OS	• Windows 10 • Windows 11
	Recommended browser	Use a browser that supports HTML5, CSS3, JavaScript, and WebSocket Protocol (RFC 6455). • Google Chrome • Microsoft Edge • Firefox
GOT (except GT SoftGOT3000)	Browser	Use the web browser function of the system application (add-on function).

Precautions

If a client accesses the server (GOT) that has project data containing a large amount of mobile screen data, browsers may abend and mobile screens may not be displayed depending on the specifications of the client.
In such situations, reducing the project data size by deleting unnecessary mobile screens or objects may prevent this from happening.

82.2.5 Usable functions

GT37 SoftGOT3000

☞ Page 2742 Common functions
☞ Page 2748 Utility function
☞ Page 2748 Add-on function
☞ Page 2749 Figures that can be placed
☞ Page 2750 Objects that can be placed

The following shows the functions that can be used on a client.

Common functions

○: Available, ×: Not available

Function	Availability	Remarks
Standard GOT system font	×	The standard font of each client is used.
Optional GOT font	×	
Superimposition of objects	○	—
Base screen display	○	A mobile screen is used as a base screen.
Overlap window display	○	A mobile screen is used as overlap window 1 or 2.
Superimpose window display	○	A mobile screen is used as superimpose window 1 or 2.
Key window display	○	The standard key window for mobile screens is used. For details, refer to the following. ☞ Page 2744 Key window
Screen switching	○	The screen switching setting for mobile screens is used. For details, refer to the following. ☞ Page 2745 Screen switching
Station No. switching	×	The GOT monitoring target cannot be independently switched for each mobile screen. Although the station No. switching can be performed on a client, the change is applied to all the clients.
Buffer memory unit No. switching	×	The GOT monitoring target cannot be independently switched for each mobile screen. Although the buffer memory unit No. switching can be performed on a client, the change is applied to all the clients.
Language switching	○	The language switching setting for mobile screens is used. For details, refer to the following. ☞ Page 2746 Language switching
System information	×	The system information related to the screens and the objects cannot be used in mobile screens. For information on the notification and control of mobile screens, use the client information. For details, refer to the following. ☞ Page 2824 [Client Information]
GOT special register (GS)	×	The GOT special registers related to the screens and the objects cannot be used in mobile screens. For information on the notification and control of mobile screens, use the client information. For details, refer to the following. ☞ Page 2824 [Client Information]
Security authentication	○	For details, refer to the following. ☞ Page 2747 Screen security (level authentication and operator authentication)
Alarm monitoring	○	The results of GOT operations can also be used by the client. However, screens cannot be switched and sound will not be output.
Alarm popup display	○	The alarm popup display setting for mobile screens is used. For details, refer to the following. ☞ Page 2748 Alarm popup display
Trigger action (project)	○	The results of GOT operations can also be used by the client.
Trigger action (screen)	×	—
Time action	○	The results of GOT operations can also be used by the client.
Hard copy function	×	—

Function	Availability	Remarks
Comment	○	—
Figure	○	For details, refer to the following. ☞ Page 2749 Figures that can be placed
Object	○	For details, refer to the following. ☞ Page 2750 Objects that can be placed
GOT internal device	○	The GOT internal devices can be used for clients through the GOT Mobile devices (VGB and VGD). For details, refer to the following. ☞ Page 2755 GOT Mobile device (VGB and VGD) The GOT internal devices (GB and GD) can also be specified for clients without using the GOT Mobile devices (VGB and VGD).
SoftGOT3000 internal device	○	When GT SoftGOT3000 is set as the server (GOT), SoftGOT3000 internal devices (SGB and SGD) can be used. For details, refer to the following. 📖GT SoftGOT3000 User's Manual
Cursor movement	×	—
Operation Log	○	The results of GOT operations can also be used by the client.
Logging	○	
Recipe	○	
Project script	○	
Screen script	×	No screen script is settable for a mobile screen.
Object script	×	No object script is settable for an object on a mobile screen.
Multi-channel connection	×	The GOT Mobile device does not have a function to set a controller using multi-channel connection but can monitor a controller connected using multi-channel connection of the GOT or GT SoftGOT3000.
Vertical display	○	The size of a mobile screen is settable in the screen property.

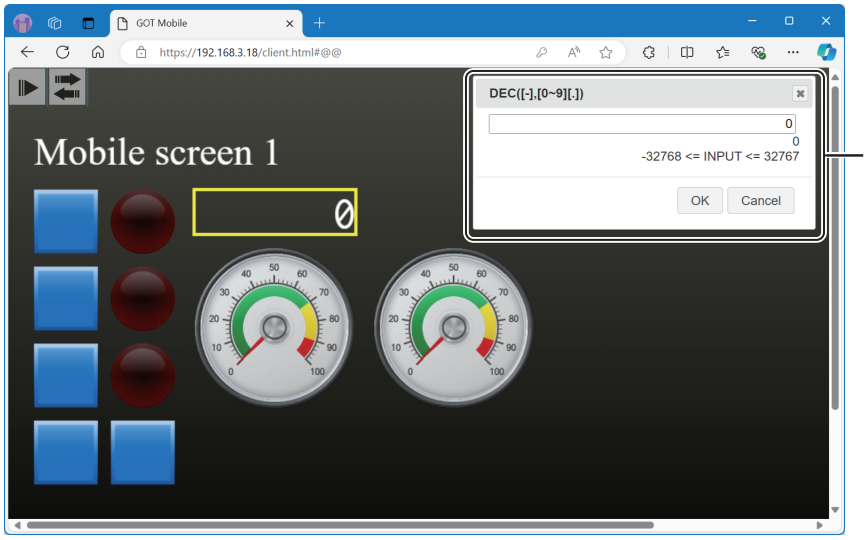
PART 25

■Key window

The standard key window for mobile screens is supported.

User-created windows are not supported.

When using a tablet or smartphone, input characters with the software keyboard.



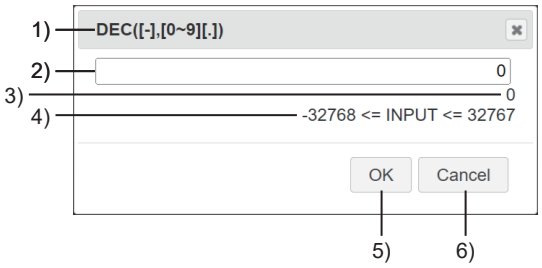
Standard key window for mobile screens

The minimum width of the standard key window is 420 dots.

Note that the actual display size of the standard key window varies with the resolution set on the client or the contents displayed on the key window.

Check the actual size of the key window size in the browser.

The following shows the setting items of the standard key window for mobile screens.



Item		Description
1)	Title bar	Displays the data type being input. • [BIN([0~9],[A~F])]: Binary • [OCT([0~9],[A~F]): Octal • [DEC([-],[0~9][.]): Decimal • [HEX([0~9],[A~F])]: Hexadecimal • [STRING]: Character string
2)	Input value display	Displays the input value.
3)	Current value display	Displays the current value of the device.
4)	Input range display	Displays the valid input range. (This item is not displayed for the text input.) The displayed input range depends on the number of displayed digits which is set for the numerical input. The following shows the meaning of displayed symbols. • [INPUT]: Value to be input • [<]: The left side of the symbol is less than the right side. • [<=]: The left side of the symbols is less than or equal to the right side. • [==]: The left side of the symbols is equal to the right side. • [!=]: The left side of the symbols differs from the right side.
5)	[OK] key (Enter key)	Confirms the input value.
6)	[Cancel] key	Cancels the input value.

■Screen switching

You can switch between mobile screens with the screen switching device dedicated to mobile screens.

This device is set independently of the GOT environmental setting.

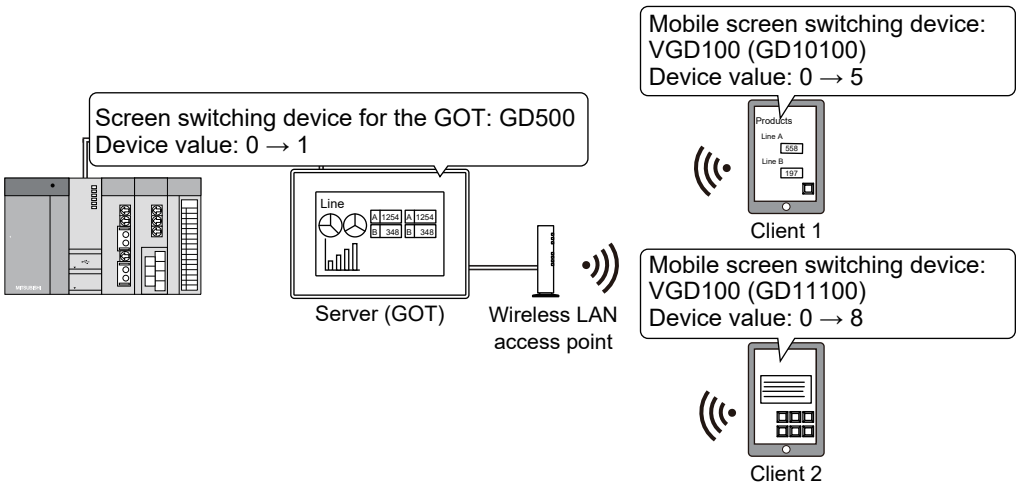
Therefore, when you switch between mobile screens on a client, the screen displayed on the GOT is not switched coincidentally.

To display different mobile screens on each client simultaneously, set a GOT Mobile device (VGB or VGD) for the screen switching device dedicated to mobile screens.

☞ Page 2755 GOT Mobile device (VGB and VGD)

Ex.

When [Points] is set to 1000 and [First Device] is set to GD10000 in the device (VGD) allocation setting



On a mobile screen, when screen switching is performed for the overlap window which is being moved, that overlap window is switched.

For the screen switching setting for mobile screens, refer to the following.

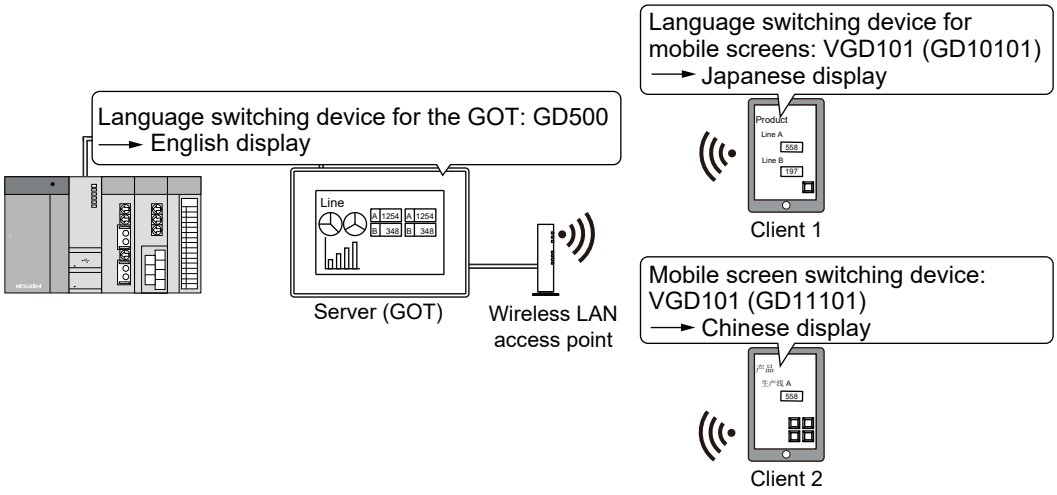
☞ Page 2822 [Screen Switching/Window]

PART 25

■Language switching

You can switch the languages of mobile screens with the language switching device dedicated to mobile screens.
Therefore, when you switch the languages of mobile screens on a client, the display language on the GOT is not switched coincidentally.
To switch between languages on a per-client basis, set a GOT Mobile device (VGB or VGD) for the language switching device dedicated to mobile screens.
☞ Page 2755 GOT Mobile device (VGB and VGD)

Ex.
When [Points] is set to 1000 and [First Device] is set to GD10000 in the device (VGD) allocation setting

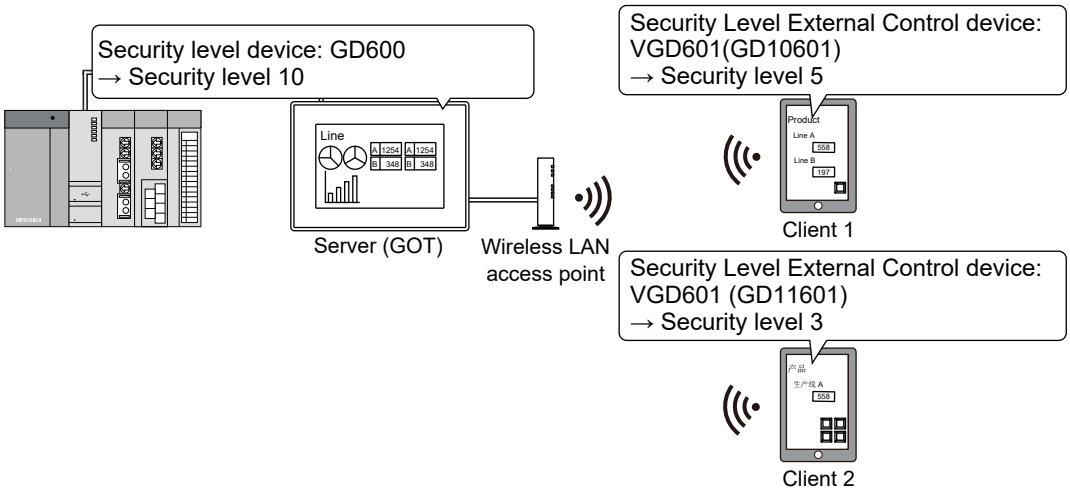


Except for the language switching device dedicated to mobile screens, the language switching settings configured in the [Environmental Setting] window are applied to the clients.
(The language switching settings are common to the GOT and the clients.)
The language switching device dedicated to mobile screens is settable when the language switching is enabled in the [Environmental Setting] window.
For the setting of the language switching device for mobile screens, refer to the following.
☞ Page 2746 Language switching

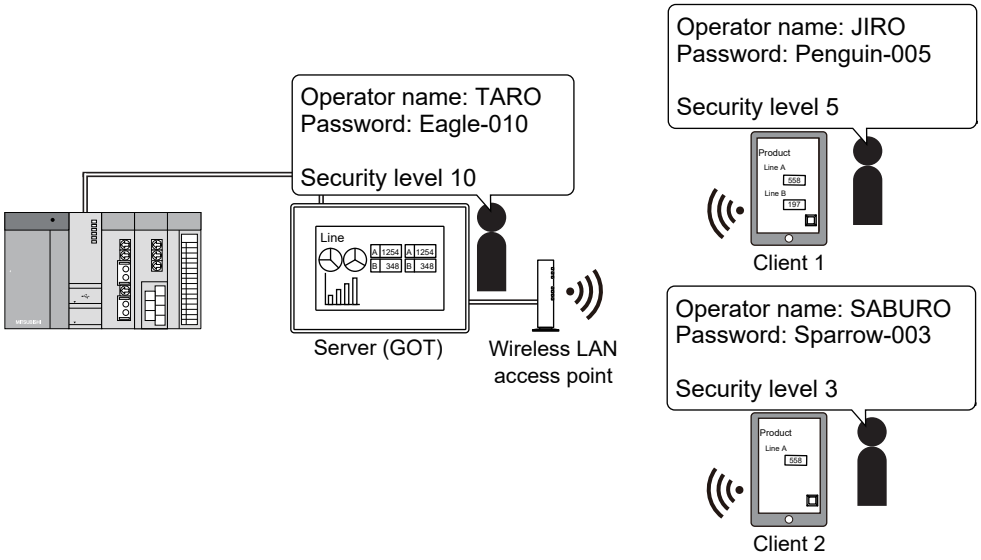
■Screen security (level authentication and operator authentication)

For the screen security on clients, the authentication method set in [Security] in the [Environmental Setting] window is applied.
When the security mode is mode 2, the authentication method is fixed to operator authentication.
(The authentication method is common to the GOT and the clients.)
When the level authentication is used, the GOT and each client can display a screen according to their security levels.
For the clients, the security level device (Security Level External Control device) dedicated to mobile screens is used for the level authentication.
To display a screen with different security levels on each client, set a GOT Mobile device (VGB or VGD) for the Security Level External Control device.
Except for the Security Level External Control device dedicated to mobile screens, the screen security settings configured in [Security] in the [Environmental Setting] windows are applied to the clients.

Ex.
When [Points] is set to 1000 and [First Device] is set to GD10000 in the device (VGD) allocation setting



When the operator authentication is used, you can log in or out from the GOT and each client with different operator accounts.
Configure the operator authentication settings for the GOT and the clients independently.
On the clients, the operator authentication through an external authentication device (such as a barcode reader or RFID controller) is not available.



For the screen security setting for clients, refer to the following.
☞ Page 2825 [Security]
For the screen security setting for the GOT, refer to the following.
☞ Page 3038 Restricting display and operation on the GOT (Screen security)

■Alarm popup display

You can use the alarm popup display dedicated to mobile screens.

The alarm popup display settings are not common to the GOT and the clients.

To use the alarm popup display on both the GOT and the clients, configure the alarm popup settings for the GOT and the mobile screens independently.

For the alarm popup display for mobile screens, some setting items have restrictions as shown below.

• [Basic] tab

[Close up the space between alarm comments] is not settable.

[Touch Mode] can be set to [None] or [Stage Hierarchy Switching] only.

• [Text Style] tab

[Font] is not settable.

When a mobile screen with alarm popup display settings configured is used as an overlap window screen or superimpose window screen, the settings become disabled.

For the alarm popup display settings, refer to the following.

☞ Page 2748 Alarm popup display

For the alarm popup display for mobile screens, an opaque popup window appears in a user-specified background color.

Utility function

The utility function cannot be used on clients.

Add-on function

The following add-on functions are usable.

- Contactless tag function
- Web browser function
- Encrypted communication function

■Contactless tag function

When the contactless tag embedded on the GOT is enabled, you can connect the client to the server (GOT) by placing the client over the contactless tag of the server (GOT).

For information on the contactless tag function, refer to the following.

☞ Page 2765 Client connection using a contactless tag

■Web browser function

When the web browser function is used, the GOT can be used as a client of the GOT Mobile function.

For information on the web browser function, refer to the following.

☞ Page 691 Setting the web browser function ([Web Browser])

■Encrypted communication

Encrypting the communication between the server and the client prevents unauthorized access and data leakage in the communication route.

For information on encrypted communication, refer to the following.

☞ Page 2759 Encrypted communication

Figures that can be placed

The following shows the figures that can be placed on mobile screens.

○: Available, ×: Not available

Figure	Availability	Restrictions
Text	○	• [Font], [Character Set], [Direction], and [KANJI Region], and some text effects are not settable.
Logo text	○	—
Line	○	• The [Lamp Feature] and [Trigger] tabs are not settable.
Line freeform	○	
Rectangle	○	
Polygon	○	
Circle	○	
Arc, sector	○	—
Table	○	—
Scale	○	—
Piping	○	• The [Lamp Feature] and [Trigger] tabs are not settable. • [Layer] is not settable.
Paint	×	—
Image data	○	—
Import DXF data	○	—
Import IGES data	○	—

For the figures on mobile screens, some setting items have restrictions.

• [Lamp Feature] tab and [Trigger] tab

The lamp feature and trigger settings are not available.

Therefore, a figure cannot be displayed in different styles according to the conditions. In this case, use a lamp object instead.

• [Font], [Direction], [KANJI Region], and text effects

Each client displays characters in its standard font.

Therefore, the font, orientation of characters, and KANJI region are not settable with GT Designer3.

To change the font or KANJI region, change the standard font of the client used.

The orientation of characters cannot be changed.

Only [Bold], [Solid], or [Raised] is settable for the text effect.

• [Layer]

For mobile screens, the layer settings are not available.

Figures and objects are always displayed in the order specified with GT Designer3.

Precautions

■Data size of the project containing a BMP image

When the GOT Mobile function is enabled, if a BMP image is used in a mobile screen or is registered as a part, the image is automatically converted to PNG format and saved as a new file.

Even if you do not use the BMP image registered as a part in a mobile screen, the image is converted to PNG format and saved as a new file.

Since the project contains both the BMP image and the PNG image, the project size becomes larger.

Objects that can be placed

The following shows the objects that can be placed on mobile screens.

○: Available, ×: Not available

Object		Availability	Restrictions
Touch switch	Switch	○	• In [Action List] of the [Action] tab, [Station No. Switching], [Key Window Display], and [Sound Output] are not selectable. • In the [Style] tab, [Reverse Switch Area] is not settable. • In the [Text] tab, [Font] and [Character Set] are not settable. • The [Script] tab is not settable. • In the [Extended] tab, [Buzzer], [KANJI Region], and [Layer] are not settable.
	Bit switch	○	• In the [Text] tab, [Font] and [Character Set] are not settable. • In the [Extended] tab, [KANJI Region] and [Layer] are not settable.
	Word switch	○	
	Go To Screen switch	○	• In the [Text] tab, [Font] and [Character Set] are not settable. • In the [Extended] tab, [Buzzer], [KANJI Region], and [Layer] are not settable.
	Change station No. switch	×	—
	Special function switch	○	• In the [SP Function] tab, items other than the following ones are not selectable for [Switch Action]. [Password (Security Level)] [Login/Logout (Operator)] [Password Change (Operator)] • In the [Text] tab, [Font] and [Character Set] are not settable. • In the [Extended] tab, [Buzzer], [KANJI Region], and [Layer] are not settable.
	Key window display switch	×	—
	Key code switch	○	• Becomes active when either of the following is selected for [Key Code Type] in the [Key Code] tab. [Numerical/Text Input] [Alarm Display] [Historical Trend Graph/Historical Data List] • In the [Text] tab, [Font] and [Character Set] are not settable. • In the [Extended] tab, [Buzzer], [KANJI Region], and [Layer] are not settable.
Lamp	Bit lamp	○	• In the [Text] tab, [Font] and [Character Set] are not settable. • In the [Extended] tab, [KANJI Region] and [Layer] are not settable. • The [Script] tab is not settable.
	Word lamp	○	• In the [Text] tab, [Font] and [Character Set] are not settable. • In the [Extended] tab, [KANJI Region] and [Layer] are not settable. • The [Operation] tab is displayed instead of the [Operation/Script] tab. The object script settings are not available.
	Lamp area	×	—
Numerical display		○	• In the [Device] tab, [Font] and [Font Width] are not settable. • In the [Extended] tab, [Display Mode], [KANJI Region], and [Layer] are not settable. • The [Operation] tab is displayed instead of the [Operation/Script] tab. The object script settings are not available.
Numerical input		○	• In the [Device] tab, [Font] and [Font Width] are not settable. • In the [Extended] tab, the following items are not settable. [Display Mode], [Move Destination ID], [Display input value on destination object location], [Input data using Bar Code/RFID], [KANJI Region], and [Layer] • The [Operation] tab is displayed instead of the [Operation/Script] tab. The object script settings are not available. • Use the standard key window for numerical input. Key code switches cannot be used.
Text display		○	• In the [Device/Style] tab, [Font], [Font Width], [Lock aspect ratio], and [Reverse] are not settable. • In the [Extended] tab, [Display Mode], [KANJI Region], and [Layer] are not settable. • The [Operation] tab is displayed instead of the [Operation/Script] tab. The object script settings are not available.
Text input		○	• In the [Device/Style] tab, [Font], [Font Width], [Lock aspect ratio], and [Reverse] are not settable. • In the [Extended] tab, the following items are not settable. [Display Mode], [Move Destination ID], [Display input value on destination object location], [Input data using Bar Code/RFID], [KANJI Region], and [Layer] • The [Operation] tab is displayed instead of the [Operation/Script] tab. The object script settings are not available. • Use the standard key window for numerical input. Key code switches cannot be used.

Object		Availability	Restrictions
Date/Time display		×	—
Comment display	Bit comment	○	• In the [Comment] tab, [Font], [Font Width], [Lock aspect ratio], and [Reverse] are not settable. • In the [Extended] tab, [Display Mode], [KANJI Region], and [Layer] are not settable. • The [Script] tab is not settable.
	Word comment	○	
	Simple comment	○	• [Font], [Font Width], [Lock aspect ratio], and [Reverse] are not settable.
Parts display		×	—
Frame animation		×	—
Historical data list display		○	• In the [Text/Style] tab, [Font], [Font Width], [Lock aspect ratio], and [Display the comments in Windows fonts] are not settable. • In the [Extended] tab, [KANJI Region] and [Layer] are not settable.
Alarm display (user)		○	• [Occurrence Log] cannot be set in the [Display] tab of the alarm display (user). • In the [Text] tab, [Font], [Font Width], [Lock aspect ratio], and [KANJI Region] are not settable. • In the [Style] tab, [Text color on cursor display] is not settable. • In the [Extended] tab, [Layer] is not settable.
Alarm display (system)		○	
Simple alarm display		×	—
System alarm display		○	• [Font], [Font Width], [Lock aspect ratio], and [Layer] are not settable.
Recipe display (record list)		×	—
Line graph		○	• In the [Style] tab, [Font] and [Font Width] are not settable. • In the [Extended] tab, [Layer] is not settable. • The [Operation] tab is displayed instead of the [Operation/Script] tab. The object script settings are not available.
Trend graph		○	
Bar graph		○	
Band graph		○	
Pie graph		○	
Scatter graph		○	• In the [Style] tab, [Font] and [Font Width] are not settable. • In the [Extended] tab, [Store Memory] and [Layer] are not settable. • The [Operation] tab is displayed instead of the [Operation/Script] tab. The object script settings are not available.
Historical trend graph		○	• In the [Style] tab, [Font] and [Font Width] are not settable. • In the [Extended] tab, [Layer] is not settable. • The [Operation] tab is displayed instead of the [Operation/Script] tab. The object script settings are not available.
Graphical meter		○	• In the [Text] tab, [Font], [Character Set], and [Font Width] are not settable. • In the [Scale] tab, [Font Width] is not settable. • In the [Extended] tab, [KANJI Region] and [Layer] are not settable. • The [Operation] tab is displayed instead of the [Operation/Script] tab. The object script settings are not available.
Level		×	—
Panel meter		×	—
Slider		×	—
Document display		×	—
Digital image display		×	—
Script part		×	—
Set overlay screen		○	• In the [Set Overlay Screen] window, only mobile screens are listed in the [Screen Selection] tree. • In the [Number Specification] window, [Screen Type] is fixed to [Mobile Screen].
Window position		○	This is enabled only when a mobile screen is displayed as the base screen. This is disabled when a mobile screen is displayed as an overlap window or superimpose window.
Key window object		×	—
Hyperlink		○	—

For the objects on mobile screens, some setting items have restrictions.

• Object script

No object script is settable for an object on a mobile screen.

Create a mobile screen without object scripts.

• Font and KANJI region

Each client displays characters in its standard font.

Therefore, the font and KANJI region are not settable with GT Designer3.

To change the font or KANJI region, change the standard font of the client used.

• Layers and display mode

For mobile screens, the layer settings are not available.

Therefore, the display mode ([Transparent] or [XOR]) of an object is not settable.

Figures and objects are always displayed in the order specified with GT Designer3.

• Set overlay screen

Only mobile screens can be called.

You cannot call another mobile screen from a called mobile screen.

Precautions

■Forcibly turning off a touch switch if the communication is lost (momentary switch forced off)

If a touch switch is released on a client after the client loses communication with the GOT, the GOT does not recognize the release.

After a specified time (default: 3 seconds) elapses, the GOT forcibly turns off the touch switch.

Use the Time to Force Mobile Momentary Switch OFF device (GS1899) to set the time from when communication is lost until when the GOT forcibly turns off the touch switch.

For details on the Time to Force Mobile Momentary Switch OFF device (GS1899), refer to the following.

☞ Page 3660 Time to Force Mobile Momentary Switch OFF (GS1899)

■Corrective action when a touch switch (bit momentary) does not operate

When the browser is Google Chrome, a touch switch with bit momentary set may not operate.

In such situations, check if the setting for [Touch Events API] is [Automatic] in the browser.

The following shows how to check or change the setting.

• For Google Chrome version earlier than 79

1. Enter "Chrome://flags" in the Google Chrome address bar.
2. Enter "Touch Events API" in the search field [Search flags] at the top of the screen.
3. Check if the setting for [Touch Events API] is [Automatic].

If [Disabled] is set, change the setting to [Automatic].

• For Google Chrome version 79 or later

The setting for [Touch Events API] cannot be checked.

[Automatic] is set for [Touch Events API] when Google Chrome is run from the shortcut created in the following steps.

1. Create a shortcut to Google Chrome.
2. Select [Properties] from the context menu of the shortcut to open the window.
3. Append "--touch-events" to the path in [Target] and click the [OK] button.

■Placing an object in the location of the operation menu bar on a mobile screen

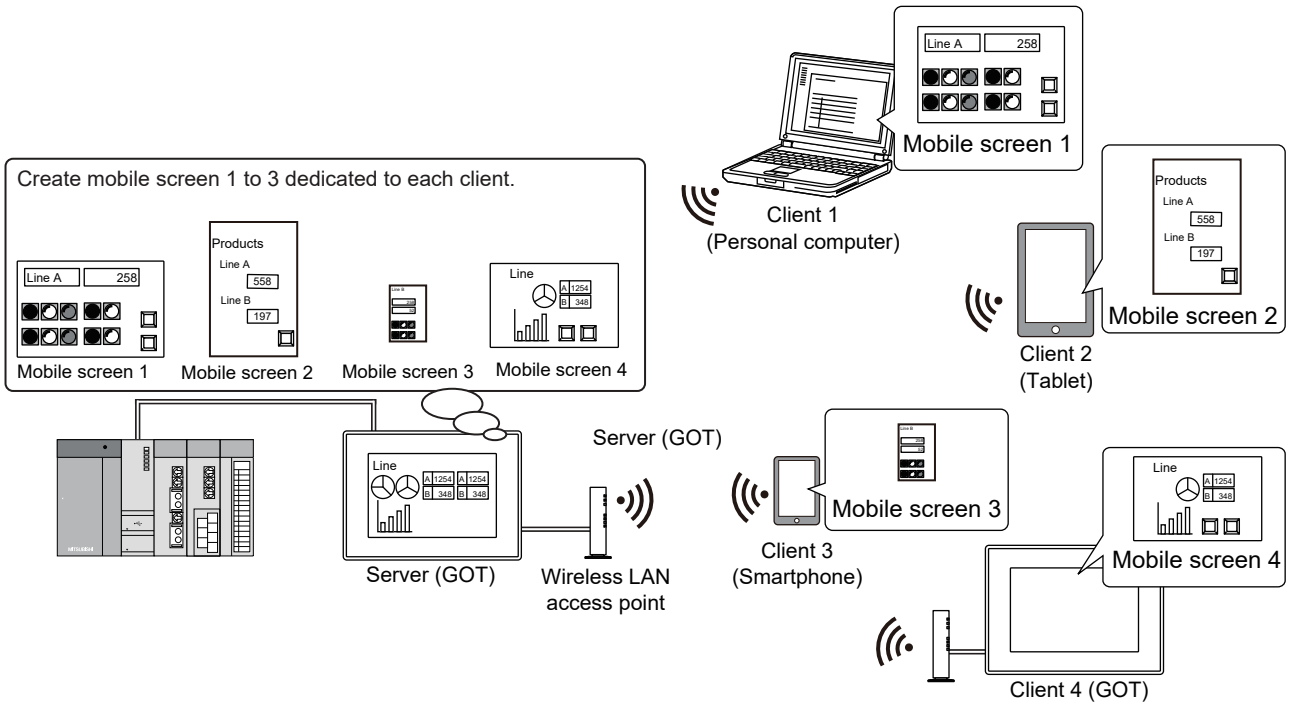
When you place an object, make sure that the object and the operation menu bar do not overlap each other.

Otherwise, the object is hidden under the menu bar and you cannot touch the object.

82.2.6 Mobile screen

The mobile screen is a monitor screen dedicated to clients.

Since the screen size is settable for each mobile screen, you can create mobile screens for each client according to the client display size.



For the functions, figures, and objects available on mobile screens, refer to the following.

☞ Page 2742 Usable functions

Mobile screens are created with GT Designer3, and the mobile screen data is contained in the GOT project.

For information on how to create a mobile screen, refer to the following.

☞ Page 2800 Creating a mobile screen

Created base screens or window screens can be copied to mobile screens.

For details, refer to the following.

☞ Page 2800 Copying a base screen or window screen to a mobile screen

Mobile screen specifications

Item	Specifications
Screen size (width × height) (dots)	16 to 3000 × 2 to 3000
Number of screens registrable	9999
Registrable screen number	0 to 32767
Number of simultaneously displayable screens	5

■Font and KANJI region

Each client displays characters in its standard font. Therefore, the font and KANJI region are not settable with GT Designer3.

To change the font or KANJI region, change the standard font of the client used.

■Layers and display mode

For mobile screens, the layer settings are not available.

Figures and objects are always displayed in the order specified with GT Designer3.

■Displaying the mobile screens in multiple languages

The display language of the mobile screens depends on the client OS.

To display the mobile screens in multiple languages, check that the client OS supports relevant languages.

■Mobile screen size

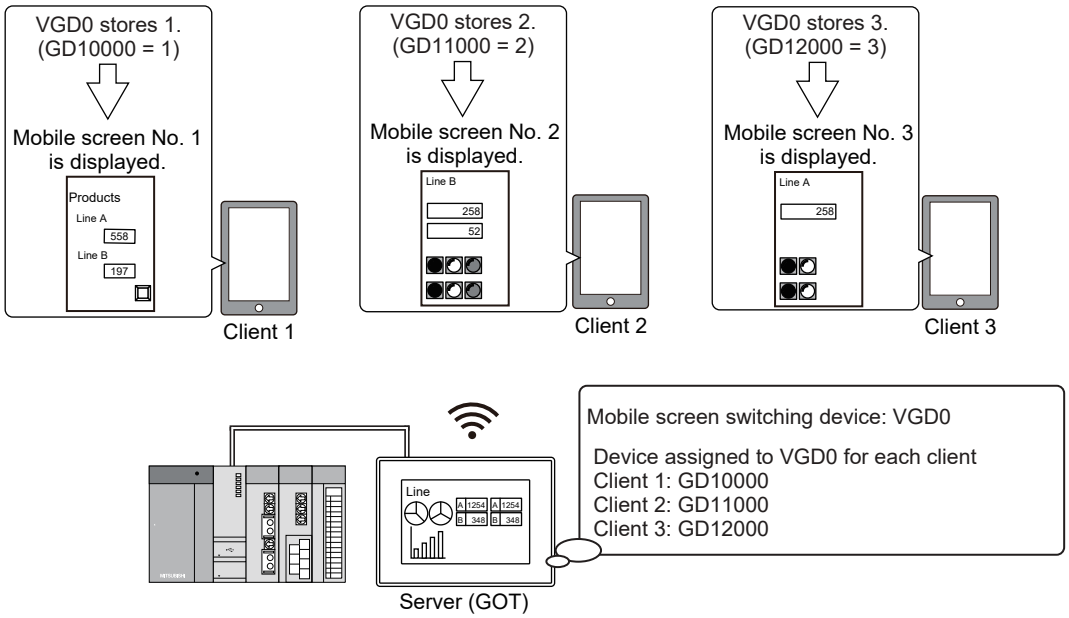
To determine the mobile screen size, consider the screen resolution and OS of the information device, and the browser characteristics.

If you set the mobile screen size the same as the resolution of the information device, a portion of the screen may not be displayed depending on the location of the OS status bar, browser tabs, or other conditions.

82.2.7 GOT Mobile device (VGB and VGD)

The GOT Mobile device (VGB and VGD) is a virtual device usable for a client.
Assign GOT internal devices (GB and GD) to GOT Mobile devices for a client. Thus, the GOT Mobile devices are used as internal devices for the client.

Ex.
When switching screens on multiple clients



Setting range and settable devices

Target device	Setting range of the GOT Mobile device	GOT Mobile device No. representation	Number of the GOT internal devices that can be assigned	GOT internal device that can be assigned
GOT Mobile bit register (VGB)	VGB0 to VGB32767	Decimal	32 to 32768 (in 32-point units)	GB64 to GB65535*1
GOT Mobile data register (VGD)	VGD0 to VGD32767	Decimal	2 to 32768 (in 2-point units)	GD0 to GD65535

*1 Do not assign GB0 to GB63 to the GOT Mobile device because these internal devices (GB0 to GB63) are already assigned for the GOT system.

Precautions

Use the GOT Mobile devices (VGB and VGD) in the following settings only.

- Setting for an object on a mobile screen
- Setting in the [GOT Mobile Setting] window
- Setting in the [Alarm Popup Display(GOT Mobile Setting)] dialog

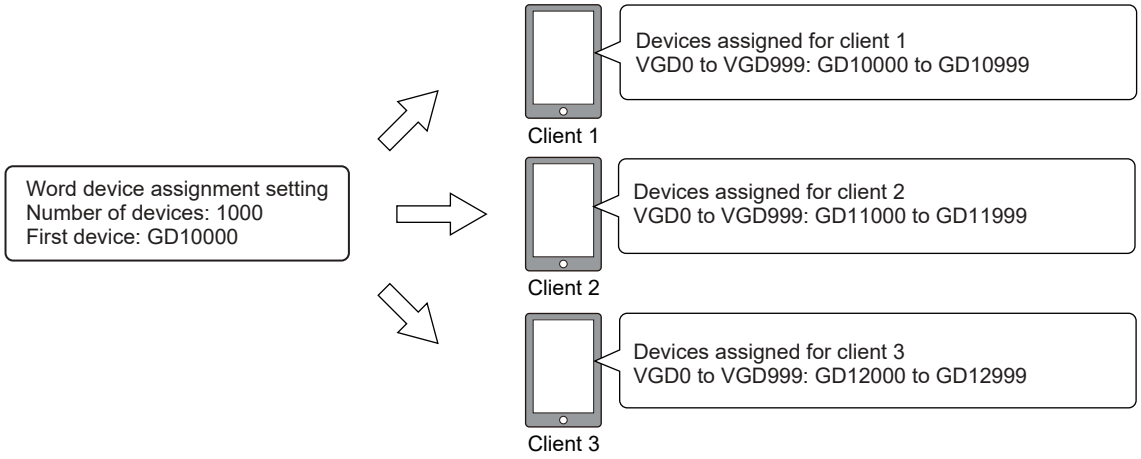
If you set the GOT Mobile devices for objects on screens other than mobile screens and for functions configured in the project, these objects and functions do not operate properly.

How to assign a GOT internal device

Set the number of devices to be assigned, and specify the first device assigned for client 1. Then, the set number of consecutive devices (starting from the specified first device) are automatically assigned to the GOT Mobile devices for each client.

Ex.

Assigning 1000 GOT internal devices (GD) to the GOT Mobile devices (VGD) for client 1, client 2, and client 3



For the GOT Mobile device setting, refer to the following.

☞ Page 2821 [Device Allocation Setting]

Clearing the values of the GOT Mobile devices

If you select [Initialize the devices (VGD, VGB) at the time of client connection] in the [GOT Mobile Setting] window ([Device Allocation Setting]), the values of the GOT Mobile devices assigned to a client are cleared when the client connects to the GOT.

If you deselect the item, the assigned devices retain the values stored in the last session.

☞ Page 2821 [Device Allocation Setting]

Precautions

If you deselect [Initialize the devices (VGD, VGB) at the time of client connection] in the [GOT Mobile Setting] window ([Device Allocation Setting]), the values of the GOT Mobile devices assigned to a client are not cleared automatically when the client starts accessing the GOT.

(The values stored before the access are retained.)

Configure the settings so that the values of the GOT Mobile devices are cleared when a client starts accessing the GOT or becomes disconnected from the GOT.

Note that restarting the GOT clears the values of the GOT Mobile devices that are assigned to each client.

82.2.8 Authentication

The following shows the methods of connecting the GOT and clients.

- Connection with the operator name and password-based authentication (The authentication screen appears.)
- Connection without the operator name and password-based authentication—ANDON function (The authentication screen does not appear.)

For the ANDON function, refer to the following.

☞ Page 2812 ANDON function

For the connection with the operator name and password-based authentication, a target client displays mobile screens upon being authenticated.

The authentication method is selectable between the GOT Mobile exclusive authentication and the operator authentication.

For instruction on the authentication setting, refer to the following.

☞ Page 2819 [Authentication Setting]

GOT Mobile exclusive authentication

This authentication method is dedicated to the GOT Mobile function.

The account dedicated to the GOT Mobile function is used for authentication.

The operator management information is not used.

After the GOT Mobile authentication succeeds, you can log in using the operator authentication or the level authentication.

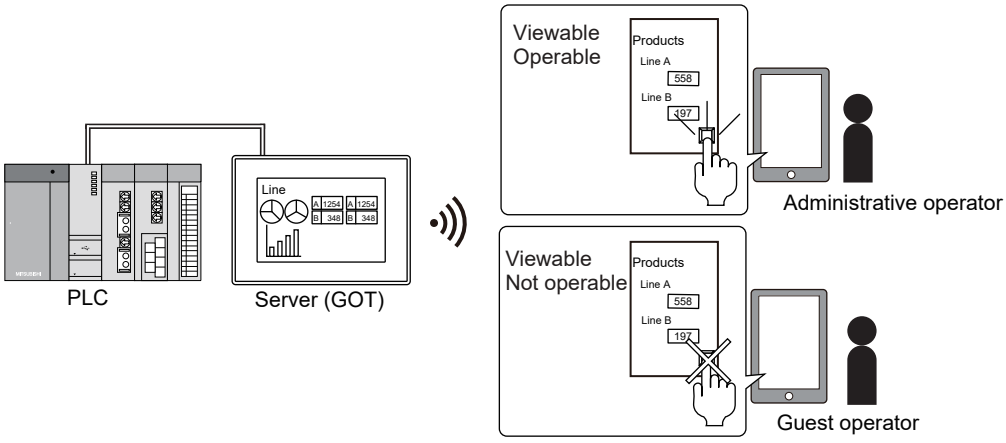
Two types of accounts are used in the GOT Mobile authentication: administrative operator account and guest operator account.

When authenticated with the administrative operator account, the client can obtain the operation right for the GOT network interaction function.

You can view a mobile screen in which the authorization control is enabled, and operate the objects on the mobile screen.

When authenticated with the guest operator account, the client cannot obtain the operation right for the GOT network interaction function.

You can view a mobile screen in which the authorization control is enabled, but cannot operate the objects on the mobile screen.



One administrative operator account and one guest operator account are settable for each project.

For the setting method, refer to the following.

☞ Page 2819 [Authentication Setting]

Operator authentication

This authentication needs an operator account in the operator management information file.
Make sure to preconfigure the operator authentication setting in [Security] in the [Environmental Setting] window.
Otherwise, the authentication method of the GOT Mobile function is fixed to the GOT Mobile exclusive authentication.
After the operator authentication succeeds, you can view mobile screens according to the operator account security level.
The authenticated client can obtain the operation right for the GOT network interaction function, regardless of the operator account security level.
When the security mode is mode 2, authentication with the operator with the corresponding authority is required.
If the operator account is logged out, the GOT automatically disconnects the client.
Even if the operator account is logged out because of the automatic logout time, the client becomes disconnected from the GOT.
The operator switching is not available on a client that is connected to the GOT.
To switch between operators, disconnect the target client from the GOT, and then perform the authentication with another operator account.
For details on the operator authentication, refer to the following.
☞ Page 3038 Restricting display and operation on the GOT (Screen security)
☞ Page 2989 Restricting GOT screen operations and access from external devices (operator authentication (Mode 2))

Authorization control

You can prevent simultaneous operations from multiple clients and the GOT by enabling the authorization control.
Base screens, overlap windows, and superimpose windows for GOT Mobile are the targets for authorization control, which is the same as authorization control of GOT screens.
To control the authorization among clients and the GOT, use the GOT network interaction function in combination.
For details on the GOT network interaction function, refer to the following.
☞ Page 762 Setting the interaction function for equipment on Ethernet ([GOT Network Interaction])
You can check and control the operation right status of each client.
Use the following devices.

■Operational Authority Status Notification device

This device notifies the operation right status of each client.
Specify this device using the GOT Mobile device (VGD) or the word-specified GOT Mobile device (VGB).
☞ Page 2829 [Exclusive Control of Operational Authority]

Bit number	Function	Description
b0	Notifies whether the equipment obtains the operation right.	Turns on when the equipment obtains the operation right.
b1	Notifies whether the authorization control is enabled in the screen being displayed.	Turns on when the authorization control is enabled in the screen being displayed.
b2 to b15	-	Use prohibited

■Operational Authority Status Control device

This device controls the operation right among the clients.
Specify this device using the GOT Mobile device (VGD) or the word-specified GOT Mobile device (VGB).
☞ Page 2829 [Exclusive Control of Operational Authority]

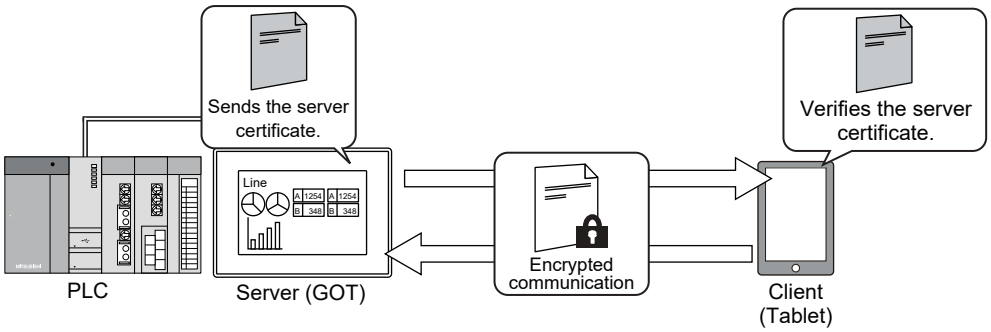
Bit number	Function	Description
b0	Disables the automatic acquisition of the operation right.	When this bit turns on, the automatic acquisition of the operation right becomes disabled. On unauthorized equipment, even if you switch a screen to another screen in which the authorization control is enabled, the equipment cannot automatically obtain the operation right.
b1 to b15	-	Use prohibited

82.2.9 Encrypted communication

Encrypting the communication between the server and the client prevents unauthorized access and data leakage in the communication route.

For details on encrypted communication, refer to the following.

☞ Page 3069 Encrypting communication data (Encrypted communication function)



The procedure to enable encrypted communication varies with the GOT model.

☞ Page 2771 Settings for encrypted communication (except GT SoftGOT3000)
☞ Page 2780 Settings for encrypted communication (GT SoftGOT3000)

82.2.10 Public folder

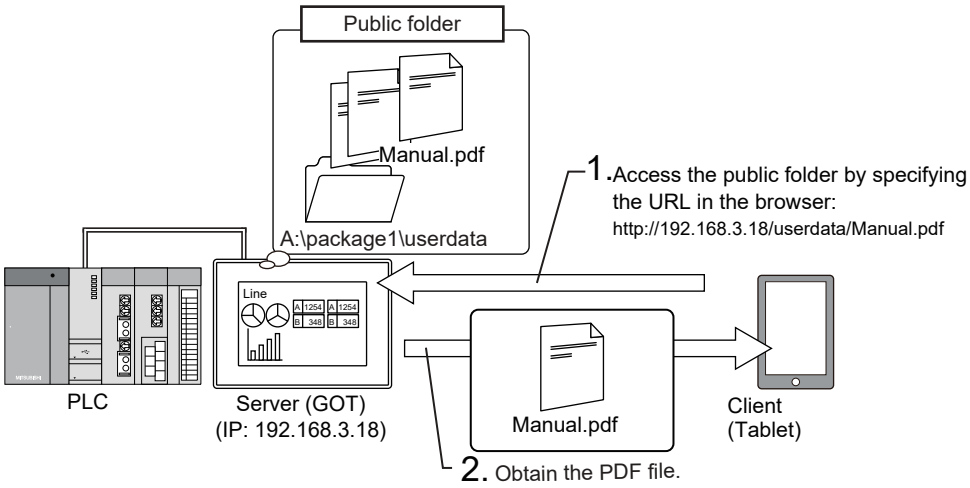
The server (GOT) uses the public folder to provide files for clients.

To access a file in the public folder on the server (GOT), specify the URL of the file in your browser.

No authentication is performed to access the public folder.

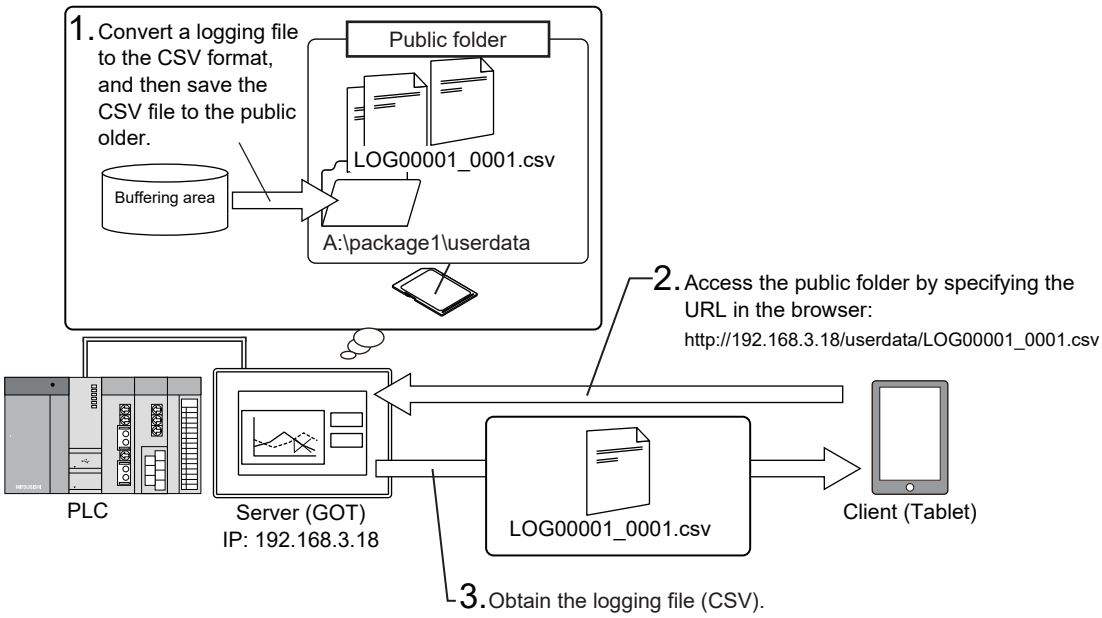
Ex.

Accessing a manual PDF file in the public folder from a client



Ex.

Saving a logging file to the public folder and accessing the file from a client



Enabling the public folder

To allow clients to access the public folder, select [Allow external access to GOT public folder] in [Basic Setting] in the [GOT Mobile Setting] window.

☞ Page 2818 [Basic Setting]

Creating the public folder

The public folder is created by the user.

Under the package folder of the GOT, create the public folder named "userdata".

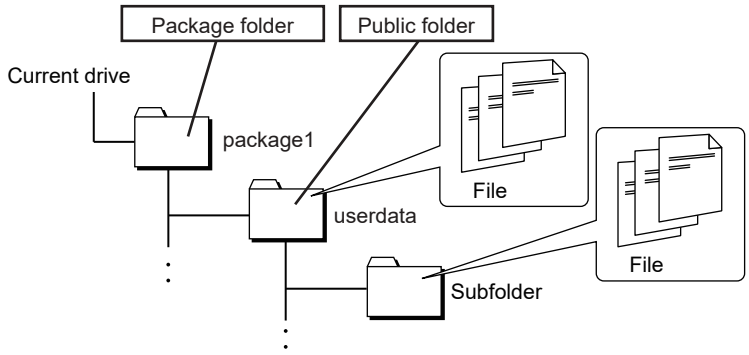
The package folder is in the current drive.

For details on the current drive, refer to the following.

☞ Page 81 Drive configuration and capacity of the GOT

If a sub folder is created under the public folder, files in the sub folder are also accessible.

Create sub folders when necessary.



Precautions

Each file in the public folder is accessible without authentication by specifying the URL of the file in the browser.

Once equipment is connected to the GOT by Ethernet, anyone can obtain the files in the public folder. Therefore, do not store your important data in the public folder.

Accessing a file in the public folder from a client

To access a file in the public folder, enter the URL of the file in the address bar of the browser in the following format.

- http://GOT IP address/userdata/sub folder name/file name

Enter the sub folder name only if a sub folder has been created.

To encrypt communications, start with "https://".

When you place a hyperlink object on a mobile screen and specify the URL of a file in the public folder in the object setting, touch the object to access the file.

For details on the hyperlink object, refer to the following.

☞ Page 1896 Placing a hyperlink on a mobile screen

Ex.

Input when encrypted communication is enabled

https://192.168.3.18/userdata/subfolder1/AAM00001.csv

82.2.11 File manager

Displays the file manager screen where you can view the folders and files in the public folder, or perform manipulations on them such as copying.

Item	Description
Viewing	The folders and files in the public folder are viewable.
Manipulations*1	The following manipulations are supported. • Copy • Cut (GT SoftGOT3000 does not support this manipulation on folders.) • Paste • Rename • New folder • Delete (GT SoftGOT3000 does not support this manipulation on folders.) Folders and files cannot be moved between the public folder and the other folders.

*1 When the GOT security mode is mode 2, files cannot be manipulated.

For the public folder, refer to the following.

☞ Page 2760 Public folder

When the security mode is mode 1, turn on GS1896.b1 to manipulate the folders and files in the public folder.

To limit users to perform the manipulations, specify a security level with GS1892.

When a security level (0 to 15) is specified with GS1892, the users with the specified security level and higher are allowed to perform the manipulations.

☞ Page 3581 GOT special register (GS)

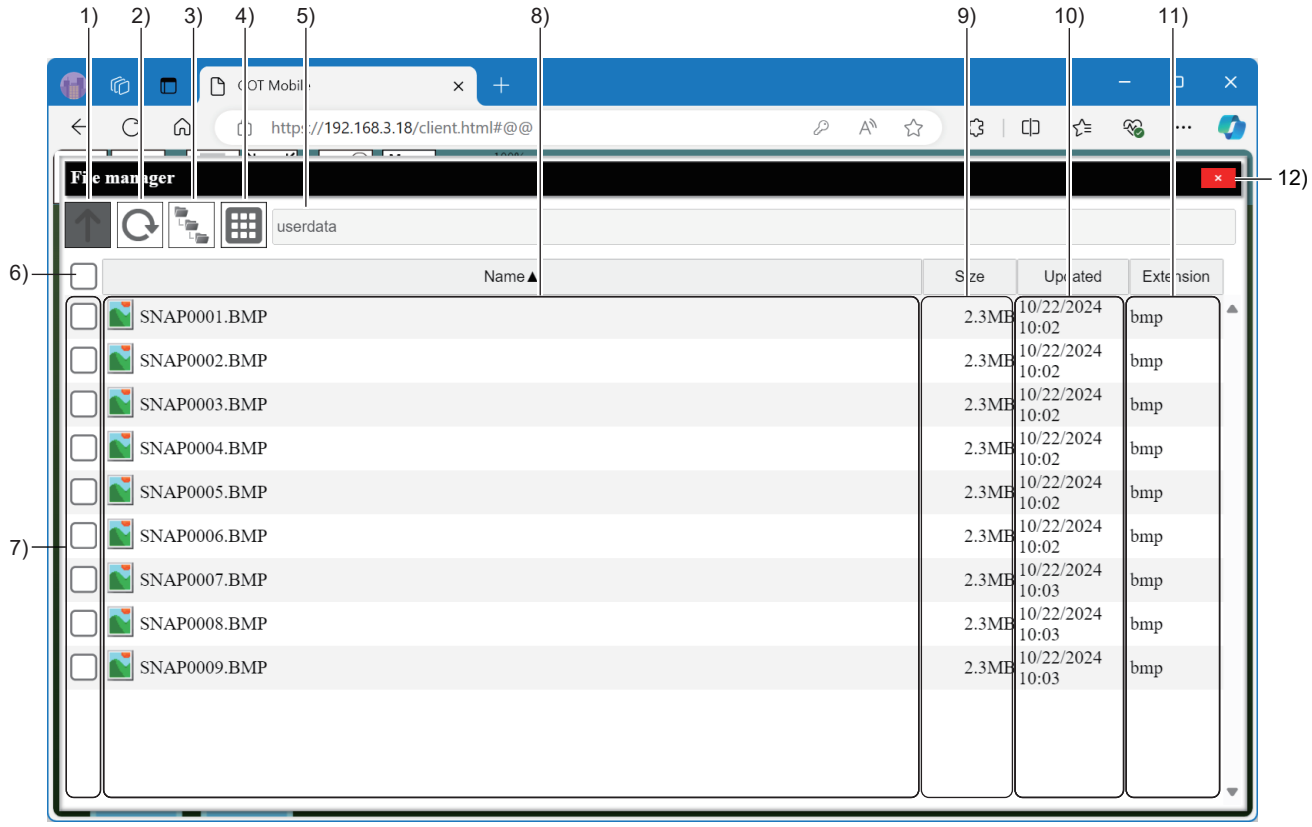
File manager screen

To display the file manager screen, touch the extended function button on the operation menu bar on the mobile screen, and select [File manager] from the displayed menu.

☞ Page 2809 Operation menu bar on the mobile screen

The mobile screen is not operable while the file manager screen is being displayed.

Touch a row to open the corresponding folder or file.



Item			Description
1)	Return button		Moves to the parent folder.
2)	Update button		Updates the contents of the file manager screen.
3)	Directory button		Displays the directory tree to the open folder. Touch the folder to move to in the tree structure.
4)	Manipulation buttons	[Copy]	Displays the menu for manipulating the folders and files listed. Copies the selected folder or file.
		[Cut]	GT SoftGOT3000 does not support this manipulation on folders. Cuts the selected folder or file.
		[Paste]	Pastes the copied or cut folder or file in the open folder.
		[Rename]	Renames the selected folder or file. For restrictions on the folder name and file name, refer to the following. ☞ Page 84 Restrictions for folder names and file names used in GOT
		[New folder]	Creates a folder.
		[Delete]	GT SoftGOT3000 does not support this manipulation on folders. Deletes the selected folder or file. If you delete a folder, the files in the folder will also be deleted even though they are in use.
5)	Address bar		Displays the path to the open folder.
6)	Select all checkbox		Selects all folders and files.
7)	Select checkbox		Selects a folder or file to be manipulated.
8)	[Name]		Displays the folder and file names.
9)	[Size]		Displays the size of files.
10)	[Updated]		Displays the updated date and time of folders and files.
11)	[Extension]		Displays the filename extensions.
12)	Close button		Closes the file manager screen.

Precautions

When the file manager is used for multiple tabs in the windows of the same browser, an error occurs.
Do not use the file manager for multiple tabs in the windows of the same browser.
You cannot move to the destination folder with the Return button in the file manager screen if you manipulate an open folder or file or its parent folders on the GOT.
In such a case, use the Directory button to display the directory tree, and select the folder to move to.

82.2.12 Hard copy function

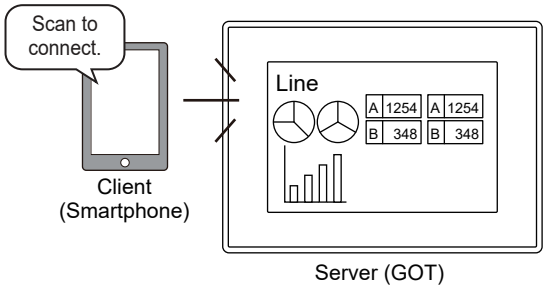
The hard copy function captures the current mobile screen in PNG format and outputs it to a new tab in the browser.
To execute the hard copy function, touch the extended function button on the operation menu bar on the mobile screen, and select [Hard Copy] from the displayed menu.
☞ Page 2809 Operation menu bar on the mobile screen
The image is displayed in full size (100%) that is set on GT Designer3.
Save the displayed image as necessary.
The following items are not captured in the screenshot by the hard copy function.

- Mouse pointer
- Operation menu bar on the mobile screen
- Authorization popup display
- Alarm popup display
- Key window
- Dialog

82.2.13 Client connection using a contactless tag

GT37 SoftGOT3000

When the contactless tag embedded in the server (GOT) is enabled, you can connect the client to the server (GOT) by placing the client over the contactless tag of the server (GOT).
This eliminates the need of opening a browser window to directly enter the URL or specify the IP address of the GOT directly.



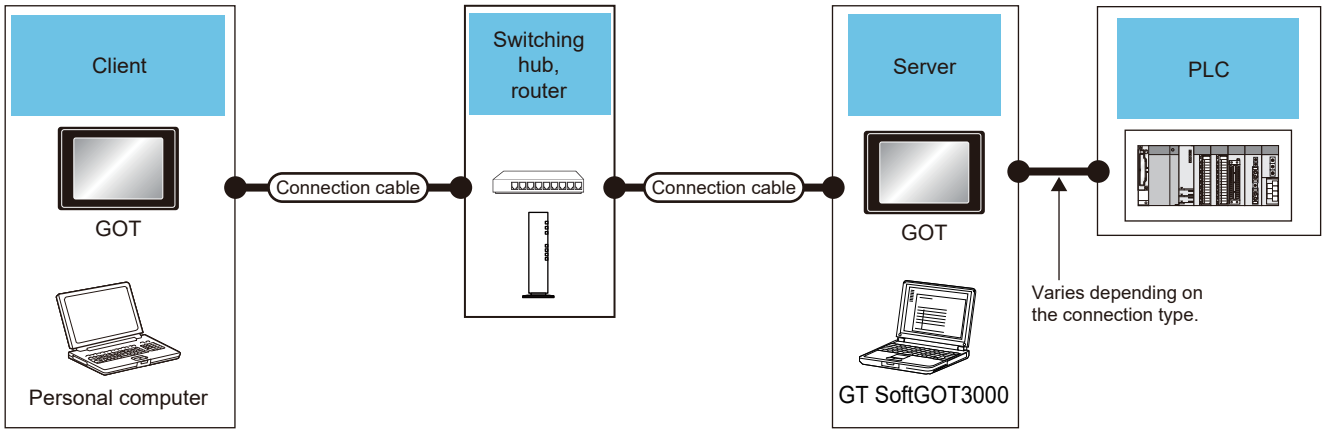
To connect the client to the server (GOT) using a contactless tag, you must make advance preparations such as connecting the client and a wireless LAN access point.
For information on the setting to enable a contactless tag, refer to the following.
☞ Page 667 Configuring the settings for the GOT contactless tag ([Contactless Tag])

82.3 System configuration of the GOT Mobile function

The following shows the system configuration of the GOT Mobile function.

☞ Page 2766 System configuration using cables
☞ Page 2768 System configuration via wireless LAN

System configuration using cables



Client (GOT, personal computer)	Connection cable, Switching hub, router	Server (GOT, GT SoftGOT3000)		PLC
		Interface	GOT model	
GT37, personal computer	• Cable Shielded twisted pair cable • Switching hub, router For information on connectable switching hubs and routers, refer to the following. ☞ Page 2766 Connection cable, connector, hub	Built-in Ethernet interface of the GOT	GT37 SoftGOT3000	For information on the system configuration between the GOT and the PLC, refer to the following. GOT3000 Series User's Manual (Connection)
		Ethernet interface of personal computer	GT37 SoftGOT3000	

■Connection cable, connector, hub

Use a connection cable that meets the following standards.

Standard	Category
100BASE-TX	Shielded twisted pair cable (STP): Category 5 and 5e
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

A straight cable is usable.

When the GOT is directly connected to the personal computer via Ethernet cable, a cross cable is applicable.

The destination device connected with the twisted pair cable varies with the configuration of the Ethernet network system used.

Connect the cable to the Ethernet module, hub, or other system equipment corresponding to the applicable Ethernet network system.

Use cables, connectors, and hubs that meet the IEEE802.3 100BASE-TX/1000BASE-T standards.

■Maximum segment length

The maximum segment length (length between a hub and a node) is 100 m.

The maximum length depends on the Ethernet equipment used.

The following shows the number of connectable hubs when a repeater hub is used.

- 100BASE-TX: Up to 2 cascade-connected hubs (within 205 m)
- 1000BASE-T: The number differs depending on the hub to be used.

For the cascade connection between the switching hubs, there is no theoretical limit to the number of cascades.

For the limit, contact the switching hub manufacturer.

Precautions

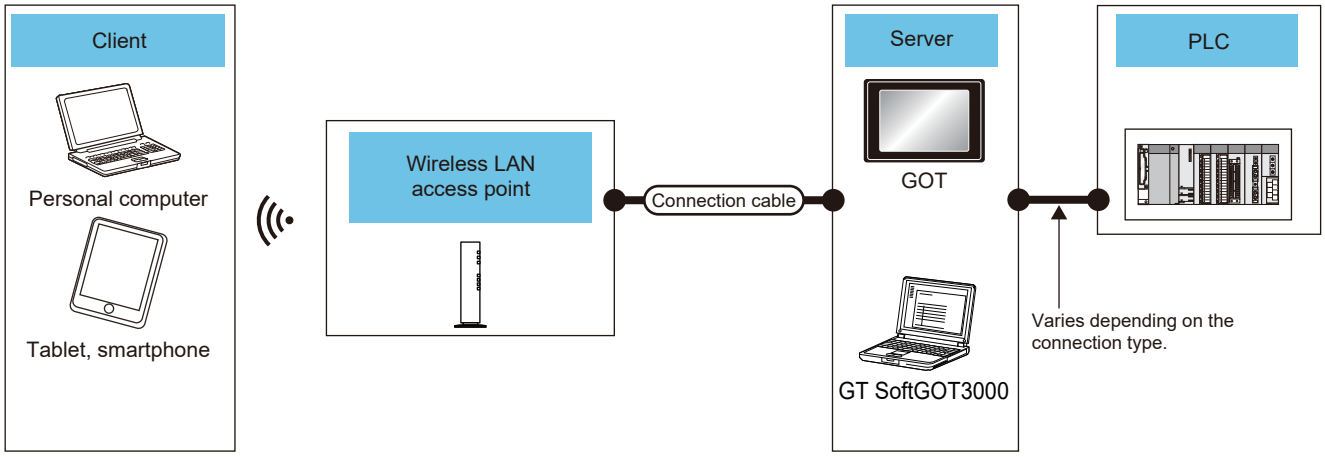
When multiple network devices (including GOTs) are connected in the same segment, the network load increases and the transmission speed between the GOT and PLC may be reduced.

The following actions may improve the communication performance:

- Use a switching hub compatible with 1000BASE-T (1 Gbps) or more.
- Reduce the number of devices monitored by the GOT.

PART 25

System configuration via wireless LAN



Client (Personal computer, tablet, or smartphone)	Wireless LAN access point	Server (GOT, GT SoftGOT3000)		PLC
		Interface	GOT model	
Personal computer, tablet, or smartphone	For information on the connectable wireless LAN access points and system devices, refer to the following Technical Bulletin.*1 📖List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)	Built-in Ethernet interface of the GOT	GT37 SoftGOT3000	For information on the system configuration between the GOT and the PLC, refer to the following. 📖GOT3000 Series User's Manual (Connection)
		Ethernet interface of personal computer	GT37 SoftGOT3000	

*1 The usable wireless LAN access point varies with the personal computer used.

82.4 Settings and connection method of the GOT Mobile function

GT37 SoftGOT3000

☞ Page 2770 Setting GT37 as a server
☞ Page 2778 Setting GT SoftGOT3000 as a server
☞ Page 2800 Creating a mobile screen
☞ Page 2802 Settings on the client
☞ Page 2802 Connecting the client with the server (GOT)
☞ Page 2809 Operations on the mobile screen

This section describes the settings required to use the GOT Mobile function and the method for connecting the client with the server (GOT).

The setting procedure for using the Mobile function differs depending on the model.

Item		Description	
		When the server is GT37	When the server is GT SoftGOT3000
Settings in GT Designer3	GOT Mobile function setting	☞ Page 2770 Setting GT37 as a server	☞ Page 2778 Setting GT SoftGOT3000 as a server
	Creating the mobile screen		
Settings on the client		☞ Page 2802 Settings on the client	
Connecting the client with the server (GOT)		☞ Page 2802 Connecting the client with the server (GOT)	

PART 25

82.4.1 Setting GT37 as a server

1. Set the GOT Ethernet interface.

☞ Page 713 Setting the GOT Ethernet interface ([GOT Ethernet Setting])

2. Configure the GOT Mobile function setting.

Select [Common] → [GOT Mobile Setting] from the menu to display the [GOT Mobile Setting] window ([Basic Setting]), then select [Use GOT Mobile function].

For information on the GOT Mobile function setting, refer to the following.

☞ Page 2817 [GOT Mobile Setting] window

3. Create a mobile screen.

☞ Page 2800 Creating a mobile screen

4. To encrypt the communication between the GOT and the client, enable encrypted communication referring to the following.

☞ Page 2771 Settings for encrypted communication (except GT SoftGOT3000)

5. If you have enabled external access to the GOT public folder, create the public folder under the package folder.

Create the package folder in the data storage to be installed in the current drive of the GOT.

Store the public folder (folder name: userdata) in the package folder.

☞ Page 2760 Public folder

After the public folder is created, install the data storage to the GOT.

6. To use the file manager, refer to the following.

☞ Page 2762 File manager

7. To connect the GOT and the client using a contactless tag, enable automatic connection with a contactless tag in the [GOT Setup] window ([Contactless Tag]).

☞ Page 667 Configuring the settings for the GOT contactless tag ([Contactless Tag])

For information on the client connection with a contactless tag, refer to the following.

☞ Page 2765 Client connection using a contactless tag

8. To connect the GOT and clients without the operator name and password-based authentication, configure the setting in the [GOT Mobile Setting] window ([ANDON Setting]).

☞ Page 2817 [GOT Mobile Setting] window

For the ANDON function, refer to the following.

☞ Page 2812 ANDON function

9. Connect the personal computer to the GOT, and write the project to the GOT.

☞ Page 408 Transferring data to the GOT

10. Register the license number to the GOT.

For information on how to register the license number, refer to the following.

☞ Page 3686 License registration method

11. Connect the client with the GOT (server).

☞ Page 2802 Connecting the client with the server (GOT)

Settings for encrypted communication (except GT SoftGOT3000)

For encrypted communications, the server certificate must be updated on the server (GOT) and imported on the client.

The following shows the required settings.

• Mandatory settings

Setting	Description	Target device
1. Enabling encrypted communication	☞ Page 2771 GOT Mobile function setting (GT Designer3)	Server (GOT)
2. Setting the server certificate information and updating the server certificate	☞ Page 2771 Setting the server certificate information and updating the server certificate (GT Designer3, server (GOT))	
3. Importing the server certificate	☞ Page 2771 Importing the server certificate (client)	Client

• Optional settings (if client authentication is used)

Setting	Description	Target device
1. Enabling client authentication	☞ Page 2771 GOT Mobile function setting (GT Designer3)	Server (GOT)
2. Creating the client certificate	☞ Page 2775 Creating and importing the client certificate (client, server (GOT))	Client
3. Importing the client certificate		Server (GOT)

■GOT Mobile function setting (GT Designer3)

Set the communication method for the GOT Mobile function to HTTPS (SSL).

In GT Designer3, select [Common] → [GOT Mobile Setting] to display the [GOT Mobile Setting] window ([Basic Setting]).

Then select [HTTPS(SSL)] for [Communication Method].

☞ Page 2818 [Basic Setting]

Select [Perform authentication with client certificates] to enable client authentication.

When this item is selected, create a client certificate on the client terminal and import it to the server (GOT).

☞ Page 2775 Creating and importing the client certificate (client, server (GOT))

■Setting the server certificate information and updating the server certificate (GT Designer3, server (GOT))

After setting the certificate information in [Information Protection Function] of GT Designer3, write the package data to the GOT.

Then, update the server certificate in the GOT utility. For details on the operations, refer to the following.

☞ Page 3076 Updating the server certificate with the GOT (except GT SoftGOT3000)

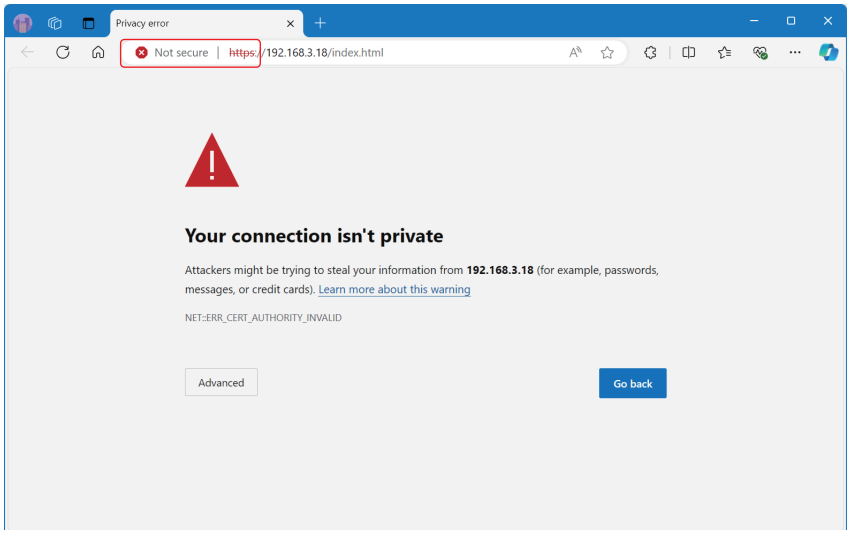
■Importing the server certificate (client)

Import the server certificate of the server (GOT) to the client.

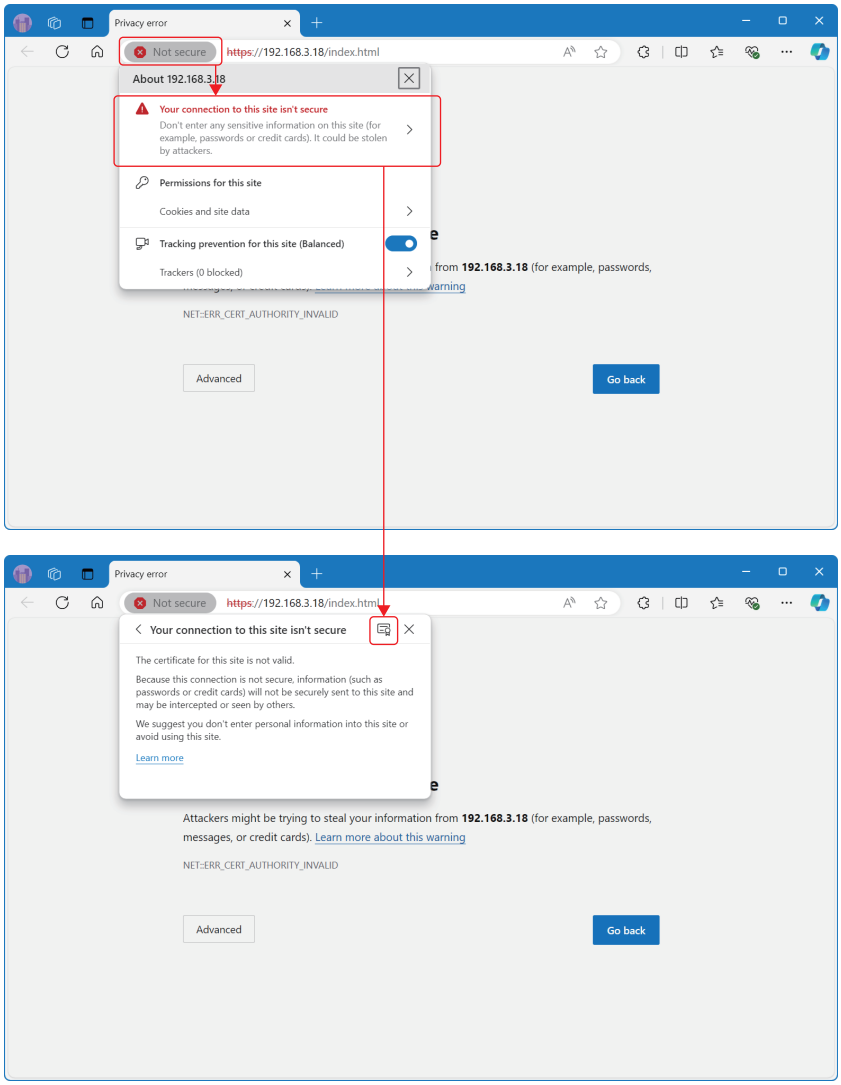
The following shows the importing procedures, using Microsoft Edge as an example.

1. Open the client's web browser and enter the URL of the access destination GOT to display the following screen.

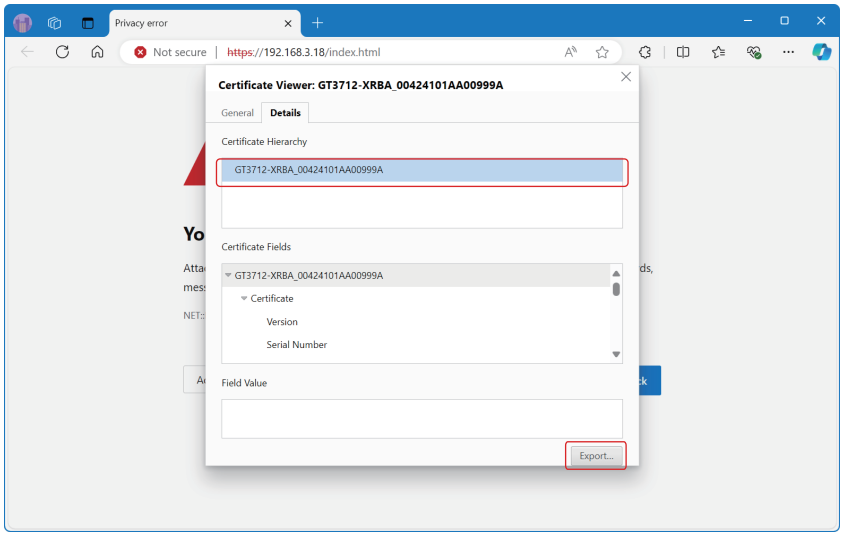
The communication is not protected because the server certificate has not been imported into the client.



2. Follow the steps below.



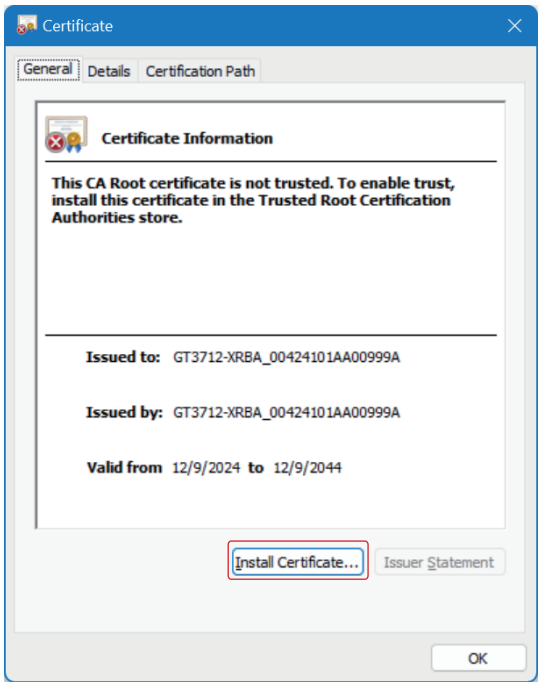
3. Select the server certificate in the [Details] tab of the displayed screen, and click the [Export] button.



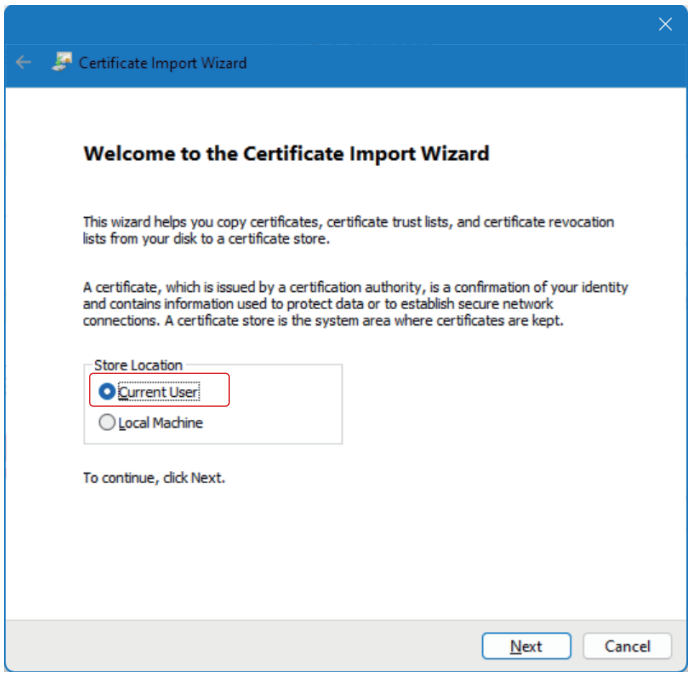
4. Save the server certificate when the [Save As] dialog appears.

5. Double-click the saved server certificate file.

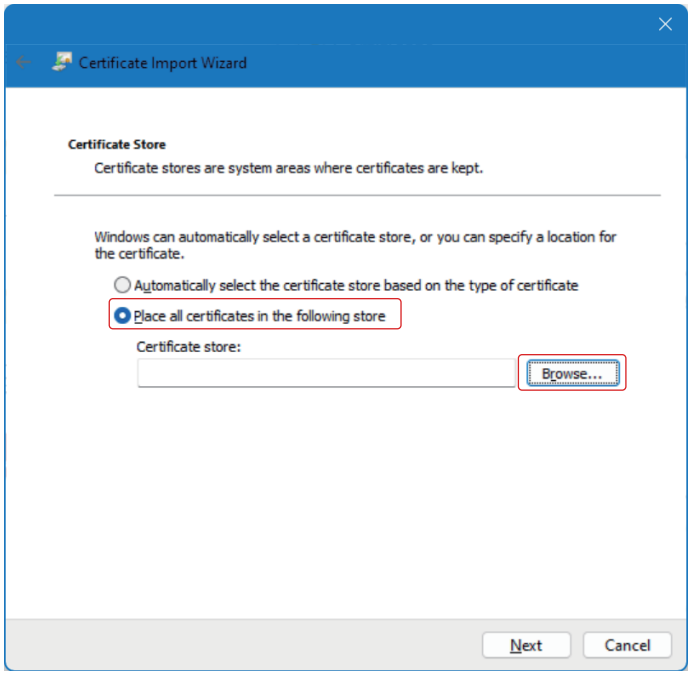
6. On the displayed screen, click the [Install Certificate] button.



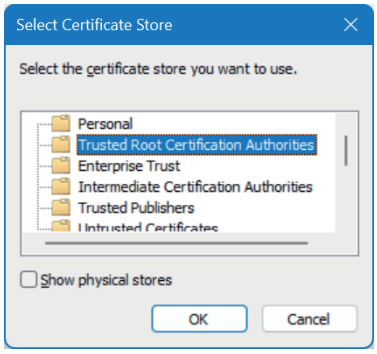
7. Set as follows on the displayed screen, then click the [Next] button.



8. Set as follows on the displayed screen, then click the [Browse] button.



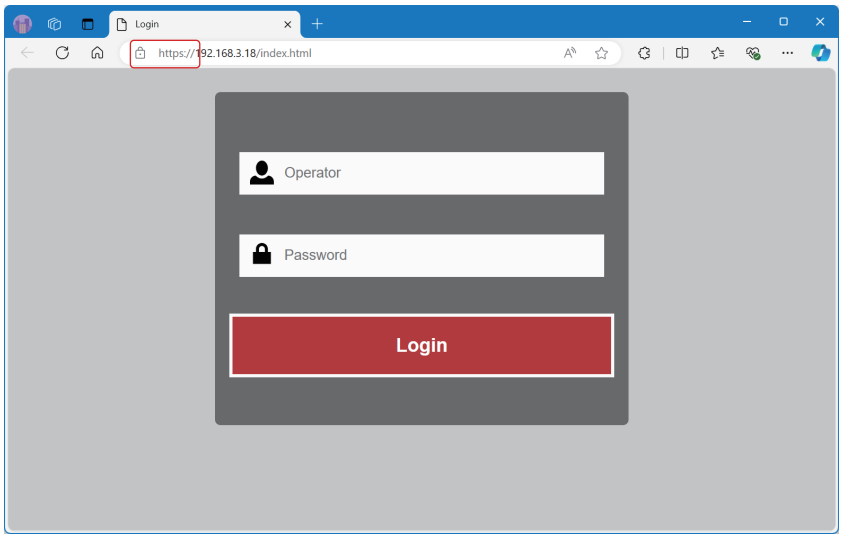
9. Set as follows on the displayed screen, then click the [OK] button.



10. Once you click the [Next] button on the displayed screen, the certificate will be imported.

11. Open the client's web browser and enter the URL of the access destination GOT.

The communication will then be protected.



■Creating and importing the client certificate (client, server (GOT))

The setting is required only when [Perform authentication with client certificates] is selected in [Basic Setting] in the [GOT Mobile Setting] window in GT Designer3.

After creating a client certificate on the client terminal, import it to the server (GOT) using the utility.

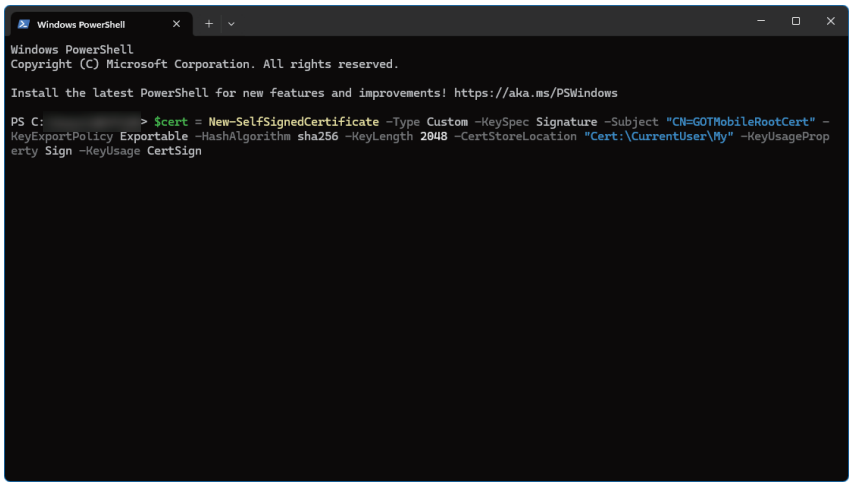
1. Create a self-signed certificate.

From the Windows start menu, select [All] → [Windows Tools], and double-click [Windows PowerShell] in the displayed [Windows Tools].

2. Execute the following command in Windows PowerShell.

Change "####" to a specific name.

$cert = New-SelfSignedCertificate -Type Custom -KeySpec Signature -Subject "CN=####" -KeyExportPolicy Exportable -HashAlgorithm sha256 -KeyLength 2048 -CertStoreLocation "Cert:\CurrentUser\My" -KeyUsageProperty Sign -KeyUsage CertSign

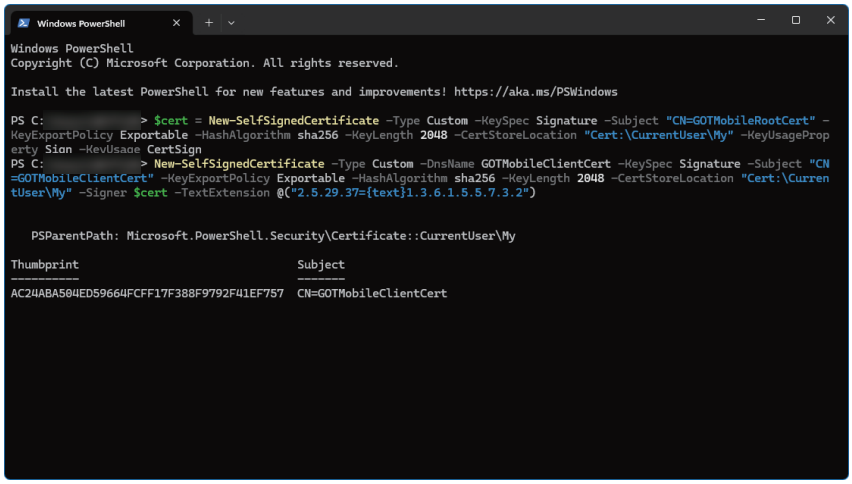


The created self-signed root certificate is placed in the personal certificate store of the user who executes the command.

3. Next, create a client certificate signed by the root certificate.

Execute the following command in Windows PowerShell.

New-SelfSignedCertificate -Type Custom -DnsName #### -KeySpec Signature -Subject "CN=####" -KeyExportPolicy Exportable -HashAlgorithm sha256 -KeyLength 2048 -CertStoreLocation "Cert:\CurrentUser\My" -Signer $cert -TextExtension @("2.5.29.37={text}1.3.6.1.5.5.7.3.2")



The created certificate is also placed in the personal certificate store of the user who executes the command, as well as the self-signed root certificate.

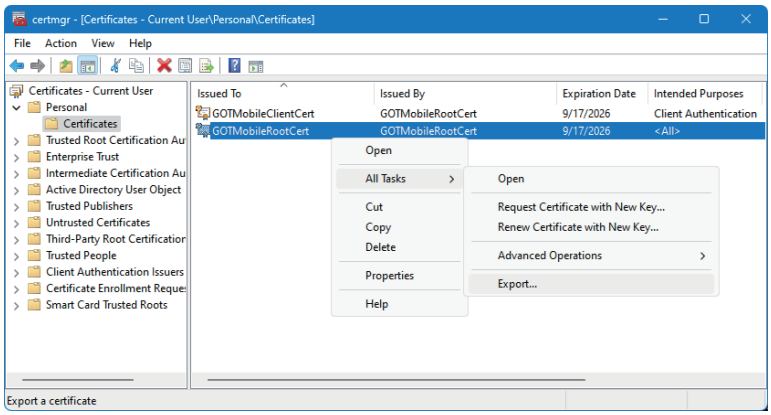
4. Next, export the root certificate.

If you execute the following command in Windows PowerShell, the [certmgr] (user certificate management) window will be displayed.

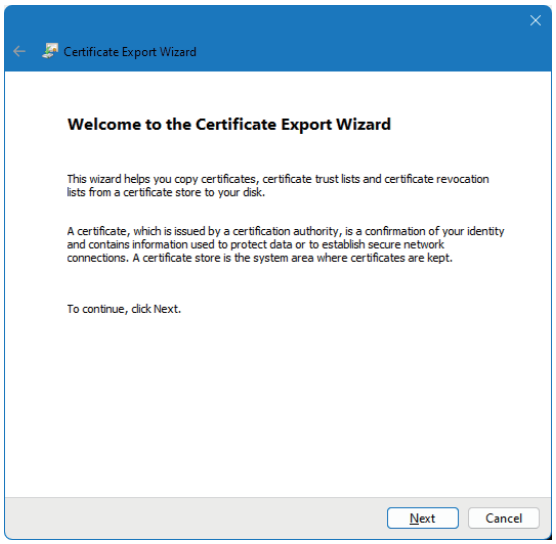
certmgr

5. Select [Personal] → [Certificates] to display the certificate list.

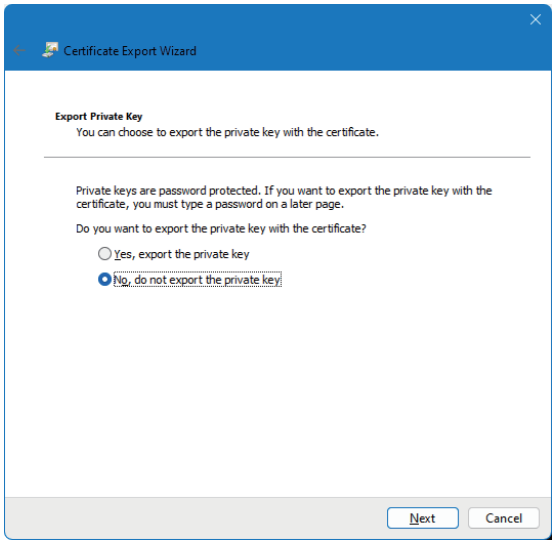
6. Right-click the self-signed root certificate created in step 2 from the list and select [All Tasks] → [Export].



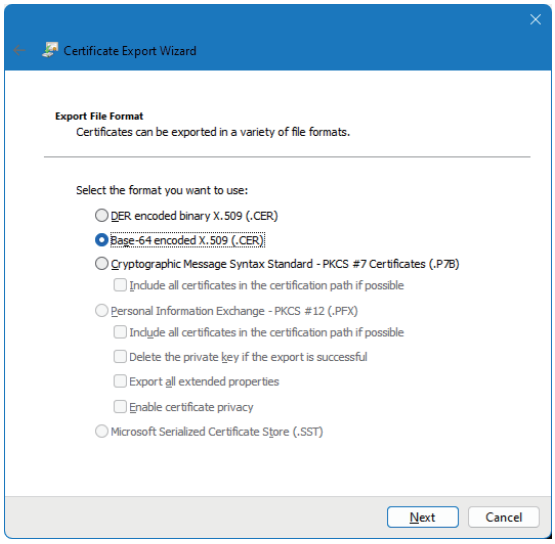
7. On the displayed [Certificate Export Wizard] dialog, click the [Next] button.



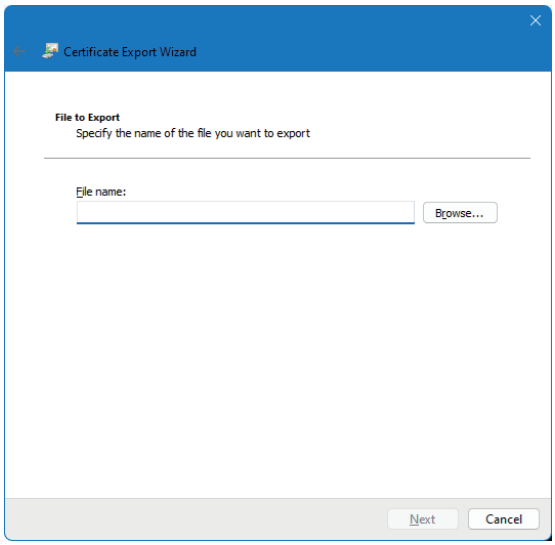
8. Select [No, do not export the private key] and click the [Next] button.



9. Select [Base-64 encoded X.509 (.CER)] for the export file format and click the [Next] button.



10. Enter a file name for the file to be exported, specify the save destination, and click the [Next] button.



11. Click the [Finish] button.

12. Check the displayed message and click the [OK] button.

13. Import the exported file to the GOT.

Model	Procedure
GOT (except GT SoftGOT3000)	Store the client certificate in the root folder of the data storage, and install the data storage to the GOT. Display the [Certificate of GOT] tab in the [Certificate management] screen in the utility, and click the [Import] button. 📖GOT3000 Series User's Manual (Utility & Maintenance Functions)
GT SoftGOT3000	☞ Page 2795 Creating and importing the client certificate and importing it to GT SoftGOT3000 (client, server (GOT))

82.4.2 Setting GT SoftGOT3000 as a server

1. Enable Internet Information Services (IIS) and the required IIS components on a personal computer running GT SoftGOT3000.

For information on how to enable IIS, refer to the following.

☞ Page 2779 Enabling IIS

2. Configure the GOT Mobile function setting.

Select [Common] → [GOT Mobile Setting] from the menu to display the [GOT Mobile Setting] window ([Basic Setting]), then select [Use GOT Mobile function].

For information on the GOT Mobile function setting, refer to the following.

☞ Page 2817 [GOT Mobile Setting] window

3. Create a mobile screen.

☞ Page 2800 Creating a mobile screen

4. To encrypt the communication between the GOT and the client, enable encrypted communication referring to the following.

☞ Page 2780 Settings for encrypted communication (GT SoftGOT3000)

5. If you have enabled external access to the GOT public folder, create the public folder under the package folder.

Create the package folder on the virtual drive A.

Store the public folder (folder name: userdata) in the package folder.

☞ Page 2760 Public folder

When accessing the GT SoftGOT3000 public folder from multiple clients, it is necessary to configure the IIS settings.

☞ Page 2797 Settings to allow access to the GT SoftGOT3000 public folder from multiple clients

6. To use the file manager, refer to the following.

☞ Page 2762 File manager

7. To connect GT SoftGOT3000 and the clients without operator name and password-based authentication, configure the settings in the [GOT Mobile Setting] window ([ANDON Setting]).

☞ Page 2817 [GOT Mobile Setting] window

For the ANDON function, refer to the following.

☞ Page 2812 ANDON function

8. Register the license number to the GT SoftGOT3000.

GT SoftGOT3000 User's Manual

9. Start GT SoftGOT3000 and open the created project.

GT SoftGOT3000 User's Manual

10. Connect the client with the GOT (server).

☞ Page 2802 Connecting the client with the server (GOT)

Precautions

The following shows how to act when system alarm 621 occurs when GT SoftGOT3000 is set as a server.

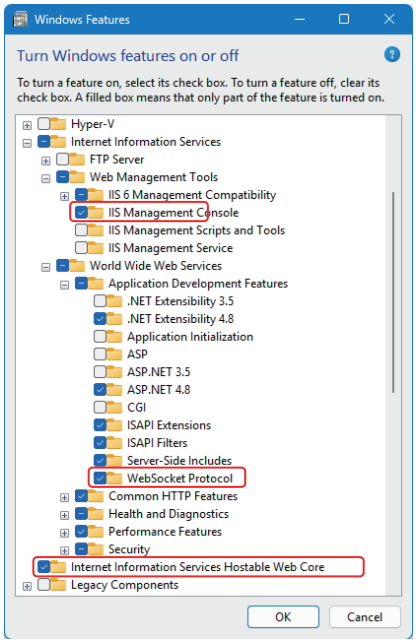
Cause	Corrective action
When port numbers are duplicated	Correct the port number to set different port numbers. There must be three or more consecutive numbers between the port numbers specified.
If GT SoftGOT3000 is abnormally terminated before starting the GOT Mobile function	Restart the personal computer.

Enabling IIS

The following shows the steps to enable Internet Information Services (IIS) and the required IIS components.
This is an example of Windows 11.

1. From the Windows start menu, select [All] → [Windows Tools], and double-click [Control Panel] in the displayed [Windows Tools].
2. In the displayed [Control Panel], select [Programs] → [Turn Windows features on or off].
3. The [Windows Features] window appears. Select the following items and click the [OK] button.

- IIS Management Console
- WebSocket Protocol
- Internet Information Services Hostable Web Core



IIS and the required IIS components are enabled.
IIS starts automatically at the OS startup by default.
To stop IIS or perform other operations, select [All] → [Windows Tools] from the Windows start menu, run [Internet Information Services (IIS) Manager], and use the [Actions] pane.

Settings for encrypted communication (GT SoftGOT3000)

For encrypted communications, the server certificate must be updated on the server (GOT) and imported on the client.
The following shows the required settings.

• Mandatory settings

Setting	Description		Target device
1. Enabling encrypted communication	☞ Page 2780 GOT Mobile function setting (GT Designer3)		Server (GOT)
2. Creating a server certificate	When the client browser is Safari on iOS or Firefox	Create a certificate authority certificate and a server certificate. ☞ Page 2781 Creating a certificate authority certificate and a server certificate (when using Safari on iOS or Firefox) (server (GOT))	
	When the client browser is Google Chrome or Microsoft Edge	Create a server certificate only. ☞ Page 2788 Creating a server certificate (when using Google Chrome or Microsoft Edge) (server (GOT))	
3. Importing the server certificate	☞ Page 2771 Importing the server certificate (client)		Client
4. Binding the server certificate to the port	☞ Page 2792 Binding the server certificate to the port (server (GOT))		Server (GOT)

• Optional settings (if client authentication is used)

Setting	Description	Target device
1. Enabling client authentication	☞ Page 2771 GOT Mobile function setting (GT Designer3)	Server (GOT)
2. Creating the client certificate	☞ Page 2775 Creating and importing the client certificate (client, server (GOT))	Client
3. Importing the client certificate		Server (GOT)

■GOT Mobile function setting (GT Designer3)

Set the communication method for the GOT Mobile function to HTTPS (SSL).
In GT Designer3, select [Common] → [GOT Mobile Setting] to display the [GOT Mobile Setting] window ([Basic Setting]).
Then select [HTTPS(SSL)] for [Communication Method].
☞ Page 2818 [Basic Setting]
Select [Perform authentication with client certificates] to enable client authentication.
When this item is selected, create a client certificate on the client terminal and import it to a personal computer (server (GOT)) where GT SoftGOT3000 is installed.
☞ Page 2795 Creating and importing the client certificate and importing it to GT SoftGOT3000 (client, server (GOT))
After setting the GOT Mobile function in GT Designer3, open the package data with GT SoftGOT3000.

■Creating a certificate authority certificate and a server certificate (when using Safari on iOS or Firefox) (server (GOT))

When using Safari on iOS or Firefox on user-selected OS as the client browser, create and import the certificate authority certificate and the server certificate on the personal computer (server (GOT)) where GT SoftGOT3000 is installed.
Configure the following settings on the personal computer where GT SoftGOT3000 (server) is installed.

1. Download OpenSSL from the following website.
https://slproweb.com/products/Win32OpenSSL.html
Note that the above website may be changed without notification.

2. Double-click the downloaded .exe file and follow the instructions in the displayed wizard to complete the installation.

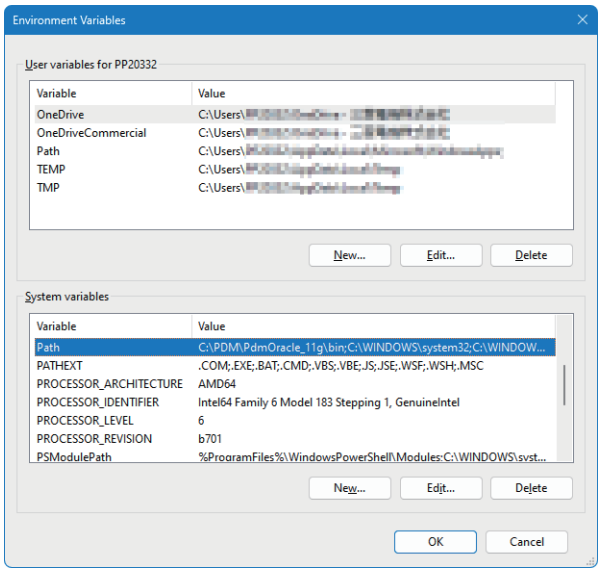
3. From the Windows start menu, select [All] → [Windows Tools], and double-click [Control Panel] in the displayed [Windows Tools].

4. In the displayed [Control Panel], select [System and Security] → [System].

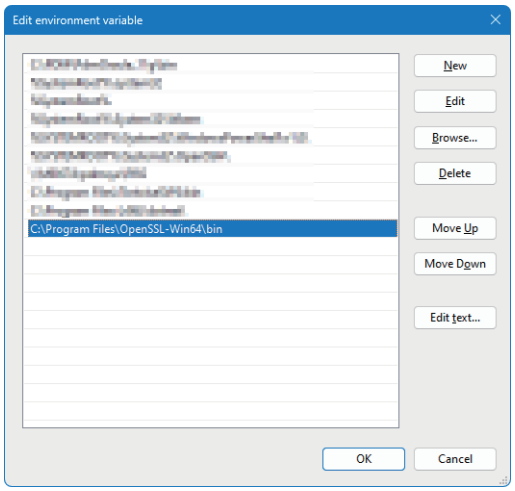
5. Click [Advanced system settings] beside [Related links].

6. The [Advanced] tab in [System Properties] is displayed. Click the [Environment Variables] button.

7. Select [Path] in [System variables], and then click the [Edit] button.



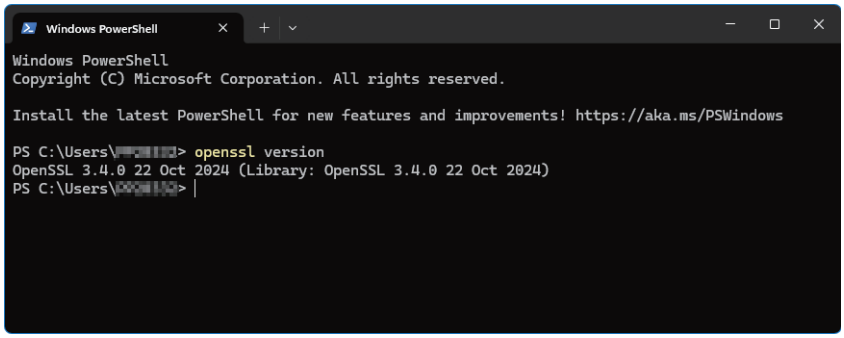
8. Click the [New] button in the [Edit environment variable] dialog and add the following path.
C:\Program Files\OpenSSL-Win64\bin



9. From the Windows start menu, select [All] → [Windows Tools], and double-click [Windows PowerShell] in the displayed [Windows Tools].

10. Execute the following command to check if the installed OpenSSL version is displayed.

openssl version



11. Create a certificate authority certificate.

Create a folder (hereafter, Folder A) in any path to store the certificate authority certificate.

12. From the Windows start menu, select [All] → [Windows Tools], and double-click [Windows PowerShell] in the displayed [Windows Tools].

13. Execute the following command to change the current folder to Folder A.

cd [Path to the folder]

Enter the path to Folder A in [Path to the folder].

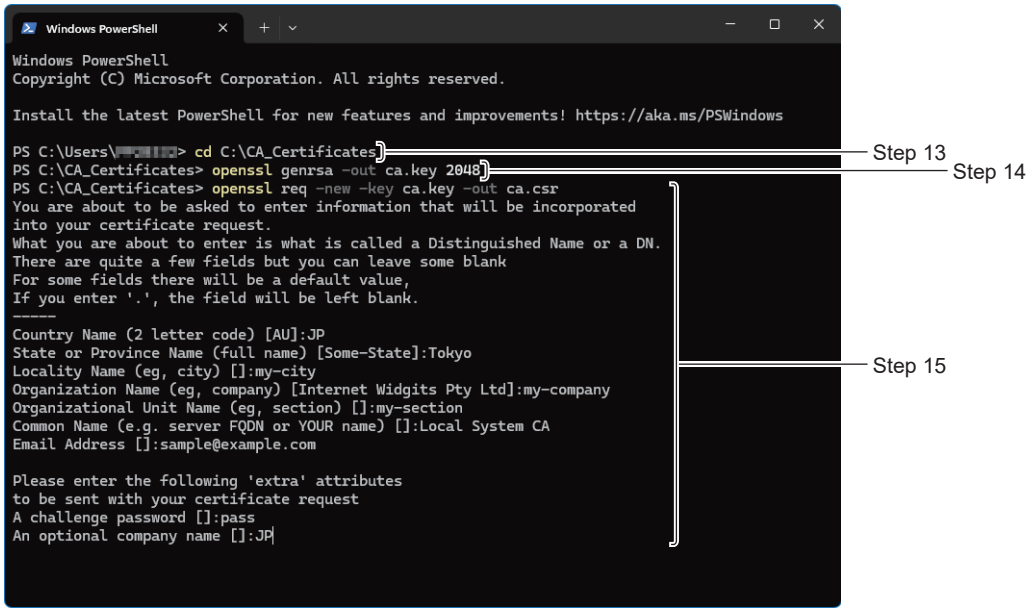
14. Execute the following command.

openssl genrsa -out ca.key 2048

15. Execute the following command.

openssl req -new -key ca.key -out ca.csr

Enter the relevant certificate details after executing the command.



16. Using a text editor, enter the following content and save it as ca.ext in Folder A.

```
[v3_ca]
basicConstraints = critical, CA:true
keyUsage = keyCertSign, cRLSign
extendedKeyUsage = serverAuth, clientAuth
subjectKeyIdentifier = hash
authorityKeyIdentifier = keyid,issuer
```

17. Execute the following command in Windows PowerShell.

openssl x509 -req -signkey ca.key -extfile ca.ext -extensions "v3_ca" -in ca.csr -out ca.crt -days 365 -sha256

18. Create a server certificate.

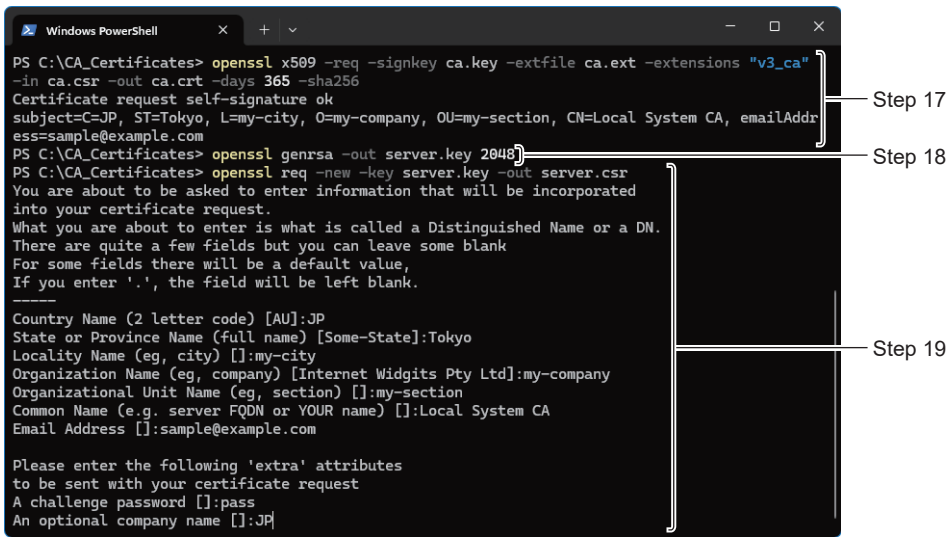
Execute the following command.

openssl genrsa -out server.key 2048

19. Execute the following command.

openssl req -new -key server.key -out server.csr

Enter the relevant certificate details after executing the command.



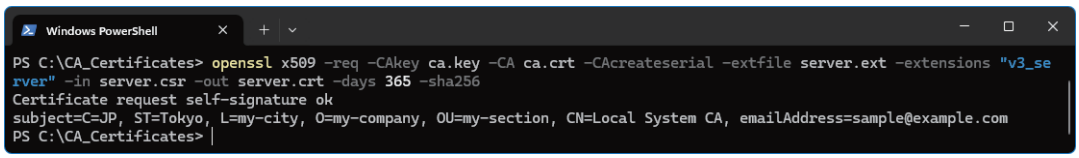
20. Using a text editor, enter the following content and save it as server.ext in Folder A.

Change the DNS and IP to match the personal computer environment.

```
[v3_server]
basicConstraints = critical, CA:false
keyUsage = digitalSignature, keyEncipherment
extendedKeyUsage = serverAuth, clientAuth
subjectKeyIdentifier = hash
authorityKeyIdentifier = keyid,issuer
subjectAltName = DNS:####,IP:###.###.###.###
```

21. Execute the following command.

openssl x509 -req -CAkey ca.key -CA ca.crt -CAcreateserial -extfile server.ext -extensions "v3_server" -in server.csr -out server.crt -days 365 -sha256



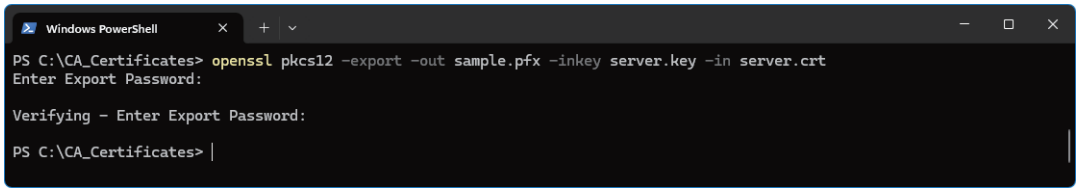
22. Execute the following command to create a certificate file (*.pfx).

Replace #### with a specific file name.

openssl pkcs12 -export -out ####.pfx -inkey server.key -in server.crt

A password and confirmation password must be entered.

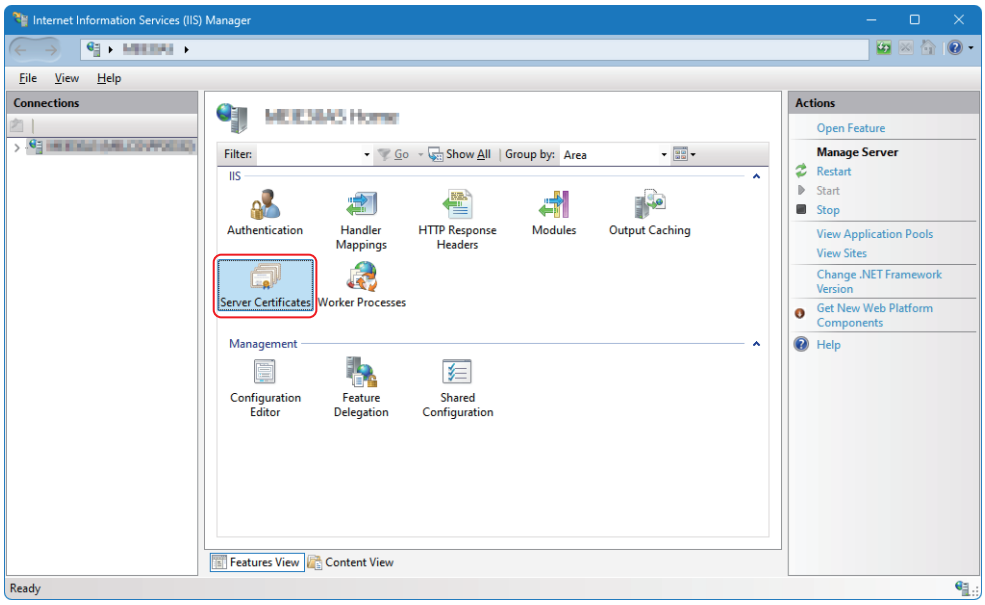
The entered password is not displayed on the Windows Powershell screen.



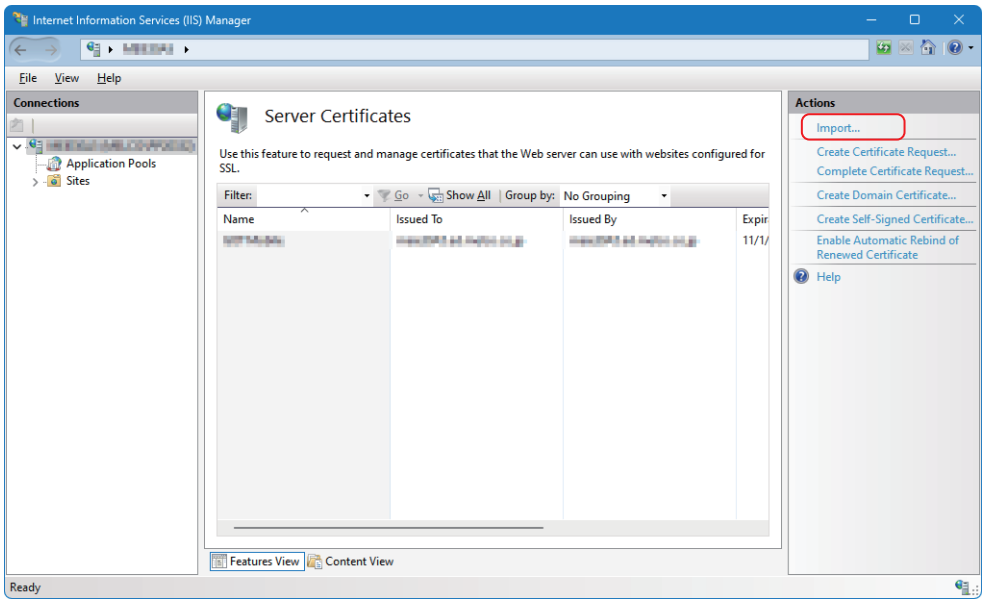
23. Import the created certificate.

From the Windows start menu, select [All] → [Windows Tools], and double-click [Internet Information Services (IIS) Manager] in the displayed [Windows Tools].

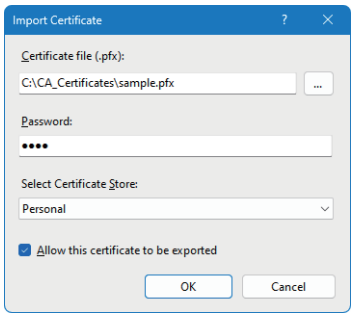
24. In the displayed [Internet Information Services (IIS) Manager], double-click [Server Certificates].



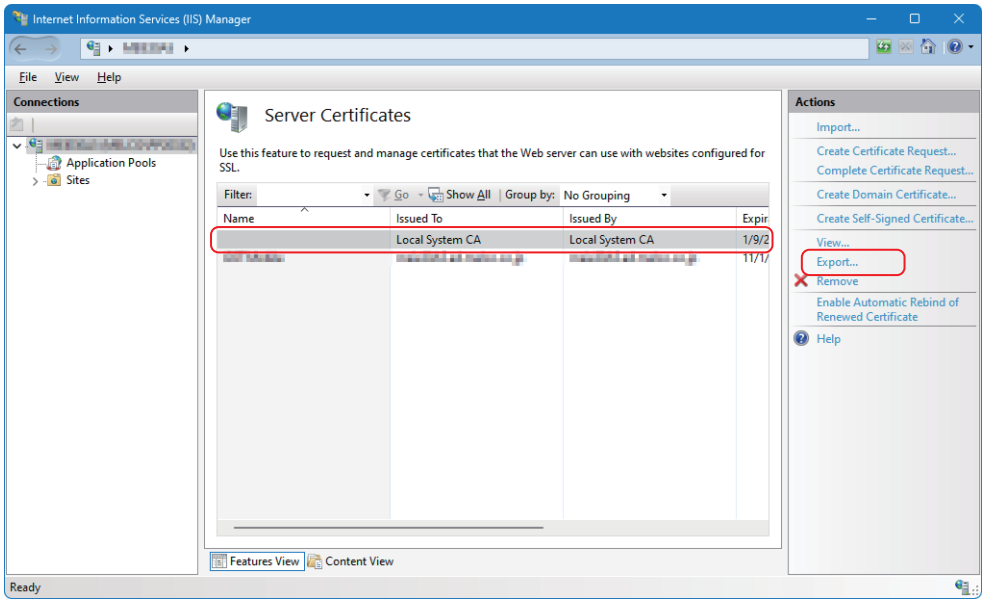
25. Click [Import].



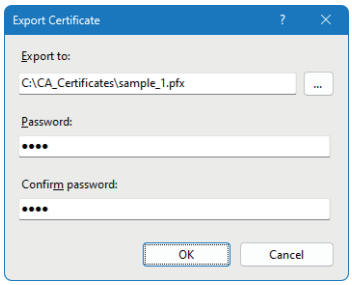
26. In the displayed dialog, specify the file (*.pfx) of the created certificate and the password, then click the [OK] button.
The certificate is imported.



27. Select the imported certificate and click [Export].

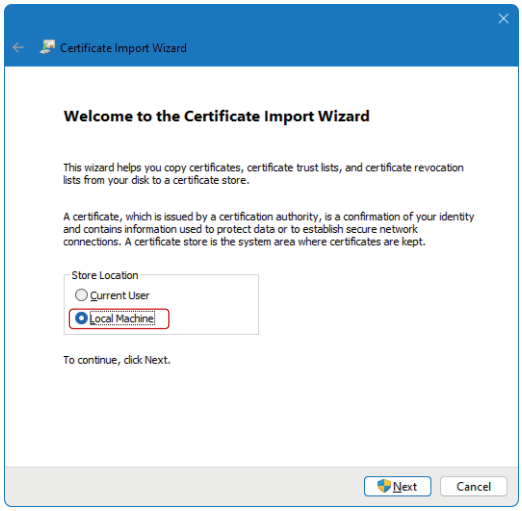


28. In the displayed dialog, specify the export destination path and the password, then click the [OK] button.
The certificate is exported.

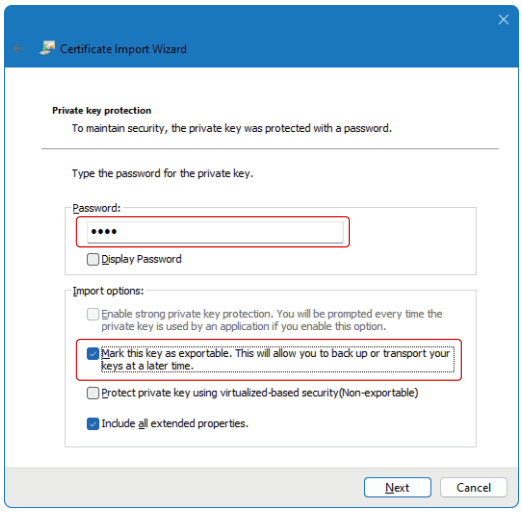


29. Double-click the file of the exported certificate.

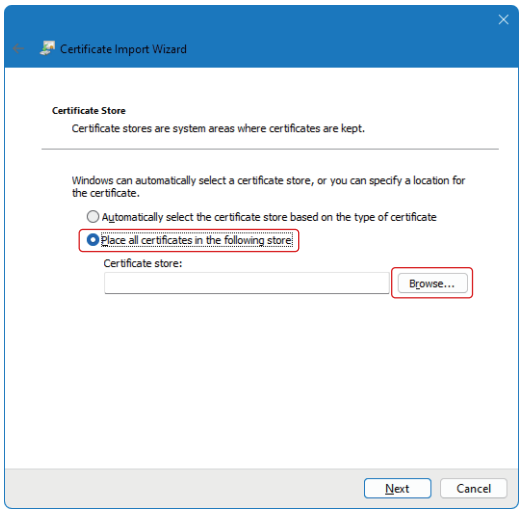
30. Set as follows on the displayed screen, then click the [Next] button.



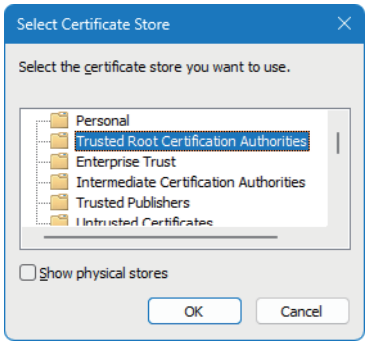
31. Proceed to the following screen, configure the settings as follows, and click the [Next] button.



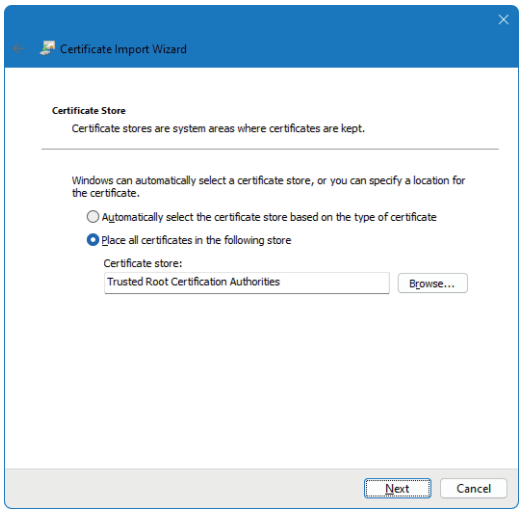
32. Set as follows on the displayed screen, then click the [Browse] button.



33. Set as follows on the displayed screen, then click the [OK] button.



34. Click the [Next] button.



35. Click the [Finish] button on the displayed screen to import the certificate.

Then, import the server certificate to the client.

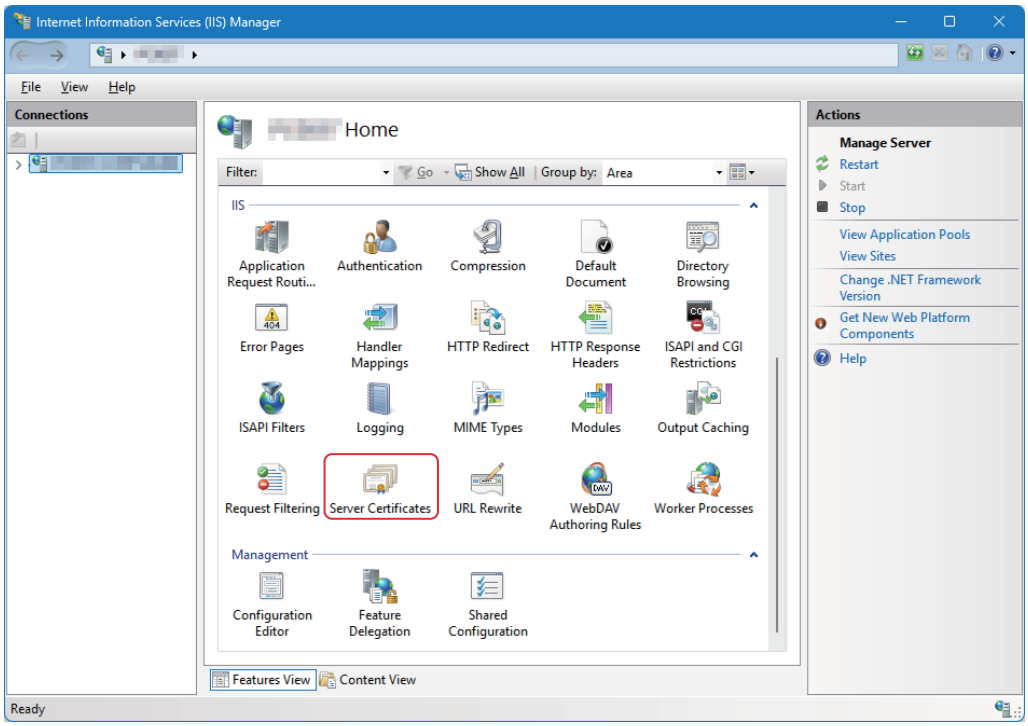
☞ Page 2791 Importing the server certificate (client)

■Creating a server certificate (when using Google Chrome or Microsoft Edge) (server (GOT))

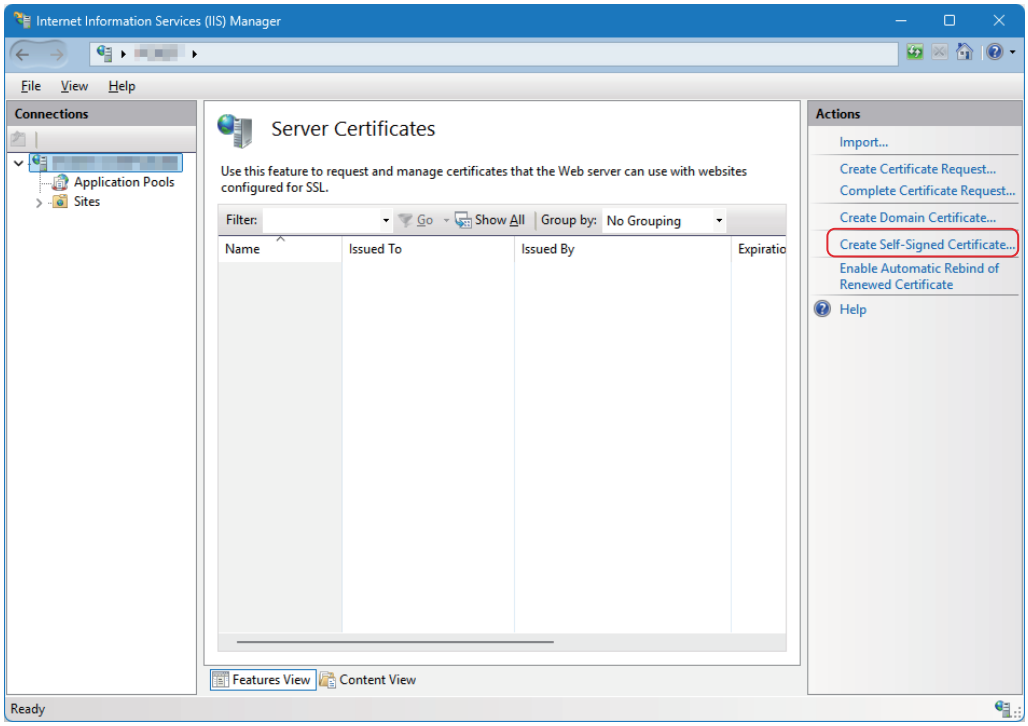
When using Google Chrome or Microsoft Edge as the client browser, create and import the server certificate using Internet Information Services (IIS) Manager on the personal computer (server (GOT)) where GT SoftGOT3000 is installed.

Configure the following settings on the personal computer where GT SoftGOT3000 (server) is installed.

1. From the Windows start menu, select [All] → [Windows Tools], and double-click [Internet Information Services (IIS) Manager] in the displayed [Windows Tools].
2. In the displayed [Internet Information Services (IIS) Manager], double-click [Server Certificates].

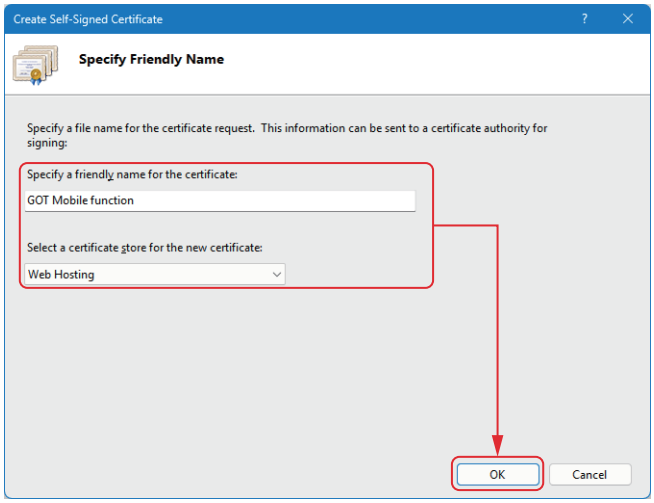


3. Click [Create Self-Signed Certificate] to open the setting window.

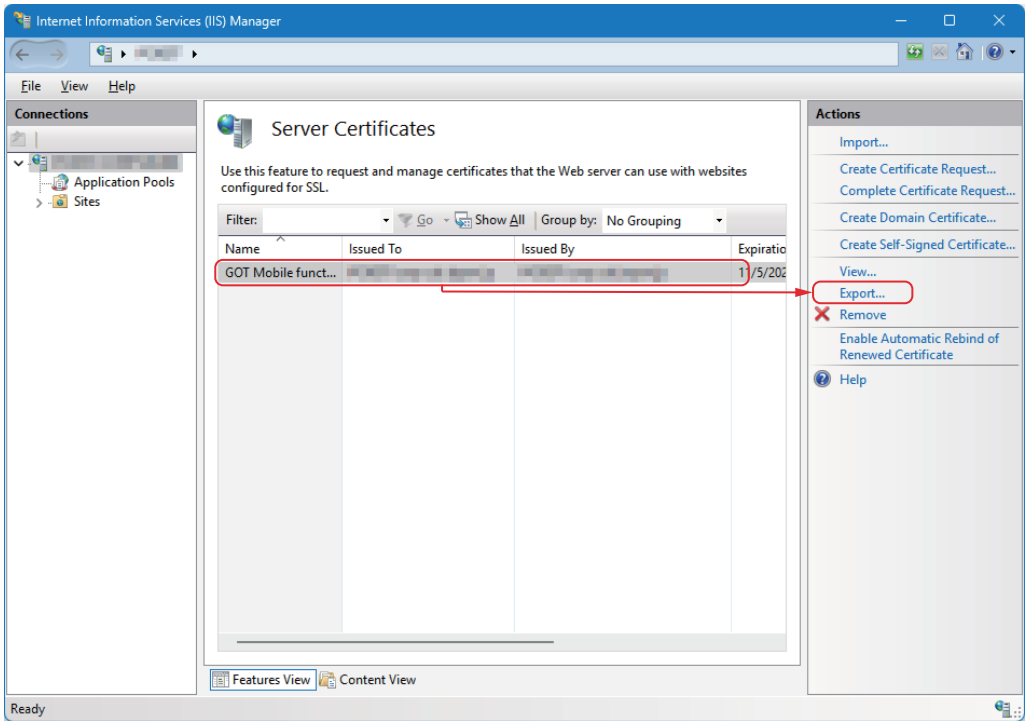


4. Configure the following items then click the [OK] button.

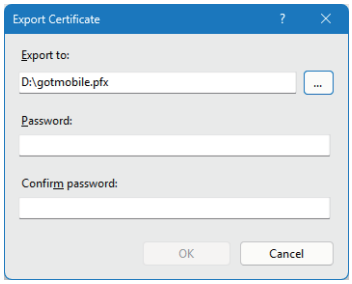
- Certificate friendly name: Enter a desired name.
- Certificate store for the new certificate: Select [Web Hosting]



5. Select the created server certificate and click [Export].

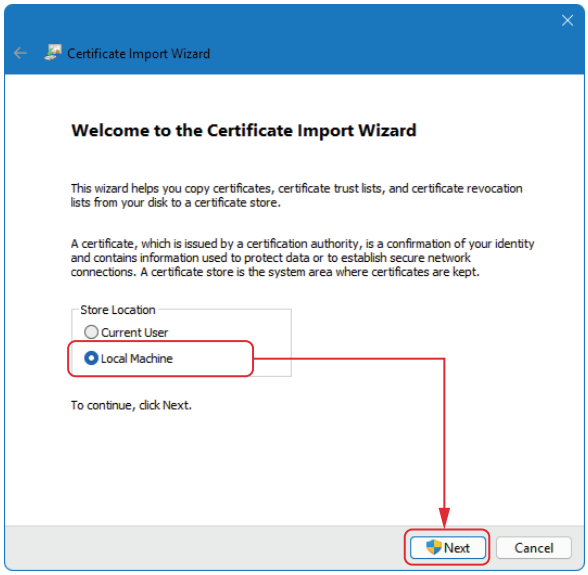


6. Specify an export destination and password, then click the [OK] button to export the server certificate to the user-specified folder.

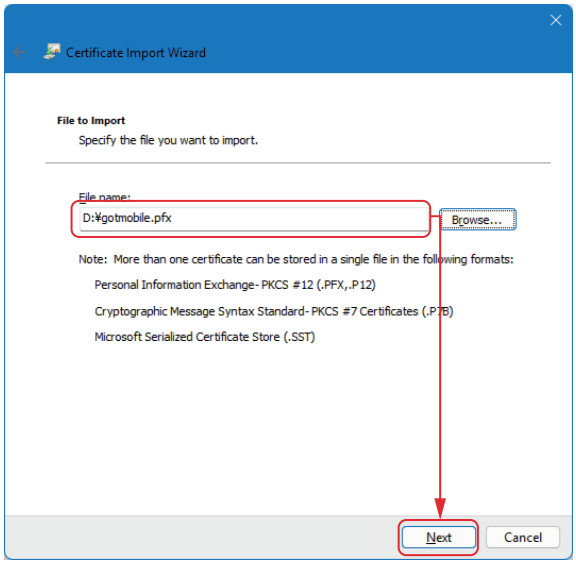


7. Double-click the exported server certificate to open the [Certificate Import Wizard].

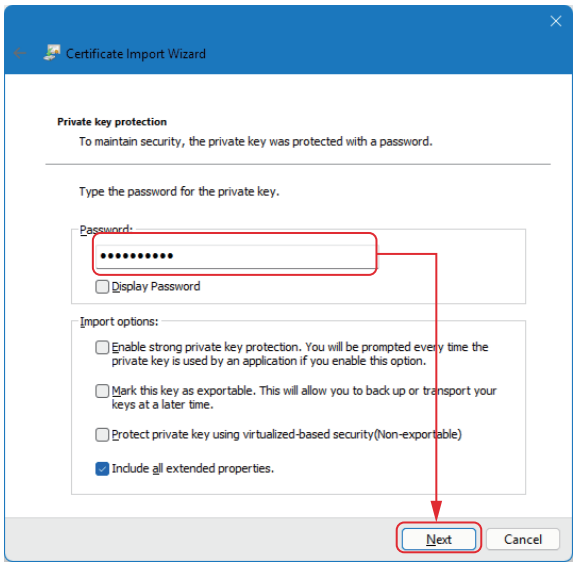
8. Select [Local Machine] for the saving destination, and click [Next].



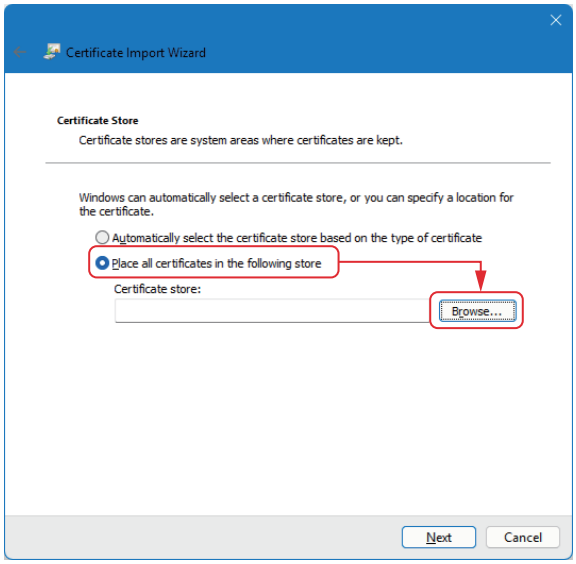
9. Set a user-selected file name for [File name] and click the [Next] button.



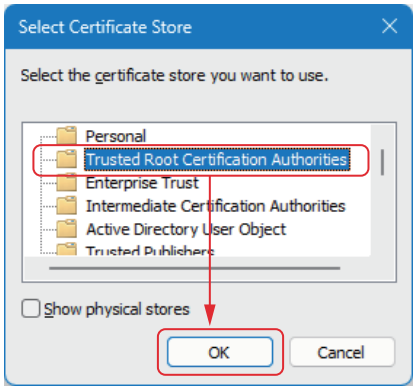
10. Enter the password specified when creating the server certificate then click the [Next] button.



11. Select [Place all certificates in the following store] and click the [Browse] button.



12. In the [Select Certificate Store] window, select [Trusted Root Certification Authorities] then click the [OK] button.



13. Click the [Next] button.

14. Click the [Finish] button to complete the import.

Then, import the server certificate to the client.

☞ Page 2791 Importing the server certificate (client)

■Importing the server certificate (client)

Import the server certificate of the personal computer (server (GOT)) where GT SoftGOT3000 is installed to the client.

The procedure is the same as when the GOT is a server.

Refer to the following.

☞ Page 2771 Importing the server certificate (client)

When you have also created a certificate authority certificate, copy the certificate file to the client and import it.

After importing the server certificate to the client, bind the server certificate to the port in the server (GOT).

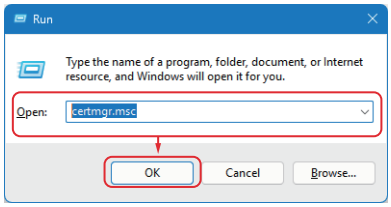
☞ Page 2792 Binding the server certificate to the port (server (GOT))

■Binding the server certificate to the port (server (GOT))

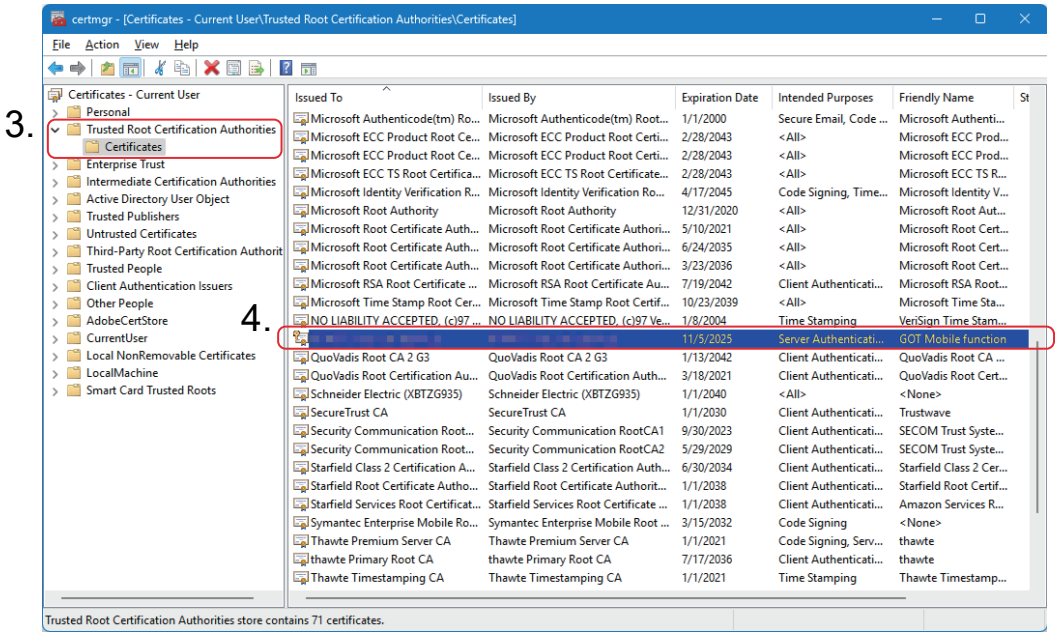
Assign the server certificate to the port. First, check the imported server certificate and copy the information necessary for port assignment. Then, assign it to the ports.

Configure the following settings on the personal computer where GT SoftGOT3000 (server) is installed.

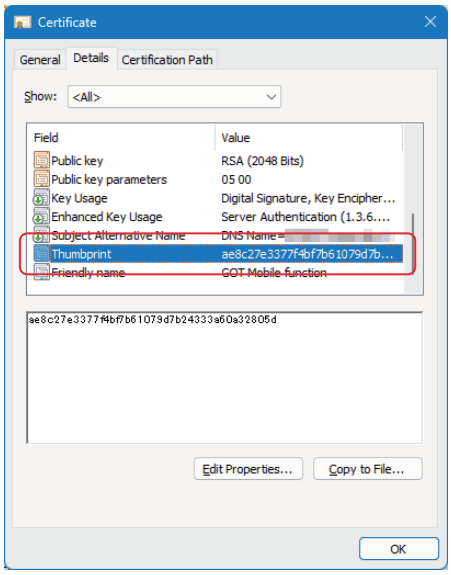
1. From the Windows start menu, select [All] → [Windows Tools], and double-click [Run] in the displayed [Windows Tools] window.
2. In the displayed [Run], type [certmgr.msc] for [Open] and click the [OK] button to open the [crtmgr] (user certificate management) window.



3. Select [Trusted Root Certification Authorities] → [Certificates] to display the certificate list.
4. Double-click the imported server certificate and open the certificate.



5. In the [Details] tab, copy and save the values of [Subject Alternative Name] and [Thumbprint] to Notepad or other application.



6. From the Windows start menu, select [All] → [Windows Tools], right-click [Command Prompt] in the displayed [Windows Tools], and click the [Run as administrator] menu.

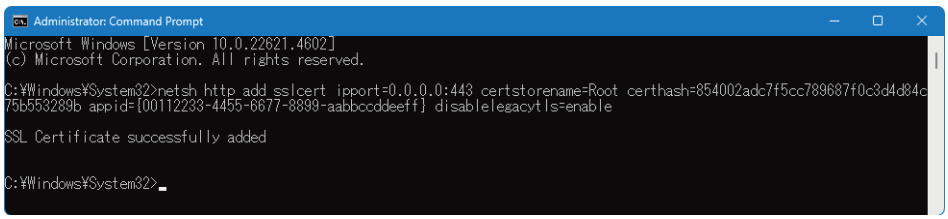
7. In the displayed [Command Prompt], execute the following command to bind the server certificate to the port.

GT SoftGOT3000 uses a total of three ports, as it uses two port numbers after the specified port. Binding is required for all three ports.

Only the first port has different commands depending on whether client authentication is enabled or disabled.

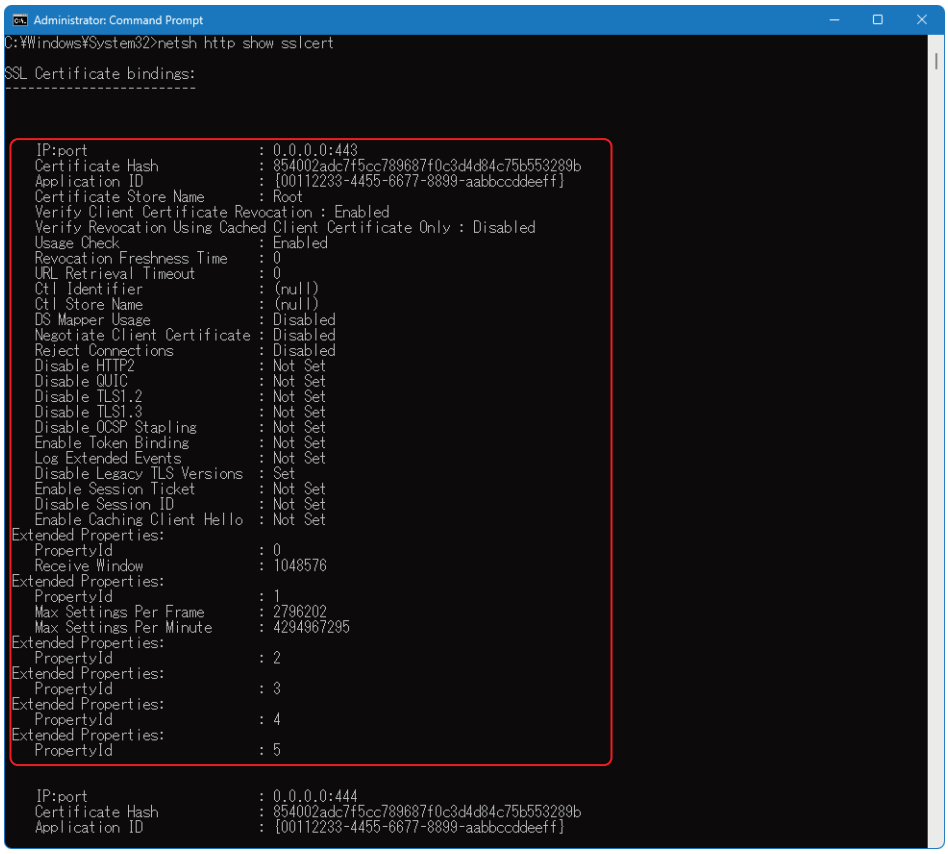
Port	Command to be input	
	Client certificate is enabled	Client certificate is disabled
First port	netsh http add sslcert ipport=0.0.0.0:[Port No.] certstorename=Root certhash=[Thumbprint] appid={[APPID]} disablelegacytls=enable clientcertnegotiation=enable	netsh http add sslcert ipport=0.0.0.0:[Port No.] certstorename=Root certhash=[Thumbprint] appid={[APPID]} disablelegacytls=enable
Second port	netsh http add sslcert ipport=0.0.0.0:[Port No.] certstorename=Root certhash=[Thumbprint] appid={[APPID]} disablelegacytls=enable	
Third port		

- [Port No.]: Port number used for the GOT Mobile function (for the second and third ports, +1 or +2 to the first port number)
- [Thumbprint]: Thumbprint of the server certificate obtained in step 5
- [APPID]: User-selected GUID (to be specified in the format xxxxxxxx-xxxx-xxxx-xxxx-xxxxxxxxxxxx)



8. Execute the following command to check that binding has been performed.

netsh http show sslcert



For information on how to connect the client to the GOT (server), refer to the following.

☞ Page 2802 Connecting the client with the server (GOT)

■Creating and importing the client certificate and importing it to GT SoftGOT3000 (client, server (GOT))

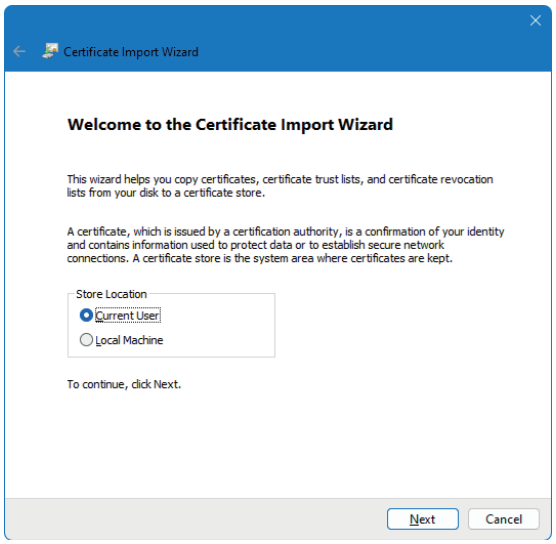
Create the client certificate used for client authentication, and import it to a personal computer (server (GOT)) where GT SoftGOT3000 is installed.

For details on how to create the client certificate, refer to the following.

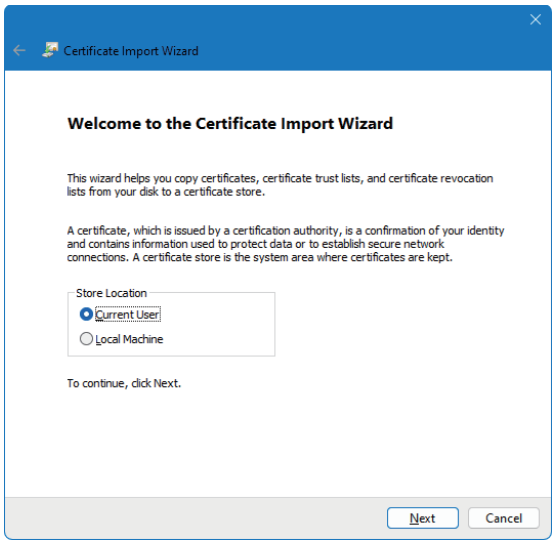
☞ Page 2775 Creating and importing the client certificate (client, server (GOT))

Operating procedure

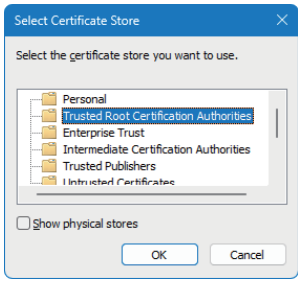
1. Copy the created client certificate file to the computer where GT SoftGOT3000 is installed.
2. Double-click the client certificate file to open the [Certificate Import Wizard].
3. Select [Current User] for the saving destination, and click [Next].



4. Select [Place all certificates in the following store] and click the [Browse] button.



5. In the [Select Certificate Store] window, select [Trusted Root Certification Authorities] then click the [OK] button.



6. Click the [Next] button.

7. Click the [Finish] button to complete the import.

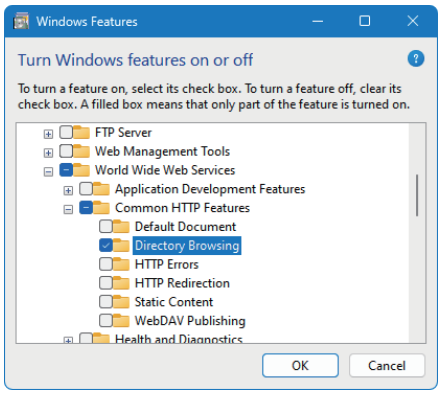
Settings to allow access to the GT SoftGOT3000 public folder from multiple clients

Configure the following settings in Internet Information Services (IIS).
If not, accessing the same file from more than one GOT Mobile client will cause an error in the web browser.

Operating procedure

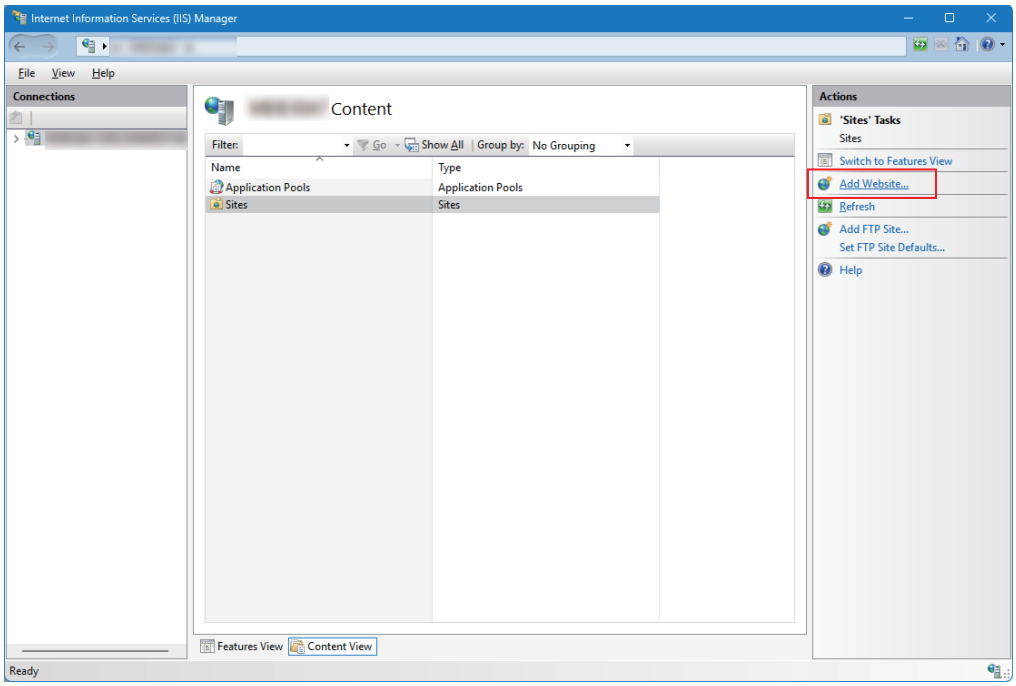
1. From the Windows start menu, select [All] → [Windows Tools], and double-click [Control Panel] in the displayed [Windows Tools].
2. In the displayed [Control Panel], select [Programs] → [Turn Windows features on or off].
3. The [Windows Features] window appears. Select the following item and click the [OK] button.

• Directory Browsing



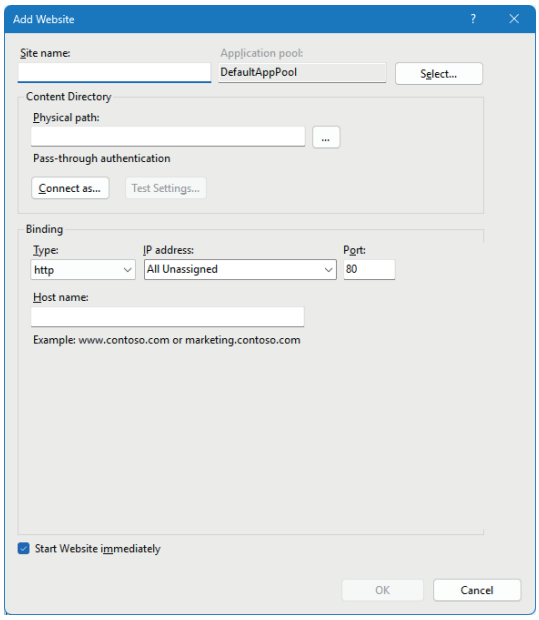
IIS and the required IIS components are enabled.

4. From the Windows start menu, select [All] → [Windows Tools], and double-click [Internet Information Services (IIS) Manager] in the displayed [Windows Tools].
5. In the displayed [Internet Information Services (IIS) Manager] window, select [Sites] and click [Add Website].

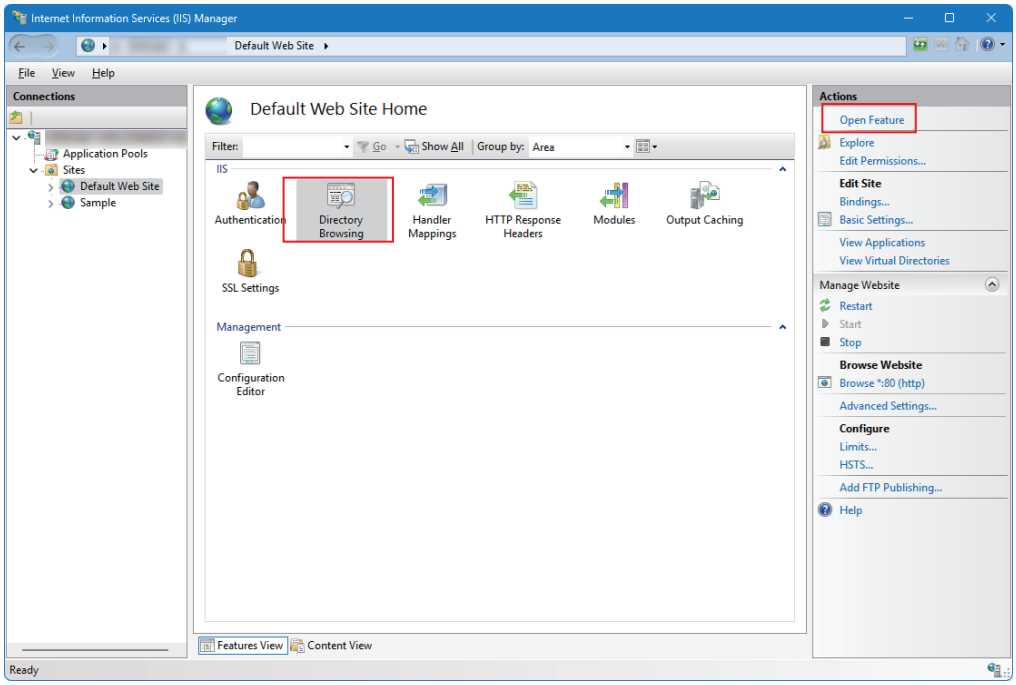


PART 25

6. In the displayed [Add Website] dialog, configure the settings for [Site name], [Physical path], and [Port] and click the [OK] button.

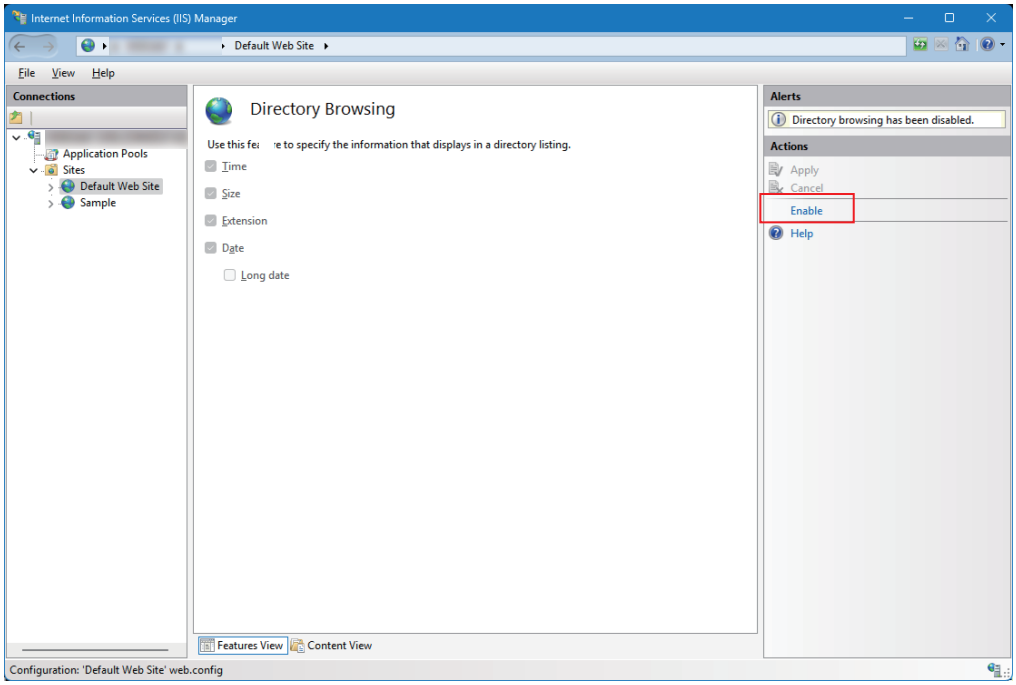


7. Enable browsing of the directory.



While the added website is selected, click [Directory Browsing], and then click [Open Feature].

8. Click [Enable].



9. Store the file in the directory where browsing is enabled.

Point

To access URLs from hyperlinks located on mobile screens, set the following in the [Basic Settings] tab of the [Hyperlink] dialog.

- [Action]: [Open a website]
- [URL]: URL set in IIS

☞ Page 1901 [Hyperlink] dialog

82.4.3 Creating a mobile screen

1. Perform one of the following operations to display the [Mobile Screen Property] dialog.

- Select [Screen] → [New] → [Mobile Screen] from the menu.
- In the [Screen] window, click the [New Screen] button and select [Mobile Screen] from the pull-down menu.

2. Configure the settings, and click the [OK] button.

☞ Page 2831 Mobile screen properties

Point

Created base screens or window screens can be copied to mobile screens.

☞ Page 2800 Copying a base screen or window screen to a mobile screen

3. A mobile screen is created and a screen editor appears in the work window.

Place figures and objects on the mobile screen.

☞ Page 1001 Placing figures and objects

Copying a base screen or window screen to a mobile screen

Created base screens or window screens can be copied to mobile screens.

The following shows the procedure to copy a screen.

1. In the [Screen] window, right-click on a base screen and window screen to be copied and select [Copy to Mobile Screen].

2. In the [Copy to Mobile Screen] dialog, set the destination screen number and other items.

☞ Page 2801 [Copy to Mobile Screen] dialog

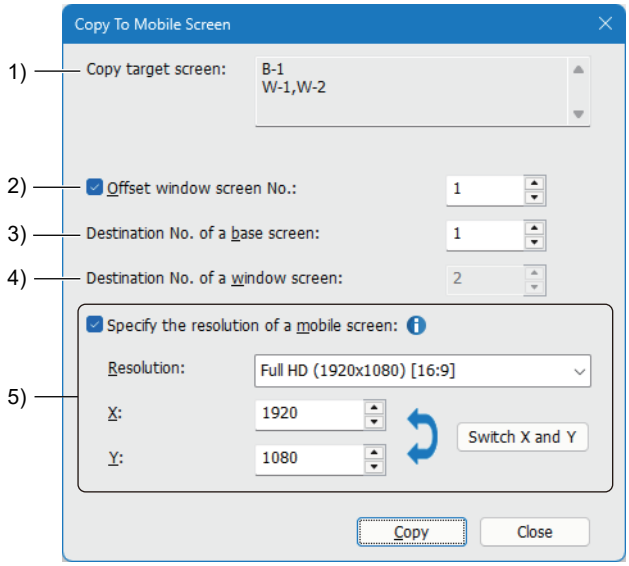
3. Click the [Copy] button to copy the screen to the mobile screen.

■Specifications for copying a screen to a mobile screen

The following shows the specifications for copying a screen to a mobile screen.

Item		Description
Screen	Expanded screen	Automatically resized according to the resolution of the model set in [GOT Type Setting].
	Screens that are prohibited from being displayed by the project security settings	Not available for copying. When multiple screens are simultaneously copied, the screen numbers of the screens that are not copied are skipped.
Object	Go To Screen switch	When the screen is also copied after being switched, the screen number will change to the one specified for the copied screen. The screen number will be retained if the screen is not copied after being switched. When [Offset window screen No.] is selected, the copy destination screen number is the sum of the copy source screen number and the offset value. If the sum is outside the range, the copy source screen number is retained.
	Set overlay screen	When a copy source screen has a set overlay screen object, the called screen is also copied. The screen number will be changed to the one specified for the copied screen (mobile screen). The original screen number will be retained when the called screen is a display-prohibited screen.

■[Copy to Mobile Screen] dialog



Item		Description
1)	[Copy target Screen]	Displays the screen numbers to be copied to the mobile screen. The screen numbers selected when [Copy to Mobile Screen] is pressed are displayed.
2)	[Offset window screen No.]	The sum of the copy source screen number and the offset value is the copy destination window screen number. Select this item to set the offset value to be added. This function is helpful when using a copied screen as a window screen for mobile application. On the GOT, base screens (screen type [B]) are differentiated from window screens (screen type [W]). On mobile applications, these screens are created as mobile screens [M] and are therefore not differentiated. Use this function to add an offset value of [1000], for example, then it will be possible to use screens with screen numbers in the 1000s as window screens.
3)	[Destination No. of a base screen]	Specify a screen number of the copy destination screen (mobile screen) to which the base screen is copied. The setting range is [0] to [32767].
4)	[Destination No. of a window screen]	Specify a screen number of the copy destination screen (mobile screen) to which the window screen is copied. The setting range is [0] to [32767]. When [Offset window screen No.] is selected, this item is grayed out.
5)	[Specify the resolution of a mobile screen]	Set the screen size of the mobile screen. For details on the setting, refer to the following. ☞ Page 2831 [Basic] tab

82.4.4 Settings on the client

Enable JavaScript and Cookie in the browser.
The method to enable JavaScript or Cookie differs depending on the browser.
The setting items may also differ depending on the information device and the browser version.
For the setting method, refer to the following.

Browser	Reference
Google Chrome for Android Google Chrome for Windows	☞ Google LLC Help website
Safari for iOS	☞ Apple Support website
Microsoft Edge for Windows	☞ Microsoft official website
Firefox Firefox (Android version) Firefox (iOS version)	☞ Firefox Help page

To encrypt the communication between the client and the server (GOT), the server certificate needs to be imported on the client.
☞ Page 2771 Settings for encrypted communication (except GT SoftGOT3000)
☞ Page 2780 Settings for encrypted communication (GT SoftGOT3000)

82.4.5 Connecting the client with the server (GOT)

To connect a client to the GOT, enter the URL of the destination GOT in the address bar in the browser, or use the contactless tag of the GOT.

Connection method	Model
☞ Page 2803 Connection by entering the URL of the destination GOT	GT37 SoftGOT3000
☞ Page 2807 Connection using a contactless tag	GT37 SoftGOT3000

Precautions

Do not turn off the GOT while the client is being operated.
If you turn off the GOT being accessed by a client, the browser of the client may not display a communication error message immediately.

Connection by entering the URL of the destination GOT

The following shows the procedure of the connection by directly entering the URL of the destination GOT.

Ex.
When using Google Chrome (for Android)

1. Start Google Chrome.
2. Touch the address bar, and enter the URL of the destination GOT with the software keyboard.

[index.html] can be omitted from the URL.

The URL of the destination GOT differs depending on whether encrypted communication is enabled or disabled.

Item		Example URL of the destination GOT
When encrypted communication is disabled		Connecting a client to the standard HTTP port No. 80 http://192.168.1.18/index.html GOT IP address
		Connecting a client to a user-specified HTTP port (example: port No. 8080) http://192.168.1.18:8080/index.html GOT IP address Port No.
When encrypted communication is enabled	GOT (except GT SoftGOT3000) is a server	Connecting a client to the standard HTTPS port No. 443 https://192.168.3.18/index.html GOT IP address
		Connecting a client to a user-specified HTTPS port (example: port No. 9443) https://192.168.3.18:9443/index.html Port No. GOT IP address
	GT SoftGOT3000 is a server	To use a subject alternative name for access, you need an environment that can resolve the subject alternative name to an IP address. Prepare a name resolution environment, such as a DNS server.
		Connecting a client to the standard HTTPS port No. 443 https://Subject Alternative Name:443/index.html Port No. Check the imported server certificate.
		Connecting a client to a user-specified HTTPS port (example: port No. 9443) https://Subject Alternative Name:9443/index.html Port No. Check the imported server certificate.

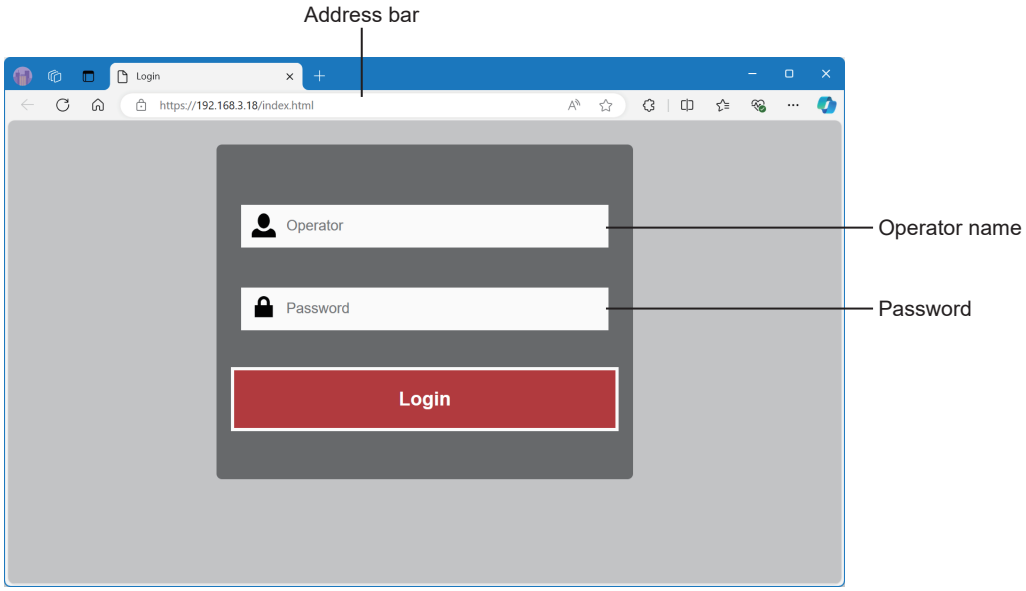
Point

The behavior of the client is customizable by appending specific parameters to the URL of the destination GOT.

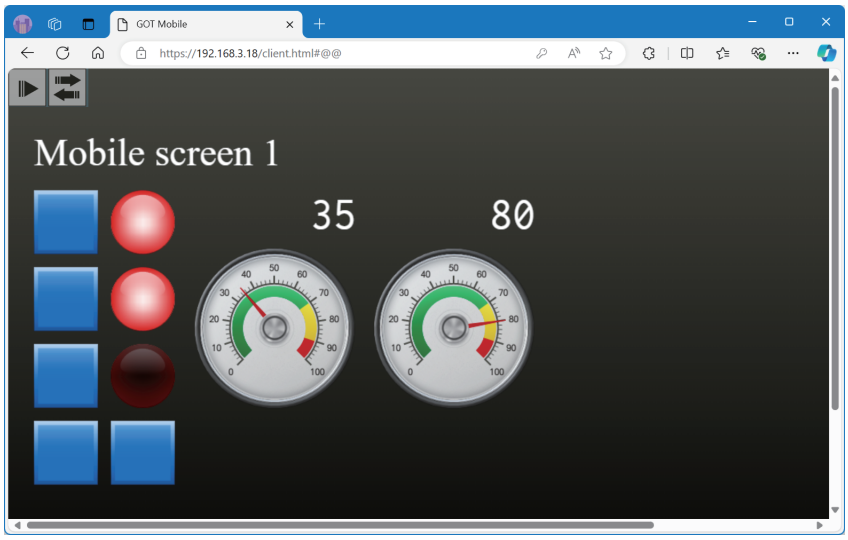
For details on the URL parameters, refer to the following.

☞ Page 2805 URL parameters

3. In the authentication screen, enter an operator name and password, and touch the [Login] button.



4. If the client is authenticated with the GOT, an applicable mobile screen appears in the browser.



Point

You can specify the mobile screen appearing after the client is authenticated to the GOT in the [GOT Mobile Setting] window. In [Screen Switching], select [Specify the No. of a screen to be displayed at the time of client connection] and specify a screen number.
If you do not specify the mobile screen, the smallest-numbered mobile screen appears.
☞ Page 2822 [Screen Switching/Window]

■URL parameters

The behavior of the client is customizable by appending specific parameters to the URL of the destination GOT.

The following shows available parameters.

Function	Parameter name	Setting value	Behavior without the target parameter	Remarks
Always fitting the mobile screen display on the width of the browser window	autofit	true false	Same as for specifying "false" (The target function is disabled.)	—
Hiding the operation menu bar on the mobile screen	hiddenmenu	true false	Same as for specifying "false" (The target function is disabled.)	When this function is enabled, zooming and scrolling the mobile screen display are not available.
Specifying a client number to connect to the GOT	clientno	1 to maximum number of simultaneous connections	A client number is automatically assigned.	The following client numbers cannot be specified. • Client number that is higher than the set value of [Simultaneous Client Connection] in the [GOT Mobile Setting] window ([Basic Setting]) • Client number of a client being connected to the GOT If you specify the client number set for [Target Client No.] in [ANDON Setting] of the [GOT Mobile Setting] window, also add the parameter for enabling the ANDON function (andon=true).
Enabling the ANDON function (Connecting to the GOT without the operator name and password-based authentication)	andon	true false	Same as for specifying "false" (The target function is disabled.)	When this function is enabled, the target client is not disconnected automatically even if no operation is performed on the client for a certain time. To use the ANDON function, settings must be configured in GT Designer3 and in the utility. For details, refer to the following. ☞ Page 2813 Settings required for the ANDON function
Specifying the screen number of the initial mobile screen appearing after the client connects to the GOT with authentication	initscreen	0 to 32767	The corresponding setting configured in GT Designer3 is applied.	To enable this function, turn on the Enable Initial Screen Specification with URL Parameter signal (GS1896.b0). This parameter setting overrides the setting of [Specify the No. of a screen to be displayed at the time of client connection] in the [GOT Mobile Setting] window ([Screen Switching]).
Displaying the disconnect screen (client.html) when the client disconnects the GOT	disconnectscreen	true false	Same as for specifying "false" (The target function is disabled.)	When this function is enabled, the screen that appears at the disconnection changes. • true: Displays the disconnect screen. • false: Displays the connection authentication screen. For details on the disconnect screen, refer to the following. ☞ Page 2816 Displaying the disconnect screen
Specifying the time (minutes) to reload the web page	reloadtime	1 to 43200	The reload time is not specified.	Reloads the web page at the specified time interval. Reloading is carried out while retaining parameters other than the URL parameter. If you specify the parameter to enable the ANDON function (andon=true) in the URL, it will be automatically connected when reloaded. If you do not specify the parameter to enable the ANDON function (andon=true) in the URL, the login screen will be displayed when reloading.

To use a parameter, append "?<Parameter name>=<Setting value>" to the URL of the destination GOT.

Delimit parameters with single ampersands (&).

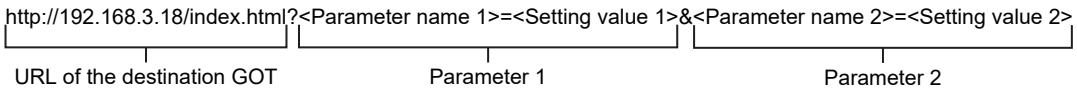
The used parameters must be different.

One-byte alphanumeric characters are usable for the parameters.

The parameters are case-sensitive.

Ex.

When encrypted communication is disabled



Example 1) When specifying client No. 3

http://192.168.3.18/index.html?clientno=3

Example 2) When setting the following functions

- Enabling the ANDON function
- Always fitting the mobile screen display on the width of the browser window
- Hiding the operation menu bar on the mobile screen

http://192.168.3.18/index.html?andon=true&autofit=true&hiddenmenu=true

Precautions

When a URL is entered in the address bar in the browser directly, the preloading function of the browser may work and the session between the GOT (server) and the client may be unintentionally maintained.

Preform the following operations if the number of connected clients exceeds the maximum number of simultaneously connectable clients even though no operator is logged in, or if a client that you have not connected is regarded to be connected.

- Exit the browser of the device being used.
- Check the client numbers of the connected clients on the utility screen, and turn on the disconnection signal for the target client.

Connection using a contactless tag

To connect the GOT (server) and the client using a contactless tag, the GOT (server) settings must be configured.

For information on the setting to enable a contactless tag, refer to the following.

☞ Page 667 Configuring the settings for the GOT contactless tag ([Contactless Tag])

The following shows the procedure to connect the client using the contactless tag of the GOT.

1. Enable the NFC function on the smartphone or tablet to be used as the client.

2. Connect the smartphone or tablet to a wireless LAN access point to enable communication with the GOT.

For information on how to connect the smartphone or tablet to a wireless LAN access point, refer to the following.

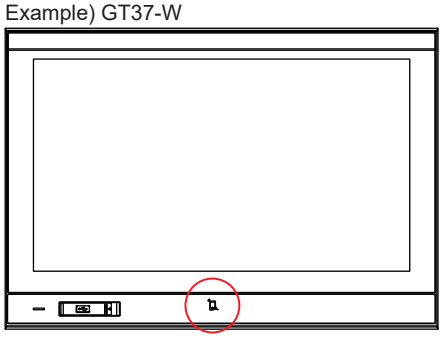
📖Manual of the wireless LAN access point used

3. Bring the client (smartphone or tablet) closer to the contactless tag of the GOT.

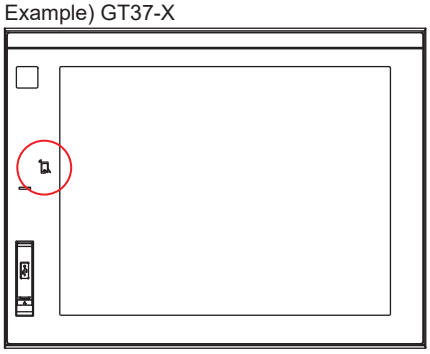
The position of the contactless tag varies depending on the GOT model.

The position of the contactless tag is marked with a contactless tag mark.

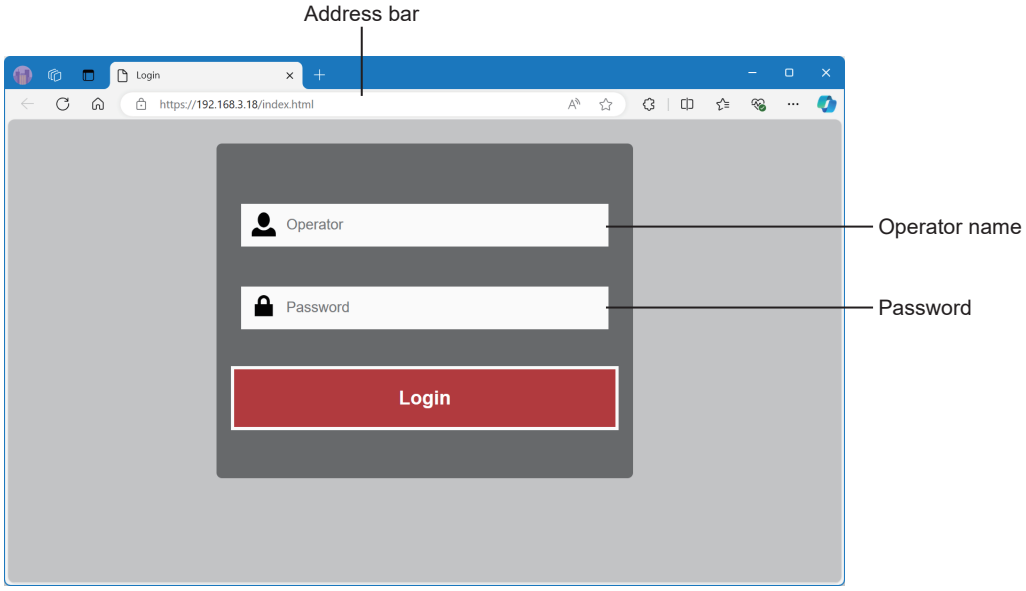
Example) GT37-W



Example) GT37-X

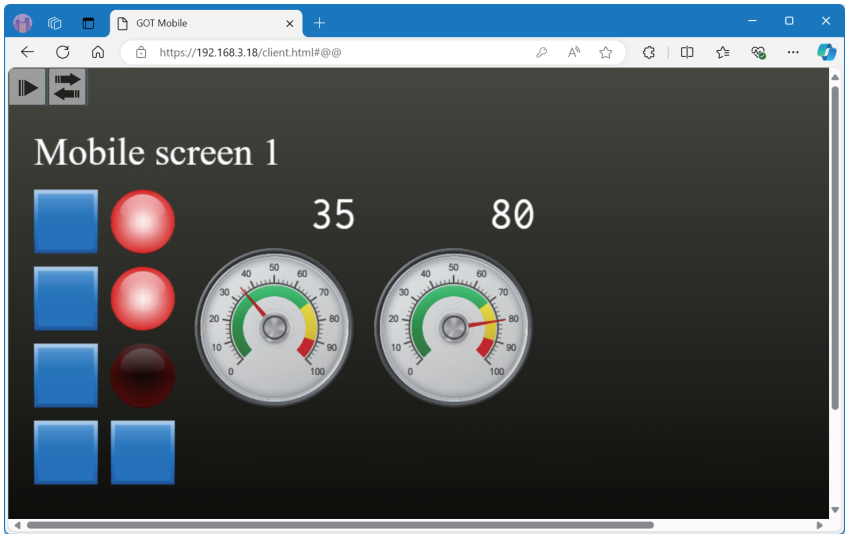


4. In the authentication screen, enter an operator name and password, and touch the [Login] button.



PART 25

5. If the client is authenticated with the GOT, an applicable mobile screen appears in the browser.



Point

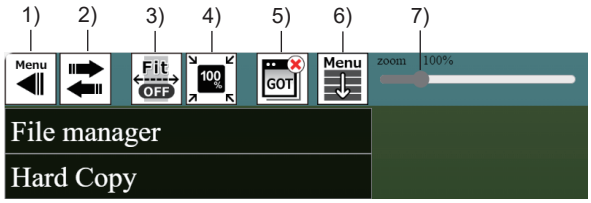
You can specify the mobile screen appearing after the client is authenticated to the GOT in the [GOT Mobile Setting] window. In [Screen Switching], select [Specify the No. of a screen to be displayed at the time of client connection] and specify a screen number.
If you do not specify the mobile screen, the smallest-numbered mobile screen appears.
☞ Page 2822 [Screen Switching/Window]

82.4.6 Operations on the mobile screen

☞ Page 2809 Operation menu bar on the mobile screen
☞ Page 2810 Zooming the mobile screen display
☞ Page 2811 Disconnecting a client

Operation menu bar on the mobile screen

The operation menu bar is displayed in the upper-left corner of a mobile screen to control the display.



Item		Description
1)	Expand/collapse button	Expands or collapses the operation menu bar. While the operation menu bar is expanded, you cannot touch the objects on the mobile screen. However, you can scroll the screen by a swipe or flick operation on a tablet or smartphone.
2)	Button to move the operation menu bar	Moves the operation menu bar from side to side.
3)	[Fit Width] button	Adjusts the mobile screen display to fit on the width of the browser window. While the [Fit Width] button is held down, the mobile screen display is fit on the width of the browser window automatically in the following timing. • When the screen is switched • When the width of the browser window is changed
4)	[100%] button	Displays the mobile screen display at its original magnification (100%).
5)	Disconnect button	Disconnects the client from the GOT.
6)	Extended function button	Displays a pull-down menu. • [File manager] Displays the file manager screen where you can view the folders and files in the public folder, or perform manipulations on them such as copying. ☞ Page 2762 File manager • [Hard Copy] Captures the current mobile screen in PNG format and outputs it to a new tab in the browser. ☞ Page 2765 Hard copy function
7)	Zoom slider	Zooms in or out the mobile screen display. Move the slider control to the right to zoom in the display, and move the slider control to the left to zoom out the display. The setting range is [10]% to [500]%.

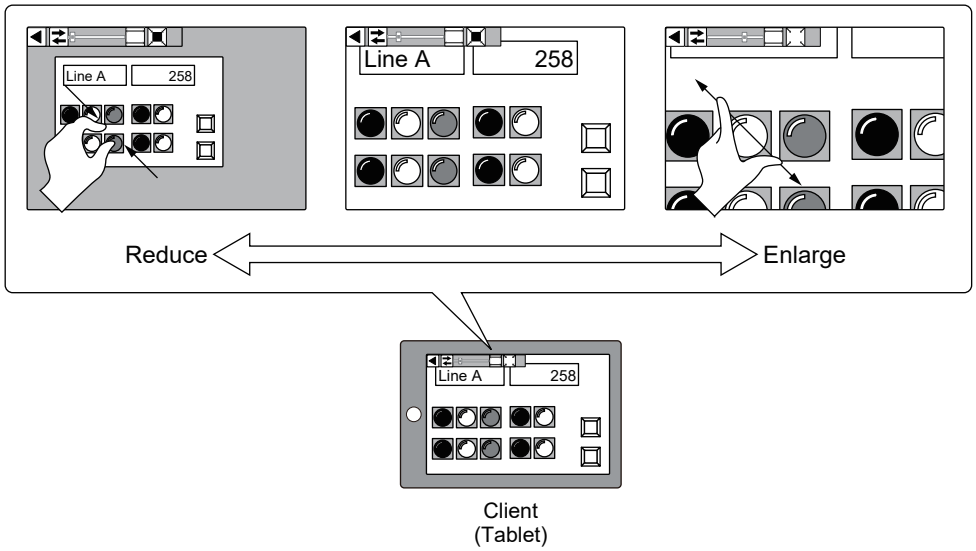
Precautions

While a mobile screen is being displayed, do not use the browser's [Back] button, [Forward] button, or [Refresh] button. Doing so disconnects the client from the GOT and returns you to the authentication screen.

Zooming the mobile screen display

When the operation menu bar is expanded on the mobile screen, you can pinch in or out to zoom the screen display (10% to 500%).

The screen display is zoomed by moving fingers toward or away from each other.



Precautions

While a mobile screen is being displayed, do not use the browser's zoom function.

Doing so may cause an unintended display, such as an enlarged or reduced operation menu bar.

Disconnecting a client

Once the client is disconnected from the GOT, the client is not automatically reconnected.
In such a case, reconnect the client to the GOT.

■Disconnection by user operation

If you perform any of the following operations, the client becomes disconnected from the GOT.

- Close an applicable browser.
- Perform a logout when the authentication method of the GOT Mobile function is set to the operator authentication.
- Touch the Disconnect button on the operation menu bar in the mobile screen.
- Turn on b0 of the client control device that is specified in [Client Information] of the [GOT Mobile Setting] window.
- Touch the [Disconnect] button on the [GOT Mobile information] screen in the utility.

■Disconnection by methods other than user operation

The client becomes disconnected in the following timing as well.

- When a communication timeout occurs on the GOT
- When the GOT is turned off
- When the GOT enters the offline mode because of package data writing or others
- When no operation is performed on the client for a certain time

(When [Automatically disconnect clients with no operation] is selected in [Basic Setting] of [GOT Mobile Setting] window)
When the ANDON function is used, the client is not disconnected.

- When the authentication method of the GOT Mobile function is set to the operator authentication, and the automatic logout is performed
- When the connection time exceeds 30 minutes without license registration

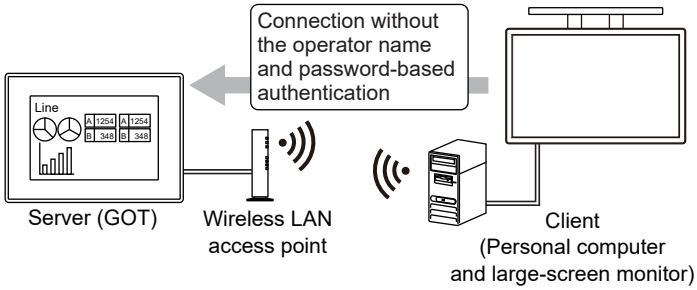
Precautions

Depending on the browser, connection with the GOT may be cut if the browser is used for a long period of time.
In such situations, perform authentication again to connect to the GOT.
If a hardware acceleration feature is used for the browser, disabling the feature may improve the situation.
☞ Page 2834 Troubleshooting for clients

82.5 ANDON function

GT37 SoftGOT3000

The ANDON function enables a specific client to connect to the GOT without the operator name and password-based authentication. (The authentication screen does not appear.)
This function is usable for applications, such as an andon display. You can specify a set of a personal computer and a large-screen monitor as a client to display mobile screens.



For information on how to use the ANDON function, refer to the following.
☞ Page 2813 Settings required for the ANDON function
By configuring the above setting and the client side setting in combination, the target client can display a mobile screen upon its power-on.
For details, refer to the following.
☞ Page 2814 Displaying a mobile screen on the client upon power-on
If you click the [OK] button in the confirmation dialog for disconnection while the ANDON function is enabled, the client does not become disconnected due to the automatic reconnection.
For how to display the disconnect screen without allowing a reconnection, refer to the following.
☞ Page 2816 Displaying the disconnect screen

82.5.1 Settings required for the ANDON function

The following shows the settings required for the ANDON function.

Settings in GT Designer3

1. Select [Common] → [GOT Mobile Setting] from the menu to display the [GOT Mobile Setting] window. In [ANDON Setting], select [Use ANDON function].
2. Select a client number targeted for the ANDON function.

☞ Page 2817 [GOT Mobile Setting] window

Precautions

When the ANDON function is used, anyone can access the GOT from the client without an operator name and a password. Take security measures for such a client, including limiting displayable screens.

Settings for the server (GOT)

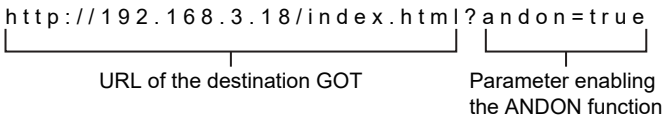
In [ANDON connection] of the utility, set the IP address of a client targeted for the ANDON function.
For the setting method, refer to the following.

GOT3000 Series User's Manual (Utility & Maintenance Functions)

URL parameter setting

When you enter the URL of the destination GOT on the address bar in the browser, add the parameter for enabling the ANDON function.

Ex.
When encrypted communication is enabled



For details on the URL parameters, refer to the following.

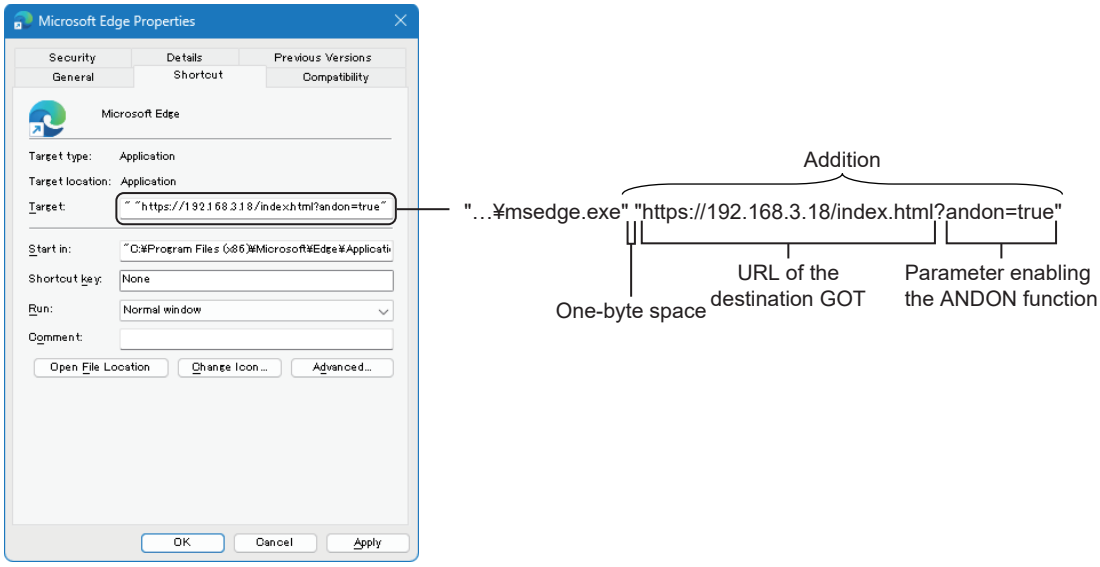
☞ Page 2805 URL parameters

82.5.2 Displaying a mobile screen on the client upon power-on

A client can display a mobile screen upon power-on without specific operations, such as logging into the OS, starting a browser, and entering a URL on the address bar.
The following shows the setting instructions using Windows 11 and Microsoft Edge as an example for encrypted communication

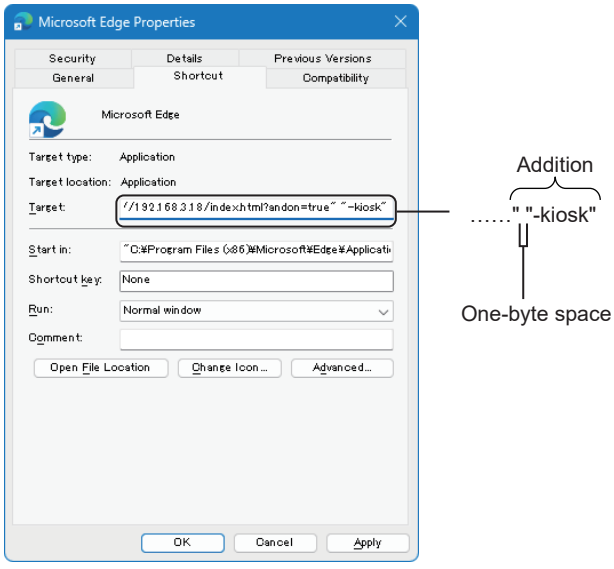
1. Set the destination of a Microsoft Edge shortcut by specifying the URL of the destination GOT and the parameter for enabling the ANDON function.

Create a Microsoft Edge shortcut, and select [Properties] from the right-click context menu.
In the [Shortcut] tab of the [Microsoft Edge Properties] dialog, add the URL and parameter to [Target] as shown below.



2. Configure the setting to open a browser in full screen mode.

In the [Shortcut] tab of the [Microsoft Edge Properties] dialog, add a one-byte space and "-kiosk" to [Target] as shown below.



3. Configure the setting to open the browser automatically upon startup of Windows.

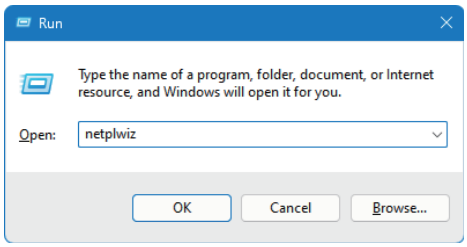
Place the Microsoft Edge shortcut set as above in the directory below.

[\Users\(User name)\AppData\Roaming\Microsoft\Windows\Start Menu\Programs\Startup]

4. Configure the setting to log into Windows automatically upon power-on of the client.

From the Windows start menu, select [All] → [Windows Tools], and double-click [Run] in the displayed [Windows Tools] window.

In the displayed [Run] dialog, type "netplwiz" in the [Open] field and click the [OK] button. The [User Accounts] dialog appears.



5. In the [Users] tab, select a user to log onto Windows automatically, and clear [Users must enter a user name and password to use this computer].

Click the [OK] button to display the [Automatically Log On] dialog.

Precautions

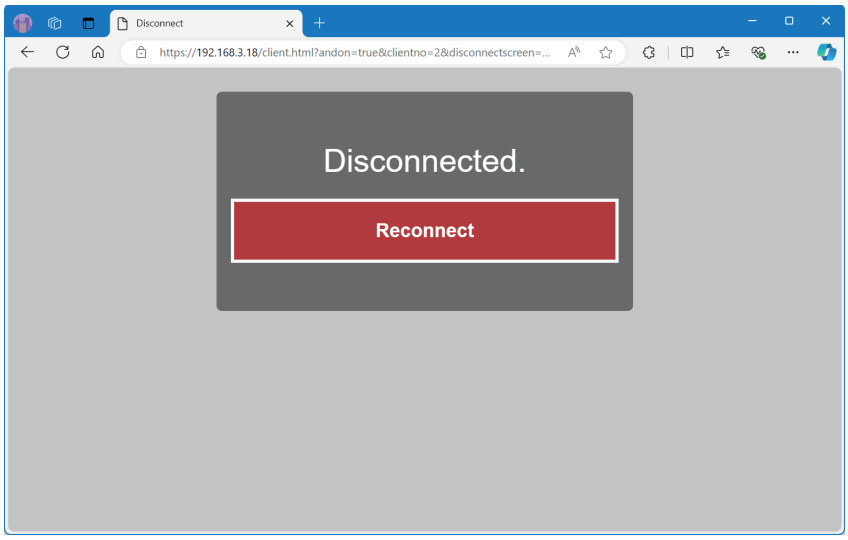
If the personal computer is joined to a Windows domain, [Users must enter a user name and password to use this computer] may not be displayed.

In this case, consult the administrator of the personal computer.

6. Enter the target user name and its password, and click the [OK] button.

82.5.3 Displaying the disconnect screen

When the ANDON function is used, clicking the OK button in the confirmation dialog for disconnection establishes an automatic reconnection without displaying the connection authentication screen.
Enable the URL parameter (disconnectscreen) to display the disconnect screen without allowing an automatic reconnection after clicking the OK button in the confirmation dialog for disconnection.



Clicking the [Reconnect] button establishes a reconnection.
When the ANDON function is not used, click the [Reconnect] button to display the connection authentication screen.
For details on the URL parameters, refer to the following.
☞ Page 2805 URL parameters

82.6 [GOT Mobile Setting] window

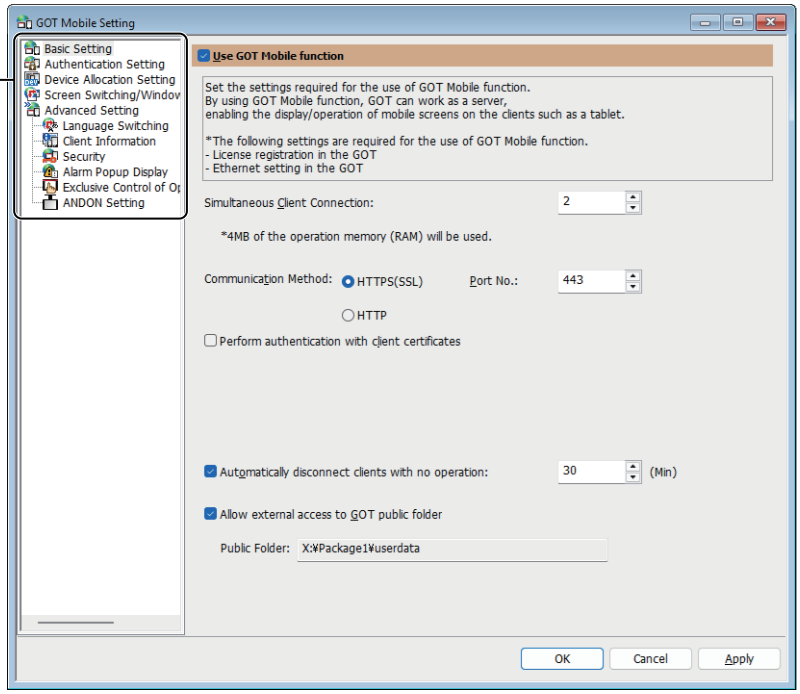
GT37 SoftGOT3000

Configure the GOT Mobile function setting.

Select [Common] → [GOT Mobile Setting] from the menu to display this window.

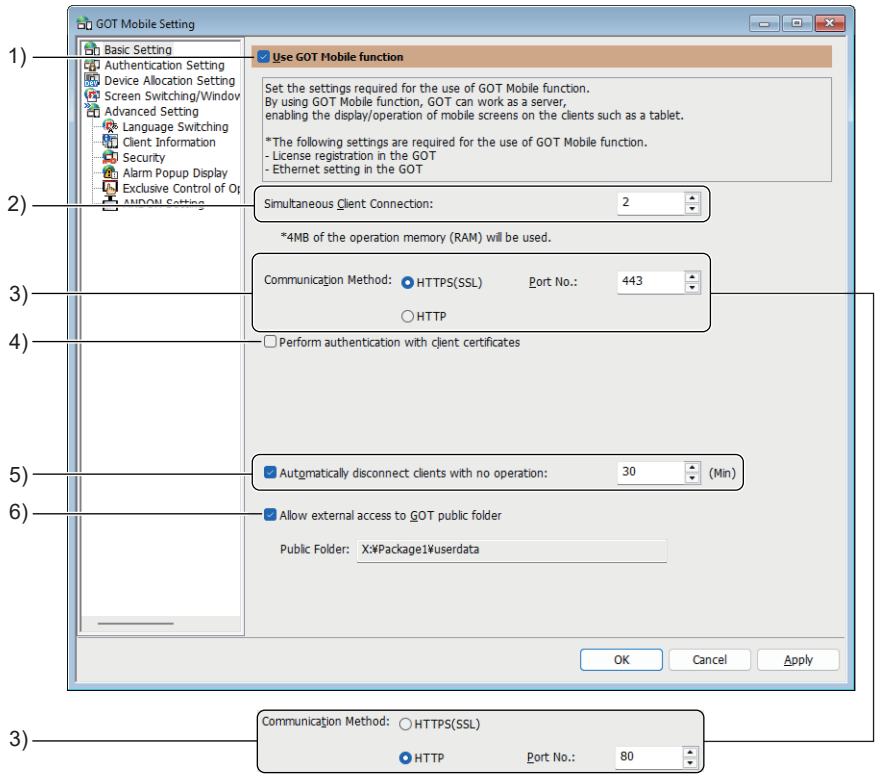
The display contents are changeable by selecting an item in the setting tree on the left of the window.

Setting tree



☞ Page 2818 [Basic Setting]
☞ Page 2819 [Authentication Setting]
☞ Page 2821 [Device Allocation Setting]
☞ Page 2822 [Screen Switching/Window]
☞ Page 2823 [Language Switching]
☞ Page 2824 [Client Information]
☞ Page 2825 [Security]
☞ Page 2828 [Alarm Popup Display]
☞ Page 2829 [Exclusive Control of Operational Authority]
☞ Page 2830 [ANDON Setting]

82.6.1 [Basic Setting]

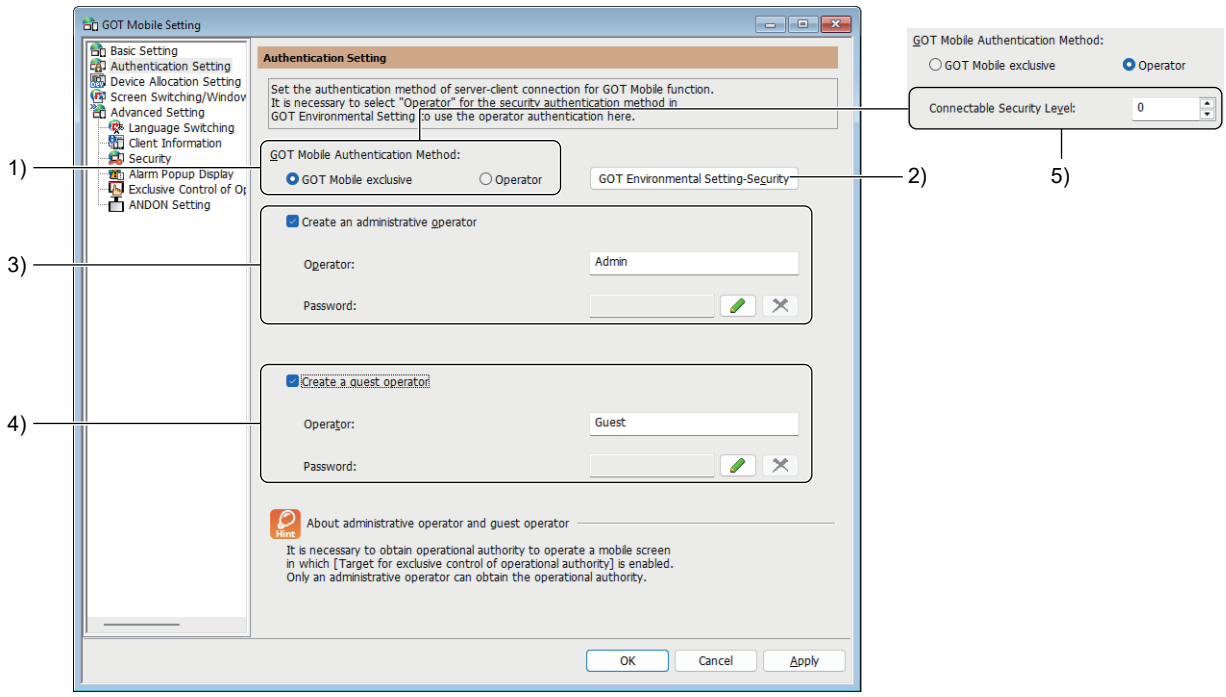


Item		Description
1)	[Use GOT Mobile function]	Enables the GOT Mobile function.
2)	[Simultaneous Client Connection]	Set the maximum number of clients connectable to the GOT simultaneously. The GOT reserves 2 MB space of the user area in the operation memory (RAM) for each client. The setting range depends on the GOT type. • GT37: [1] to [5] • GT SoftGOT3000: [1] to [15]
3)	[Communication Method]	Select the communication method for connection with the client. After selecting the communication method, specify the port number. • [HTTPS(SSL)]: [443], [1024] to [65535] • [HTTP]: [80], [1024] to [65535]
4)	[Perform authentication with client certificates]	Select this item to perform authentication with client certificates. It is recommended to select this item to enhance security for the ANDON connection. When this item is selected, it is necessary to import the client certificate created on the client terminal to the GOT.
5)	[Automatically disconnect clients with no operation]	Disconnects a client from the server (GOT) if no operation is performed on the client for a specified time period. Select this item, and specify the time period until disconnection is performed. The setting range is [1] minute to [60] minutes.
6)	[Allow external access to GOT public folder]	Allows clients to access the files in the GOT public folder. For details on the public folder, refer to the following. ☞ Page 2760 Public folder

82.6.2 [Authentication Setting]

For details on the authentication, refer to the following.

☞ Page 2757 Authentication



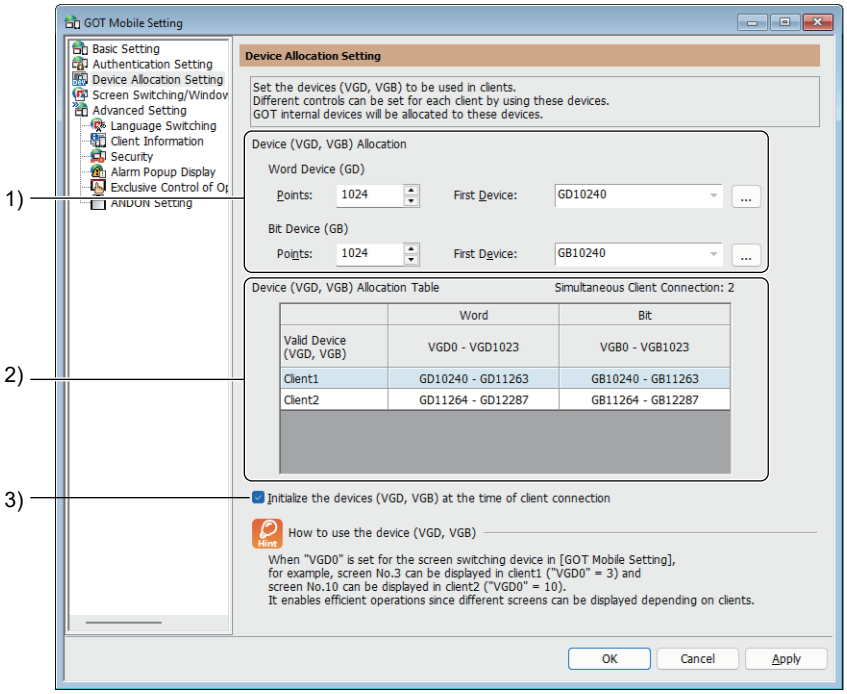
Item			Description
1)	[GOT Mobile Authentication Method]		Select an authentication method for connecting a client to the GOT. When the ANDON function is used, login using the operator authentication is not available. The following shows selectable items. • [GOT Mobile exclusive] • [Operator]
2)	[GOT Environmental Setting-Security] button		Displays the [Environmental Setting] window ([Security]). For the settings in the [Environmental Setting] window ([Security]), refer to the following. ☞ Page 3038 Restricting display and operation on the GOT (Screen security)
3)	[Create an administrative operator]	—	Set an administrator operator account for authentication. The administrative operator account can monitor and operate the mobile screen. This item is settable when [GOT Mobile Authentication Method] is set to [GOT Mobile exclusive]. Select this item, and set [Operator] and [Password].
		[Operator]	Set the operator name of the administrative operator. Up to 32 one-byte alphanumeric characters (uppercase letters and lowercase letters), one-byte spaces, and the following symbols are available for the operator name. ! " # $ % & ' ( ) * + , ` - . / : ; < = > ? @ [\ ] ^ _ { | } ~ Note that the operator name or password cannot end in a one-byte space.
		[Password]	Set the password for the administrative operator. • Password display area The password is displayed as eight [●] regardless of the number of digits of the password set in the [Password Edit] dialog. • Edit button Click the Edit button to display the [Password Edit] dialog. • Delete button Deletes the set password.

Item			Description
4)	[Create a guest operator]	—	Set a guest operator account for authentication. The guest operator account can only monitor the mobile screen. This item is settable when [GOT Mobile Authentication Method] is set to [GOT Mobile exclusive]. Select this item, and set [Operator] and [Password].
		[Operator]	Set the operator name of the guest operator. Up to 32 one-byte alphanumeric characters (uppercase letters and lowercase letters), one-byte spaces, and the following symbols are available for the operator name. ! " # $ % & ' ( ) * + , ` - . / : ; < = > ? @ [\ ] ^ _ { ¦ }~ Note that the operator name or password cannot end in a one-byte space.
		[Password]	Set the password for the guest operator. • Password display area The password is displayed as eight [●] regardless of the number of digits of the password set in the [Password Edit] dialog. • Edit button Click the Edit button to display the [Password Edit] dialog. • Delete button Deletes the set password.
5)	[Connectable Security Level]		Set the security level of the operator allowed to access the GOT. This item is settable when [GOT Mobile Authentication Method] is set to [Operator]. The setting range is [0] to [15].

82.6.3 [Device Allocation Setting]

For details on the GOT Mobile devices, refer to the following.

☞ Page 2755 GOT Mobile device (VGB and VGD)

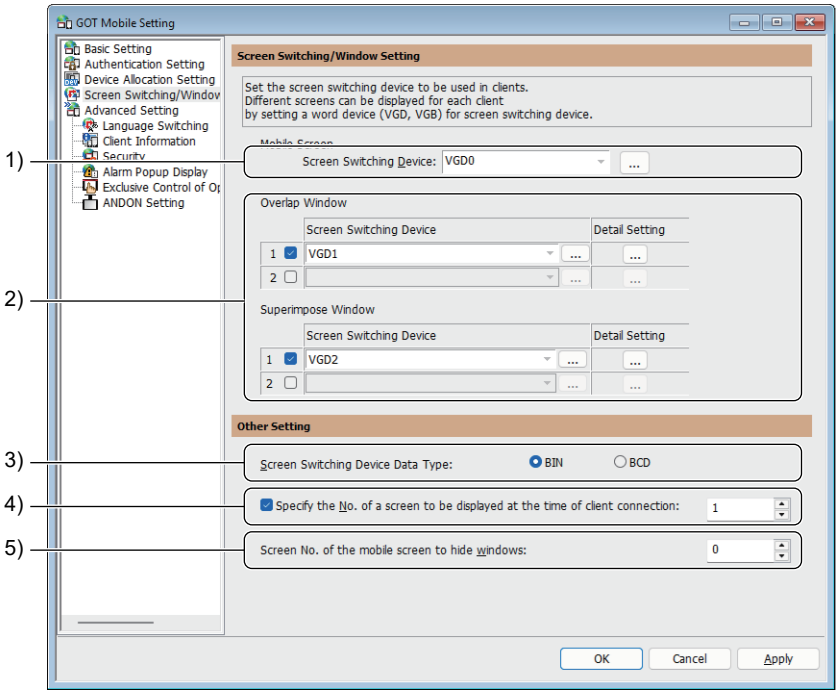


Item				Description
1)	[Device (VGD, VGB) Allocation]	—		Set GOT internal devices to be assigned to the GOT Mobile devices (VGD and VGB). The number of GOT internal devices (GD and GB) to be assigned is obtained by the following formula: [Points] × [Simultaneous Client Connection].
		[Word Device (GD)]	[Points]	Set the number of GOT internal devices (GD) to be assigned for one client. The value is settable in 2-point units. The setting range is [2] to [32768].
			[First Device]	Set the first GOT internal device (GD) to be assigned for client 1. The consecutive devices starting from [First Device] are assigned for clients. The total number of assigned devices is obtained by the following formula: [Points] × [Simultaneous Client Connection]. The setting range is [GD0] to [GD65535].
		[Bit Device (GB)]	[Points]	Set the number of GOT internal devices (GB) to be assigned for one client. The value is settable in 32-point units. The setting range is [32] to [32768].
			[First Device]	Set the first GOT internal device (GB) to be assigned for client 1. The consecutive devices starting from [First Device] are assigned for clients. The total number of assigned devices is obtained by the following formula: [Points] × [Simultaneous Client Connection]. The setting range is [GB0] to [GB65520].
2)	[Device (VGD, VGB) Allocation Table]	—		Shows the correspondence between the GOT Mobile devices and the assigned GOT internal devices by client number.
		[Simultaneous Client Connection]		Maximum number of clients connectable to the GOT simultaneously The value set in [Basic Setting] is displayed.
		[Valid Device (VGD, VGB)]		Setting range of GOT Mobile devices usable in clients
		[Client1] to [Client15]		GOT internal devices that are assigned for each client
3)	[Initialize the devices (VGD, VGB) at the time of client connection]			Clears the values of the GOT Mobile devices assigned to a client when the client connects to the GOT.

82.6.4 [Screen Switching/Window]

For details on screen switching on a client, refer to the following.

☞ Page 2745 Screen switching



Item		Description
1)	[Screen Switching Device]	Set the screen switching device for clients. You can specify a word device or word-specified bit device.
2)	Settings of overlap windows 1 and 2 and superimpose windows 1 and 2	Set whether to use overlap windows 1 and 2, superimpose windows 1 and 2, screen switching devices, display methods, and other items. For details, refer to the following. ☞ Page 542 [Screen Switching/Window]
3)	[Screen Switching Device Data Type]	Select the data type of the screen switching device for clients. The following shows selectable items. • [BIN]: Signed 16-bit binary or unsigned 16-bit binary • [BCD]: 16-bit binary coded decimal
4)	[Specify the No. of a screen to be displayed at the time of client connection]	Set the screen number of the mobile screen to be displayed immediately after the client becomes authenticated to the GOT. The setting range varies depending on the setting of [Screen Switching Device Data Type]. • For [BIN]: [0] to [32767] • For [BCD]: [0] to [9999]
5)	[Screen No. of the mobile screen to hide windows]	Set the screen number of a mobile screen. Then, the overlap windows and superimpose windows displayed on the screen are hidden. When the set number is stored in the screen switching device, the corresponding window is hidden.

Precautions

When you use multiple clients simultaneously, specify a GOT Mobile device as the mobile screen switching device.

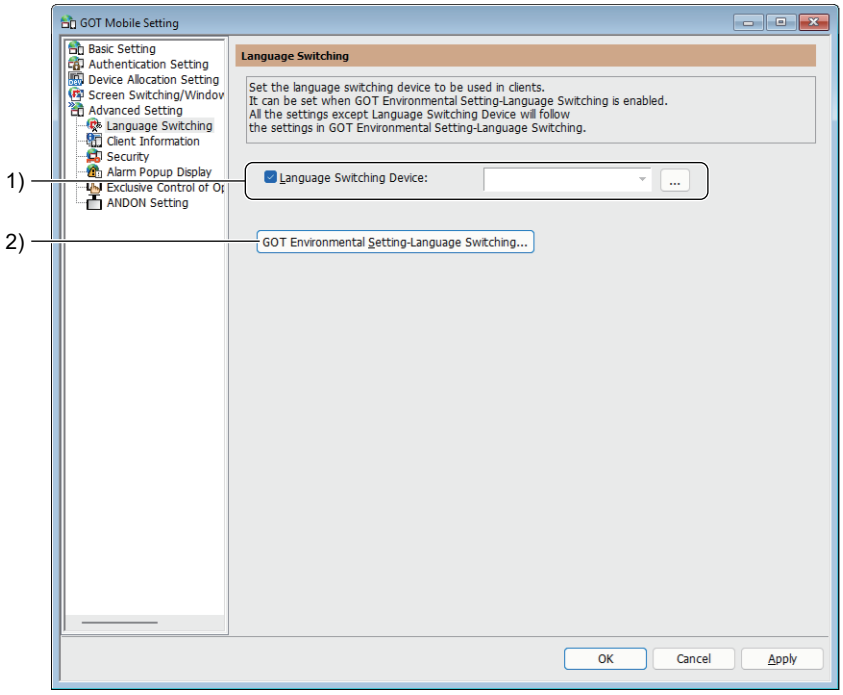
If any device other than a GOT Mobile device is specified as the screen switching device, all clients display the same screen when the screen switches.

☞ Page 2755 GOT Mobile device (VGB and VGD)

82.6.5 [Language Switching]

For details on language switching on the mobile screen, refer to the following.

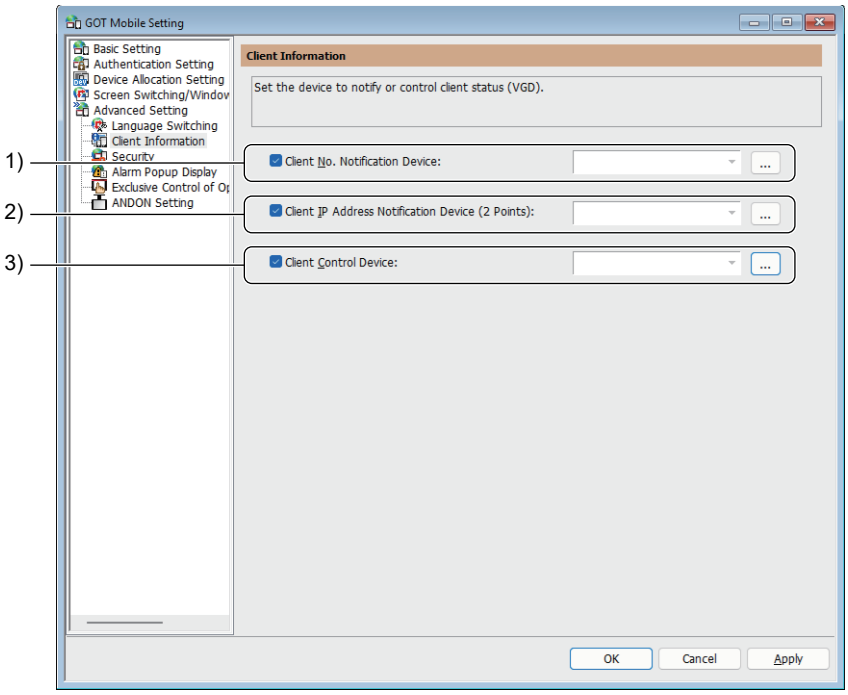
☞ Page 2746 Language switching

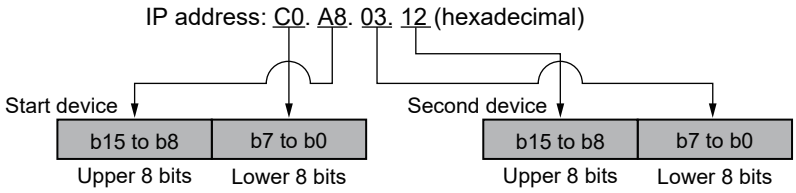


Item		Description
1)	[Language Switching Device]	Set the language switching device for clients. You can specify a word device or word-specified bit device.
2)	[GOT Environmental Setting-Language Switching] button	Displays the [Environmental Setting] window ([Language Switching]). For language switching on the mobile screen, the GOT environmental settings are applied except the setting of [Language Switching Device]. For the settings in the [Environmental Setting] window ([Language Switching]), refer to the following. ☞ Page 551 [Language Switching]

82.6.6 [Client Information]

Set the devices to notify the information on the client being connected or to control the state of the client.



Item		Description
1)	[Client No. Notification Device]	Set a device to store the client number of the client being connected. Select this item, and set the device. You can specify a GOT Mobile device (VGD) only. The data type of the device is unsigned 16-bit binary.
2)	[Client IP Address Notification Device (2 Points)]	Set a device to store the IP address of the client. Select this item, and set the device. You can specify a GOT Mobile device (VGD) only. Two consecutive word devices are reserved, starting from the specified device. The data type of the device is unsigned 32-bit binary. The IP address is stored as shown below. Example) When the IP address is 192.168.3.18 (decimal) 
3)	[Client Control Device]	Set a device to control the state of the client being connected. Select this item, and set the device. Turning on b0 of the set device disconnects the client from the GOT. You can specify a GOT Mobile device (VGD) only. The data type of the device is unsigned 16-bit binary.

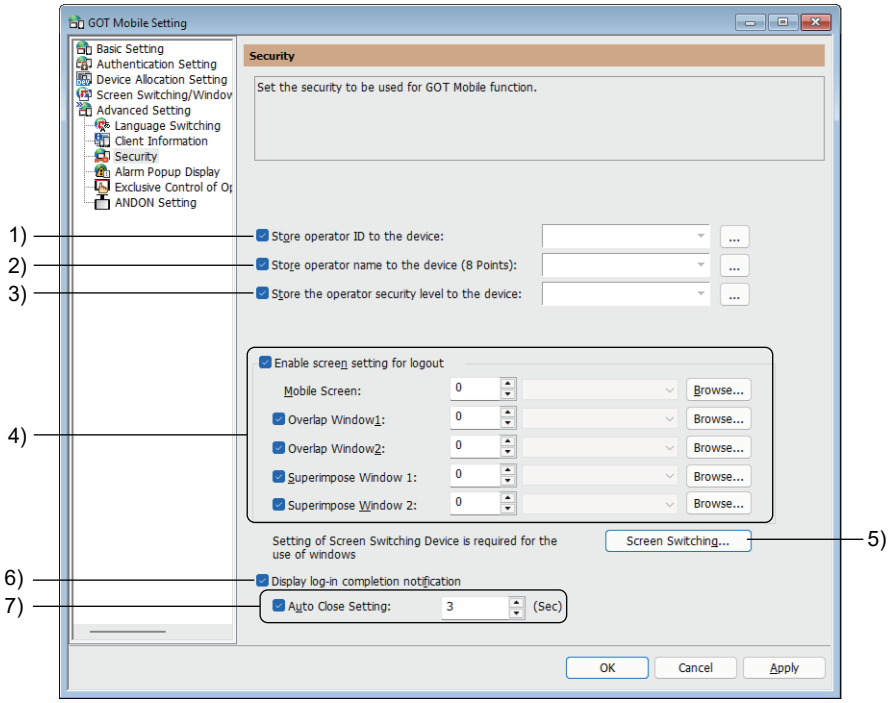
82.6.7 [Security]

The setting items differ according to the security mode and the authentication method of the screen security.

For details on the mobile screen security authentication, refer to the following.

☞ Page 2747 Screen security (level authentication and operator authentication)

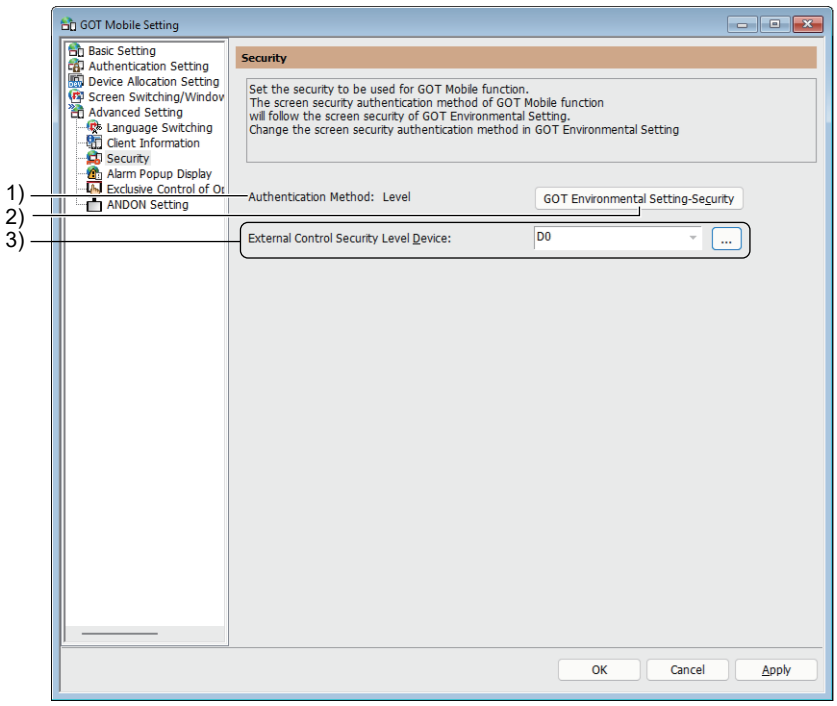
Security mode 2



Item		Description
1)	[Store operator ID to the device]	Set a device to store the ID number of the operator who is logged in from a client (Operator ID External Notification device). You can specify a GOT Mobile device (VGD) only. The specified device stores 0 when the operator logs out.
2)	[Store operator name to the device (8 Points)]	Set a device to store the name of the operator who is logged in from a client (Operator Name External Notification device). You can specify a GOT Mobile device (VGD) only. Eight consecutive word devices are reserved, starting from the specified device. If the operator name contains less than 16 characters, blank devices store 0. All the devices store 0 when the operator logs out.
3)	[Store the operator security level to the device]	Set a device to store the security level of the operator who is logged in from a client (Operator Level External Notification device). You can specify a GOT Mobile device (VGD) only. The specified device stores 0 when the operator logs out.
4)	[Enable screen setting for logout]	Set a screen to be displayed at logout. When using an overlap window or superimpose window, set a screen switching device in [Screen Switching/Window] in the [GOT Mobile Setting] window. Click the [Browse] button to display the [Screen Image List] dialog. For details on the [Image List] dialog, refer to the following. ☞ Page 3683 [Image List] dialog (screen)
5)	[Screen Switching] button	Displays the setting screen for the screen switching devices. ☞ Page 2822 [Screen Switching/Window]
6)	[Display log-in completion notification]	Displays a login completion notification dialog upon login.
7)	[Auto Close Setting]	Closes the login completion notification dialog automatically. Select this item, and specify the time period from when the login completion notification dialog appears until it closes. The setting range is [1] second to [60] seconds.

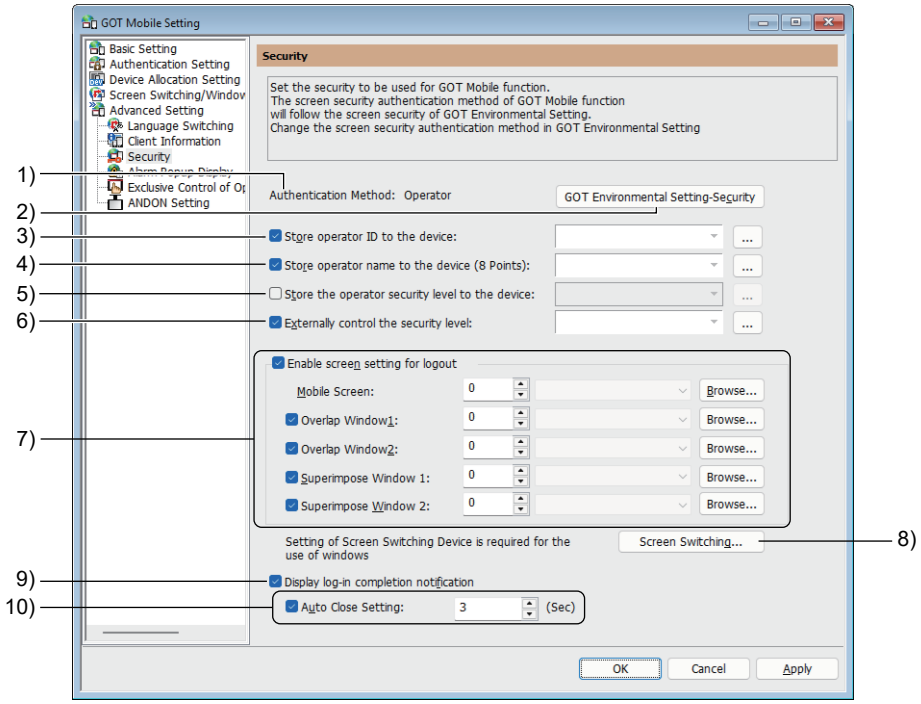
Security mode 1

■For the level authentication



Item		Description
1)	[Authentication Method]	Displays the security authentication method selected for [Authentication Method] in the [Environmental Setting] window ([Security]).
2)	[GOT Environmental Setting-Security] button	Displays the [Environmental Setting] window ([Security]). The security level password is common to the clients and the GOT. Change the authentication method and security level password for the GOT as necessary. For details, refer to the following. ☞ Page 3054 Level authentication
3)	[External Control Security Level Device]	Set a device to store the security level of a client. You can specify a word device or word-specified bit device.

■For the operator authentication

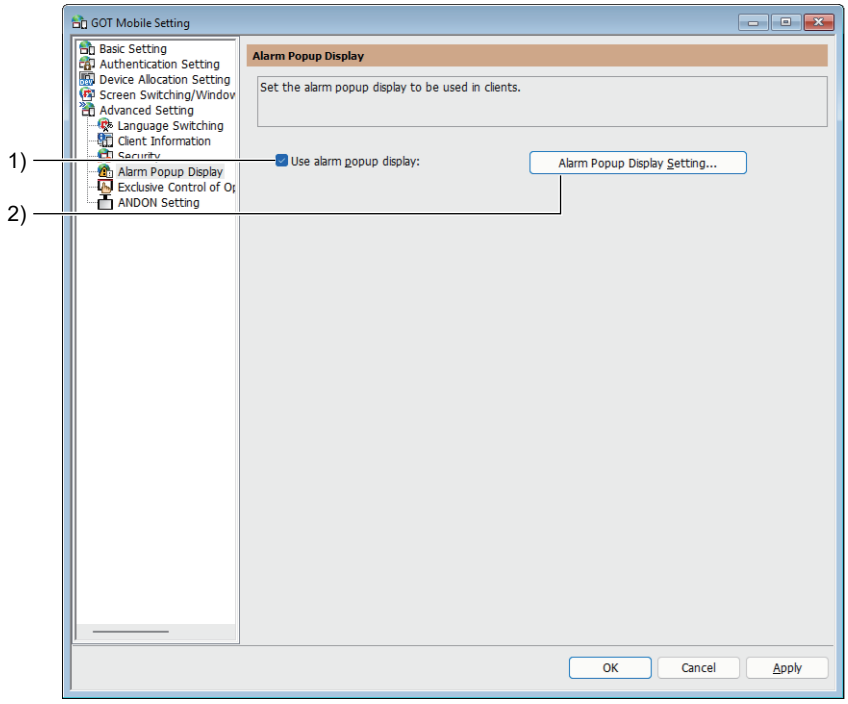


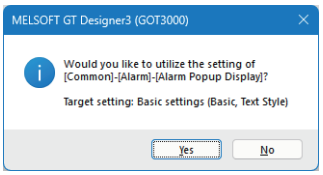
Item		Description
1)	[Authentication Method]	Displays the security authentication method selected for [Authentication Method] in the [Environmental Setting] window ([Security]).
2)	[GOT Environmental Setting-Security] button	Displays the [Environmental Setting] window ([Security]). Change the authentication method for the GOT as necessary. For details, refer to the following. ☞ Page 3055 Operator authentication (Mode 1)
3)	[Store operator ID to the device]	Set a device to store the ID number of the operator who is logged in from a client (Operator ID External Notification device). You can specify a GOT Mobile device (VGD) only. The specified device stores 0 when the operator logs out.
4)	[Store operator name to the device (8 Points)]	Set a device to store the name of the operator who is logged in from a client (Operator Name External Notification device). You can specify a GOT Mobile device (VGD) only. Eight consecutive word devices are reserved, starting from the specified device. If the operator name contains less than 16 characters, blank devices store 0. All the devices store 0 when the operator logs out.
5)	[Store the operator security level to the device]	Set a device to store the security level of the operator who is logged in from a client (Operator Level External Notification device). You can specify a GOT Mobile device (VGD) only. The specified device stores 0 when the operator logs out.
6)	[Externally control the security level]	Set a device to externally control the operator authentication on a client (Operator Authentication External Control device). You can specify a word device or word-specified bit device. For details on the security level control from an external device, refer to the following. ☞ Page 3047 Security level control from an external device
7)	[Enable screen setting for logout]	Set a screen to be displayed at logout. When using an overlap window or superimpose window, set a screen switching device in [Screen Switching/Window] in the [GOT Mobile Setting] window. Click the [Browse] button to display the [Screen Image List] dialog. For details on the [Image List] dialog, refer to the following. ☞ Page 3683 [Image List] dialog (screen)
8)	[Screen Switching] button	Displays the setting screen for the screen switching devices. ☞ Page 2822 [Screen Switching/Window]
9)	[Display log-in completion notification]	Displays a login completion notification dialog upon login.
10)	[Auto Close Setting]	Closes the login completion notification dialog automatically. Select this item, and specify the time period from when the login completion notification dialog appears until it closes. The setting range is [1] second to [60] seconds.

82.6.8 [Alarm Popup Display]

For details on the alarm popup display on mobile screens, refer to the following.

☞ Page 2748 Alarm popup display

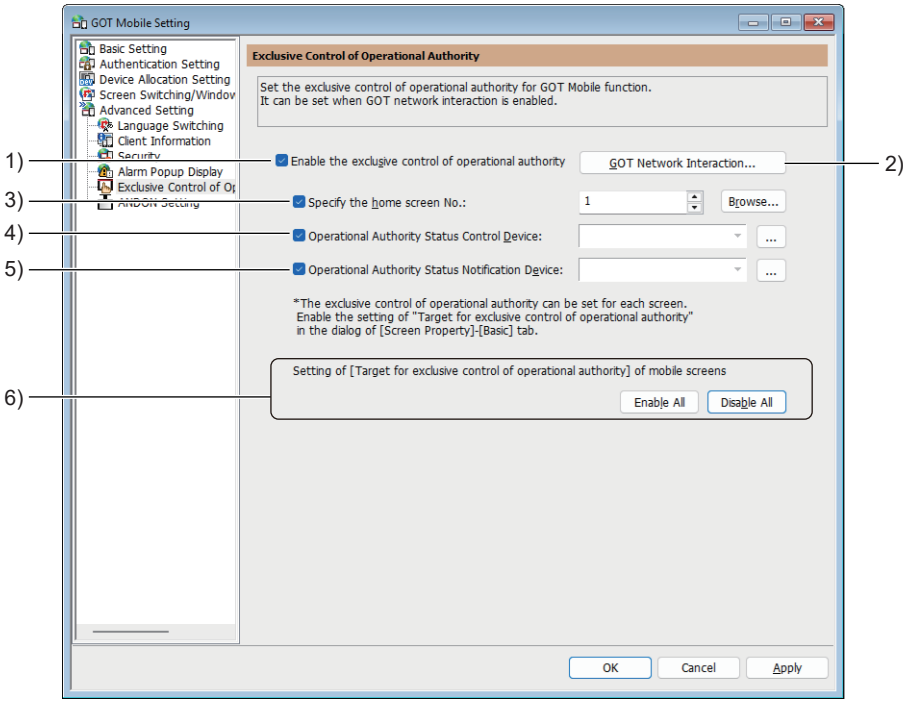


Item		Description
1)	[Use alarm popup display]	Uses the alarm popup display on mobile screens.
2)	[Alarm Popup Display Setting] button	Displays the following dialog to configure the alarm popup display setting for mobile screens. Clicking this button displays the following dialog.  To utilize the alarm popup display setting for the GOT, click the [Yes] button to display the [Alarm Popup Display(GOT Mobile Setting)] dialog. To not to utilize the alarm popup display setting for the GOT, click the [No] button to display the [Alarm Popup Display(GOT Mobile Setting)] dialog. ☞ Page 2105 Enabling the popup display for when an alarm occurs

82.6.9 [Exclusive Control of Operational Authority]

For details on the GOT network interaction function, refer to the following.

☞ Page 762 Setting the interaction function for equipment on Ethernet ([GOT Network Interaction])

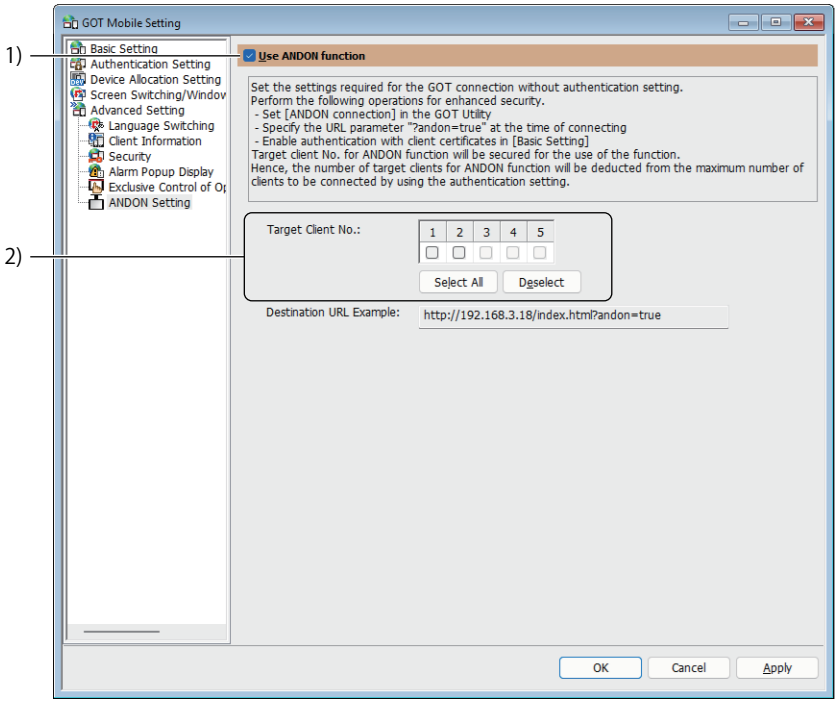


Item		Description
1)	[Enable the exclusive control of operational authority]	Enables the authorization control of the GOT network interaction function in the GOT Mobile function. This item is settable only when the GOT network interaction function is enabled. To enable authorization control, select [Target for exclusive control of operational authority] in the [Basic] tab of [Screen Property]. ☞ Page 2831 [Basic] tab
2)	[GOT Network Interaction] button	Displays the [GOT Network Interaction] dialog. For the settings in the [GOT Network Interaction] dialog, refer to the following. ☞ Page 772 [GOT Network Interaction] dialog
3)	[Specify the home screen No.]	Set a mobile screen to be displayed by the home screen button on the popup display of the GOT network interaction function. Select this item, and specify the screen number of the mobile screen. Make sure to disable the authorization control in the mobile screen set as the home screen. For details on the home screen in the GOT network interaction function, refer to the following. ☞ Page 766 Operation on target equipment Click the [Browse] button to select a mobile screen in thumbnail view in the [Image List] dialog. ☞ Page 3683 [Image List] dialog (screen)
4)	[Operational Authority Status Control Device]	Set a device to control the authorization status. Select this item, and set the device. You can specify a GOT Mobile device (VGD) or word-specified GOT Mobile device (VGB). For details on the Operational Authority Status Control device, refer to the following. ☞ Page 2758 Operational Authority Status Control device
5)	[Operational Authority Status Notification Device]	Set a device to notify the authorization status. Select this item, and set the device. You can specify a GOT Mobile device (VGD) or word-specified GOT Mobile device (VGB). For details on the Operational Authority Status Notification device, refer to the following. ☞ Page 2758 Operational Authority Status Notification device
6)	[Setting of [Target for exclusive control of operational authority] of mobile screens]	Enables or disables the setting of [Target for exclusive control of operational authority] in all mobile screens at once. For the mobile screen setting, refer to the following. ☞ Page 2831 Mobile screen properties

82.6.10 [ANDON Setting]

For details on the ANDON function, refer to the following.

☞ Page 2812 ANDON function



Item		Description
1)	[Use ANDON function]	Enables connection between the GOT and clients without the operator name and password-based authentication.
2)	[Target Client No.]	Select the target client number of the ANDON function. The number of settable clients depends on the model. The selected client connects to the GOT without the operator name and password-based authentication. Connection using the GOT Mobile exclusive authentication or the operator authentication is not applicable.

82.7 Mobile screen properties

GT37 SoftGOT3000

Set the properties of a mobile screen.

To display the properties, perform one of the following operations.

When creating a mobile screen:

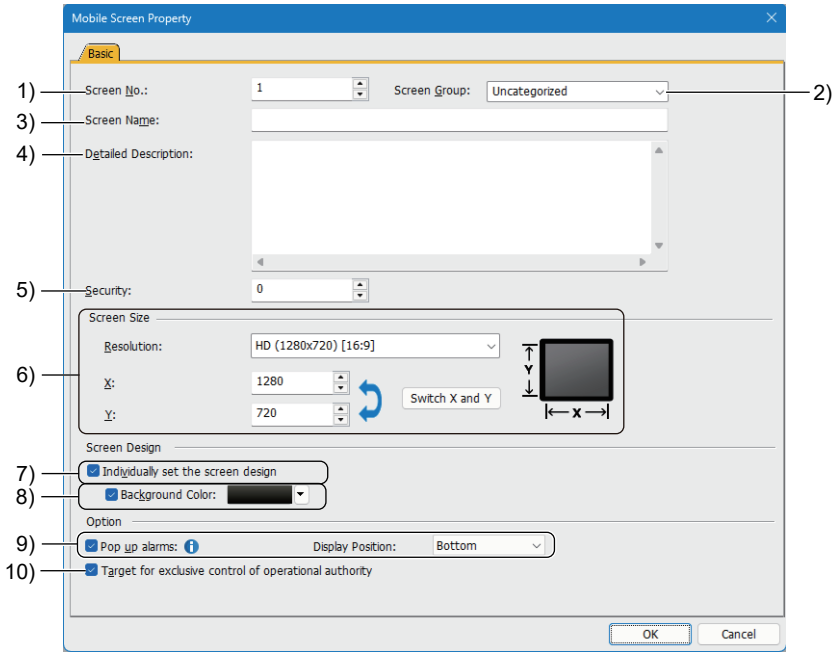
- Select [Screen] → [New] → [Mobile Screen] from the menu.
- In the [Screen] window, click the [New Screen] button and select [Mobile Screen].

When editing an existing mobile screen:

- Right-click a mobile screen, and select [Screen Property].
- Right-click a mobile screen in the tree in the [Screen] window, and select [Screen Property].

☞ Page 2831 [Basic] tab

82.7.1 [Basic] tab



Item		Description
1)	[Screen No.]	Set a screen number. The setting range is [0] to [32767]. The screen number cannot be changed if the [Mobile Screen Property] dialog has been brought up for multiple screens.
2)	[Screen Group]	Set a screen group. Up to 100 characters can be set.
3)	[Screen Name]	Set the title of the screen. Up to 100 characters can be set.
4)	[Detailed Description]	Set the explanation for the screen. Up to 512 characters can be set. A line feed is counted as two characters.
5)	[Security]	Set the security level. The setting range is [0] to [15]. If you do not use the security function of the GOT, select [0]. ☞ Page 2989 Restricting GOT screen operations and access from external devices (operator authentication (Mode 2)) ☞ Page 3038 Restricting display and operation on the GOT (Screen security)

Item			Description
6)	[Screen Size]	—	Set the screen size.
		[Resolution]	Select the resolution of the mobile screen. The values of [X] and [Y] are automatically specified according to the selection for [Resolution]. [VGA (640×480) [4:3]] [SVGA (800×600) [4:3]] [XGA (1024×768) [4:3]] [QXGA (2048×1536) [4:3]] [WXGA (1280×800) [16:10]] [HD (1280×720) [16:9]] [FWXGA (1366×768) [16:9]] [Full HD (1920×1080) [16:9]] [WUXGA (1920×1200) [16:10]] [WQHD (2560×1440) [16:9]] [Custom] The above resolutions are approximate and should be used for reference. Adjust the resolution according to the information device and browser to be used.
		[X]	Screen width If you change a specified value, the selection for [Resolution] is changed to [Custom]. The setting range is [16] to [3000].
		[Y]	Screen height If you change a specified value, the selection for [Resolution] is changed to [Custom]. The setting range is [2] to [3000].
		[Switch X and Y] button	Interchanges the values of [X] and [Y]. If you click this button, the selection for [Resolution] is changed to [Custom].
7)	[Individually set the screen design]		Enables the individual screen design (including the background color), instead of the design selected in the [Screen Design] dialog.
8)	[Background Color]		Select a background color. For instruction on the color setting, refer to the following. ☞ Page 988 Color settings
9)	[Pop up alarms]	—	An alarm pops up when an alarm occurs.
		[Display Position]	Select the position to display an alarm to be popped up. The following shows selectable items. • [Top] • [Center] • [Bottom] Configure the following settings additionally. • User alarm settings or system alarm settings ☞ Page 2045 [User Alarm Observation] dialog ☞ Page 2097 [System Alarm Observation] dialog • Alarm popup display settings ☞ Page 2118 [Alarm Popup Display] dialog
10)	[Target for exclusive control of operational authority]		Enables the authorization control in the screen being edited. ☞ Page 2758 Authorization control To enable the authorization control throughout the project, select [Enable the exclusive control of operational authority] in the [GOT Mobile Setting] window ([Exclusive Control of Operational Authority]). ☞ Page 2829 [Exclusive Control of Operational Authority]

82.8 Relevant settings

GT37 SoftGOT3000

Configure the relevant settings in addition to the specific settings for the GOT Mobile function as required.
The following shows the functions that are available by configuring the relevant settings.
☞ Page 3581 GOT special register (GS)

82.8.1 GOT internal device

Function	Setting item
Storing the number of clients connected to the GOT	GS1400
Turned on when a client is connected to the GOT	GS1401.b1 to .b15
Specifying a security level with which folder and file manipulations are allowed on the file manager screen	GS1892
Setting whether to use the URL parameter (initscreen)	GS1896.b0
Enabling folder and file manipulations on the file manager screen*1	GS1896.b1
Disabling the addition of X-Frame-Options to the HTTP response header	GS1896.b2
Setting the time from when communication is lost between the GOT and a client until when the GOT forcibly turns off the touch switch being touched on the client	GS1899

*1 Always disabled when the security mode 2 is selected.

82.9 Troubleshooting

GT37 SoftGOT3000

If you have any trouble with the GOT Mobile function, check the operating environment first.

☞ Page 2740 Operating environment

For details, refer to the following Technical Bulletin as well.

📖Precautions for the GOT Mobile Function (for Japanese Market) (GOT-A-0090)

82.9.1 Troubleshooting for clients

The following shows the troubleshooting for clients.

Symptom	Cause	Corrective action
Although a URL is specified, a communication error occurs and no screen appears.	The specified URL is incorrect.	Enter the correct URL. ☞ Page 2802 Connecting the client with the server (GOT)
	The setting for connection to the server (GOT) is configured incorrectly.	Check that the system is configured correctly. ☞ Page 2766 System configuration of the GOT Mobile function If the system is configured correctly, check that the connection setting on the client and settings in the [GOT Ethernet Setting] dialog on GT Designer3 are configured correctly. ☞ Page 727 Setting channels
	The system application (add-on function) for the GOT Mobile function is not installed on the GOT.	Write the package data that contains the system application (add-on function) for the GOT Mobile function to the GOT. ☞ Page 2818 [Basic Setting]
After the authentication, the client stays at a black screen and no mobile screen appears.	When the communication method is HTTP, the antivirus software prevents the mobile screen from appearing.	Set any number other than 80 or 8080 for the HTTP port No. for GOT Mobile. ☞ Page 2818 [Basic Setting] If no mobile screen appears even after you change the port number, disable the antivirus software.
	When the communication method is HTTPS (SSL), the GOT server certificate is not registered in the client.	Register the GOT server certificate in the web browser. ☞ Page 2771 Settings for encrypted communication (except GT SoftGOT3000) ☞ Page 2780 Settings for encrypted communication (GT SoftGOT3000)
	No mobile screen appears due to unintended browser refresh when switching between tabs or other actions.	Close all browser tabs, restart the browser, and reconnect the server (GOT).
Response speed is low.	When you operate a mobile screen or an object on the mobile screen, the response speed or display refresh rate is low depending on the specifications of the client.	Reduce the number of objects or graph points on the mobile screen. The situation may improve.
The client is disconnected from the GOT.	Browser tabs may be switched or another application may be operated during communications with the server (GOT).	Connect the client to the server (GOT) again. Close unnecessary browser tabs or exit other applications. The situation may improve.
A mobile screen is enlarged.	The screen may be enlarged when displayed for the first time.	Adjust the screen to fit the width of the browser window using the [Fit Width] button on the mobile screen operation menu bar. Alternatively, preset the mobile screen size accordingly.
A message saying [License unregistration.] appears on the mobile screen.	The license of the GOT Mobile function is unregistered to the GOT.	Register the license of the GOT Mobile function to the GOT. ☞ Page 3686 License registration method 📖GT SoftGOT3000 User's Manual
The client is disconnected from the GOT after a lapse of 30 minutes.		

Symptom	Cause	Corrective action
After displaying a mobile screen, the client is disconnected after a certain period of time.	The client is communicating with the server (GOT) using USB-LAN conversion with [USB selective suspend setting] set to [Enable] in Windows.	Set [USB selective suspend setting] in Windows to [Disable] using the following procedure. 1. In Windows, select [Control Panel] - [Power Options]. 2. Click [Change plan settings] for the current power plan. 3. Click [Advanced settings]. 4. Select [USB settings] - [USB selective suspend setting] - [Disabled] and click the [OK] button.
The mobile screen stops displaying after extended use. After the mobile screen is displayed for a certain period of time, [Out Of Memory] appears on the web browser.	The web browser is using hardware acceleration or graphic acceleration.	• Disable hardware acceleration or graphic acceleration in the web browser settings. • Decrease the number of objects or graph points on the mobile screen. • Specify [reloadtime] as the URL parameter to enable reloading at a specified interval. ☞ Page 2805 URL parameters • Restart the web browser and then reconnect to the server (GOT). For the restart procedure, refer to the following. 📖Precautions for the GOT Mobile Function (GOT-A-0090)

82.9.2 Error messages on clients

Errors before authentication

Error message	Cause	Corrective action
Unsupported browser. Check the operating environment.	The browser does not support the following items. • HTML5 • CSS3 • JavaScript • WebSocket Protocol (RFC 6455)	Use a browser that meets operating environment conditions. ☞ Page 2741 Client operating environment
JavaScript is disabled. Enable JavaScript and connect again.	JavaScript is disabled in the browser.	Enable JavaScript in the browser. ☞ Page 2802 Settings on the client
Cookie is disabled. Enable Cookie and connect again.	Cookie is disabled in the browser.	Enable Cookie in the browser. ☞ Page 2802 Settings on the client

Errors at authentication

Error message	Cause	Corrective action
The operator name or password is incorrect. Please check the operator name or password and execute again.	An incorrect operator name or password has been entered at authentication.	Check the entered operator name and password.
The operator information is being edited in the destination device. Please wait for a while and try again.	The operator authentication cannot be performed because the operator management information file is being edited on the server (GOT).	Perform the operator authentication again after the edit is completed.
Exceeding the maximum number of connections and the connection cannot be made. Please wait for a while and try again.	The connection failed because the number of clients has exceeded the maximum number of simultaneously connectable clients. ☞ Page 2818 [Basic Setting]	• Reconnect to the GOT after any other client becomes disconnected from the GOT. • Check that no operator who has used the GOT Mobile function maintains a logged-in state.
Destination does not respond. Check the communication environment and connect again.	The client cannot communicate with the server (GOT) due to a radio disturbance or a failure in the information device.	Check that the communication environment between the server (GOT) and client is established properly.
The operator is locked or disabled and cannot log in. Please check with the administrator.	A locked operator account due to incorrect login attempts or a disabled operator account is used.	Ask your system administrator to unlock or enable the operator account.
Parameters specified in the URL is wrong. Please check parameters.	An incorrect URL parameter has been entered on the address bar in the browser.	Check the entered URL parameter. ☞ Page 2805 URL parameters
Parameters specified in the URL is invalid. Please check the connection destination setting.	The URL parameter setting is inconsistent with the settings on GT Designer3 or the GOT.	Check that the settings are configured correctly on GT Designer3 and the GOT. ☞ Page 2805 URL parameters
The client No. specified in the URL is in use and cannot be accessed. Please wait for a while and try again.	The connection failed because any other client is connecting to the GOT by using the specified client number.	Reconnect to the GOT after the client using the specified client number becomes disconnected from the GOT. ☞ Page 2805 URL parameters
The operator does not meet the connection conditions and cannot log in. Please check with the administrator.	The connection with the operator authentication failed because the security level of the operator is insufficient.	Ask your system administrator to check the security level setting.
Your password has expired and cannot log in. Please change the password on the connection destination.	The connection with the operator authentication failed because the entered password has expired.	Change the password on the GOT.

Errors in the process of monitoring

Error message	Cause	Corrective action
Trial time has expired. Connection disconnected.	The trial connection time has elapsed, and the client became disconnected from the server (GOT). This is because the license number of the GOT Mobile function is unregistered to the server (GOT).	Register the license of the GOT Mobile function to the GOT. ☞ Page 3686 License registration method 📖GT SoftGOT3000 User's Manual
Connection with destination is disconnected. Check the communication path.	Communication between the server (GOT) and client has been lost.	Connect the client to the server (GOT) again. If connection cannot be established, check that the communication environment between the server (GOT) and client is established properly.
Destination has changed to a offline mode. The connection has been terminated.	The server (GOT) disconnected the client, because the server (GOT) entered the offline mode because of package data writing or others.	Connect the client to the server (GOT) again.
Mobile screen was not operated for a set period of time. Connection terminated.	The server (GOT) disconnected the client, because the automatic logout time elapsed. ☞ Page 2818 [Basic Setting]	Connect the client to the server (GOT) again.
The operator information is being edited in the destination device. Please wait for a while and login and change password again.	You cannot log in using the operator authentication from the client. If you are already logged in, you cannot change your operator account password on the client. These are because the operator management information file is being edited on the server (GOT).	Perform the operator authentication again or change the password after the edit is completed.
You have been logged out. The connection has been terminated.	When you are logged in using the operator authentication, a logout is performed on the client.	Connect the client to the server (GOT) again.
Authentication method is set to the operator authentication. Operators cannot be changed.	The operator switching was denied because you are logged in using the operator authentication.	Log out of the operator account in use, and log in with another operator account.

PART 26 OPC UA server function

83 Monitoring controllers through the GOT (OPC UA server function)

83 Monitoring controllers through the GOT (OPC UA server function)

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☞ Page 2840 Overview of the OPC UA server function
☞ Page 2841 OPC UA server function specifications
☞ Page 2843 OPC UA tag specifications
☞ Page 2851 System configuration of the OPC UA server function
☞ Page 2852 OPC UA server function setting methods
☞ Page 2856 [OPC UA Server Settings] window
☞ Page 2860 [OPC UA Tag Setting] window
☞ Page 2866 Relevant settings
☞ Page 2866 Troubleshooting

PART 26

83.1 Overview of the OPC UA server function

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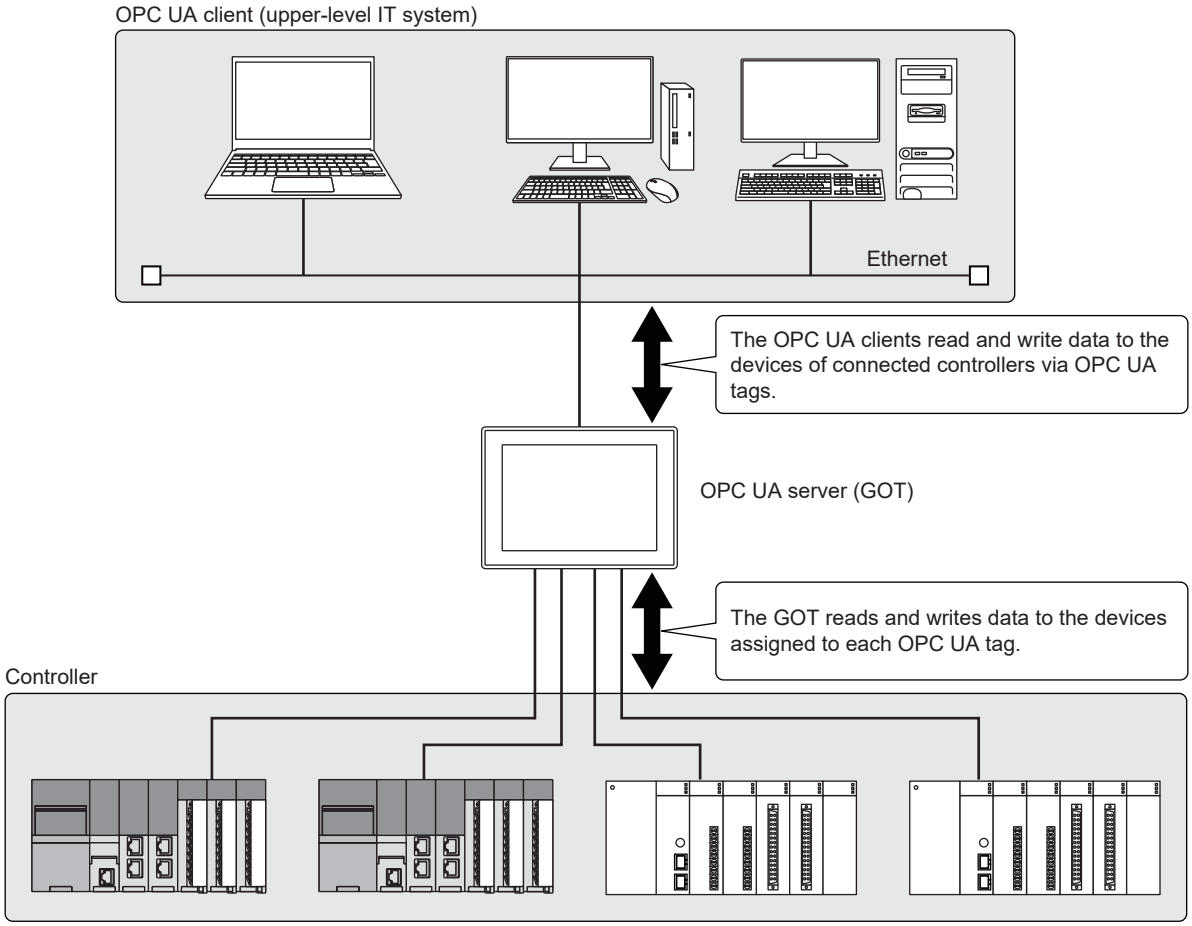
The OPC UA server function enables the GOT to function as an OPC UA server and collect the values of devices assigned to OPC UA tags.

The OPC UA client (upper-level IT system) can access the OPC UA server (GOT) to read/write data to/from devices of connected controllers assigned to OPC UA tags.



OPC UA tag

OPC UA tags are character strings that are assigned to devices.

They support structure and string definitions.

Individual OPC UA tags can be configured to allow or deny reading and writing to and from the OPC UA client. (Configuration of the direction of access)

OPC UA server function security

The OPC UA server function uses the functions shown in the table below to prevent problems caused by unauthorized control due to malicious access of the GOT.

Function	Description
Security policy Security mode	Configures the security policy and security mode applied to the system. The security policy and security mode of both the OPC UA server and OPC UA client must match.
Encrypted communication function	Encrypts communication data when the GOT communicates with an external device. To perform encrypted communications, a digital certificate (hereafter "certificate") is required for the GOT and controllers. ☞ Page 3069 Encrypting communication data (Encrypted communication function)
User authentication	Authenticates users via a username and password when accessing the OPC UA server from the OPC UA client.

83.2 OPC UA server function specifications

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☞ Page 2841 OPC UA server specifications
☞ Page 2842 Required system application (add-on function)

83.2.1 OPC UA server specifications

The GOT runs as a server that is compliant with OPC UA standards (IEC 62451) and OPC Ver.1.03.
The GOT supports the following service sets.
○: Supported
—: Not supported

OPC UA standard		GOT support
Discovery Services	FindServers	○
	FindServersOnNetwork	—
	GetEndpoints	○
	RegisterServer	—
	RegisterServer2	—
SecureChannel Service Set	OpenSecureChannel	○
	CloseSecureChannel	○
Session Service Set	CreateSession	○
	ActivateSession	○
	CloseSession	○
	Cancel	—
NodeManagement Service Set	AddNodes	—
	AddReferences	—
	DeleteNodes	—
	DeleteReferences	—
View Service Set	Browse	○
	BrowseNext	○
	TranslateBrowsePathsToNodeIds	○
	RegisterNodes	—
	UnregisterNodes	—
Query Service Set	QueryFirst	—
	QueryNext	—
Attribute Service Set	Read	○
	HistoryRead	—
	Write	○
	HistoryUpdate	—
Method Service Set	Call	—
MonitoredItem Service Set	CreateMonitoredItems	○
	ModifyMonitoredItems	○
	SetMonitoringMode	○
	SetTriggering	—
	DeleteMonitoredItems	○
Subscription Service Set	CreateSubscription	○
	ModifySubscription	○
	SetPublishingMode	○
	Publish	○
	Republish	○
	TransferSubscriptions	—
	DeleteSubscriptions	○

Specifications for reading OPC UA tags with OPC UA clients

Up to 32768 OPC UA tags can be monitored by OPC UA clients using the MonitoredItem Service Set.
OPC UA tags are read from the OPC UA server in accordance with the service set (MonitoredItem) and the settings supported by the OPC clients.

Support for MonitoredItem	OPC UA tag read specifications
Supported by OPC UA client	OPC UA tags are read according to the cycle (sampling interval) of MonitoredItem set by the OPC UA client. The cycle may not be respected depending on the load of the OPC UA server (GOT). Check whether tags are read cyclically with the cycle time stored in GS2057. GS2057 stores the current value of the cycle when a tag is updated. ☞ Page 3620 MonitoredItem Cycle Time Current Value (GS2057)
Not supported by OPC UA client	Reading OPC UA tags when a request is sent to the OPC UA server outside of a cycle.

Precautions

Depending on the frequency of requests from the OPC UA client, the OPC UA server (GOT) may be overloaded causing degraded communication.
Implement the following steps as necessary to reduce the load on the server:

- Reduce the number of OPC UA tags.
- Reduce the number of connected OPC UA clients.
- Increase the cycle time in which the OPC UA client collects tag data.

83.2.2 Required system application (add-on function)

To use the OPC UA server function, [OPC UA Server Function] must be selected from the system applications (add-on functions).
Selecting one or more OPC UA tags in the [OPC UA Tag Setting] window automatically incorporates this system application (add-on function) into the package data.

83.3 OPC UA tag specifications

☞ Page 2843 Assignable devices
☞ Page 2844 OPC UA tag setting specifications
☞ Page 2847 OPC UA tag data types and assignable device types
☞ Page 2848 Structures
☞ Page 2848 Array
☞ Page 2850 Operation memory (RAM) usage

OPC UA tags are character strings that are assigned to devices.
Create tag groups to organize tags into groups and hierarchies for use cases and other purposes.

Precautions

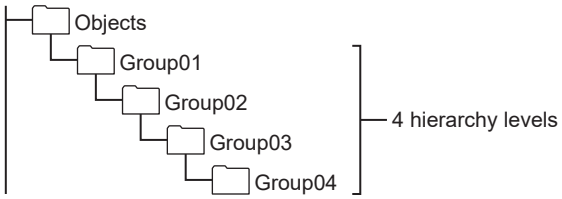
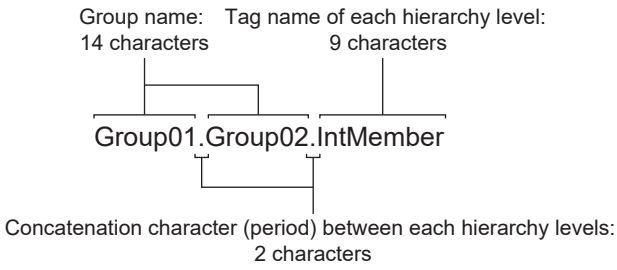
OPC UA tags created with the OPC UA server function in the project of the GOT used as an OPC UA server cannot be set as devices that are monitored by objects, etc.

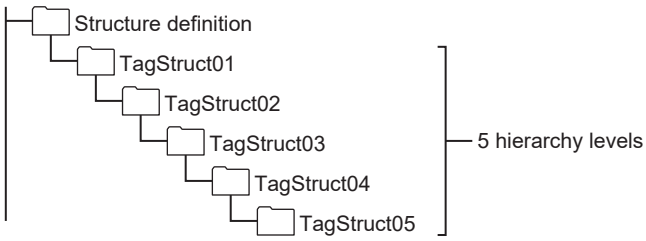
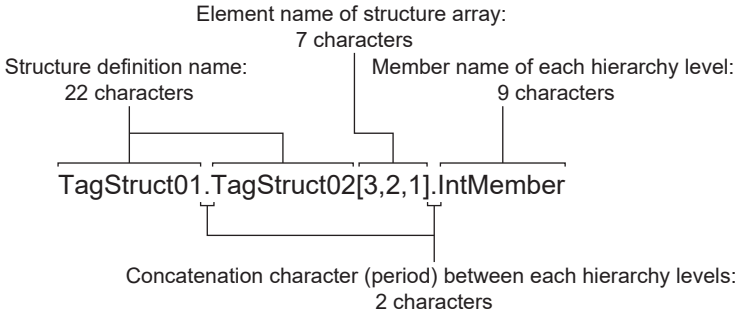
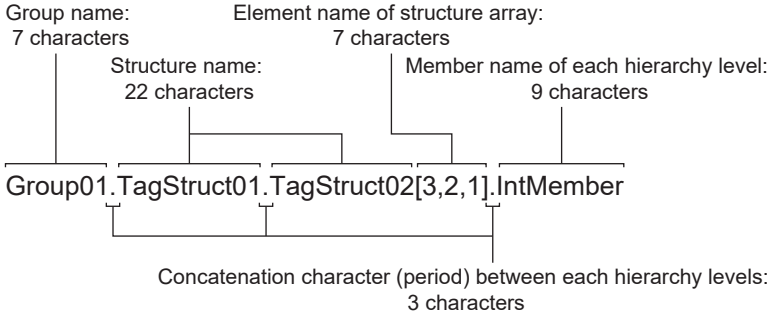
83.3.1 Assignable devices

You can assign the following devices to OPC UA tags.

Assignable devices	Remarks
Devices of Mitsubishi Electric products	☞ Page 3128 Device range and settings of Mitsubishi Electric equipment
Devices of non-Mitsubishi Electric products	☞ Page 3487 Device range and settings of each controller
GOT internal device	☞ Page 3577 GOT internal devices
Labels and tags	Cannot be assigned to the following OPC UA tags: (Except RSLogix5000 tags) • String data type • Array

83.3.2 OPC UA tag setting specifications

Item		Specifications
OPC UA tag	Amount creatable (Total number of tag groups)	32768
	Max. size (Total number of tag groups)	25000 KB
	Tag name	1 to 255 characters One-byte alphanumeric characters and symbols (no invalid characters) ☞ Page 2846 Invalid characters
Tag group	Amount creatable (Total number of groups and structures. For arrays, structure array elements are included.)	10000
	Number of hierarchies	4 
	Group name (Per hierarchy)	1 to 255 characters One-byte alphanumeric characters and symbols (no invalid characters) ☞ Page 2846 Invalid characters
	Total number of characters for tag groups and tag names	800 characters The total number of characters is the sum of the following: • Group name • Concatenation character (period) between each hierarchy • Tag name or member name of each hierarchy Example) Total number of characters: 14 + 2 + 9 = 25 characters  [Objects], the parent node of OPC UA tags, tag groups, and structures is not included in the total number of characters. ☞ Page 2860 [OPC UA Tag Setting] window

Item		Specifications
Structure definition	Amount creatable	128
	Number of members per structure	5120
	Number of hierarchies	5 
	Structure definition name (Per hierarchy)	1 to 255 characters One-byte alphanumeric characters and symbols (no invalid characters) ☞ Page 2846 Invalid characters
	Total number of characters for structure definition names and member names	800 characters The total number of characters is the sum of the following: • Structure definition name • Concatenation character (period) between each hierarchy • Element name of structure array • Member name of each hierarchy Example) Total number of characters: 22 + 2 + 7 + 9 = 40 characters 
	Data types that can be used for members	The same data types that can be set for OPC UA tags ☞ Page 2844 OPC UA tag setting specifications
Structure	Amount creatable (Total number of groups and structures)	10000
	Number of hierarchies (Total number of groups and structures)	9
	Total number of characters for structure definition names and member names	800 characters The total number of characters is the sum of the following: • Group name (only when using structures under a tag group hierarchy) • Structure definition name • Concatenation character (period) between each hierarchy • Element name of structure array • Member name of each hierarchy Example) Total number of characters: 7 + 22 + 3 + 7 + 9 = 48 characters  [Objects], the parent node of OPC UA tags, tag groups, and structures is not included in the total number of characters. ☞ Page 2860 [OPC UA Tag Setting] window

Invalid characters

The following characters and combinations cannot be used.

- [ ] . ; ( ) // & "
- Control codes (Unicode: U+0000 to U+001F (C0 control code), U+007F (delete character), U+0080 to U+009F (C1 control code))
- A combination of one or more spaces added to the prefix or suffix of the character string

83.3.3 OPC UA tag data types and assignable device types

The following table shows OPC UA data types, corresponding GOT data types, and assignable device types.
For the specifications when defining OPC UA tags as arrays, refer to the following.
☞ Page 2848 Array

OPC UA data type	Corresponding GOT data type*1	Assignable devices	
		Device type*2	Data type*3
Boolean	BOOL	BIT	Bit
		WORD	
		DWORD	
SByte	SINT	BIT	Signed 8-bit binary
		BYTE	
Byte	BYTE	BIT	Unsigned 8-bit binary
		BYTE	
Int16	INT	BIT	Signed 16-bit binary
		WORD	
UInt16	UINT	BIT	Unsigned 16-bit binary
		WORD	
Int32	DINT	BIT	Signed 32-bit binary
		WORD	
		DWORD	
UInt32	UDINT	BIT	Unsigned 32-bit binary
		WORD	
		DWORD	
Int64	LINT	WORD	Signed 64-bit binary
UInt64	ULINT	WORD	Unsigned 64-bit binary
Float	REAL	BIT	Real number (32-bit)
		WORD	
		DWORD	
Double	LREAL	WORD	Real number (64-bit)
String	STRING*4	BIT	Unsigned 16-bit binary
		WORD	
DateTime	Not supported	—	—
Guid	Not supported	—	—
ByteString	Not supported	—	—
XmlElement	Not supported	—	—
NodeId	Not supported	—	—
ExpandedNodeId	Not supported	—	—
StatusCode	Not supported	—	—
QualifiedName	Not supported	—	—
LocalizedText	Not supported	—	—
ExtensionObject	Not supported	—	—
DataValue	Not supported	—	—
Variant	Not supported	—	—
DiagnosticInfo	Not supported	—	—

*1 When configuring an OPC UA tag, select the data type from the [Data Type Selection] dialog.
☞ Page 2865 [Data Type Selection] dialog
*2 The device type that can be set for the data type.
A device with the applicable data length can be assigned to OPC UA tags.
*3 The data types that are applied to assigned devices.
The range of values that can be handled depends on the data type.
*4 Only character strings expressed in two-byte Unicode (UTF-16) characters are supported.

83.3.4 Structures

OPC UA tag structures can be created.

Structures can be used to collectively manage multiple associated OPC UA tags.

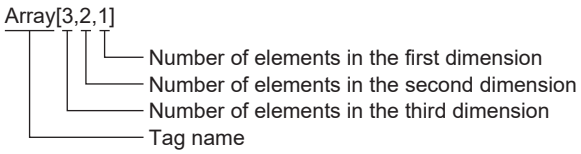
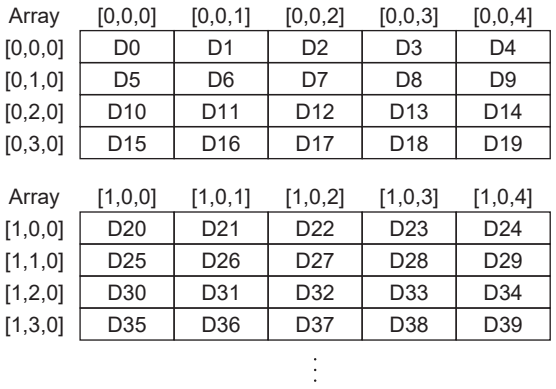
For information on structure definitions and structure setting specifications, refer to the following.

☞ Page 2844 OPC UA tag setting specifications

83.3.5 Array

OPC UA tags can be defined as arrays.

By defining a tag as an array, multiple pieces of data can be stored for one OPC UA tag.

Item	Specifications
Maximum number of dimensions	Three dimensions Example) Three-dimensional array 
Number of elements	The product of the elements in each dimension must be less than or equal to the maximum number of elements. The maximum number of elements differs depending on the data type. ☞ Page 2849 Data types that support arrays, maximum number of elements, and assignable device types
Relationship between elements and assigned devices	When the first device is specified, consecutive devices equal to the number of elements are assigned. Example) When assigning D0 as the first device for Array [3, 4, 5] which has the data type "INT" 

Data types that support arrays, maximum number of elements, and assignable device types

OPC UA data type	Corresponding GOT data type*1	Array definability	Maximum number of elements	Assignable devices		
				Device type*2	Data type*3	Assignability
Boolean	BOOL	Assignable	30000	BIT	Bit	Assignable
				WORD		Not assignable
				DWORD		Not assignable
SByte	SINT	Assignable	30000	BIT	Signed 8-bit binary	Assignable
				BYTE		
Byte	BYTE	Assignable	30000	BIT	Unsigned 8-bit binary	Assignable
				BYTE		
Int16	INT	Assignable	30000	BIT	Signed 16-bit binary	Assignable
				WORD		
UInt16	UINT	Assignable	30000	BIT	Unsigned 16-bit binary	Assignable
				WORD		
Int32	DINT	Assignable	15000	BIT	Signed 32-bit binary	Assignable
				WORD		
				DWORD		
UInt32	UDINT	Assignable	15000	BIT	Unsigned 32-bit binary	Assignable
				WORD		
				DWORD		
Int64	LINT	Assignable	7500	WORD	Signed 64-bit binary	Assignable
UInt64	ULINT	Assignable	7500	WORD	Unsigned 64-bit binary	Assignable
Float	REAL	Assignable	15000	BIT	Real number (32-bit)	Assignable
				WORD		
				DWORD		
Double	LREAL	Assignable	7500	WORD	Real number (64-bit)	Assignable
String	STRING	Not assignable	—	—	—	—
Structure	Structure	Assignable	5120	Depends on the data type set for the member by the structure definition.		

*1 When configuring an OPC UA tag, select the data type from the [Data Type Selection] dialog.
☞ Page 2865 [Data Type Selection] dialog

*2 The device type that can be set for the data type.
A device with the applicable data length can be assigned to OPC UA tags.

*3 The data types that are applied to assigned devices.
The range of values that can be handled depends on the data type.

83.3.6 Operation memory (RAM) usage

OPC UA tags are stored in the operation memory (RAM).

Operation memory (RAM) usage changes depending on the number of OPC UA tag settings.

Non-array OPC UA tags

Corresponding GOT data type	RAM usage (bytes)
Other than STRING	160
STRING	160 + (No. of characters × 6) + 1

OPC UA tag defined as an array

Corresponding GOT data type	RAM usage (bytes)	
	One-dimensional array	Multidimensional array
BOOL	160 + (No. of elements × 1)	160 + (No. of dimensions × 4) + (Total No. of dimensions × 1)
SINT		
BYTE		
INT	160 + (No. of elements × 2)	160 + (No. of dimensions × 4) + (Total No. of dimensions × 2)
UINT		
DINT	160 + (No. of elements × 4)	160 + (No. of dimensions × 4) + (Total No. of elements × 4)
UDINT		
LINT	160 + (No. of elements × 8)	160 + (No. of dimensions × 4) + (Total No. of elements × 8)
ULINT		
REAL	160 + (No. of elements × 4)	160 + (No. of dimensions × 4) + (Total No. of elements × 4)
LREAL	160 + (No. of elements × 8)	160 + (No. of dimensions × 4) + (Total No. of elements × 8)

83.4 System configuration of the OPC UA server function

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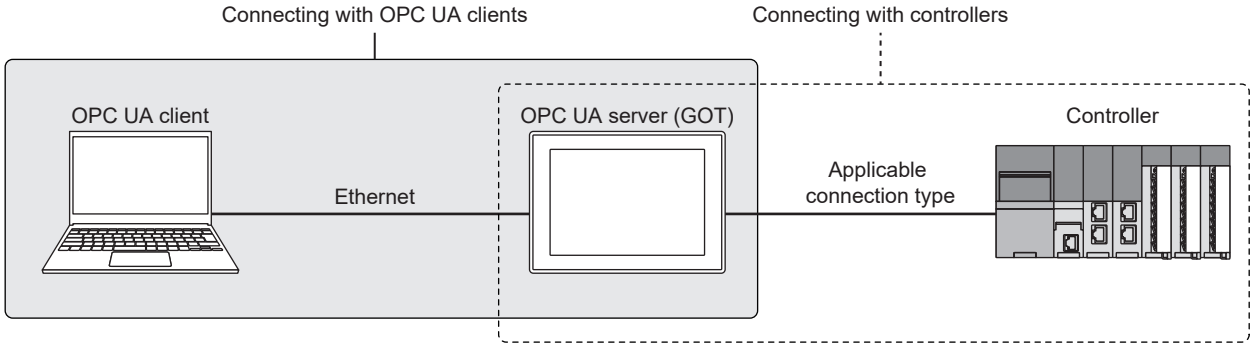

83.4.1 Connecting with OPC UA clients

Item	Specifications
OPC UA client	The OPC UA server (GOT) supports connection with a client that is compliant with OPC UA Version 1.03. For recommended clients, refer to the following technical bulletin. 📖List of OPC UA Validated to Operate with the GOT3000 Series (GOT-A-0248-A)
Number of connectable OPC UA clients	Recommended: Up to five Maximum: 64
Ethernet cable Switching hub	Use the following cables: • 10BASE-T • 100BASE-TX • 1000BASE-T
Port number for communication with OPC UA clients	1024 to 5010, 5014 to 49152, 50000 to 65534
Endpoint URL of the OPC UA server	Check the [Communication Setup] tab in the [OPC UA Server Setting] window. ☞ Page 2857 [Communication Setting] tab

83.4.2 Connecting with controllers

For connection types and controllers that can connect to the GOT, refer to the following.

📖GOT3000 Series User's Manual (Connection)

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83.5 OPC UA server function setting methods

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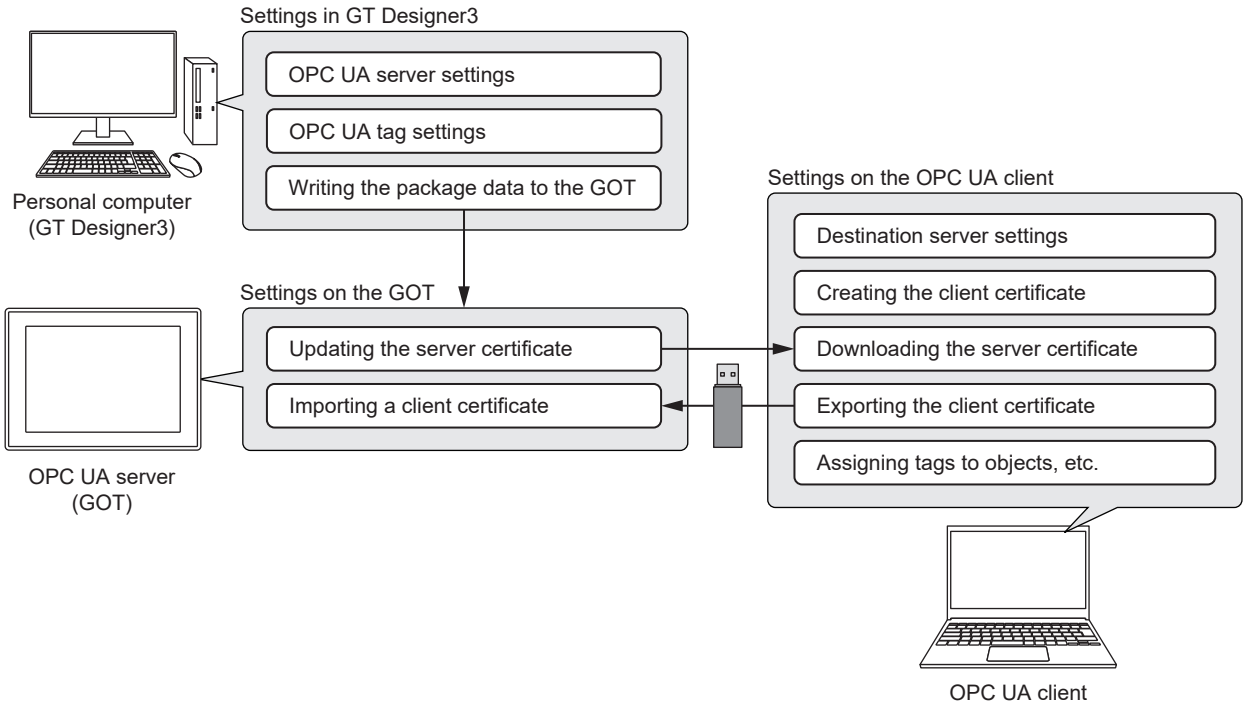
Settings must be configured individually for the personal computer (GT Designer3), OPC UA server (GOT), and OPC UA client.



☞ Page 2853 Settings in GT Designer3
☞ Page 2854 Settings on the GOT
☞ Page 2855 Settings on the OPC UA client

83.5.1 Settings in GT Designer3

Configure the following settings in GT Designer3:

☞ Page 2853 OPC UA server settings
☞ Page 2853 OPC UA tag settings
☞ Page 2853 Writing package data

OPC UA server settings

Configure the settings so that the GOT operates as an OPC UA server.

1. Select [Common] → [OPC UA Server Setting] → [OPC UA Server Setting] from the menu to display the [OPC UA Server Setting] window.
2. Select [Use OPC UA server function] then set [Security Policy] and [Security Mode] in the [Communication Setup] tab.

☞ Page 2857 [Communication Setting] tab

3. Click the [Server Certificate Settings] button in the [Certificate Settings] tab to display the [Certificate] tab in the [Environmental Setting] window ([Information Protection Function]).

☞ Page 2858 [Certificate Setting] tab

4. Select [Set the certificate information], configure the server certificate settings, and click the [OK] button.

☞ Page 3078 [Certificate]

5. Select [Use user authentication] in the [User Authentication] tab in the [OPC UA Server Setting] window and set the authentication method.

☞ Page 2859 [User Authentication] tab

This completes the OPC UA server settings.

OPC UA tag settings

Create OPC UA tags and assign devices.

1. Select [Common] → [OPC UA Server Setting] → [OPC UA Tag Setting] from the menu to display the [OPC UA Tag Setting] window.

☞ Page 2860 [OPC UA Tag Setting] window

2. Create OPC UA tags and configure relevant settings.

Item	Description
How to create OPC UA tags	In the tree view area, select a tag group to register an OPC UA tag to. Set the tag name and assigned device in the OPC UA tag list. To define the tag as an array, select [Array] in the [Data Type Selection] dialog then set the number of elements.
How to create tag groups	In the tree view area, select which tag group hierarchy to create the tag group in. Click the [New Group] button and enter a name of the tag group to be created in the displayed [Group] dialog.
How to create structure definitions	In the tree view area, select which structure definition hierarchy to create the structure definition in. Click the [New Structured Data Type Definition] button and enter the information on the structure definition to be defined in the displayed [Structure Definition] dialog. To define the tag as an array, select [Array] in the [Structured Data Type Definition] dialog and set the number of elements.
How to create a structure	In the tree view area, select which tag group hierarchy to create the structure in. Click the [New Structured Data Type] button and enter the information on the structure to be created in the displayed [Structured Data Types] dialog. To define the tag as an array, select [Array] in the [Structured Data Types] dialog then set the number of elements.

Writing package data

For information on how to write package data to the GOT, refer to the following.

☞ Page 437 Writing data to the GOT

For information on the settings configured on the GOT once package data has been written, refer to the following.

☞ Page 2854 Settings on the GOT

83.5.2 Settings on the GOT

Prepare the server certificate.

Updating the server certificate

Update the GOT server certificate using the server certificate setting information.

Update the server certificate in [Certificate management] of the utility.

GOT3000 Series User's Manual (Utility & Maintenance Functions)

Importing a client certificate

Import the client certificate created by the OPC UA client to the GOT.

You can import the client certificate after it has been created by the OPC UA client.

Export the client certificate using the OPC UA client and store it in the data storage.

Store the client certificate file as follows.

Item	Description
Extension	*.der
Storage destination	Root data storage folder

Insert a data storage device into the GOT and import the certificate in [Certificate management] of the utility.

GOT3000 Series User's Manual (Utility & Maintenance Functions)

83.5.3 Settings on the OPC UA client

The following table shows the settings to be configured on the OPC UA client.

For information on settings and operations on the OPC UA client, refer to the following.

📖The manual of the OPC UA client used

Settings on the OPC UA client	Remarks
Settings on the connected OPC UA server	Configure the following settings according to the information set in the [OPC UA Server Setting] window ([Communication Setup] tab) in GT Designer3. ☞ Page 2857 [Communication Setting] tab • Endpoint URL • Security policy • Security mode • User authentication
Creating the client certificate	—
Downloading the server certificate	—
Exporting the client certificate	—
Assigning tags to objects, etc.	—

83.6 [OPC UA Server Settings] window

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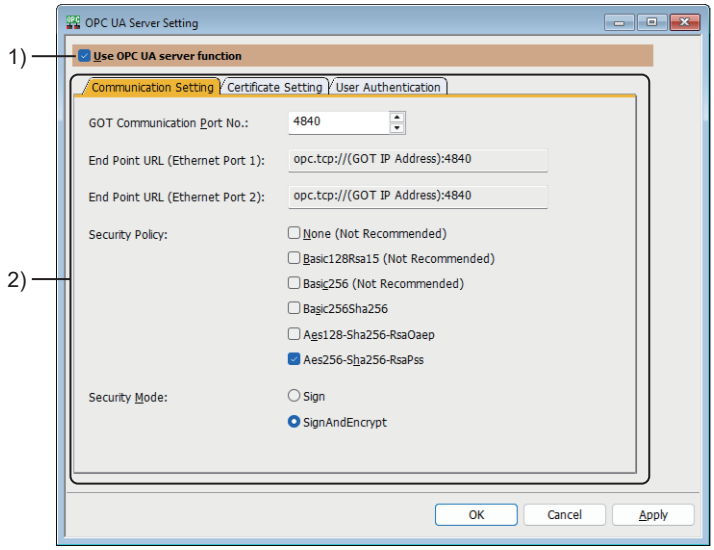
Configure the relevant settings for the OPC UA server function.

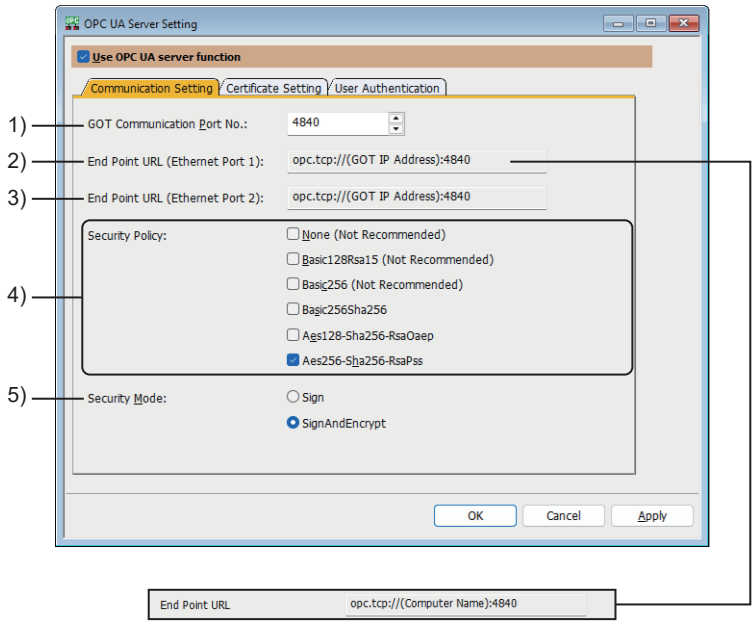


Item			Description
1)	[Use OPC UA server function]		Enables OPC UA server settings.
2)	Tab	[Communication Setting] tab	Set the security policy and the security mode. ☞ Page 2857 [Communication Setting] tab
		[Certificate Setting] tab	Set the information used to update the server certificate on the GOT. ☞ Page 2858 [Certificate Setting] tab
		[User Authentication] tab	Configure the user authentication settings. ☞ Page 2859 [User Authentication] tab

83.6.1 [Communication Setting] tab

GT37 SoftGOT3000

Set the security policy and the security mode.



For GT SoftGOT3000

Item		Description
1)	[GOT Communication Port No.]	Set the port number used for the communication with an OPC UA client. The setting range is 1024 to 5010, 5014 to 49152, and 50000 to 65534. Do not set the port number used for the other settings. Duplication of the port number disables communication. To change the number, it is recommended to use a number in the 50000s or higher.
2)	[End Point URL (Ethernet Port 1)]	The endpoint URL of the GOT. When setting the endpoint URL using the OPC UA client, replace [(GOT IP Address)] with the GOT IP address. ☞ Page 714 [GOT IP Address Setting] The GOT IP address can also be changed in the utility. When changing the IP address in the utility, check the [IP Address] of the utility. 📖GOT3000 Series User's Manual (Utility & Maintenance Functions)
3)	[End Point URL (Ethernet Port 2)]	
4)	[End Point URL]	The endpoint URL of GT SoftGOT3000. When setting the endpoint URL using the OPC UA client, replace [(Computer Name)] with the GT SoftGOT3000 computer name.
5)	[Security Policy]	Select an encryption method for the communication data. Multiple methods can be selected.
6)	[Security Mode]	Select whether to require a signature or both a signature and encryption of communication data. This item does not appear if [None (Not Recommended)] is selected for [Security Policy].

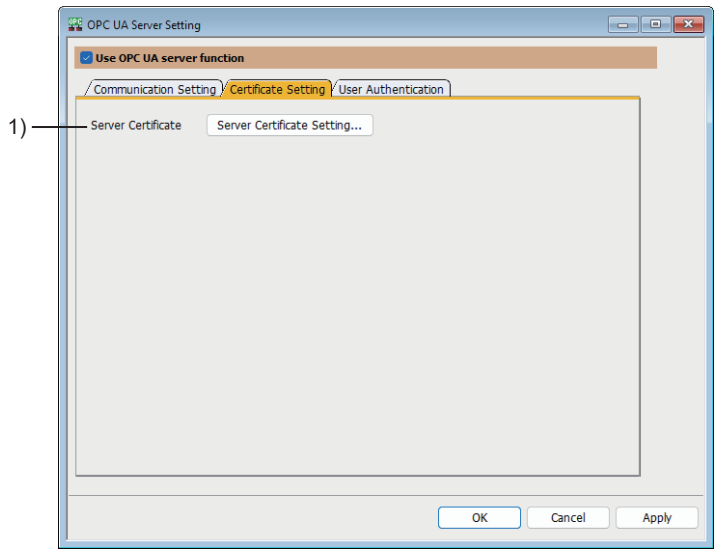
PART 26

83.6.2 [Certificate Setting] tab

GT37 SoftGOT3000

Set the information used to update the server certificate on the GOT.

The server certificate will be created in the utility after the package data configured with this setting has been written to the GOT.

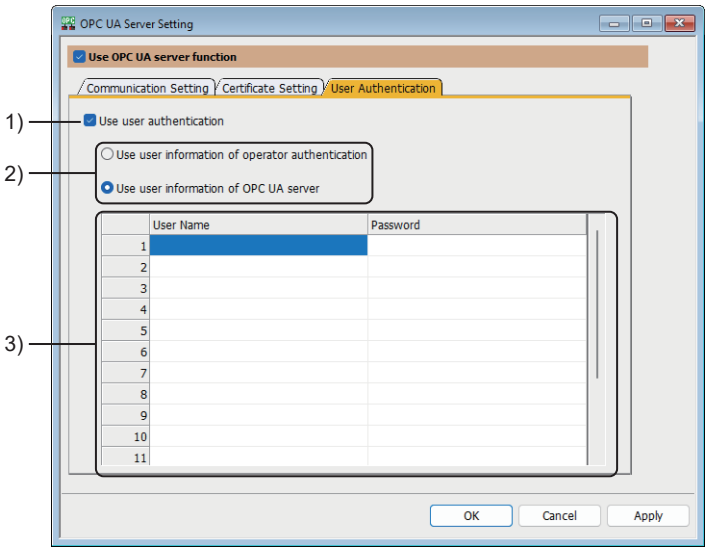


Item		Description
1)	[Server Certificate]	Click the [Server Certificate Setting] button to display the [Environmental Setting] window ([Information Protection Function]). ☞ Page 3078 [Certificate]

83.6.3 [User Authentication] tab

GT37 SoftGOT3000

Configure the user authentication settings.



Item			Description
1)	[Use user authentication]		Authenticates users via a username and password when accessing the OPC UA server from the OPC UA client. Select an authentication method.
2)	Authentication method	[Use user information of operator authentication]	Appears when the security mode is set to mode 2. ☞ Page 526 [Security Setting] Operator management information is used for operator authentication.
			If the information on the logged-in operator is changed, the connection with all OPC UA clients is disconnected.
			While an OPC UA client is accessing the OPC UA server (GOT), the operator is not automatically logged out and remains logged in even after the automatic logout time has elapsed. If automatic logout is required for the OPC UA server function, construct a mechanism that prevents the OPC UA client from accessing the OPC UA server (GOT) when no operation is performed on the OPC UA client for a certain period of time. Example) When no operation is performed, the OPC UA client terminal is locked and cannot be operated until the authentication is performed.
		[Use user information of OPC UA server]	Set a user name and password dedicated to the OPC UA server function, and use them for authentication.
3)	User information list	—	Configure the settings when the authentication method is set to [Use user information of OPC UA server]. Up to 16 pieces of user information can be registered.
		[User Name]	User names must consist of 0 to 32 one-byte alphanumeric characters.
		[Password]	Click the [...] button to display the [Password Edit] dialog and edit or register a password.

PART 26

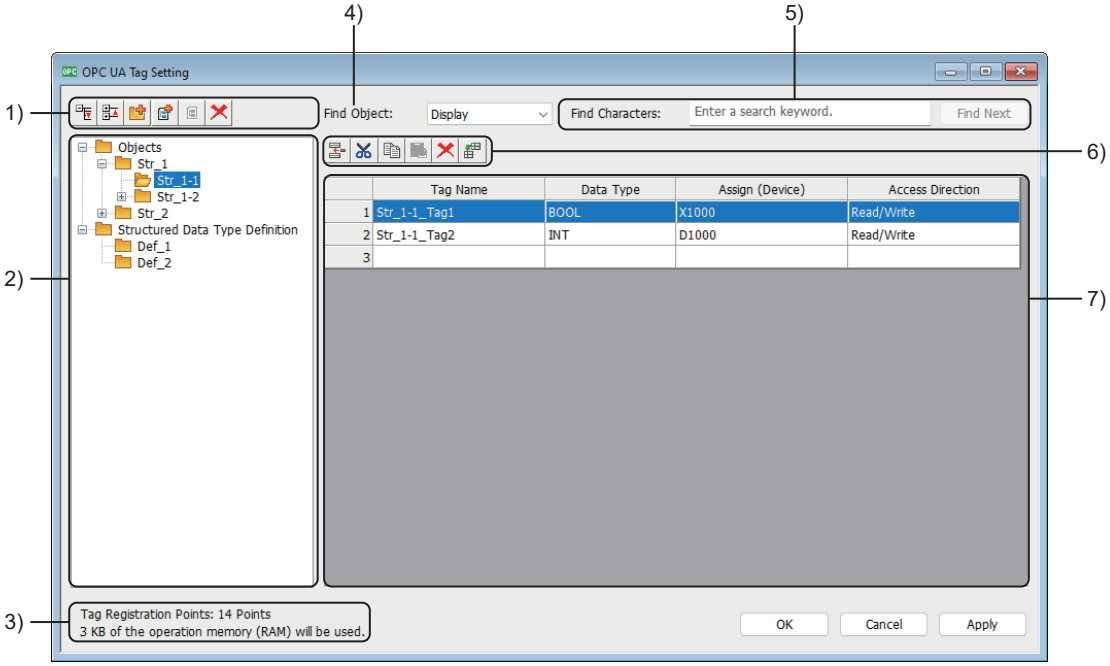
83.7 [OPC UA Tag Setting] window

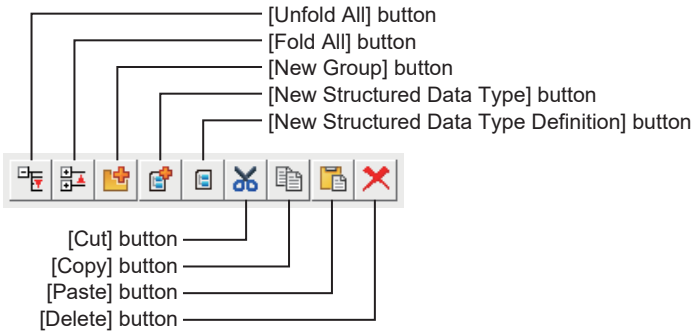
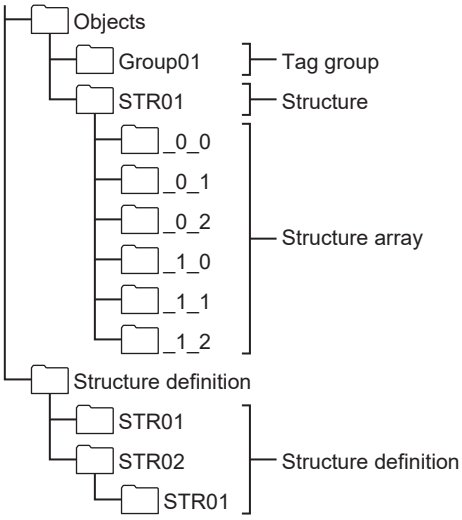
GT37 SoftGOT3000

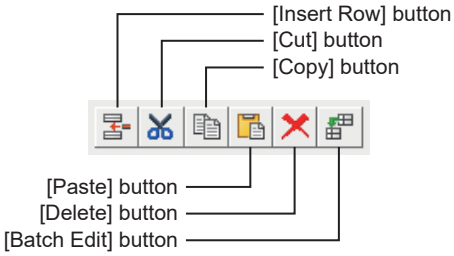
Create an OPC UA tag.

Precautions

If the OPC UA tag settings are changed, apply the tag change to the OPC UA client.
If you do not apply the changes to the OPC UA client, incorrect tags may be monitored.



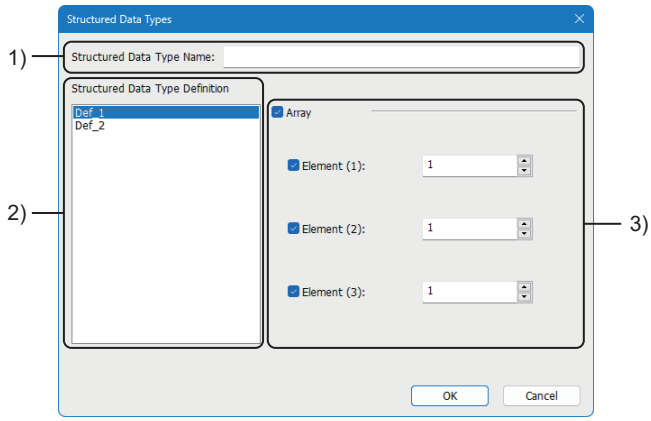
Item			Description
1)	Tree view operation buttons	—	Buttons for operations within the tree view. 
		[Unfold All] button	Expands all the nodes within the tree view.
		[Fold All] button	Retracts all nodes within the tree view.
		[New Group] button	Enabled when [Objects] or a tag group is selected in the tree view. Enter a group name in the displayed [Group] dialog. For information on tag group specifications, refer to the following. ☞ Page 2844 Specifications for reading OPC UA tags with OPC UA clients
		[New Structured Data Type] button	Enabled when [Objects] or a tag group is selected in the tree view. Create a structure in the [Structured Data Types] dialog. ☞ Page 2863 [Structured Data Types] dialog
		[New Structured Data Type Definition] button	Enabled when [Structured Data Type Definition] or a registered structure definition is selected in the tree view. Create a structure definition in the [Structured Data Type Definition] dialog. ☞ Page 2864 [Structured Data Type Definition] dialog
		[Cut] button	Edit the properties of the node selected in the tree view area. The structure definitions shown below cannot be edited. • Structure • Structure definition
		[Copy] button	
		[Paste] button	
		[Delete] button	
2)	Tree view	—	The following items are displayed in the tree: • Created tag groups • Created structures • Created structure definitions The default names [Objects] and [Structured Data Type Definition] cannot be changed. 
		[Objects]	Parent node of OPC UA tags, tag groups, and structures.
		[Structured Data Type Definition]	Parent nodes of structure definitions.
3)	[Tag Registration Points]		The number of registered OPC UA tags and the amount of operation memory (RAM) in use.
4)	[Find Object]		Select the search target from the OPC UA tag list.

Item			Description
5)	[Find Characters]		Specify a search keyword. Up to 255 characters can be entered per comment. Click the [Find Next] button to execute the search.
6)	OPC UA tag list operation buttons	—	Operation buttons for the OPC UA tag list. 
		[Insert Row] button	Edit the row selected in the OPC UA tag list.
		[Cut] button	
		[Copy] button	
		[Paste] button	
		[Delete] button	
		[Batch Edit] button	Enabled when a row in the OPC UA tag list is selected. Batch edits the channel and network settings in the [Batch Edit] dialog for the devices assigned to the OPC UA tags. ☞ Page 2865 [Batch Edit] dialog (OPC UA tag) If the selected row is the one for a GOT internal device, which does not have the channel No. or network setting, or label (GT Designer3), the [Batch Edit] dialog does not appear.
7)	OPC UA tag list	—	Displays the settings of the selected node in the tree view. The settings will differ depending on the selected node.
		[Tag Name]	Set the tag name. For setting specifications, refer to the following. ☞ Page 2844 OPC UA tag setting specifications
		[Data Type]	Set the data type for OPC UA tags. Click the [...] button to select the data type in the displayed [Data Type Selection] dialog. ☞ Page 2865 [Data Type Selection] dialog Use the [Data Type Selection] dialog to also define tags and structures as an array.
		[Assign (Device)]	Set the devices to be assigned to OPC UA tags. ☞ Page 834 How to set devices, labels, and tags For the assignment of arrays, refer to the following. ☞ Page 2848 Array
		[Access Direction]	Selects the operations (read/write) that the OPC UA client is permitted to perform.

83.7.1 [Structured Data Types] dialog

GT37 SoftGOT3000

Creates structures from structure definitions.

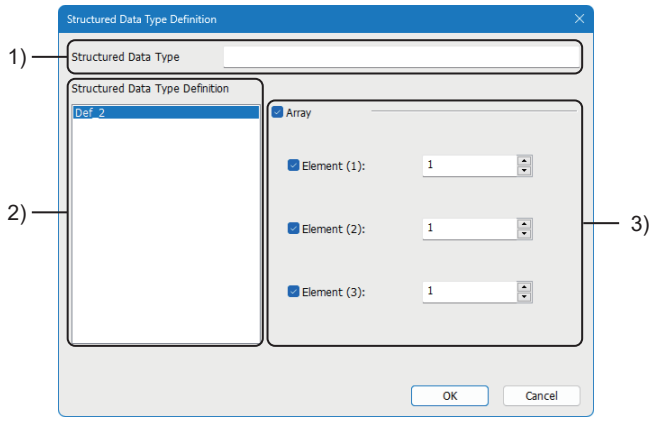


Item			Description
1)	[Structured Data Type Name]		Set a structure name. For setting specifications, refer to the following. ☞ Page 2844 OPC UA tag setting specifications
2)	[Structured Data Type Definition]		Select a structure definition. Use the [New Structured Data Type Definition] button in the [OPC UA Tag Setting] window to create a structure definition. ☞ Page 2860 [OPC UA Tag Setting] window
3)	[Array]	—	Set the structures to an array.
		[Element (1)]	Select the number of dimensions for the array to be defined then set the number of elements for each dimension. The setting range is [1] to [5120].
		[Element (2)]	
		[Element (3)]	

83.7.2 [Structured Data Type Definition] dialog

GT37 SoftGOT3000

Creates structure definitions.

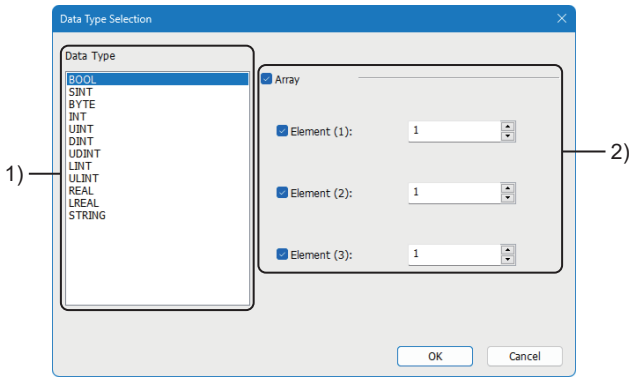


Item			Description
1)	[Structured Data Type]		Set a structure definition name. For setting specifications, refer to the following. ☞ Page 2844 OPC UA tag setting specifications
2)	[Structured Data Type Definition]		This item is displayed when any node other than [Structured Data Type Definition] (parent node of structure definitions) is selected in the tree view in the [OPC UA Tag Setting] window and this dialog is displayed. Select which structure definition to create. Structure definitions which cause a circular reference if selected are not displayed as options.
3)	[Array]	—	Set the structure definition to an array.
		[Element (1)]	Select the number of dimensions for the array to be defined then set the number of elements for each dimension. The setting range is [1] to [5120].
		[Element (2)]	
		[Element (3)]	

83.7.3 [Data Type Selection] dialog

GT37 SoftGOT3000

Select the data type of OPC UA tags.



Item			Description
1)	[Data Type]		Select the data type for the OPC UA tag selected in the OPC UA tag list in the [OPC UA Tag Setting] window.
2)	[Array]	—	Set the OPC UA tag to an array.
		[Element (1)]	Select the number of dimensions for the array to be defined then set the number of elements for each dimension. The setting range is [1] to [5120].
		[Element (2)]	
		[Element (3)]	

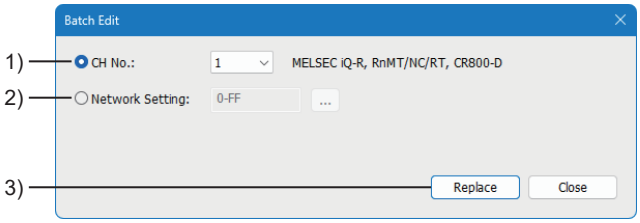
83.7.4 [Batch Edit] dialog (OPC UA tag)

Batch edits the channel or network settings for the devices assigned to the OPC UA tags.

The rows (OPC UA tags) selected in the OPC UA tag list in the [OPC UA Tag Setting] window are applicable.

For information on the batch edit dialog for labels (GT Designer3) in the [Label Group] window or [Register to Label] dialog, refer to the following.

☞ Page 891 [Batch Edit] dialog (label (GT Designer3))



Item		Description
1)	[CH No.]	Select the channel number after batch edit.
2)	[Network Setting]	Configure the network settings after batch edit. The settings differ depending on the controller. Refer to the descriptions of the device setting dialog for each controller. ☞ Page 3128 Device range and settings of Mitsubishi Electric equipment ☞ Page 3487 Device range and settings of each controller
3)	[Replace] button	Executes batch edit.

83.8 Relevant settings

GT37 SoftGOT3000

Configure the relevant settings for the OPC UA server functions as required in addition to other specific settings.
The following shows the functions that are available by configuring the relevant settings.

83.8.1 GOT internal device

GT37 SoftGOT3000

☞ Page 3581 GOT special register (GS)

Function	Setting item
Uses the MonitoredItem service set from the OPC UA client to store the tag update cycle time (current value).	GS2057
Uses the MonitoredItem service set from the OPC UA client to store the tag update cycle time (minimum value).	GS2058
Uses the MonitoredItem service set from the OPC UA client to store the tag update cycle time (maximum value).	GS2058
Notifies of OPC UA server startup.	GS2060.b0
Disconnects established connections with all clients.	GS2563.b0

83.9 Troubleshooting

GT37 SoftGOT3000

Issue	Possible cause	Solution
Cannot connect to OPC UA client.	The security policies and/or security modes do not match.	Check that the security policy and security mode of both the OPC UA server and OPC UA client match.
	The client certificate of the OPC UA client you are trying to connect to is registered as an invalid certificate on the GOT.	If the client certificate has been accidentally registered as invalid, remove the certificate from the utility and register it as a valid certificate.
	The client certificate of the OPC UA client you are trying to connect to is not registered as a valid certificate on the GOT.	Register the client certificate as a valid certificate on the GOT.
	The client certificate has expired.	Recreate the client certificate on the OPC UA client and register it as a valid certificate on the GOT.
	The client certificate is corrupt.	
	The server certificate has expired.	Renew the server certificate in the utility.
	The username and/or password for user authentication is incorrect.	Enter the correct username and password.
	The maximum number of sessions has been reached.	Turn on GS2563.b0 and disconnect all connections.

PART 27 Controller monitoring function

84 Monitoring a controller through the GOT (server/client function)

84 Monitoring a controller through the GOT (server/client function)

GT37 SoftGOT3000

☞ Page 2869 Overview of the server/client function
☞ Page 2872 Specifications of the server/client function
☞ Page 2875 How to use the gateway devices
☞ Page 2879 How to use the server/client function
☞ Page 2883 [Gateway Communication Setting]
☞ Page 2884 [Gateway-Server]
☞ Page 2885 [Gateway Client]
☞ Page 2886 Server/client function application examples
☞ Page 2891 Using the server/client function efficiently
☞ Page 2894 Precautions
☞ Page 2898 Relevant settings
☞ Page 2899 Troubleshooting

84.1 Overview of the server/client function

The server/client function allows for the remote monitoring and maintenance of a production site from an office.
You can access a GOT or GT SoftGOT3000 having the server function (hereafter "GOT (server)") through a client device, and easily collect or change device data of the controllers monitored by the GOT (server).
The following devices can be used as a client.

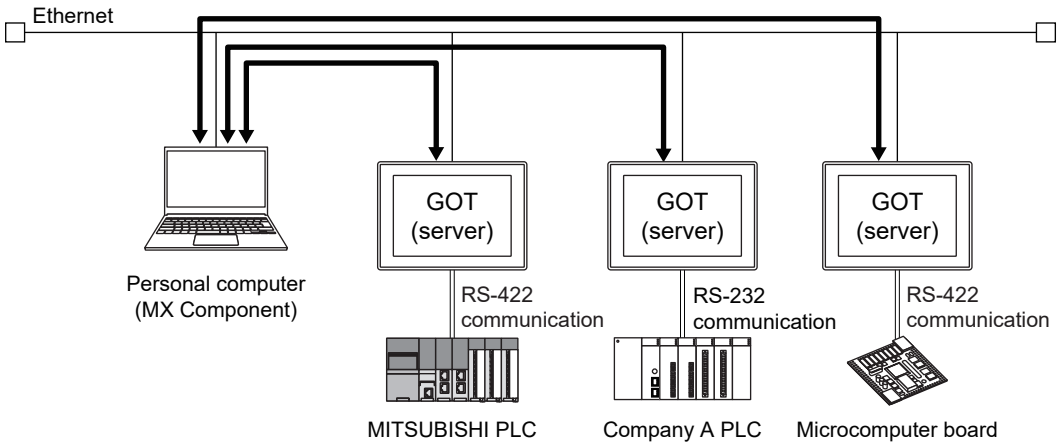
- Personal computer on which MX Component is installed (hereafter "personal computer (MX Component)")
- GOT to which the client function is granted (hereafter "GOT (client)")

Precautions

The server/client function does not support security functions such as encrypted communication and operator authentication.
If security functions are required, use the OPC UA server function and the OPC UA client connection.

84.1.1 Collecting or changing device data on a personal computer (MX Component) (server function)

When you use a personal computer (MX Component) as a client, GT SoftGOT3000 cannot be a server.
You can read/write device data of the controllers monitored by a GOT (server) on a personal computer (MX Component) connected to Ethernet.
Use the server function, and you can monitor multiple controllers on a personal computer by connecting the personal computer to a GOT (server) by Ethernet. The function has eliminated the need for establishing communications with controllers in their respective communication formats or installing the OPC UA server.
The function is available by installing MX Component. Communication settings for each controller is not required on the personal computer.



PART 27

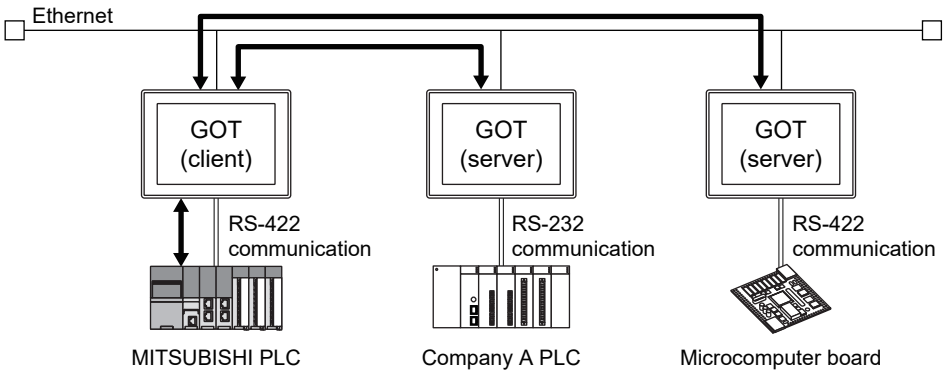
84.1.2 Collecting or changing device data monitored by another GOT on a GOT (server/client function)

GT SoftGOT3000 supports the server function but does not support the client function.

You can read/write device data of the controllers monitored by a GOT (server) by accessing the GOT (server) through a GOT (client) connected to Ethernet.

This enables you to monitor device data of different manufacturers' controllers collectively on one GOT (client).

One GOT (client) can be connected to up to 128 GOTs (servers).

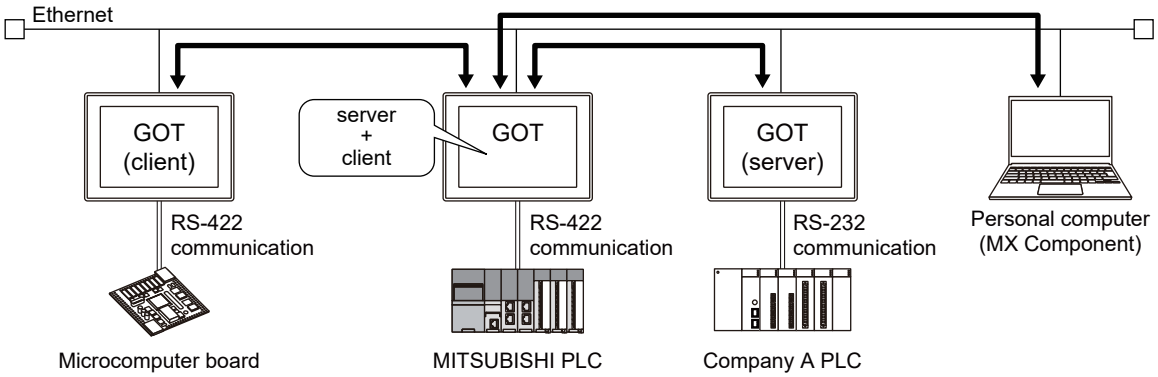


84.1.3 Using the server/client function in one GOT

Not available for GT SoftGOT3000.

The server/client function can be used in one GOT.

When a GOT has the server/client function, while collecting data of another GOT (server) you can send the data to a personal computer (MX Component) or another GOT (client) through the GOT.

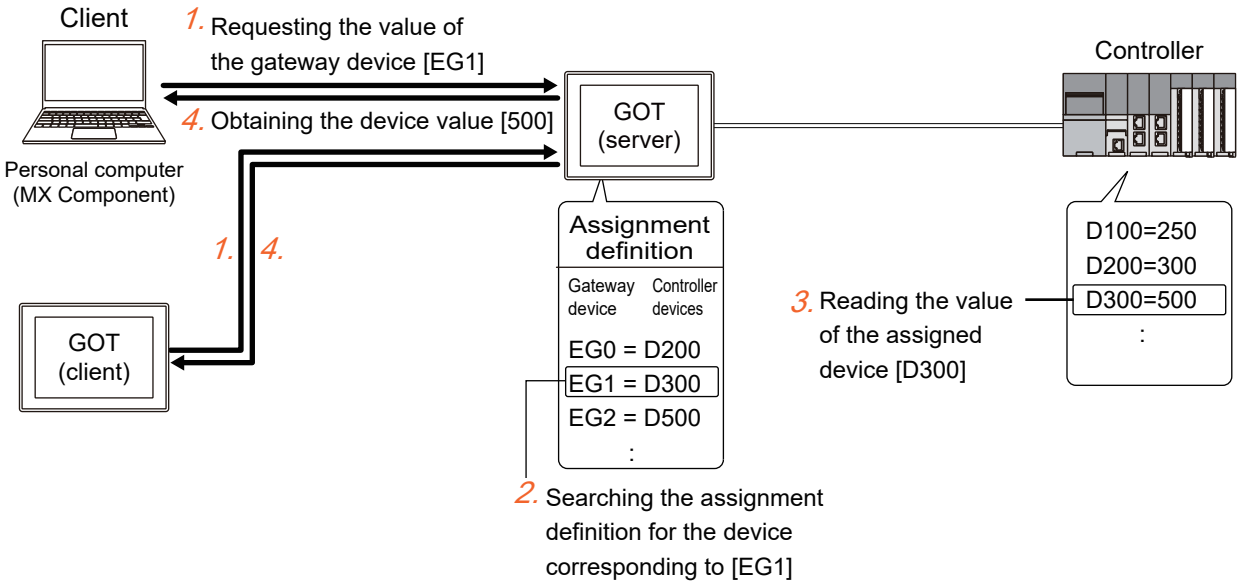


84.1.4 Flow of data

To collect or change device data of the controller monitored by a GOT (server) through a client, set the assignment definition of the virtual gateway devices (EG devices) and the corresponding devices of the monitored controller on the GOT (server). Then, you can access the gateway devices of the GOT (server) through the client and read/write the data of the controller devices assigned to the gateway devices.
Data is exchanged using the gateway devices set in the GOT (server). There is no need to consider the manufacturer and model of the monitored controller.

The following shows the flow of data when device data of a controller connected to a GOT (server) is read to a client.

Ex.
Reading the value of the controller's device [D300] to a client



1. The client requests the value of the gateway device [EG1] from the GOT (server).
2. The GOT (server) searches for the controller device assigned to the gateway device [EG1] based on the assignment definition of the gateway devices and controller devices.
3. The GOT (server) reads the value [500] of the assigned device [D300] from the controller.
4. The client obtains the value [500] read by the GOT (server).

How to access the gateway devices of the GOT (server) through a client depends on the client type.

Client type	How to access the gateway devices of the GOT (server)
Personal computer (MX Component)	Use the functions of MX Component. ☞ Page 2876 How to access the gateway devices of a GOT (server) from a personal computer (MX Component)
GOT (client)	Use the script function. ☞ Page 2877 How to access the gateway devices of a GOT (server) from a GOT (client)

84.2 Specifications of the server/client function

GT37 SoftGOT3000

☞ Page 2872 System application (add-on function)
☞ Page 2872 Number of server/client functions for one project
☞ Page 2872 GOTs and software applications usable as a server or client
☞ Page 2873 Specifications of the server/client function
☞ Page 2873 Monitoring access range

84.2.1 System application (add-on function)

To use the server/client function, [Gateway (Server/Client)] must be selected from the system applications (add-on functions). Configuring either of the following settings in the [Controller Setting] window incorporates the application into the package data automatically.

☞ Page 2884 [Gateway-Server]
☞ Page 2885 [Gateway Client]

84.2.2 Number of server/client functions for one project

One server function setting and one client function setting are available for one project.

84.2.3 GOTs and software applications usable as a server or client

The following GOTs and software applications can be used as a server or client.
Communication is possible between the personal computer (MX Component), GOT2000, and GOT3000, each using the server/client function.
Server: GT37, GT27, GT25, GT SoftGOT3000, and GT SoftGOT2000
Client: GT37, GT27, GT25, and MX Component
The following shows availability of server/client combinations.
○: Available
—: Not available

Server	Client	Availability
GT37, GT27, GT25	GT37	○
	GT27, GT25	○
	MX Component	○
GT SoftGOT3000	GT37	○
	MX Component	—
GT SoftGOT2000	GT37	○
	GT27, GT25	○
	MX Component	—

84.2.4 Specifications of the server/client function

The following shows the specifications of the server/client function.

Item		Specifications
Port No.	Server function	1024 to 65534
	Client function	1024 to 65534
Maximum number of nodes		The total number of the following nodes is 64 (recommended). • GOTs (server) • GOT (client) • Personal computers that communicate with GOTs
Number of accessible clients (GOTs and personal computers) to a server (GOT) simultaneously		Up to 5 units *1
Specifying other nodes		Specifying by an IP address, up to 128 nodes
Gateway device		Word device 32768 points: EG0 to EG32767
Compatible MX Component		MX Component Version 5.008J or later

*1 When six or more clients (GOTs and personal computers) access a server (GOT), the scripts of the clients may stop.

84.2.5 Monitoring access range

The following shows the access range for the server/client function.

To monitor controllers via the GOT, monitor the controller devices assigned to gateway devices.(Controller devices on the network are to be also assigned to gateway devices to be monitored.)

The monitoring access range is the same as that of the GOT.

For information on the GOT monitoring access range, refer to the following.

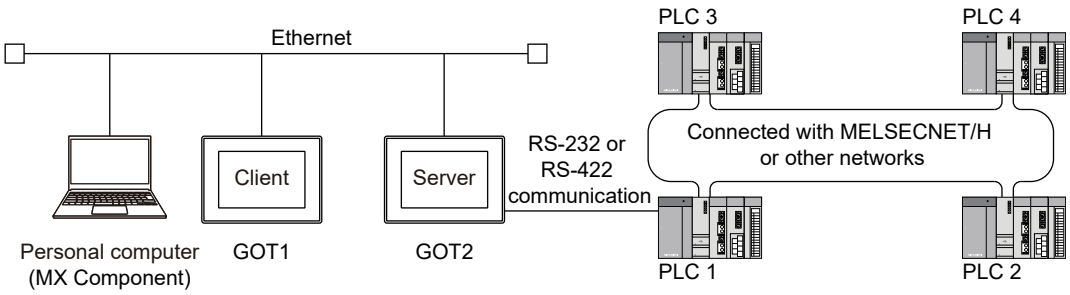
GOT3000 Series User's Manual (Connection)

The following shows the PLCs that can be accessed from GOT1 (client) and the personal computer (MX Component).

For the applicable connection types when GT SoftGOT3000 is a server, refer to the following.

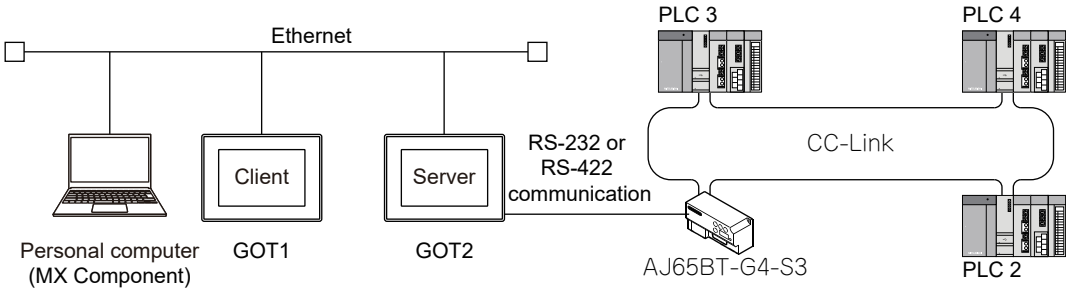
GT SoftGOT3000 User's Manual

When the connection type between GOT2 (server) and PLC1 is the direct CPU connection (serial) or serial communication connection



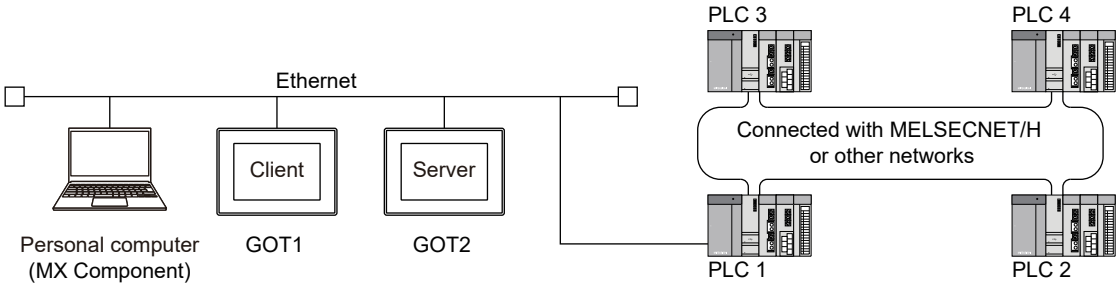
Access source	Access destination	
	GOT2 (server)	PLC1, PLC2, PLC3, PLC4
Personal computer (MX Component)	Monitoring the gateway devices or the controller devices	Monitoring the controller devices that are assigned to the gateway devices of GOT2 from the personal computer (MX Component) and GOT1 (client)
GOT1 (client)		

When the connection type between GOT2 (server) and PLCs is a CC-Link connection (via G4)



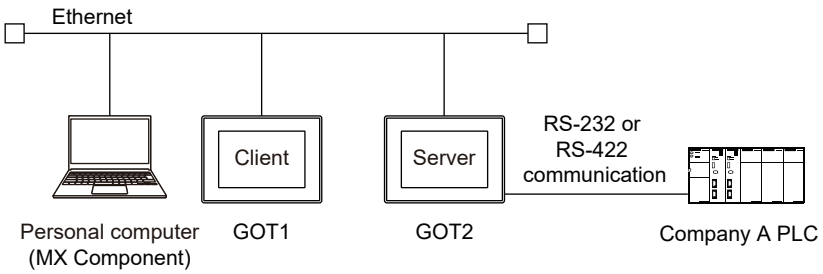
Access source	Access destination	
	GOT2 (server)	PLC1, PLC2, PLC3
Personal computer (MX Component)	Monitoring the gateway devices or the controller devices	Monitoring the controller devices that are assigned to the gateway devices of GOT2 from the personal computer (MX Component) and GOT1 (client)
GOT1 (client)		

When the connection type between GOT2 (server) and PLCs is an Ethernet connection



Access source	Access destination		
	GOT2 (server)	PLC1	PLC2, PLC3, PLC4
Personal computer (MX Component)	Monitoring the gateway devices or the controller devices		Monitoring the gateway devices or the controller devices from a personal computer (MX Component) and GOT1 (client)
GOT1 (client)			Monitoring the controller devices that are assigned to the gateway devices of GOT2 from the personal computer (MX Component) and GOT1 (client)

When the connection type between GOT2 (server), PLCs, and a temperature controller is another manufacturer's PLC connection



Access source	Access destination	
	GOT2 (server)	PLC, temperature controller
Personal computer (MX Component)	Monitoring the gateway devices or the controller devices	Monitoring the controller devices that are assigned to the gateway devices of GOT2 from the personal computer (MX Component) and GOT1 (client)
GOT1 (client)		

84.3 How to use the gateway devices

The gateway device is a virtual device exclusively used to perform the server/client function on the GOT.

GT37 SoftGOT3000

☞ Page 2875 Applicable gateway devices
☞ Page 2875 Assignable devices
☞ Page 2876 How to access the gateway devices of a GOT (server) from a personal computer (MX Component)
☞ Page 2877 How to access the gateway devices of a GOT (server) from a GOT (client)

84.3.1 Applicable gateway devices

The following shows the applicable gateway devices.

Device name		Device range	Device No. representation
Word device	EG	EG0 to EG32767	Decimal number
Bit device	EG	Specified bits of above word devices	Decimal number

84.3.2 Assignable devices

You can assign the following devices to gateway devices (EG).

- Controller devices that can be monitored by the GOT
- GOT internal device

However, some controller devices cannot be assigned.

For information on which device can be assigned, refer to the following.

☞ Page 3128 Device range and settings of Mitsubishi Electric equipment
☞ Page 3487 Device range and settings of each controller

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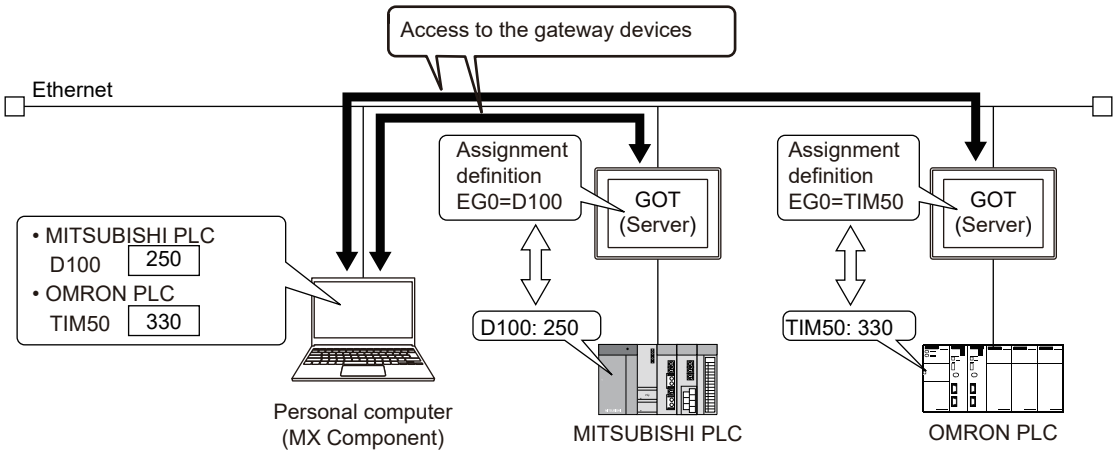
84.3.3 How to access the gateway devices of a GOT (server) from a personal computer (MX Component)

Use the functions of MX Component to access the gateway devices of a GOT (server) from a personal computer (MX Component).



For the operation and the programming procedures of MX Component, refer to the following manuals.

MX Component Version 3 Operating Manual

MX Component Version 3 Programming Manual

The following shows the functions of MX Component that support the GOT.

Item	Device range
Open	Opens the communication line (starts the communication with the GOT).
Close	Closes the communication line (ends the communication with the GOT).
ReadDeviceBlock	Device batch read
ReadDeviceBlock2	
WriteDeviceBlock	Device batch write
WriteDeviceBlock2	
ReadDeviceRandom	Device random read
ReadDeviceRandom2	
WriteDeviceRandom	Device random write
WriteDeviceRandom2	
EntryDeviceStatus	Device status observation registration
FreeDeviceStatus	Cancels device status observation registration.
OnDeviceStatus	Event notification
SetDevice	Changes device data values.
SetDevice2	
GetDevice	Obtains device data values.
GetDevice2	
GetCpuType	Obtains GOT model information.

84.3.4 How to access the gateway devices of a GOT (server) from a GOT (client)

Use the script function of the GOT (client) to access the gateway devices of the GOT (server) from the GOT (client).

☞ Page 2325 Controlling operations with scripts ([Script])

Object scripts cannot be used since the gateway devices cannot be assigned to objects.

Use a project script or screen script.

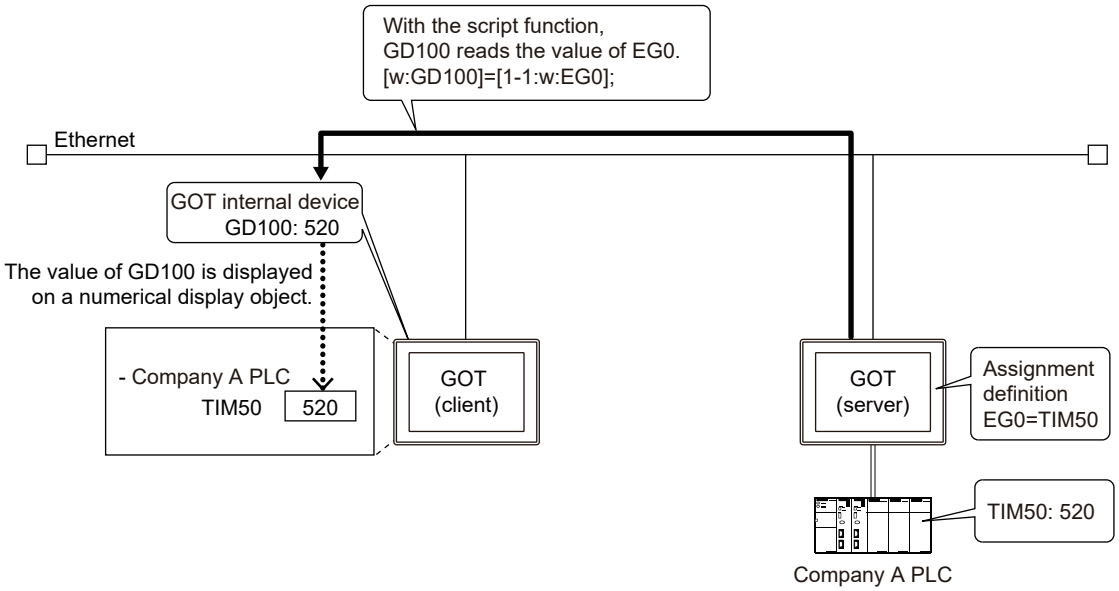
When reading the value of a gateway device

Using a script reads the value of a gateway device of a GOT (server) to an internal device of a GOT (client).

You can monitor the value read to the internal device using a numerical display object or others on the GOT (client).

For details on scripts, refer to the following.

☞ Page 2325 Controlling operations with scripts ([Script])



The following shows the settings required for a GOT (client) and a GOT (server).

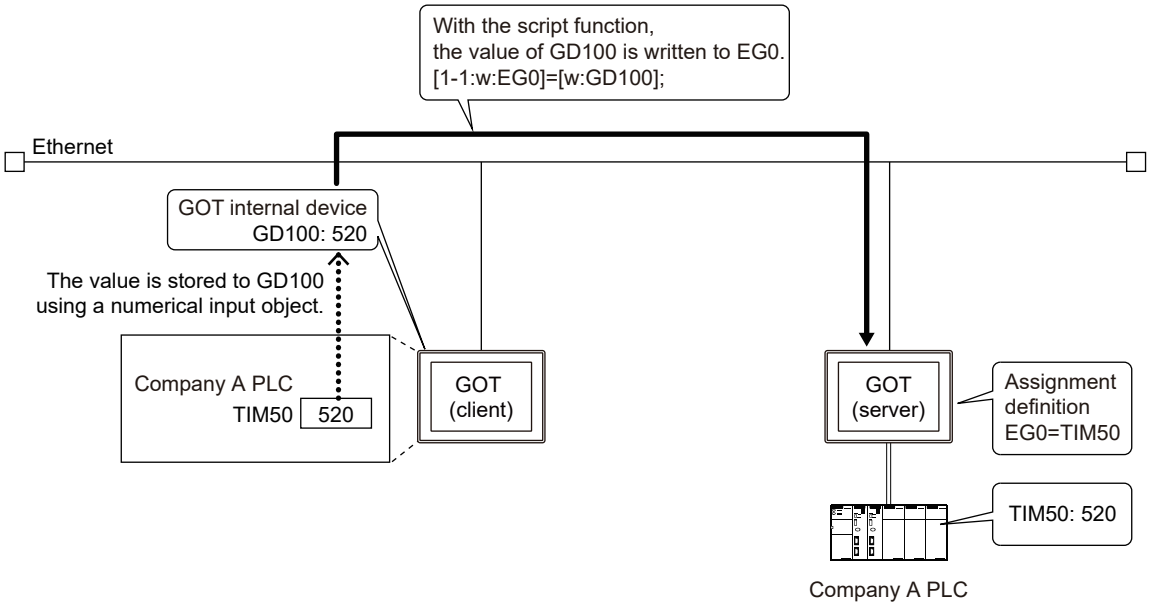
GOT	Required setting	Description
GOT (server)	Server setting	Configures the setting for assigning the device of the company A PLC CPU to the gateway device.
GOT (client)	Script	Configures the setting to read the gateway device value of the GOT (server) to internal device of the GOT (client).
	Client setting	Registers the GOT (server) from which the client reads the device value.
	Numerical display	Configures the setting for displaying the internal device value of the GOT (client).

When writing a value to the gateway device.

Write the value of the internal device of the GOT (client) to the gateway device of the GOT (server) by using a script.

Write the value to the GOT (client) internal device using a numerical input object or others.

A device of the GOT (server) can be also set as the write destination for the script.



GOT	Setting item	Description
GOT (server)	Server setting	Configures the setting for assigning the device of the company A PLC CPU to the gateway device.
GOT (client)	Script	Configures the setting to write the internal device value of GOT (client) to the gateway device of the GOT (server).
	Client setting	Registers the GOT (server) to which the value is written.
	Numerical input	Configures the setting for entering the value of the GOT (client) internal device.

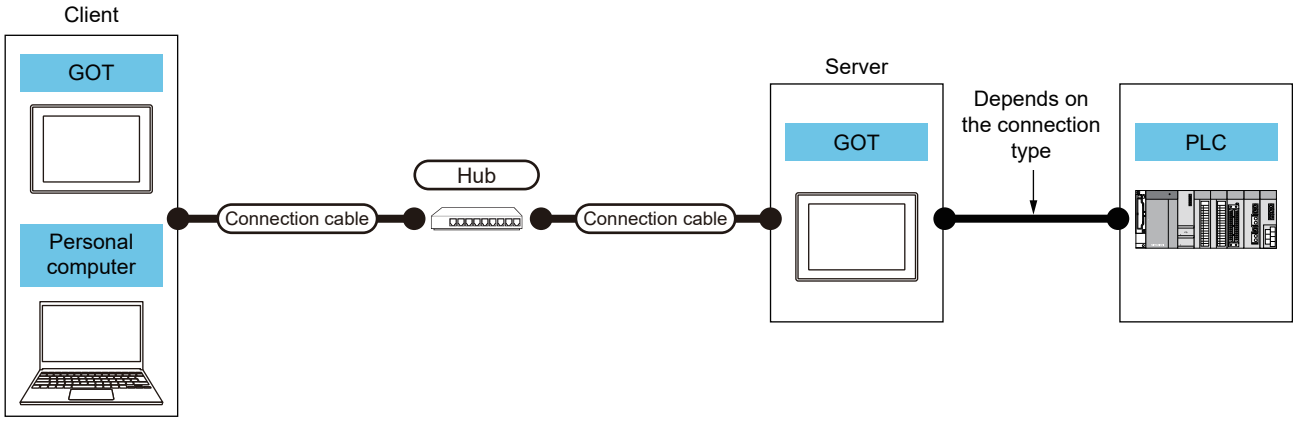
84.4 How to use the server/client function

GT37 SoftGOT3000

☞ Page 2879 System configuration
☞ Page 2881 Setting procedure
☞ Page 2882 Firewall setting

84.4.1 System configuration

The following shows the system configuration for the server/client function.



For details on the connection cable and maximum segment length, refer to the following.

☞ Page 2879 Connection cable
☞ Page 2880 Maximum segment length

Client (GOT, personal computer)		Connection cable	Server (GOT)	
GOT or personal computer	Interface		Interface	GOT
GT37	Built-in Ethernet interface of the GOT	Shielded twisted pair cable	Built-in Ethernet interface of the GOT	GT37
Personal computers with MX Component installed	Ethernet interface of personal computer		Ethernet interface of personal computer	Personal computer with GT SoftGOT3000 installed*1

*1 To use a personal computer, an Ethernet board/card is required.
For Ethernet boards/cards, refer to the following.
GT SoftGOT3000 User's Manual

Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

A straight cable is usable.
When the GOT is directly connected to the personal computer via Ethernet cable, a cross cable is applicable.
The destination device connected with the twisted pair cable varies with the configuration of the Ethernet network system used.
Connect the cable to the Ethernet module, hub, or other system equipment corresponding to the applicable Ethernet network system.
Use cables, connectors, and hubs that meet the IEEE802.3 10BASE-T/100BASE-TX/1000BASE-T standards.

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Maximum segment length

The maximum segment length (length between a hub and a node) is 100 m.
The maximum length depends on the Ethernet equipment used.
The following shows the number of connectable hubs when a repeater hub is used.

- 10BASE-T: Up to 4 cascade-connected hubs (within 500 m)
- 100BASE-TX: Up to 2 cascade-connected hubs (within 205 m)
- 1000BASE-T: The number differs depending on the hub to be used.

When switching hubs are used, there is no theoretical limit to the number of cascade connections between switching hubs. For the limit, contact the switching hub manufacturer.

Precautions

When multiple network devices (including GOTs) are connected in the same segment, the network load increases and the transmission speed between the GOT and PLC may be reduced.
The following countermeasures may improve the communication performance.

- Use a switching hub compatible with 1000BASE-T (1 Gbps) or more.
- Reduce the number of devices monitored by the GOT.

Precautions for system configuration

■Connection to the intranet

If the system needs to be secured against unauthorized access to the intranet, consult a network service provider or network administrator (someone responsible for tasks such as network planning and IP address management), and implement your own countermeasures.
Mitsubishi Electric Corporation assumes no responsibility for any consequences resulting from system troubles caused by the intranet connection.

■When a firewall is used

If a firewall disconnects the communication of the gateway function, take countermeasures such as changing the firewall port number.
If the system needs to be secured against unauthorized access when changing the firewall port number, consult the network administrator (someone responsible for tasks such as network planning and IP address management), and implement your own countermeasures.
Mitsubishi Electric Corporation assumes no responsibility for any consequences resulting from system troubles caused by changing the port number.

84.4.2 Setting procedure

The following shows the setting procedure for using the server/client function.

1. Consider the configuration of the whole system.

- Configuration of the whole system including controllers and GOTs
- Controller settings (including device assignment)
- GOT settings (including IP address, network number, and station number)

To use GT SoftGOT3000 as a server, configure the firewall settings.

For details, refer to the following.

☞ Page 2882 Firewall setting

2. Connect the GOT and the controller.

☞ Page 2879 System configuration

3. Configure the communication interface settings in [Controller Setting] → [Gateway Communication Setting] in the server project.

To use the GOT as a client, configure the settings in the client project.

☞ Page 2883 [Gateway Communication Setting]

To use GT SoftGOT3000 as a server, configure the [Gateway Server Function] settings in the setting dialog of GT SoftGOT3000.

📖GT SoftGOT3000 User's Manual

4. Set the IP address of the GOT.

☞ Page 714 [GOT IP Address Setting]

5. Configure the gateway server settings in [Controller Setting] → [Gateway Server] in the server project.

☞ Page 2884 [Gateway-Server]

6. To use the GOT as a client, configure the gateway client settings in [Controller Setting] → [Gateway Client] in the client project.

☞ Page 2885 [Gateway Client]

7. Write package data to the GOT.

For the communication method between the personal computer and the GOT, refer to the following.

☞ Page 408 Transferring data to the GOT

8. Check the GOT operation.

☞ Page 2886 Server/client function application examples

84.4.3 Firewall setting

To use GT SoftGOT3000 as a server, change the firewall setting.
The following shows the setting procedure.

1. Open the Start menu, search for [Control Panel], and open it.
2. If Control Panel is set to Category view, click [System and Security].
3. Click [Windows Defender Firewall] to display the [Windows Defender Firewall] dialog.
4. Click [Allow an app or feature through Windows Defender Firewall] in the left pane of the dialog to display the list of [Allowed apps and features].
5. Click the [Change settings] button.
6. In [Allowed apps and features], select the following options for [SGT3000].

- [Private]
- [Public]

If [SGT3000] is not listed, click the [Allow another app] button and add "SGT3000.exe".

84.5 [Gateway Communication Setting]

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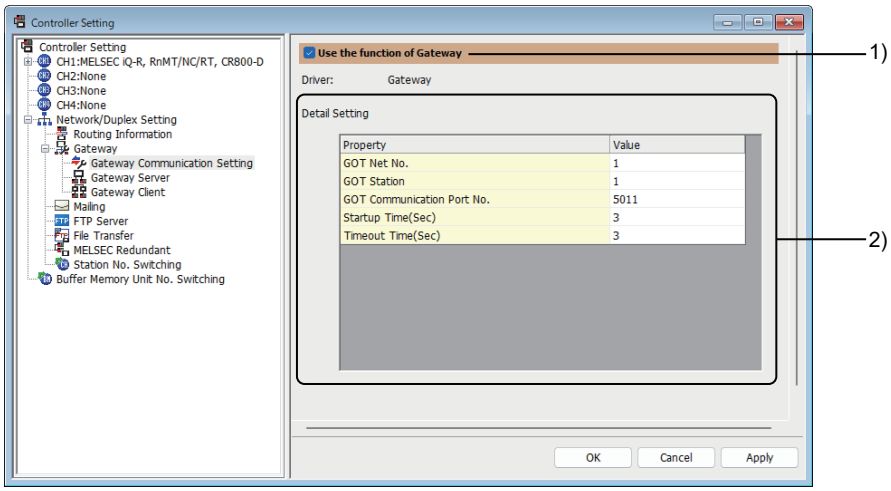
Configure the communication settings on the [Gateway Communication Setting] screen in the server/client project.

Window

1. Select [Common] → [Controller Setting] from the menu to display the [Controller Setting] window.
2. Select [Gateway Communication Setting] in the [Controller Setting] window.



Item			Description
1)	[Use the function of Gateway]		Select this item when using the client or server function.
2)	[Detail Setting]	—	Set the detailed communication format. The setting range depends on controllers. For details on the settings, refer to the following. GOT3000 Series User's Manual (Connection)
		[GOT Net No.]	Set the network No. of the GOT. The setting range is [1] to [239].
		[GOT Station]	Set the GOT's station number. The setting range is [1] to [64].
		[GOT Communication Port No.]	Set the port number used by the GOT for the connection with the Ethernet module. Do not set the port number used for the other settings. Duplication of the port number disables communication. To change the number, it is recommended to use a number in the 50000s or higher.
		[Startup Time(Sec)]	Not available for GT SoftGOT3000. Set the time period from the GOT startup to the beginning of the communication with the PLC CPU. The setting range is [3] to [255].
		[Timeout Time(Sec)]	Not available for GT SoftGOT3000. Set a communication timeout period. The setting range is [1] to [90].

84.6 [Gateway-Server]

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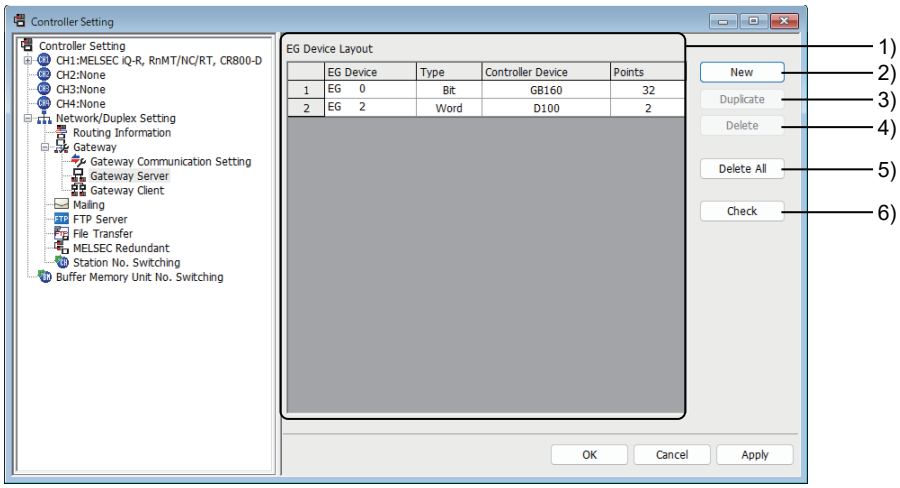
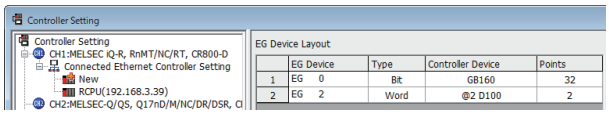
On the [Gateway Server] settings screen in the server project, set the gateway devices used by the GOT (server) and the controller devices assigned to those gateway devices.

Window

1. Select [Common] → [Controller Setting] from the menu to display the [Controller Setting] window.
2. Select [Gateway Server] in the [Controller Setting] window.



Item			Description
1)	[EG Device Layout]	—	Assign the controller devices to the gateway devices (EG devices).
		[EG Device]	Set the gateway device. The setting range is [0] to [32766].
		[Type]	Select the device type to be assigned.
		[Controller Device]	Set the controller devices to be assigned to the gateway devices. When the multi-channel function is used, devices for channels No. 2 to 4 are displayed as channel No. + device.  For information on how to set the devices, refer to the following. ☞ Page 834 How to set devices, labels, and tags
		[Points]	Set the number of the devices to be assigned. The following shows the setting ranges of [Bit] and [Word] selected in [Type]. • [Bit]: [32] to [32768] • [Word]: [2] to [32768] A value outside the above ranges cannot be set. ☞ Page 2897 Precautions for assigning devices
2)	[New] button		Adds a new assignment setting to the list. Up to 1024 settings can be configured.
3)	[Duplicate] button		Adds the copy of a selected assignment setting to the list.
4)	[Delete] button		Deletes a selected assignment setting.
5)	[Delete All] button		Deletes all assignment settings.
6)	[Check] button		Checks if the settings are correct.

84.7 [Gateway Client]

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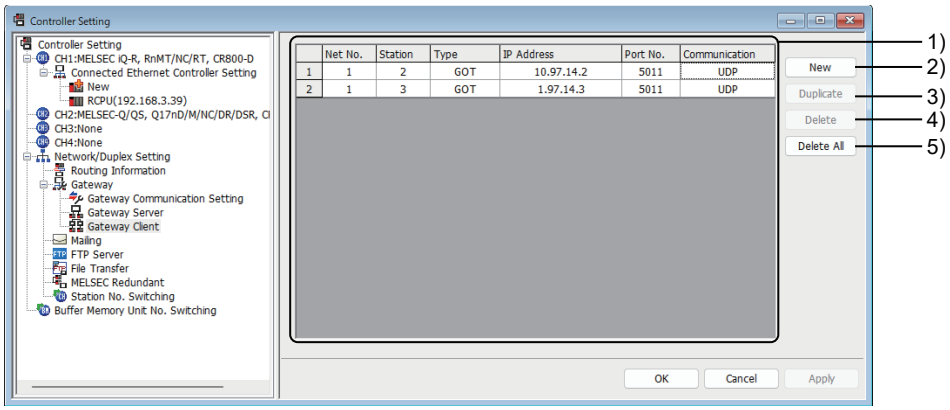
Register the GOTs (servers) to be monitored on the [Gateway Client] settings screen in the client project.
Up to 128 GOTs (servers) can be registered.

Window

1. Select [Common] → [Controller Setting] from the menu to display the [Controller Setting] window.
2. Select [Gateway Client] in the [Controller Setting] window.



Item			Description
1)	GOT list for the server function	—	Register the GOTs (server) to be monitored by the GOT (client).
		[Net No.]	Register the network number of each GOT. The setting range is [1] to [239].
		[Station]	Register the PLC No. (station number) of each GOT. The setting range is [1] to [64].
		[Type]	Register the type of the GOT used as a server.
		[IP Address]	Register the IP address of each GOT. The setting range is [0.0.0.0] to [255.255.255.255].
		[Port No.]	Register the port number of each GOT. The setting range is [1024] to [65534].
		[Communication]	Fixed to UDP.
2)	[New] button		Adds a new GOT (server).
3)	[Duplicate] button		Adds the copy of a selected GOT (server).
4)	[Delete] button		Deletes a selected GOT (server).
5)	[Delete All] button		Deletes all GOTs (server).

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84.8 Server/client function application examples

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The following shows examples of using the server/client function.

To apply the example programs in this section to the actual system, make sure that the programs cause no troubles in the target system.

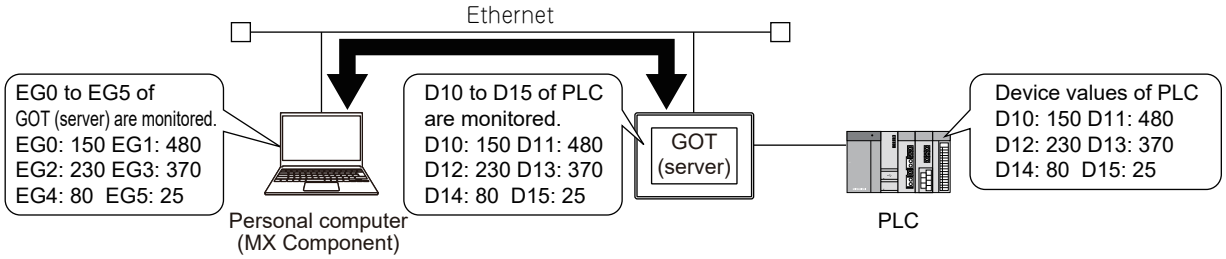
☞ Page 2886 Monitoring the PLC devices on a personal computer (MX Component) through a GOT

☞ Page 2887 Displaying the alarms occurred in multiple PLCs on the GOT (client)

☞ Page 2889 Monitoring and controlling the production status of multiple PLCs on the GOT (server)

84.8.1 Monitoring the PLC devices on a personal computer (MX Component) through a GOT

Monitor the values of the PLC devices D10 to D15 on a personal computer (MX Component) through a GOT (server).



Access EG0 to EG5 of the GOT (server) on the personal computer (MX Component).

Setting example of GOT (server)

• Settings for [Gateway Server]

EG device	Controller device	Device type	Points
EG0	D10	Word	6

Personal computer setting

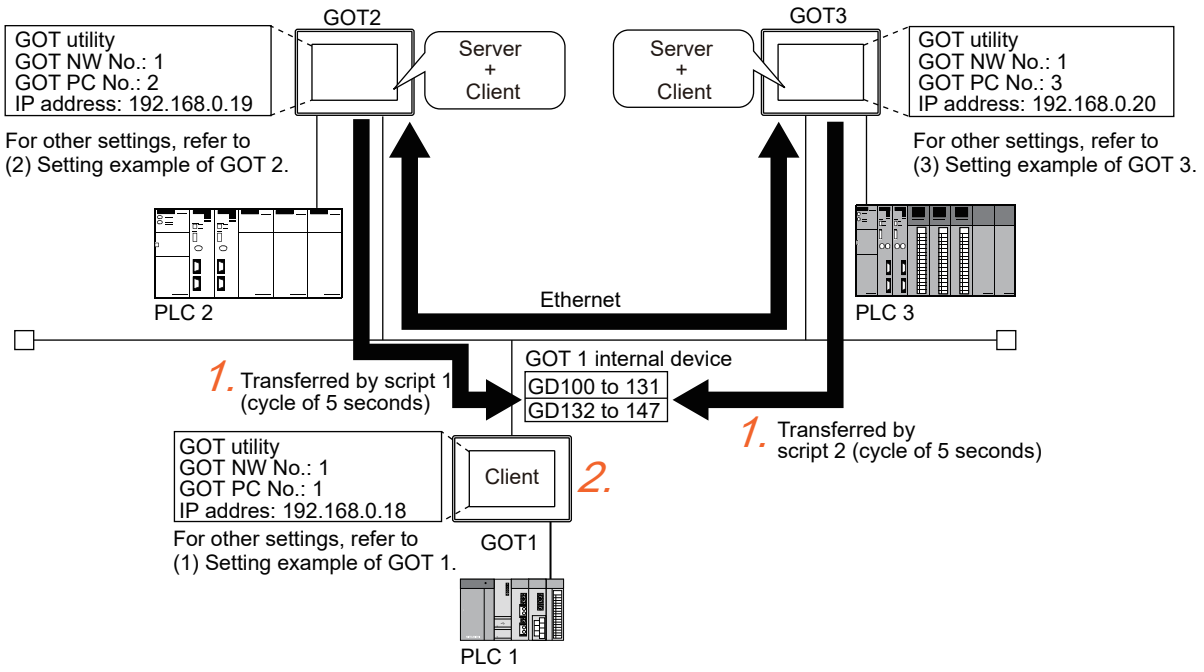
Access the GOT (server) by using MX Component.

For details on MX Component, refer to the following.

MX Component Version 3 Operating Manual

MX Component Version 3 Programming Manual

84.8.2 Displaying the alarms occurred in multiple PLCs on the GOT (client)



1. Transfer the device values of PLC2 and PLC3 to the internal devices of GOT1 (GD100 to GD147).

2. GOT1 monitors its own internal devices and displays the alarm information when an alarm occurs in PLC2 or PLC3.

Setting example of GOT1

• Settings for [Gateway Client]

N/W No.	Station No.	IP address
1	2	192.168.0.19
1	3	192.168.0.20

• Alarm display (alarm display for GOT2)

Set the comments displayed in the alarm display in advance.

Item	Description
Device points (number of alarms)	512 points (successive)
Device	GD100.b0

• Alarm display (alarm display for GOT3)

Set the comments displayed in the alarm display in advance.

Item	Description
Device points (number of alarms)	256 points (successive)
Device	GD132.b0

• Script (alarm display for GOT2)

Item		Description
Script 1	Type	Screen script
	Trigger type	Cycle: 5 seconds
	Data type	Unsigned BIN 16
	Example of script description	bmov([1-2:w:EG0],[w:GD100],32); //Transfers 32 points from EG0 of GOT2 to GD100 and subsequent devices of GOT1

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• Script (alarm display for GOT3)

Item		Description
Script 2	Type	Screen script
	Trigger type	Cycle: 5 seconds
	Data type	Unsigned BIN 16
	Example of script description	bmov([1-3:w:EG0],[w:GD132],16); //Transfers 16 points from EG0 of GOT3 to GD132 and subsequent devices of GOT1

Precautions

Do not set [Ordinary] or [Sampling, 2 sec.] for the trigger type in the script.
The setting may affect other monitoring operations.

Setting example of GOT2

• Settings for [Gateway Server]

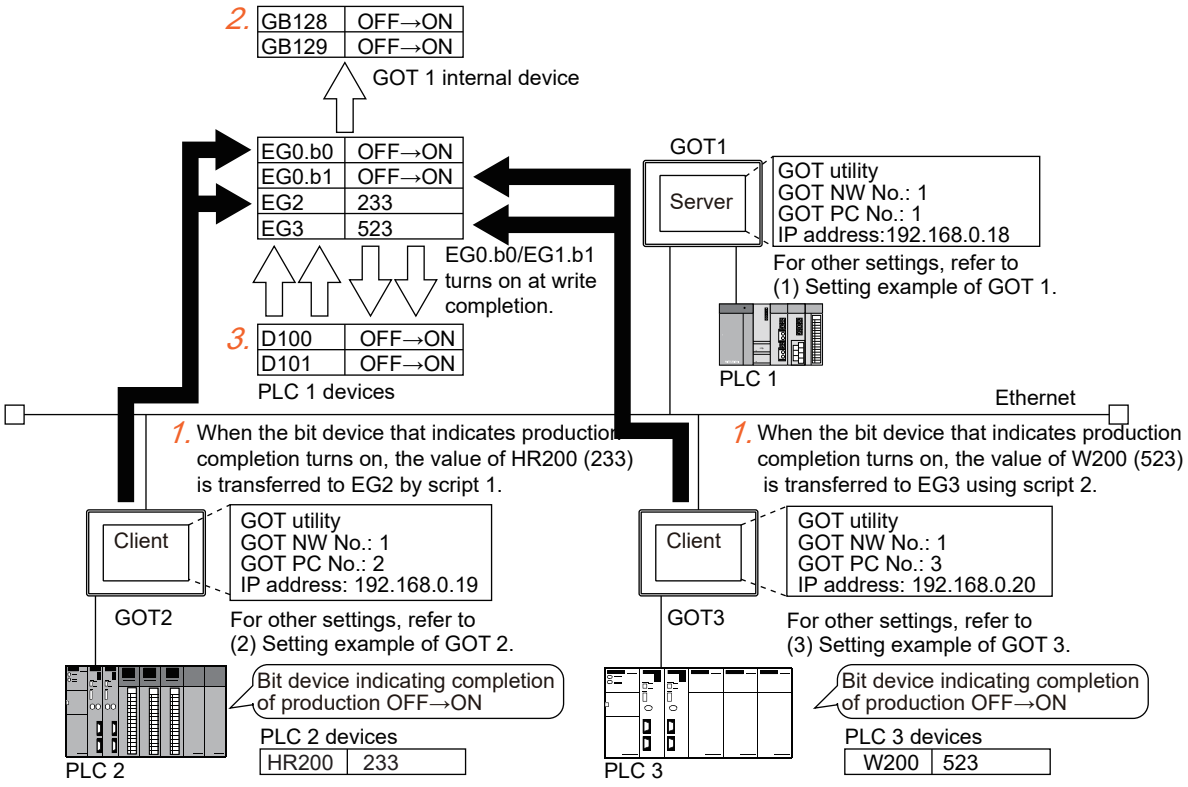
EG device	Controller device	Device type	Points
EG0	IB200	Bit	512

Setting example of GOT3

• Settings for [Gateway Server]

EG device	Controller device	Device type	Points
EG0	..300	Bit	256

84.8.3 Monitoring and controlling the production status of multiple PLCs on the GOT (server)



1. Transfer the device values of PLC2 and PLC3 to the EG devices (PLC1 devices) of GOT1 (server).

2. After the values are written to PLC1, the EG devices of GOT1 (internal devices (GB128, GB129) of GOT1) turn on. (Check a lamp or other indications to see if the writing is complete.)

3. GOT1 (server) checks the production status of PLC2 and PLC3 by monitoring the PLC1 devices.

Setting example of GOT1

• Settings for [Gateway Server]

EG device	Controller device	Device type	Points
EG0	GB128	Bit	32
EG2	D100	Word	2

• Numerical display (setting for 2 devices)

Item	Description
Device	D100 to D101
Network setting	Host station

• Lamp (setting for 2 devices)

Item	Description
Device	GB128 to GB129
Network setting	Host station

Setting example of GOT2

• Settings for [Gateway Client]

Register the information for the GOT1 (server) to be monitored.

N/W No.	Station No.	IP address
1	1	192.168.0.18

• Script

Item		Description
Script 1	Type	Screen script
	Trigger type	On: Bit device that indicates the production completion
	Data type	Unsigned BIN 16

	Example of script description	[1-1:w:EG2]=[w:HR200]; //Writes the production count to PLC1.
		set([1-1:b:EG0.00]); //Turns on the write completion signal.

Setting example of GOT3

• Settings for [Gateway Client]

Register the information for the GOT1 (server) to be monitored.

N/W No.	Station No.	IP address
1	1	192.168.0.18

• Script

Item		Description
Script 1	Type	Screen script
	Trigger type	On: Bit device that indicates the production completion
	Data type	Unsigned BIN 16

	Example of script description	[1-1:w:EG3]=[w:W200]; //The production volume is written to PLC1.
		set([1-1:b:EG0.01]); //Turns on the write completion signal.

84.9 Using the server/client function efficiently

This section explains how to use the server/client function efficiently.

☞ Page 2891 Script setting
☞ Page 2892 Gateway device setting
☞ Page 2893 Performance of the server/client function (reference value)

84.9.1 Script setting

If a program using gateway devices directly is executed, the number of times of the access to other stations' GOTs increases and the processing delays.

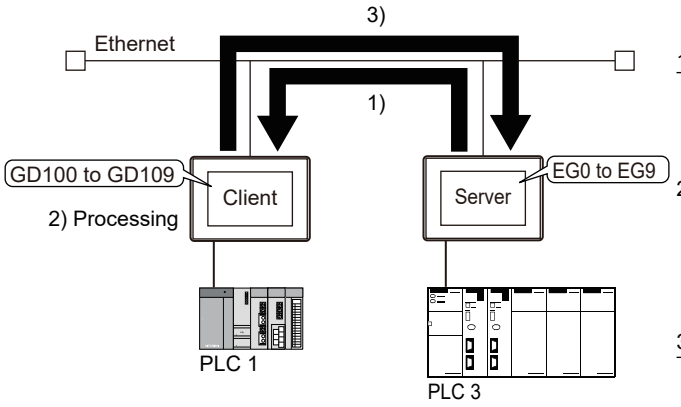
Execute batch read to the GOT internal devices and execute batch write after processing as shown below to decrease the number of accesses. Doing so improves the processing speed.

When executing batch read to store in the GOT internal device (GD) and executing batch write after processing

Access to the other station's GOT occurs twice: 1) and 3).

Hence, if one access requires 50 ms, about 100 ms is necessary in total.

The gateway devices are accessed in a batch when the execution condition of the script is satisfied. Therefore, the values of the gateway devices when the conditions are satisfied are processed and written.



Example of a script

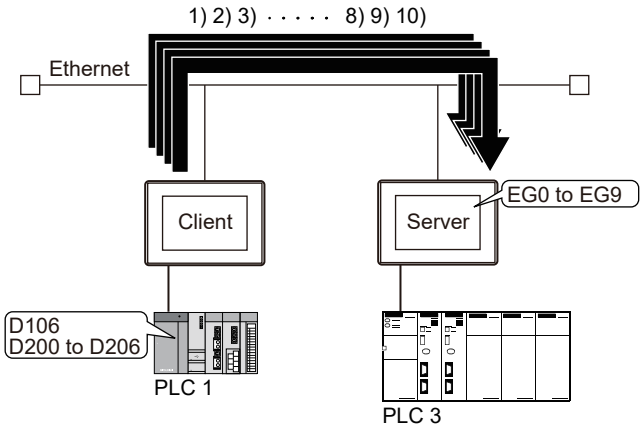
```
1) bmov([1-2:w:EG0],[w:GD100],10);
   [w:D200]=[w:GD100];
   [w:D201]=[w:GD101];
   [w:D202]=[w:GD102];
   [w:D203]=[w:GD103];
2) [w:D204]=[w:GD104];
   [w:GD105]=128;
   [w:GD106]=[w:D106];
   [w:D205]=[w:GD107];
   [w:D206]=[w:GD108];
   [w:GD109]=5433;
3) bmov([w:GD100],[1-2:w:EG0],10);
```

When using gateway devices directly

Access to the other station's GOT occurs 10 times: 1) to 10).

Hence, if one access requires 50 ms, about 500 ms is necessary in total.

The gateway devices are accessed sequentially when the execution condition of the script is satisfied. Therefore, values of the gateway devices that differ from themselves when the conditions are satisfied may be written.



Example of a script

```
1)  [w:D200]=[1-2:w:EG0];
2)  [w:D201]=[1-2:w:EG1];
3)  [w:D202]=[1-2:w:EG2];
4)  [w:D203]=[1-2:w:EG3];
5)  [w:D204]=[1-2:w:EG4];
6)  [1-2:w:EG5]=128;
7)  [1-2:w:EG6]=[w:D106];
8)  [w:D205]=[1-2:w:EG7];
9)  [w:D206]=[1-2:w:EG8];
10) [1-2:w:EG9]=5433;
```

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84.9.2 Gateway device setting

When assigning the devices of PLCs to gateway devices, assign the same type of devices of the same PLC together as far as possible.

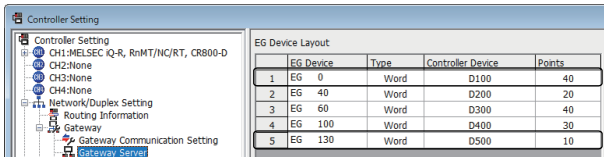
Set the same type of devices of the same PLC together as shown below to decrease the number of accesses. Doing so improves the processing speed.

☞ Page 2892 When the devices for the host station, other stations, and other PLCs are not set together

☞ Page 2892 When the devices of the host station, other stations, and other PLCs are set together

When the devices for the host station, other stations, and other PLCs are not set together

When the GOT (client) accesses the host devices of the GOT (server), program 1), which reads 40 points from EG0 and program 2), which reads 10 points from EG130, are necessary.

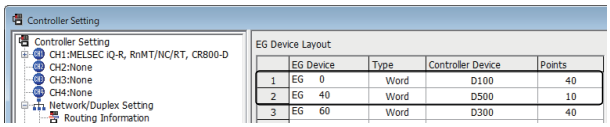


Example of a script

```
1) bmov([W:GD100],[1-2:w:EG0],40);
2) bmov([w:GD140],[1-2:w:EG130],10);
```

When the devices of the host station, other stations, and other PLCs are set together

When the GOT (client) accesses the host devices of the GOT (server), only program 1), which reads 50 points from EG0, is necessary.

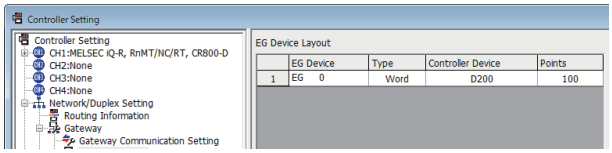


Example of a script

```
1) bmov([W:GD100],[1-2:w:EG0],50);
```

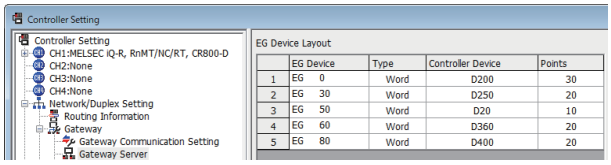
If the devices of the same PLC, used for the server/client function, are reserved as a set, as shown below, in the system design phase, the GOT (server) needs a smaller number of times of access and thus the processing speed improves.

If the devices of the same PLC are reserved as a set



If 100 points of devices are accessed,
PLC is accessed just 1 time.

If the devices of the same PLC are reserved separately



If 100 points of devices are accessed,
PLC is accessed 5 times.

84.9.3 Performance of the server/client function (reference value)

The following shows the performance (reference values) of the server/client function when [Script Setting] and [Gateway Device Setting] are set as shown above.

The reference values are obtained under the conditions shown below.

- The system is configured with one GOT (server) and one GOT (client).
- GOT (server): Numerical input (64 points) setting
- GOT (client): Numerical input (64 points) setting
- Number of assigned device points: 10 word devices

In a system with multiple GOTs (clients), the total response speed is equal to the number of GOTs (clients) multiplied by the response speed shown below.

Combinations for improving the efficiency		Response speed when direct CPU connection (serial) is used
Improving the efficiency of the script	**Improving the gateway device setting efficiency**	
○ ☞ Page 2891 When executing batch read to store in the GOT internal device (GD) and executing batch write after processing	○ ☞ Page 2892 When the devices of the host station, other stations, and other PLCs are set together	About 260 ms
○ ☞ Page 2891 When executing batch read to store in the GOT internal device (GD) and executing batch write after processing	× ☞ Page 2892 When the devices for the host station, other stations, and other PLCs are not set together	About 1300 ms
× ☞ Page 2891 When using gateway devices directly	○ ☞ Page 2892 When the devices of the host station, other stations, and other PLCs are set together	
× ☞ Page 2891 When using gateway devices directly	× ☞ Page 2892 When the devices for the host station, other stations, and other PLCs are not set together	

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84.10 Precautions

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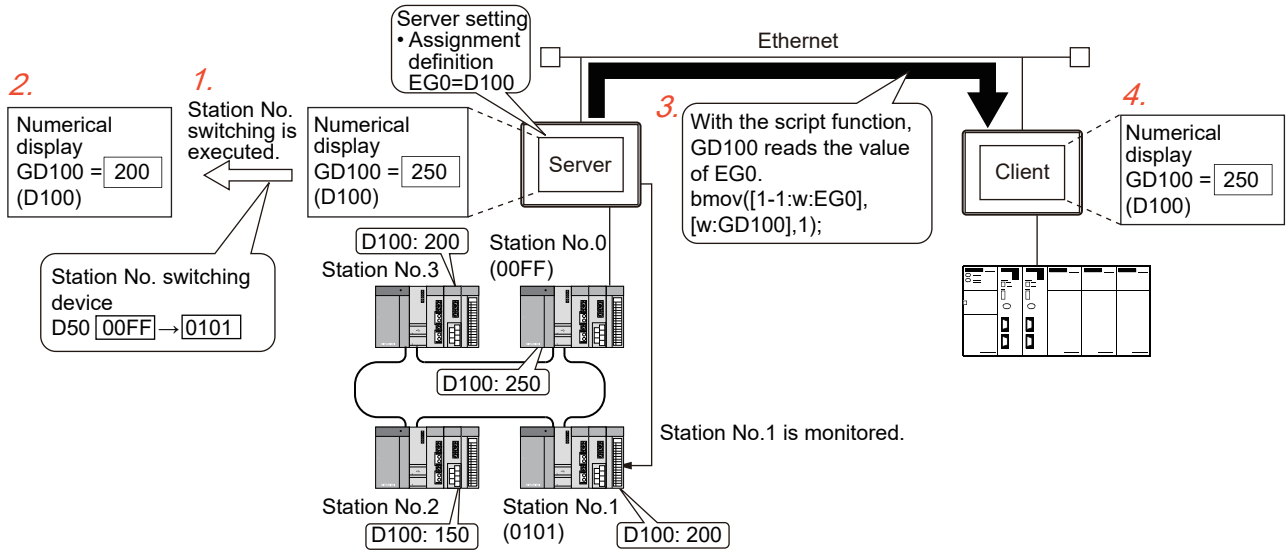
The following shows the precautions for using the server/client function.

☞ Page 2894 Precautions for station number switching
☞ Page 2895 Precautions on the script setting
☞ Page 2896 Precautions for monitoring
☞ Page 2897 Precautions for assigning devices

84.10.1 Precautions for station number switching

When monitoring gateway devices assigned to controller devices, the monitored devices are not affected by station number switching.

Create the screen for each station.



1. Execute the station number switching.

2. The numerical display on the GOT (server) changes as a result of the station number switching.

3. However, the station number switching does not affect the assignment of the gateway devices. Read the value of EG0 of the PLC (station number 0) to GD100 using the script.

4. The numerical display on the GOT (client) is does not change as a result of the station number switching.

84.10.2 Precautions on the script setting

Setting the trigger type

When setting the script, do not set the trigger type to [Ordinary] or [Sampling, 2 sec.].
The setting may affect other monitoring operations.

Monitoring gateway devices with a script

A script cannot be used to monitor the gateway devices of the GOT itself (GOT) where the script is executed.
To monitor the PLC devices assigned to the gateway devices, monitor the PLC devices directly.

Specifying the network number and PLC station number in a script

In the script, which accesses the gateway devices of the target GOT, specify the network number and the PLC station number of the target GOT.
Even if 0-FF (host station) is set for the target, the gateway devices cannot be monitored.

When using the bmov instruction in a script

A script does not run properly in the following cases.

- A bit device that cannot be specified as a word device is assigned to a gateway device. This gateway device is specified for a command specifying word devices.
- A word device that cannot be specified as a bit device is assigned to a gateway device. This gateway device is specified for a command specifying bit devices.

Do not specify such gateway devices for the commands specifying word devices and bit devices.
The following shows the commands specifying word devices and bit devices.

Item	Command type	Description
Commands specifying word devices	Function (application arithmetic operation)	sin, cos, tan, asin, acos, atan, abs, log, log10, exp, ldexp, sqrt
Commands specifying bit devices	Operator (bit device)	&, |, ~, ^, <<, >>
	Operator (assignment)	=
	Function (device operation)	set, rst, alt

For details on each device, refer to the following.
☞ Page 3487 Device range and settings of each controller
For details on each command, refer to the following.
☞ Page 2335 Control structures for scripts
☞ Page 2449 Control structure of object scripts

Number of devices used for the bmov and fmov functions

If the gateway devices are used for the bmov and fmov functions, up to 400 devices are usable.

84.10.3 Precautions for monitoring

Script execution error

If you monitor the gateway devices of the GOT (server) while the server or client cannot be used, such as when the GOT is powered off, a script execution error (error code 16) occurs on the GOT (client), causing the script to stop.
For the errors for the execution of a script, refer to the following.
☞ Page 2899 Troubleshooting

When monitoring a gateway device without an assigned PLC device

When a gateway device without an assigned PLC device is monitored, it is monitored as 0 (or off if a bit device is specified).
When a value is written, the value is invalid.

Screen save

During the execution of a script that uses gateway devices, the screen save time may be affected.
Canceling the screen saver (by a screen touch or human sensor) may take longer time than usual.
For example, if the screen processing time is two seconds, the screen save is canceled up to two seconds after the screen is touched.
When the automatic screen saver is set, the execution intervals may be longer than the specified interval.

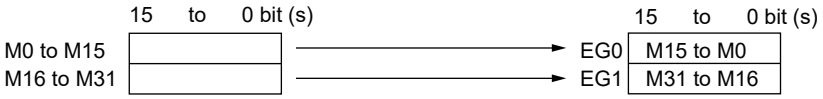
84.10.4 Precautions for assigning devices

The gateway devices are set in a set of two points.

Therefore, the number of assigned devices depends on the controller devices to be set.

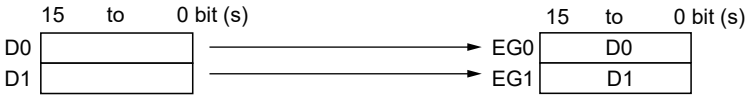
When assigning bit devices to gateway devices

Bit devices are assigned in a unit of 32 points.



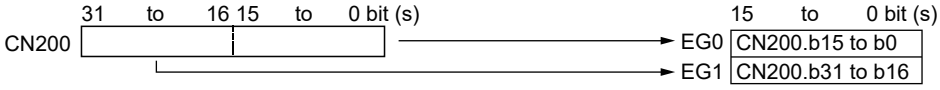
When assigning word devices to gateway devices

Word devices are assigned in a unit of 2 points.



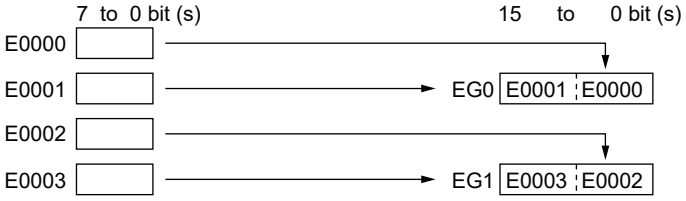
When assigning double-word devices to gateway devices

Double-word devices are assigned in a unit of 1 point.



When assigning 8-bit devices to gateway devices

The 8-bit devices are assigned in a unit of 4 points.



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84.11 Relevant settings

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Configure the relevant settings in addition to the specific for the server/client function as required. The following shows the functions that are available by configuring the relevant settings.

☞ Page 3581 GOT special register (GS)

84.11.1 GOT internal device

Function	Setting item
Notifies the operation availability status of the server function.	GS200.b3
Notifies the operation availability status of the client function.	GS200.b4
Turns on when an error occurs in the use of the server function.	GS200.b14
Turns on when an error occurs in the use of the client function.	GS200.b15
Stores the number of errors that occur in the use of the server function.	GS210
Stores the error codes of errors that occur in the use of the server function.	GS211
Stores the year (upper byte, two lower digits of year) and the month (lower byte) with BCD code when an error occurs in the use of the server function.	GS212
Stores the year (upper byte) and the hour (lower byte) with BCD code when an error occurs in the use of the server function.	GS213
Stores the minute (upper byte) and the second (lower byte) with BCD code when an error occurs in the use of the server function.	GS214
Stores the lower part of the IP address of the GOT (client), where an error occurs in the use of the server function, with BCD code.	GS215
Stores the upper part of the IP address of the GOT (client), where an error occurs in the use of the server function, with BCD code.	GS216
Stores the number of errors that occur in the use of the client function.	GS220
Stores the error codes of errors that occur in the use of the client function.	GS221
Stores the year (upper byte, two lower digits of year) and the month (lower byte) with BCD code when an error occurs in the use of the client function.	GS222
Stores the day (upper byte, two lower digits of year) and the hour (lower byte) with BCD code when an error occurs in use of the client function.	GS223
Stores the minute (upper byte) and the second (lower byte) with BCD code when an error occurs in the use of the client function.	GS224
Stores the lower part of the IP address of the GOT (server), where an error occurs in the use of the client function, with BCD code.	GS225
Stores the upper part of the IP address of the GOT (server), where an error occurs in the use of the client function, with BCD code.	GS226
Clears the errors (GS200.b14, GS210 to GS216) of the server function.	GS400.b14
Clears the errors (GS200.b15, GS220 to GS226) of the client function.	GS400.b15

84.12 Troubleshooting

GT37 SoftGOT3000

☞ Page 2899 Troubleshooting for the server/client function
☞ Page 2900 Error information of the server/client function
☞ Page 2900 Error code list of the server/client function
☞ Page 2902 Error code list of MX Component

84.12.1 Troubleshooting for the server/client function

The following shows the troubleshooting for the server/client function.

Symptom		Cause	Corrective action
The server/client function does not work.	When all the bits of GS200 are off and the GOT does not respond to the ping command*1*2	The system application (extended function) for the server/client function is not installed on the GOT.	Write the package data, which contains the system application (extended function) for the server/client function, to the GOT. ☞ Page 408 Transferring data to the GOT
		No IP address has been set for the GOT.	Set the IP address for the GOT in the utility of the GOT.
		The port number of the personal computer (MX Component) is different from that of the GOT (5011).	Set the same port number for the personal computer (MX Component) as that of the GOT (5011).
	If any bit of GS200 is on and the GOT responds to the ping command*1*2	—	Refer to the troubleshooting for the functions corresponding to the bits that are on, and take corrective actions.
A gateway device cannot be monitored.		A device that does not exist in the server settings has been monitored.	Check the controller devices that have been assigned to the gateway devices.
		The IP address of the GOT to be monitored has been incorrectly set in the client settings.	Check the IP address of the GOT to be monitored.
		An error has occurred in either of the GOTs (server or client).	Check the GOT special registers GS211 and GS221 and take the corrective actions. ☞ Page 2900 Error code list of the server/client function
		A script function error has occurred.	Check the script function error and take the corrective actions. ☞ Page 2325 Controlling operations with scripts ([Script])

*1 For details on the Gateway Common Information (GS200), refer to the following.
☞ Page 3581 GOT special register (GS)

*2 To check if the GOT responds to the ping command, execute it from the personal computer to the GOT.

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84.12.2 Error information of the server/client function

The error information of the server/client function is stored in the GOT special register (GS).
Check the error information of the server/client function by monitoring the following GOT special registers.
For details on the GOT special registers, refer to the following.
☞ Page 3581 GOT special register (GS)

Write device	Function		Description
GS210	Server function	Error counter	Stores the number of errors that have occurred.
GS211		Error code	Stores the error code. ☞ Page 2900 Error code list of the server/client function
GS212		Error date and time	Stores the year (upper byte, two lower digits of year) and the month (lower byte) of the error occurrence date/time in BCD code.
GS213			Stores the day (upper byte) and the hour (lower byte) of the error occurrence date/time in BCD code.
GS214			Stores the minute (upper byte) and the second (lower byte) of the error occurrence date/time in BCD code.
GS215		Request source	Stores the lower part of the IP address of the GOT (client), where an error has occurred, with BIN code.
GS216			Stores the upper part of the IP address of the GOT (client), where an error has occurred, with BIN code.
GS220	Client function	Error counter	Stores the number of errors that have occurred.
GS221		Error code	Stores the error code. ☞ Page 2900 Error code list of the server/client function
GS222		Error date and time	Stores the year (upper byte, two lower digits of year) and the month (lower byte) of the error occurrence date/time in BCD code.
GS223			Stores the day (upper byte) and the hour (lower byte) of the error occurrence date/time in BCD code.
GS224			Stores the minute (upper byte) and the second (lower byte) of the error occurrence date/time in BCD code.
GS225		Request target	Stores the lower part of the IP address of the GOT (server), where an error has occurred, with BIN code.
GS226			Stores the upper part of the IP address of the GOT (server), where an error has occurred, with BIN code.

84.12.3 Error code list of the server/client function

The following lists the error codes that are stored in the GOT special registers GS211 (Server Function Error Code) and GS221 (Client Function Error Code).

Error code*1	Cause	Corrective action
490	A script was used for monitoring the gate device that executed the script.	• Change the monitor destination GOT specified in the script to another GOT. • Monitor the PLC devices directly without using the script.
491	A station that does not exist was accessed.	Check the network number, the PLC station number, and the Ethernet settings of the the monitor destination.
492	A communication timeout error has occurred.	• Specify a longer communication timeout period. ☞ Page 729 [Controller Setting] • Check the network. (Check if a firewall exists, execute Ping, or take other actions.) • Check for cable disconnection, and check the module mounting status.
493	A communication error has occurred.	• Check the network. (Check if a firewall exists, execute Ping, or take other actions.) • Check for cable disconnection, and check the module mounting status.

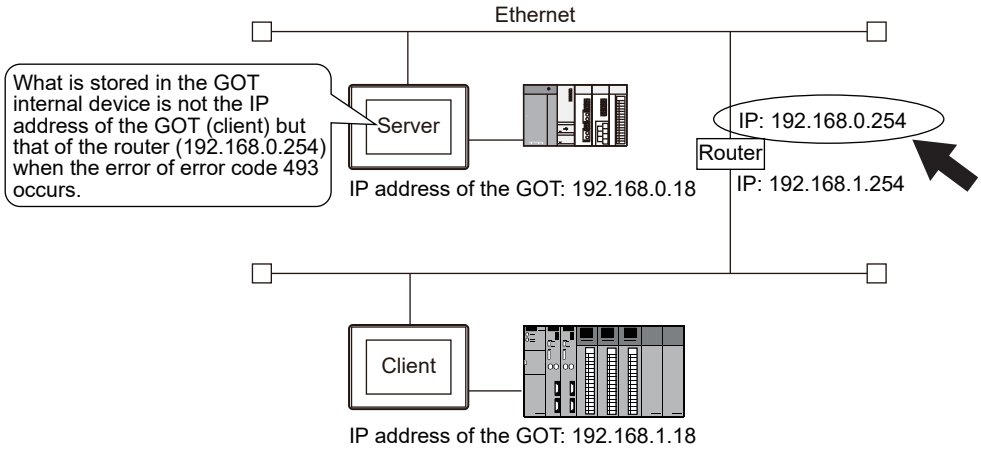
*1 The error caused in the GOT (server) is error code 493 only.

Error code 493 has occurred in the GOT (server).

The error may occur in a congested network.
If no error has occurred in the GOT (client), the communication recovers by the retry processing of the GOT (client) .

A system where a router is used

If error code 493 has occurred in the GOT (server), the router address is taken as the IP address of the target client.



An error has occurred in the GOT (client).

When an error occurs in the GOT (client), the script stops its operation.

When an error occurs, execute the script again after taking the corrective actions.

For details on scripts, refer to the following.

☞ Page 2325 Controlling operations with scripts ([Script])

Error code 492 has occurred in the GOT (client).

The error may occur when multiple GOTs (client) access the GOT (server).

Adjust the value of [Timeout Time].

Refer to the following calculation to set the value.

Timeout time that is already set × Number of GOTs (client) = [Timeout Time] after the adjustment

Error code 15 has occurred in the script error data.

If a large number of GOTs (clients) are accessing the GOT (server), a script that uses a gateway device may not finish even after the monitoring time has elapsed.

In this case, error code 15 is stored in the script error data (GS16 to GS47).

If the error occurs, adjust the value of [script monitoring time] (GS385).

Refer to the following calculation to set the value.

Timeout time that is already set × Number of GOTs (client) = [script monitoring time] after the adjustment

For details on the script, refer to the following.

☞ Page 2325 Controlling operations with scripts ([Script])

84.12.4 Error code list of MX Component

The following lists the error codes of the errors which occur when the GOT is accessed from MX Component.

Error code*1	Cause	Corrective action
0x0180840B	Timeout error Data could not be received within the timeout time.	■Corrective action for MX Component • Review the timeout value in the property. • Set the timeout value again in the communication setting utility. • Review the system including the PLC CPU, module settings, and cable status. • Retry the method. • Perform Close once and execute Open again. • Exit the program and restart the IBM-PC/AT compatible. 📖Programming Manual for MX Component ■Corrective action for the GOT • Check if the server settings for GT Designer3 are configured. ☞ Page 2884 [Gateway-Server]
0x010F4030	An unavailable device or device that does not exist has been assigned to the accessed gateway device.	Check that the device assignment is correct or the set devices exist in the server settings of GT Designer3.
0x010F4031	A device of PLCs outside the monitor range has been assigned to the accessed gateway device.	Check if the devices that are within the monitor range are assigned in the server settings of GT Designer3.
0x010F4B00	A communication timeout has occurred. A module is not mounted correctly or a cable is not correctly.	• Check for cable disconnection, and check the communication unit mounting status, and the PLC status. • The communication timeout may occur when the load on the PLC increases during the access to another station. In this case, move the data in another station to the PLC of the host station, and monitor the data at the host station. • If the sequence scan time is long, insert the COM instruction. • Check the GOT error codes for system alarms or system information.*2 When an error has occurred, take the corrective actions.

*1 When an error other than those listed above occurs, refer to the following.
📖MX Component Version 3 Operating Manual
📖MX Component Version 3 Programming Manual

*2 For details on the GOT error codes, refer to the following.
📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

PART 28 File transfer function

85 Transferring files between the GOT and peripheral devices (FTP server function)

86 Transferring files between the GOT and peripheral devices (file transfer function (FTP transfer))

87 Transferring files between the GOT drives (file transfer function (GOT internal transfer))

85 Transferring files between the GOT and peripheral devices (FTP server function)

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☞ Page 2905 Overview of the FTP server function
☞ Page 2906 Specifications of the FTP server function
☞ Page 2910 How to use the FTP server function
☞ Page 2913 [FTP Server]
☞ Page 2915 Procedures of the FTP server function
☞ Page 2924 Relevant settings
☞ Page 2925 Troubleshooting

85.1 Overview of the FTP server function

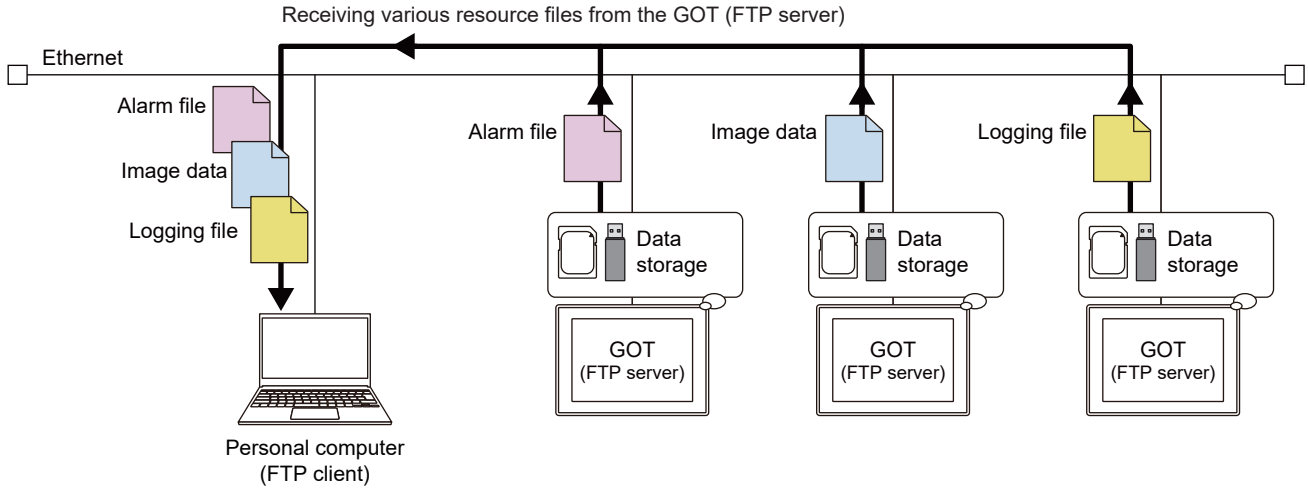
The FTP server function enables you to read/write a file from/to an external FTP client such as a personal computer via the GOT (FTP server).

Files can be read from or written to the on-site GOT using simple command operations from the office personal computer, enabling the following applications.

Reading GOT resource files on a personal computer

Resource files generated by the GOTs (alarm, logging, operation log, and other log files) and image files captured by the hard copy function are read via operations on the personal computer (FTP client).

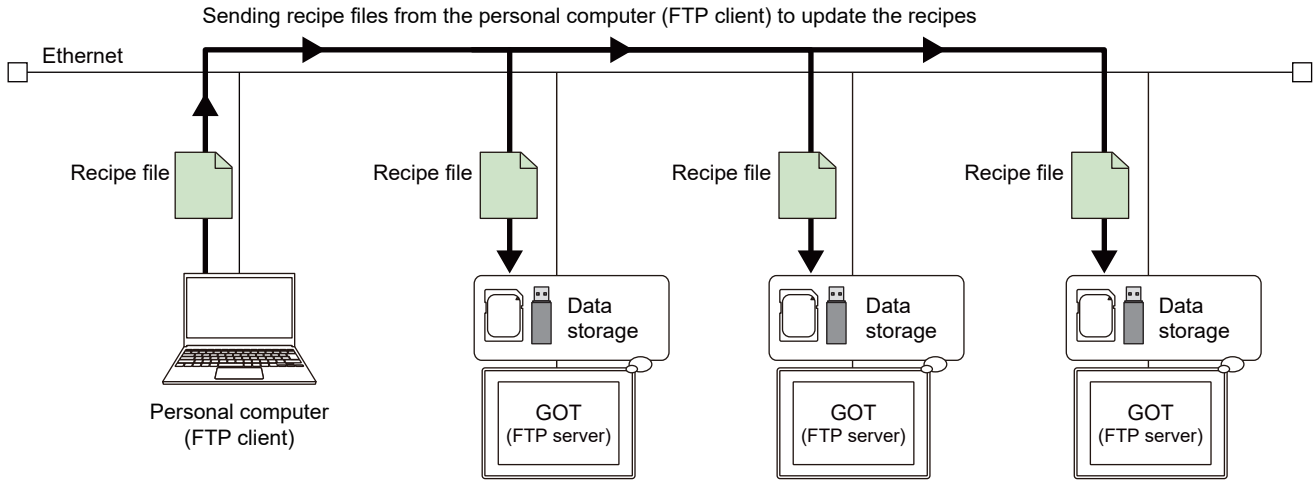
Use this function to read resource files from multiple GOTs via Ethernet.



Sending files from a personal computer to the GOT

Files created on a personal computer, such as recipe files, are written from the personal computer (FTP client) to the GOT (FTP server).

Use this function to edit resource files from multiple GOTs at once via Ethernet.



Precautions

To write recipe files from the FTP client to the GOT, set the same format of the recipe files as the one set with the recipe of the GOT.

To write recipe files from a personal computer at a distant location, check the procedure with field workers before writing recipe files.

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85.2 Specifications of the FTP server function

GT37 SoftGOT3000

☞ Page 2906 System application (add-on function)
☞ Page 2906 Number of FTP server function settings for one project
☞ Page 2906 Available FTP client
☞ Page 2907 Number of simultaneously connectable clients
☞ Page 2907 Available file size for file reading
☞ Page 2907 Character code
☞ Page 2907 Data which can be read and written using the FTP server function
☞ Page 2907 Authentication method for connecting to the FTP server
☞ Page 2908 Encrypted communication
☞ Page 2908 Operation record (operation log)
☞ Page 2909 Accessible range

85.2.1 System application (add-on function)

To use the FTP server function, [Gateway(FTP Server)] must be selected from the system applications (add-on functions). Selecting [Use the function of FTP Server] and configuring each setting in [FTP Server] in the [Controller Setting] window incorporate the application into the package data automatically.

☞ Page 2913 [FTP Server]

85.2.2 Number of FTP server function settings for one project

One setting can be configured per project.

85.2.3 Available FTP client

- FTP client compliant with RFC 959
- FTPS client compliant with RFC 2246 and RFC 4217
- FTP client which can be accessed from the Windows command prompt using the FTP command
- FTP client which supports the passive mode

For the FTP clients whose operations have been validated, refer to the following Technical Bulletin.

📖List of Devices Validated to Operate with the GOT3000 Series FTP Server Function/ File Transfer Function (GOT-A-0256)

Precautions

■Performing a test on the FTP client tool

Before using the FTP client tool, make sure to read the manual for the FTP client tool to check the functions and operating procedure, then conduct the test operation.

Some operations may not be supported by the GOT (FTP server) depending on the FTP client tool to be used.

Also, depending on the FTP client tool used, the FTP server function may not be usable because the GOT cannot support the extended command (quote) and issue GOT-dedicated commands.

■Behavior of the FTP client when disconnected

If the GOT is reset or powered off when it is connected to the FTP client, the behavior of the FTP client depends on the specifications of the FTP client tool to be used.

Use an FTP client tool which detects the FTP server down or properly shuts down the FTP client.

85.2.4 Number of simultaneously connectable clients

Up to eight clients can be connected simultaneously.

Use GS404 to specify the number of connectable clients.

When GS404 stores 0 or 9 or greater, one client can be connected.

85.2.5 Available file size for file reading

Unlimited. The maximum read size depends on the capacity of the data storage.

85.2.6 Character code

The character code used for communication is UTF-8.

This also allows for reading and writing of files with multibyte character file names.

85.2.7 Data which can be read and written using the FTP server function

The following files can be read and written using the FTP server function.

- CSV files
- Unicode text files
- Image data
- Binary format files (*.G3□)

Files with the following extensions cannot be read or written.

OUT, FON, INI, G3, PRF

Binary format files

Binary format files (*.G3□) can be read to a personal computer by using the Gateway Common Control (GS400.b8).

However, the following files cannot be read.

- G3
- G3D
- G3G

You can use the binary format file read to GT Designer3 as backup data. Some files can be converted to other formats using GT Designer3.

85.2.8 Authentication method for connecting to the FTP server

Depending on the security mode, the authentication method for connecting to the FTP server differs.

Security mode	Authentication method
Security mode 1	You can select either dedicated user authentication for the FTP server or [Operator Authentication]. [Operator Authentication] is only available if it is configured in the security settings.
Security mode 2	Operator authentication is performed. To connect to the FTP server using security mode 2 operator authentication, an operator with one of the following operation rights must perform authentication. Unauthorized operators cannot connect. • [Current drive reading] • [Current drive writing] • [Non-current drive reading/writing]

85.2.9 Encrypted communication

The FTP server function allows you to enable or disable FTPS, which encrypts communication between the GOT and the FTP client.
FTPS can prevent problems caused by unauthorized access.
For encrypted communication using FTPS, the certificate (server certificate) set in the GOT is used.
Enable or disable encrypted communication for the FTP server function using [Communication] on the [FTP Server] screen displayed in [Common] → [Controller Setting].

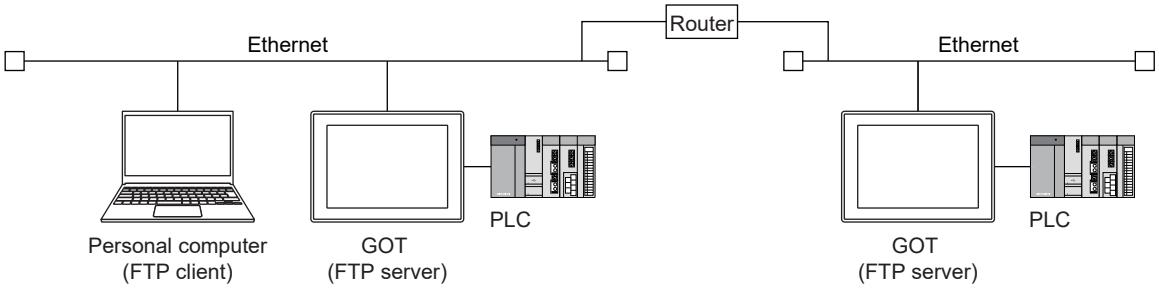
85.2.10 Operation record (operation log)

Encrypted communication, operator authentication, and file operations during the use of the FTP server function are recorded in the operation log.
Operations on the FTP server are recorded in the operation log with [FTP] as the operation source.
If the authentication method is [FTP Server Exclusive User Authentication], the user name of [FTP Server Exclusive User Authentication] is recorded as the operator name in the operation log (operator ID: [0]).
The following logs are recorded:

Log item	Event	FTP event	Remarks
Encrypted communication	Start of encrypted communication (connection)	When the FTPS connection starts	—
	Failed to start encrypted communication	When the FTPS connection fails to start	Certificate deficiencies or other issues
	End of encrypted communication (disconnection)	When the FTPS connection ends	—
Operator authentication	Login (successful)	When connection authentication is successful	—
	Login (failed)	When connection authentication fails	Authentication failed, automatic disconnection before login
	Logout	When a disconnection is performed on the FTP client	—
	Automatic logout	When automatic disconnection occurs due to the elapse of the automatic logout time.	—
	Forced logout	Forced disconnection by the Forced FTP Server Function Logout Signal (GS400.b2)	—
	Authentication prohibited (detection of unauthorized login attempts)	When multiple authentication attempts fail	Recorded on the operator management side
	Operator account lock	When the same operator fails consecutively	Recorded on the operator management side
	Automatic removal of authentication prohibition	After the prohibition period has elapsed	Recorded on the operator management side
File (drive) operation	File operation: Read	Reading files from the GOT	—
	File operation: Write	Writing files to the GOT	—
	File operation: Delete	Deleting files in the GOT	—
	File operation: Rename	Renaming a file in the GOT	—
	File creation: Create a folder	Creating a folder in the GOT	—
	File operation: Delete a folder	Deleting a folder in the GOT	—

85.2.11 Accessible range

The FTP server function allows the FTP client to access the GOTs on the network where the FTP client is connected.
When you use the FTP sever function via a relay device such as a router, consult with your network manager.



To simply determine whether file transfer is possible, issue a ping command to the GOT.

Ex.

Examples of the ping commands to be issued (when the Windows command prompt is used)

IP address of the GOT: 192.168.0.18

When file transfer is possible

```
C:\ping 192.168.0.18
  Pinging 192.168.0.18 with 32 bytes of data:
  Reply from 192.168.0.18: bytes=32 time<1ms TTL=128
  Reply from 192.168.0.18: bytes=32 time<1ms TTL=128
  Reply from 192.168.0.18: bytes=32 time<1ms TTL=128
C:\
```

When file transfer is not possible

```
C:\ping 192.168.0.18
  pinging 192.168.0.18 with 32 byte of data:
  request timed out.
  request timed out.
  request timed out.
C:\
```

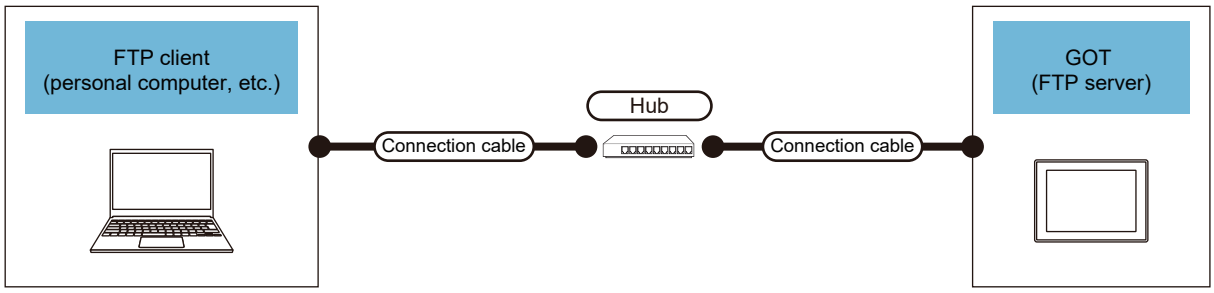
PART 28

85.3 How to use the FTP server function

GT37 SoftGOT3000

☞ Page 2910 System configuration
☞ Page 2912 Setting procedure

85.3.1 System configuration



FTP client	Connection cable	GOT	
		Interface	Model
Personal computer or others	Shielded twisted pair cable	Built-in Ethernet interface of the GOT	GT37 SoftGOT3000

Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

A straight cable is usable.

When the GOT is directly connected to the personal computer via Ethernet cable, a cross cable is applicable.

The destination device connected with the twisted pair cable varies with the configuration of the Ethernet network system used.

Connect the cable to the Ethernet module, hub, or other system equipment corresponding to the applicable Ethernet network system.

Use cables, connectors, and hubs that meet the IEEE802.3 10BASE-T/100BASE-TX/1000BASE-T standards.

Maximum segment length

The maximum segment length (length between a hub and a node) is 100 m.

The maximum length depends on the Ethernet equipment used.

The following shows the number of connectable hubs when a repeater hub is used.

- 10BASE-T: Up to 4 cascade-connected hubs (within 500 m)
- 100BASE-TX: Up to 2 cascade-connected hubs (within 205 m)
- 1000BASE-T: The number differs depending on the hub to be used.

When switching hubs are used, there is no theoretical limit to the number of cascade connections between switching hubs. For the limit, contact the switching hub manufacturer.

Precautions

■Connection to the intranet

If the system needs to be secured against unauthorized access to the intranet, consult a network service provider or network administrator (someone responsible for tasks such as network planning and IP address management), and implement your own countermeasures.

Mitsubishi Electric Corporation assumes no responsibility for any consequences resulting from system troubles caused by the intranet connection.

■Countermeasures against access delay

When multiple network devices (including GOTs) are connected to the same segment, the network load increases and therefore the communication performance between the GOT and PLC may be degraded.

The following countermeasures may improve the communication performance.

- Use a switching hub compatible with 1000BASE-T (1 Gbps) or more.
- Reduce the number of devices monitored by the GOT.

■When a firewall is used

If a firewall disconnects the communication of the gateway function, take countermeasures such as changing the firewall port number.

If the system needs to be secured against unauthorized access when changing the firewall port number, consult the network administrator (someone responsible for tasks such as network planning and IP address management), and implement your own countermeasures.

Mitsubishi Electric Corporation assumes no responsibility for any consequences resulting from system troubles caused by changing the port number.

85.3.2 Setting procedure

The following shows the setting procedure for using the FTP server function.

1. Consider the configuration of the whole system.

- Configuration of the whole system including controllers and GOTs
- Controller settings (including device assignment)
- GOT settings (including IP address, network number, and station number)

2. Connect the GOT and the controller.

☞ Page 2910 System configuration

3. Select [Common] → [Controller Setting] from the GT Designer3 menu to display the [Controller Setting] window. Select [FTP Server] and configure the required settings.

☞ Page 2913 [FTP Server]

4. To encrypt communication data using FTPS, refer to the following to enable encrypted communication.

☞ Page 3072 Target functions for encrypted communication and required settings

5. Write package data to the GOT.

For the communication method between the personal computer and the GOT, refer to the following.

☞ Page 408 Transferring data to the GOT

6. Check the GOT operation.

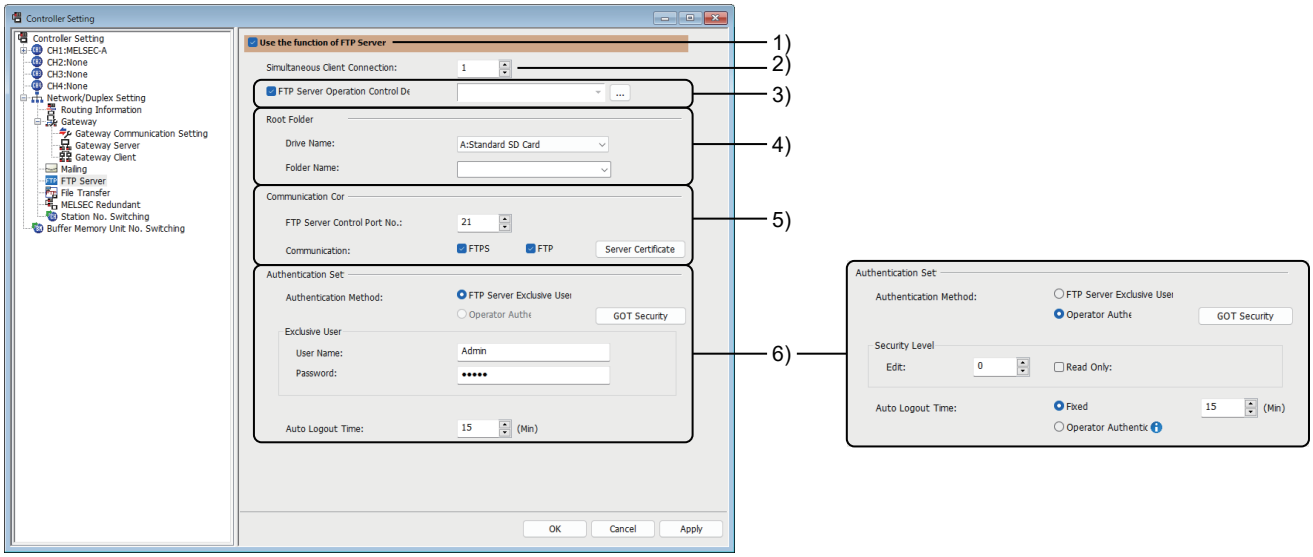
☞ Page 2915 Procedures of the FTP server function

85.4 [FTP Server]

On the [FTP Server] settings screen, configure the settings such as the control method for starting the FTP server function, whether to enable encrypted communication, and the authentication method.

Window

1. Select [Common] → [Controller Setting] from the menu to display the [Controller Setting] window.
2. Select [FTP Server] in the [Controller Setting] window.



Item			Description
1)	[Use the function of FTP Server]		Select this item when using the FTP server function.
2)	[Simultaneous Client Connection]		Specify the number of clients simultaneously connectable to the GOT. The setting range is [1] to [8].
3)	[FTP Server Operation Control Device]		Select this item to prevent the FTP server from starting simultaneously with the GOT and to control it with a device. Then, specify the control device (bit type). When the specified device is turned from off to on, the FTP server becomes operational. If the specified device is turned from on to off, the FTP server no longer accepts new connections and stops operating when the number of connections reaches zero. To immediately stop the FTP server by switching it from on to off, turn on the Forced FTP Server Function Logout Signal (GS400.b2) to perform a forced disconnection.
4)	[Root Folder]	[Drive Name]	Specify the GOT drive that can be accessed by the FTP server function. The path to the folder name (excluding the last [/]) is up to 72 characters long. Drives C and V cannot be specified.
		[Folder Name]	Set the folder name.
5)	[Communication Configuration]	[FTP Server Control Port No.]	Specify the control port number for the GOT. The setting range is [21] and [1024] to [65535]. Do not set the port number used for the other settings. Duplication of the port number disables communication. To change the number, it is recommended to use a number in the 50000s or higher.
		[Communication]	Select the communication method to be used. Select [FTPS] when using encrypted communication. Then, press the [Server Certificate] button, and configure the server certificate settings in the [Certificate] tab of the environmental settings window that appears. If the GOT server certificate has expired or is in another invalid state, the FTPS connection cannot be established even when it is required. ☞ Page 3078 [Certificate]

Item			Description
6)	[Authentication Setting]	[Authentication Method]	Specify the authentication method for connecting to the FTP server. The item that can be specified varies depending on the security mode.
			• Security mode 1 The default setting is [FTP Server Exclusive User Authentication]. Even in security mode 1, you can specify [Operator Authentication] if [Operator Authentication] is set in the security settings. When you press the [GOT Security] button, the [Screen Security] tab of the environmental settings window appears. Configure the settings as required.
			• Security mode 2 The setting is fixed to [Operator Authentication]. The required operation rights for authentication are as follows. Users without these operation rights cannot connect. ◇[Current drive reading] ◇[Current drive writing] ◇[Non-current drive reading/writing]
		[Security Level]	If [Operator Authentication] is specified as [Authentication Method], specify the security level that allows connection. There are two security levels: read/write and read-only. The read/write level takes precedence. The setting range is [0] to [15].
			• [Edit] Set the security level to read/write. Operators at or above the specified level can connect and perform operations such as reading, writing, and deleting files.
			• [Read Only] Set the security level to read-only. Operators at or above the level specified for this item, but below the level set in [Edit] can connect. File reading is available, but file writing and deleting are not available.
		Dedicated User	Set the login name and password for connecting to the GOT from an FTP client when [FTP Server Exclusive User Authentication] is specified for [Authentication Method].
			• [User Name] Only one login name can be set using 1 to 32 characters. One-byte alphanumeric characters (a to z, A to Z, and 0 to 9) can be used. The default login name is [Admin]. [anonymous] cannot be set.
			• [Password] Only one password can be set using 1 to 32 characters. One-byte alphanumeric characters, one-byte spaces, and the following symbols can be used. ! " # $ % & ‘ ( ) * + , ` - . / : ; < = > ? @ [\ ] ^ _ { | } ~ A one-byte space cannot be used at the start or end of a password.
		[Auto Logout Time]	The GOT automatically disconnects from the FTP client after a certain period of no command input during the connection. For this setting item, set the time before automatic disconnection to a value between [1] and [60]. If multiple FTP clients are connected to the GOT at the same time, this setting applies to all of them. If [FTP Server Exclusive User Authentication] is specified for [Authentication Method], specify [Auto Logout Time] in minutes. When [Operator Authentication] is specified for [Authentication Method], you can select [Fixed] and specify the automatic logout time in minutes, or select [Operator Authentication Link]. For [Operator Authentication Link], the automatic logout time set for the operator is applied. However, if the automatic logout time is set to [0] (disabled), 15 minutes will be applied as [Auto Logout Time].

85.5 Procedures of the FTP server function

GT37 SoftGOT3000

☞ Page 2915 Operating procedure
☞ Page 2919 FTP command list

85.5.1 Operating procedure

This section introduces the basic flow for accessing and operating the GOT from an FPT client using the FTP server function.
For these application examples, the Windows command prompt is used for accessing between the GOT and the FTP client.
When using a commercially available FTP client tool, refer to the manual of the FTP client tool used.
For the detailed operating procedure, refer to each item described as follows.

1. Connect to the GOT from the FTP client.

☞ Page 2916 Connecting to the GOT from the FTP client

2. Perform operations on the GOT.

When writing files to the GOT (data storage) or managing the directory, enable writing to the data storage of the GOT.

Manipulations	Reference
Reading the files in the GOT (data storage)	☞ Page 2916 Reading the files in the GOT (data storage)
Writing files to the GOT (data storage)	☞ Page 2917 Writing files to the GOT (data storage)
Managing the directory in the GOT (data storage)	☞ Page 2918 Managing the directory in the GOT (data storage)

For other available commands, refer to the following.

☞ Page 2919 FTP command list

3. Disconnect the FTP client from the GOT.

☞ Page 2918 Disconnecting the GOT from the FTP client

Connecting to the GOT from the FTP client

1. Starting the FTP client

Input [ftp] and press Enter.

2. Connecting with the GOT

Input [open], followed by the IP address of the GOT, and press Enter.

3. Inputting a login name

Input the registered login name and press Enter.

4. Inputting the password

Input the registered password and press Enter.

Ex.

Login image (When the line is properly connected.)

```
C:\>ftp
ftp>open 192.168.0.18
connected to 192.168.0.18
220 GOT3000 FTP server ready.
user:GOT3000
331 Password required.
Password:****
230 User logged in.
ftp>
```

Login image (If another personal computer has been connected to the GOT)

```
C:\>ftp
ftp>open 192.168.0.18
connected to 192.168.0.18
421 Session limit reached, closing control connection
user:GOT3000
connection closed by remote host
ftp>
```

Login image (When a wrong password is input)

```
C:\>ftp
ftp>open 192.168.0.18
connected to 192.168.0.18
220 GOT3000 FTP server ready.
user:GOT3000
331 Password required.
Password:****
530 Not logged in.
ftp>
```

Reading the files in the GOT (data storage)

Read the files from the GOT in the following procedure.

1. Notifying of no file conversion

Input [binary] and press Enter.

2. Reading files

Input [get], followed by the file name, and press Enter.

Ex.

```
ftp>binary
200 TYPE is now BINARY.
ftp>get SNAP0001.BMP
200 PORT command successful
150 Opening connection.
226 Closing data connection.
ftp: 63 bytes sent in 0.00 seconds 63000.00
K bytes/sec.
ftp>
```

Writing files to the GOT (data storage)

Write files to the GOT in the following procedure.

1. Notifying of no file conversion

Input [binary] and press Enter.

2. Entering the write mode (if not in the write mode)

Input [quote gtwr] and press Enter.

3. Display the file name to check that it is not already in use.

Input [ls] or [dir] and press Enter.

4. If the same file name is used in the GOT, delete the file.

Input [delete], followed by the file name, and press Enter.

5. Writing files

Input [put], followed by the file name, and press Enter.

Ex.

```
ftp>binary
200 TYPE is now BINARY.
ftp>quote gtwr
200 command successful.
ftp>ls
200 PORT command successful.
150 Opening connection.
SNAP0001.BMP
SNAP0002.BMP
226 Closing data connection.
ftp>delete SNAP.0001.BMP
250 File deleted Successfully.
ftp>put SNAP0001.BMP
200 PORT command successful
150 Opening connection.
226 Closing data connection.
ftp: 63 bytes sent in 0.00 seconds 63000.00
K bytes/sec.
ftp>
```

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Managing the directory in the GOT (data storage)

Create a directory using the following steps, then move to the created directory.

1. Displaying the current directory

Input [pwd] and press Enter.

2. Entering the write mode (if not in the write mode)

Input [quote gtwr] and press Enter.

3. Creating a directory

Input [mkdir], followed by the directory name, and press Enter.

4. Modifying the current directory

Input [cd], followed by the directory name, and press Enter.

Ex.

```
ftp>pwd
257 "A:/snapshot" is current directory.
ftp> quote gtwr
200 command successful.
ftp>mkdir bmpdata
275 MKD command successful.
ftp>cd bmpdata
250 CWD command successful.
ftp>pwd
257 "A:/snapshot/bmpdata" is current directoryftp>cd ..
250 CWD command successful.
ftp>pwd
257 "A:/snapshot" is current directory.
ftp>
```

Disconnecting the GOT from the FTP client

Disconnect the GOT from the FTP client in the following procedure.

1. Input [quit] (exit command) and press Enter.

Ex.

```
ftp>quit
221 User logged out. Good-Bye.
C:\>
```

Displaying errors

Errors related to the FTP server function are displayed on the FTP client.

For information on the error messages that may be displayed, refer to the following.

☞ Page 2926 Response codes of the FTP server function

Ex.

If a non-existent file (snap0010.bmp in this example) is intended to be read

```
ftp>get snap0010.bmp
200 PORT command successful.
550 snap0010.bmp:No such file or directory.
ftp>
```

85.5.2 FTP command list

The following lists the FTP commands that can be used with the FPT server function.

☞ Page 2919 Access mode switching
☞ Page 2919 General commands
☞ Page 2920 GOT-dedicated commands
☞ Page 2920 How to specify files
☞ Page 2921 Checking the connection status
☞ Page 2922 Disconnection
☞ Page 2922 Precautions

Access mode switching

There are two access modes for the FTP server: reference mode and write mode.

Depending on the specified access mode, different FTP commands are available to the client.

When logging in as an operator with read-only access using operator authentication, the mode is fixed to reference mode.

When logging in as a read-write operator, the default mode is set to write mode.

You can switch between reference mode and write mode using the mode change command from the GOT-dedicated commands.

General commands

The following table shows the general commands available for the Windows command prompt and the FTP client, and their compatibility with the FTP server function of the GOT.

The following commands cannot be used depending on the specifications of the FTP client to be used.

○: Available, —: Not available

Command name	Function	Reference mode	Write mode
append	Writes files additionally to the GOT.	—	○
ascii	Changes the file transfer mode to the ascii mode.	○	○
binary	Changes the file transfer mode to the binary mode.	○	○
bye	Exits the FTP client tool.	○	○
cd	Changes the current directory of the GOT.	○	○
cd	Disconnects from the GOT.	○	○
delete	Deletes files in the GOT.	—	○
dir	Reads the file information in the GOT.	○	○
get	Reads files from the GOT.	○	○
ls	Displays file names in the GOT.	○	○
mdelete	Deletes multiple files specified with a wild card.	—	○
mdir	Reads the file information in the GOT to a specified file.	○	○
mget	Reads multiple files specified with a wild card.	○	○
mkdir	Creates a directory in the GOT.	—	○
mls	Reads the file name in the GOT to a specified file.	○	○
mput	Writes multiple files specified with a wild card to the GOT.	—	○
open	Connects to the GOT.	○	○
put	Writes files to the GOT.	—	○
pwd	Displays the current directory of the GOT.	○	○
rename	Changes a file name in the GOT.	—	○
rmdir	Deletes a directory in the GOT.	—	○
quit	Disconnects from the GOT and exits the FTP client tool.	○	○
quote	Use this command when executing a GOT-dedicated command.	○	○
user	Input a user name and a password for logging in the GOT.	○	○
auth	Performs encrypted communication.	○	○
prot	Defines the protection level used for FTP connections.	○	○
pbsz	Provides encryption and authentication for FTP sessions to ensure data security.	○	○

Command name	Function	Reference mode	Write mode
ccc	Changes the transmission mode of the control connection in the FTP protocol from encrypted mode to plain text mode.	○	○

GOT-dedicated commands

When the GOT-dedicated commands are input with the command prompt, use quote.

For example, to use the command [gtwr], type [quote gtwr].

○: Available, —: Not available

Command name	Function	Reference mode	Write mode
gtwr	Changes the mode of the FTP server function of the GOT to the write mode.	○	○*1
gtrd	Changes the mode of the FTP server function of the GOT to the reference mode.	○*1	○
help	Displays the general commands of the FTP protocol supported by the FTP server function of the GOT.	○	○
gtds	Enables access to drive C on the GOT.	—	○

*1 The setting is disabled. (The command does not cause an error.)

How to specify files

There are two ways to specify files: by directly specifying a single file name or by using wild cards to specify files that match certain conditions.

■Specifying a single file name directly

Specify the drive name, file name, period, and extension of the file to be specified.

Ex.

Specifying [OPELOG_20250525_0001.G3O] in the [Package1/OPELOG] folder on drive A

A:/Package1/OPELOG/OPELOG_20250525_0001.G3O

Setting item	Description
Drive name	Specify one of the drives: A, B, C, E, F, G, or V. Drive C can only be used with GOT-dedicated commands. Drive V is used to enable high-speed image display switching for the parts display function. This drive can be used only when [Show image files in the memory card when Parts No. 9001-9999 is specified] is selected in the [Parts Setting] dialog.
Folder name and file name	One-byte alphanumeric characters, symbols, and Unicode characters can be used. One-byte spaces and the following values cannot be used. • COM1 to COM9, LPT0 to LPT9, AUX, CON, NUL, PRN, CLOCK$ • /\?*:|"<> • Surrogate pair characters (character codes: 0xD800 to 0xDBFF, 0xDC00 to 0xDFFF) Folder name starting with G3 cannot be used either. Set a folder name and file name so that the total number of characters used for the path is 78 or less. When specifying a hierarchical folder, separate folder names with a forward slash [/] or backslash [\]. The extension can be up to three characters long.
Extension	Files with the following extensions cannot be specified. OUT, FON, INI, G3, PRF

■Using wild cards to specify files that match certain conditions

You can use wild cards ([*], [?]) to specify file names that match certain conditions.

Ex.

When specifying only JPEG files: *.jpg

When specifying CSV files whose names start with "Main": Main*.csv

When specifying files whose extensions start with b: *.b??:

Checking the connection status

Check the connection status between the GOT and an FTP client with the following GOT special registers (GS).

Item	GOT special register (GS)	Description
Checking if one FTP client is connected to the GOT	GS200.b2	This device turns on when an FTP client is connected to the GOT. Check if an FTP client is connected to the GOT with this device.
Checking if multiple FTP clients are connected to the GOT	GS208	This device stores the number of the FTP clients connected to the GOT. Check that FTP clients are connected to the GOT by checking a change of the stored value.

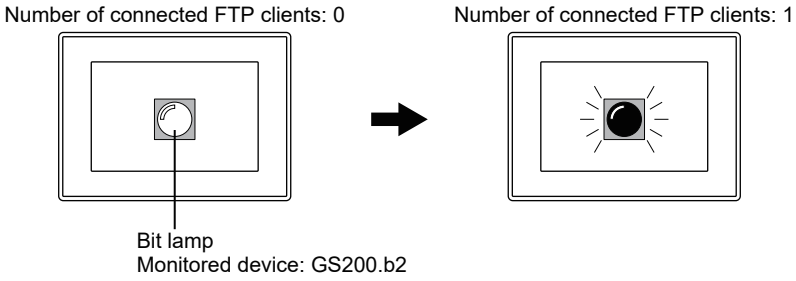
For details on the GOT special registers, refer to the following.

☞ Page 3581 GOT special register (GS)

Ex.

Notifying the connection status when one FTP client is connected

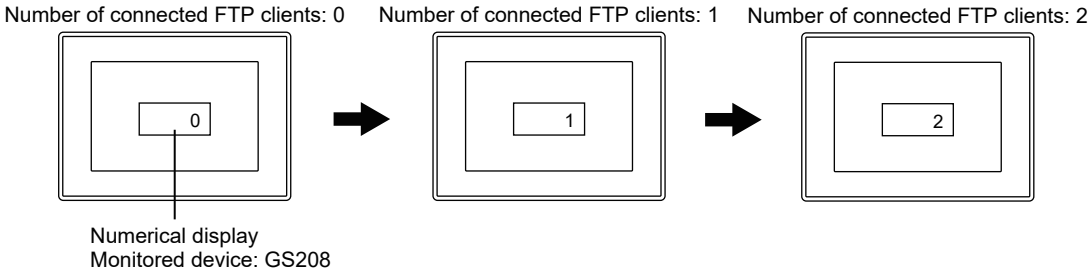
Specify GS200.b2 for a lamp object to notify whether an FTP client is connected.



Ex.

Notifying the connection status when multiple FTP clients are connected

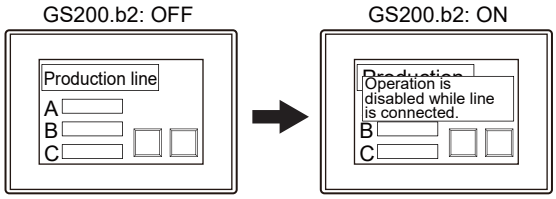
Specify GS208 for a numerical display object to display the number of connected FTP clients.



Ex.

Limiting operations

Use GS200.b2 as the trigger condition for a touch switch or numerical input object to limit the input during connection.



Configure the settings with the touch switch function or numerical input function so that input is allowed only when the device (GS200.b2) is off.

Disconnection

There are two methods for disconnection: automatic and manual.

Since the GOT cannot detect the error status of the FTP client, it does not immediately disconnect the connection if the FTP client cannot be shut down properly (for example, if the personal computer is powered off while connected).

However, the automatic logout time function automatically disconnects the connection after a certain period of time.

Disconnection method	Description
Automatic disconnection	If no commands are input from the FTP client within the automatic logout time set in the FTP server settings, the GOT automatically disconnects. For information on how to set the automatic logout time, refer to the following. ☞ Page 2913 [FTP Server]
Manual disconnection	Forcibly disconnect. Use the GOT special register GS400.b2 to forcibly disconnect all FTP clients. To disconnect, turn on GS400.b2. Check that the clients are disconnected, and then make sure to turn off GS400.b2. For details on the GOT special registers, refer to the following. ☞ Page 3581 GOT special register (GS)

Precautions

■Precautions for FTP login

• In the event of a forgotten password

If you forget the password for FTP login, you cannot connect the FTP client with the GOT.

Reset the password in [FTP Server] in the [Controller Setting] window.

☞ Page 2913 [FTP Server]

• If the login name or password is incorrectly input on the FTP software

When you input a login name or a password for FTP login incorrectly, you may need to exit the FTP client and input them again depending on the FTP software to be used.

• If Microsoft Internet Explorer does not display the user authentication screen

When you use Microsoft Internet Explorer, the user authentication screen may not be displayed.

Input the address of the GOT in the following format.

```
ftp://<User name>:<Password>@<The address name or the host name of the GOT>/
```

Ex.

When "AdminPass" is set for the password

```
ftp://Admin:AdminPass@192.168.0.18
```

■Reading multiple files using one command

If you read many files at once using one command (if you execute mget or mput specifying a wild card), the processing may be slowed down due to network congestion.

If processing is slow, issue commands separately to distribute the processing load.

■Retaining the connection when GOT becomes offline

Even if the GOT transitions to offline mode while connected to the FTP client (such as when downloading monitor screen data), the connection is held.

■Logging file

Do not write logging files to the GOT from FTP clients.

If logging files are written, they may be inconsistent with the logging function. As a result, the logging data may be initialized, or past data may not display correctly in the historical trend graph.

In addition, when reading a logging file, the logging collection process may be temporarily suspended due to exclusive control.

■Precautions for transferring a recipe file

Do not use the recipe when you transfer recipe files.

If the recipe file in the data storage is deleted while the recipe is processed, the function may not be performed properly.

If the recipe file is deleted even while the recipe is not processed, the error (system alarm: recipe file error) occurs when the recipe is performed next time.

☞ Page 2921 Checking the connection status

■Precautions for overwriting a file in the GOT

When overwriting files in the GOT using the FTP server function, check that the files are properly overwritten.

When an error occurs while files are written, the files which have been written in the GOT are deleted.

In that case, write the files again using the FTP server function.

■Login if an FTP client goes down

If an FTP client (personal computer) goes down, wait for the automatic logout time to elapse or turn on the forced logout signal (GS400.b2) to disconnect, and then log in again.

Check the connection status with GS200.b2 or GS208.

■Powering off the GOT during access to the files in the data storage

Do not power off the GOT while the FTP client accesses the files in the data storage of the GOT.

Doing so may cause the data corruption in the data storage.

■If the put command does not write data to the data storage

If the put command does not write data to the data storage, check that the following conditions are satisfied.

- The SD card cover of the GOT is closed.
- The write-protect switch of the data storage is turned off.

■Time stamp of the transfer file

The time stamp of a transfer file may differ from that of the file in the GOT data storage depending on the FTP client tool to be used.

When the time stamps differ, check the settings of the FTP client tool.

■Precautions for accessing files

Deleting certain files may cause the GOT to malfunction.

To prevent the GOT from operation errors, do not delete the files in the FTP server by accessing from the FTP client.

■To maintain file access performance

It is recommended to format the data storage before using it.

The number of files to be stored in a folder should be less than 500.

If 500 or more files are stored in a folder, file access performance may be lowered.

Repeated writing or deleting of data may lower access performance, regardless of the number of files.

In such a case, format the data storage.

85.6 Relevant settings

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Configure the relevant settings other than those specific to the FTP server function as required.
The following shows the functions that are available by configuring the relevant settings.

85.6.1 GOT internal device

☞ Page 3581 GOT special register (GS)

Function	Setting item
Notifying that the FTP server function is ready	GS200.b1
Notifying that an FTP client is connected to the GOT	GS200.b2
Notifying the number of the FTP clients connected to the GOT	GS208
Forcibly disconnecting all FTP clients	GS400.b2
Enabling the reading of binary format files (*.G3□) from the FTP client	GS400.b8
Specifying the number of FTP clients connectable to the GOT simultaneously	GS404
Specifying drive V as the current directory when logging in to the FTP server	GS423.b10
Specifying the response string for the SYST command.	GS2575

85.7 Troubleshooting

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☞ Page 2925 Troubleshooting for the FTP server function
☞ Page 2926 Response codes of the FTP server function

85.7.1 Troubleshooting for the FTP server function

The following shows the troubleshooting for the FTP server function.

Symptom		Error details	Corrective action
The FTP server function does not work.	When all the bits of GS200 are off and the GOT does not respond to the ping command *1*2	The system application (add-on function) for the FTP server function is not installed on the GOT.	Write the package data that contains the system application (add-on function) for the FTP server function to the GOT.
		No IP address has been set for the GOT.	Set the IP address for the GOT in the utility of the GOT.
	If any bit of GS200 is on and the GOT responds to the ping command *1*2	—	Refer to the troubleshooting for the functions corresponding to the bits that are on, and take corrective actions.
Unable to connect to the GOT (FTP server)		[Use the function of FTP Server] is not enabled in the FTP server setting of GT Designer3.	Enable [Use the function of FTP Server].
		The number of connected FTP clients has reached the upper limit.	Perform either of the following operations, and then connect the GOT (FTP server) again. • Log out from other devices. • Change the number of connectable FTP clients with GS404.
		—	Issue a ping command to the GOT and check if the GOT responds to it.
		—	Consult with a network manager.
Unable to log in.		The login name or the password is incorrectly input.	Input the correct login name and password (case-sensitive).
Files cannot be written.		The GOT cannot recognize the file name.	For details on settable file names, refer to the following. ☞ Page 2920 How to specify files
		The FTP client is in the reference mode.	Change the mode of the function to the write mode.
		Overwriting is prohibited in the FTP client setting.	Correct the FTP client setting.
		The FTP client which does not send a file when the same file name exists in the FTP server is used.	Change the setting of the FTP client to enable sending (overwriting) files even when the same file name exists in the FTP server. Delete the file with the same name on the FTP server.
		The data storage is write-protected.	Cancel the write protection for the data storage.
		The SD card cover of the GOT is open.	Close the SD card cover of the GOT.
		The SD card is write-protected.	Check that the write protection for the SD card is canceled.
Files cannot be read.		The file to be read does not exist.	Use the dir or ls command to check if the file exists.
		The SD card cover of the GOT is open.	Close the SD card cover of the GOT.
		The SD card is write-protected.	Check that the write protection for the SD card is canceled.
Files cannot be deleted.		The data storage is write-protected.	Cancel the write protection for the data storage.
		The SD card cover of the GOT is open.	Close the SD card cover of the GOT.
		The SD card is write-protected.	Check that the write protection for the SD card is canceled.
The GOT was powered off during login.		—	Because the file being transferred may be damaged, do not use the file and delete it. The behavior of the FTP client depends on the specifications of the FTP client.
The FTP client software was forcibly exited during login.		—	Log in to the GOT again after the automatic logout time set in the FTP server settings has elapsed. The GOT logs out after the time set by the command has elapsed.
Some FTP clients cannot connect to the GOT FTP server.		The FTP client, AndFTP, cannot correctly parse the file list.	By setting [1] to GS2575, the FTP client can interpret the file list correctly to establish a connection. (AndFTP)

*1 For details on the Gateway Common Information (GS200), refer to the following.
☞ Page 3581 GOT special register (GS)
*2 To check if the GOT responds to the ping command, execute it from the personal computer to the GOT.

85.7.2 Response codes of the FTP server function

Response codes and messages (including errors) related to the FTP server function on the GOT are displayed on the FTP client.
The display of the responses differs depending on the FTP client tool to be used.

Normal conditions

Code	Message	Description
125	Data Connection already open; transfer starting	Start of transfer
150	Opening connection.	Establishment of connection for transfer
200	TYPE is now BINARY.	Setting to the binary transfer mode is successful.
	TYPE is now ASCII.	Setting to the ASCII transfer mode is successful.
	PORT command successful.	PORT command is successful.
	File structure set to NO RECORD	The data transfer structure type is set to File. (STRU)
	Command Okay.	Normal command
	Command successful.	
	NOOP -- did nothing as requested...hah!	NOOP command response
	File deleted successfully.	The DELE command is successful. (File deletion)
	RMD command successful.	The RMD command is successful. (Directory deletion)
	data is not protected.	Successfully disabled the protection on the data port for encrypted communication.
	data is protected.	Successfully enabled the protection on the data port for encrypted communication.
	PBSZ=0.	Completed the acceptance of the maximum protection buffer size.
	clear control session.	Completed the acceptance of the termination of encrypted communication (clear).
211	The following commands are recognized. (* =>'s not implemented)	List of available commands (Commands marked with * are not available.)
	Help end.	HELP display end
	Syntax: <Command name>...	HELP display of each command
215	GOT3000	SYST command response (GS2575 = 0)
	Windows_NT	SYST command response (GS2575 = 1)
220	GOT3000 FTP server ready.	Establishment of connection
221	User logged out. Good-Bye.	Connection end
226	Closing data connection.	End of connection for transfer
227	Entering Passive Mode (%d,%d,%d,%d,%d,%d)	The PASV command is successful. (Socket passive mode)
230	User logged in.	Logging in is successful.
	Guest login ok, access restrictions apply.	Guest user can log in. (Writing is unavailable.)
	Guest login ok, upload directory is %s.	Guest user can log in. (Writing is available.)
234	AUTH TLS OK.	Accepted the start of encrypted communication.
250	CWD command successful.	The CWD command is successful (current directory is changed).
	File deleted successfully.	The DELE command is successful.
	File renamed successfully.	The RNTO command is successful.
257	"/*****/****/**.***" is current directory.	Displaying the current directory
275	MKD command successful.	The MKD (creation of a directory) command is successful.
331	Password required.	A password is required.
	Guest login ok, send your complete e-mail address as password.	Guest user specification
350	Requested file action pending further information.	The RNFR command (setting of the target to be renamed) is successful.

Erroneous conditions

Error code	Error message	Description	Corrective action
202	Command not supported.	Unsupported command	The input command is not supported. Input a supported command.
221	You could at least say goodbye.	Command read error	Reading commands has failed. Input a correct command.
421	Timeout (%d seconds): closing connection.	Connection timeout	Connect to the GOT (FTP server) again.
	Service not available, closing control connection.	Unavailable client connection	After logging out from another device, connect to the GOT (FTP server) again.
	Session limit reached, closing control connection	Upper limit error of sessions (maximum four sessions)	The number of sessions has exceeded the upper limit. Reduce the number of sessions.
425	Can't open passive connection	PASV command failure	The access from the GOT has been blocked by the firewall of Windows. Allow the FTP server programs through the firewall of Windows.
	Can't open data connection	Data socket connection (accept) failure	Data socket connection has failed. Connect to the data socket again.
	Can't build data connection	Maximum number of retry exceedance error (connect)	Connection has failed within the set number of retry. Check that the FTP server and the FTP client are properly connected.
426	Connection closed; transfer aborted.	Transfer error	The data transfer has failed. Transfer the data again or check the connection status.
	Data connection error	Data socket connection error	Connect to the GOT (FTP server) again.
431	TLS connection can't be created.	Failed to create TLS context.	—
500	Syntax error, command unrecognized.	Syntax errors and commands cannot be recognized.	Check that syntax and commands are correctly input.
	don't recognize the AUTH command.	Encrypted communication is set to disabled.	—
	Only PBSZ=0 supported.	Failed to accept the maximum protection buffer size.	—
501	Syntax error in parameters or arguments.	CWD, CDUP, XCWD, XCUP command failure (The parameter is not a directory.)	Specify a correct directory for the parameter.
504	Command not implemented for that parameter	Parameter error of the commands	Input a correct value to the parameter of the command.
	the parameter (%s) is unknown.	Parameter syntax error. Commands are not recognized.	Check that syntax and commands are correctly input.
	Control session is already cleared, don't accept PROT command.	Failed to accept PROT command because encrypted communication was canceled (cleared).	—
	Only support parameter 'C' or 'P'.	Parameter syntax error. Commands are not recognized.	Check that syntax and commands are correctly input.
	Control session is already cleared, don't accept PBSZ command.	Failed to accept PBSZ command because encrypted communication was canceled (cleared).	—
	control session is already cleaned, cleaning control session is invalid.	Failed to accept CCC command because encrypted communication was canceled (cleared).	—
510	Command not supported.	Unsupported command	The input command is not supported. Input a supported command.
	Port open fails.	Port open failure	Opening the port has failed. Open the port.
	File open fails.	File open failure	Files could not be opened. Check that the files exist and the file name is correct.

Error code	Error message	Description	Corrective action
530	Not logged in.	Login failure	Check that the login name and password are correct. Check that the login name and password are correctly input.
	USER and PASS required	Command error (The command is executed without logging in.)	Log in and input commands.
	Requested action not taken.	Command execution failure	Check that commands are available.
	Can't access the file or the Directory.	Access unavailable	Check that the connection target can be accessed. Check that the connection target is allowed to be accessed.
	No files found or invalid directory or permission problem	The specified file or directory does not exist.	Check that the specified file or directory exists.
	%s:No such file or directory.	The file does not exist or the required operation is not allowed.	Check that the file exists. Enable the required operation and execute it again.
	Unimplemented TYPE %d	Unsupported transfer mode error	Send data in a supported transfer mode.
	%s: not a plain file	RETR, SIZE, MDTM command failure (The file is corrupted.)	Access a proper file.
551	Requested file action aborted.	Input file transfer error	Transfer the file again.
553	Requested action not taken.	File open failure (STOR)	The file may be damaged. Do not use the file and delete it.

Precautions

■Precautions for using FFFTP

When FFFTP is used with the FTP server function, [501 NLST: Options not supported] may be displayed on the screen and you may not be able to connect to the server.

In this case, conduct the following procedure to avoid errors.

1. Open the host list on FFFTP.
2. Select the [Special] tab.
3. Select [Use LIST command to get file list].
4. Click the [OK] button to close the dialog.

86 Transferring files between the GOT and peripheral devices (file transfer function (FTP transfer))

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☞ Page 2930 Overview of the file transfer function (FTP transfer)
☞ Page 2932 Specifications of the file transfer function (FTP transfer)
☞ Page 2935 How to use the file transfer function (FTP transfer)
☞ Page 2938 [File Transfer] (FTP transfer)
☞ Page 2948 Operation of the file transfer function (FTP transfer)
☞ Page 2954 Precautions
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PART 28

86.1 Overview of the file transfer function (FTP transfer)

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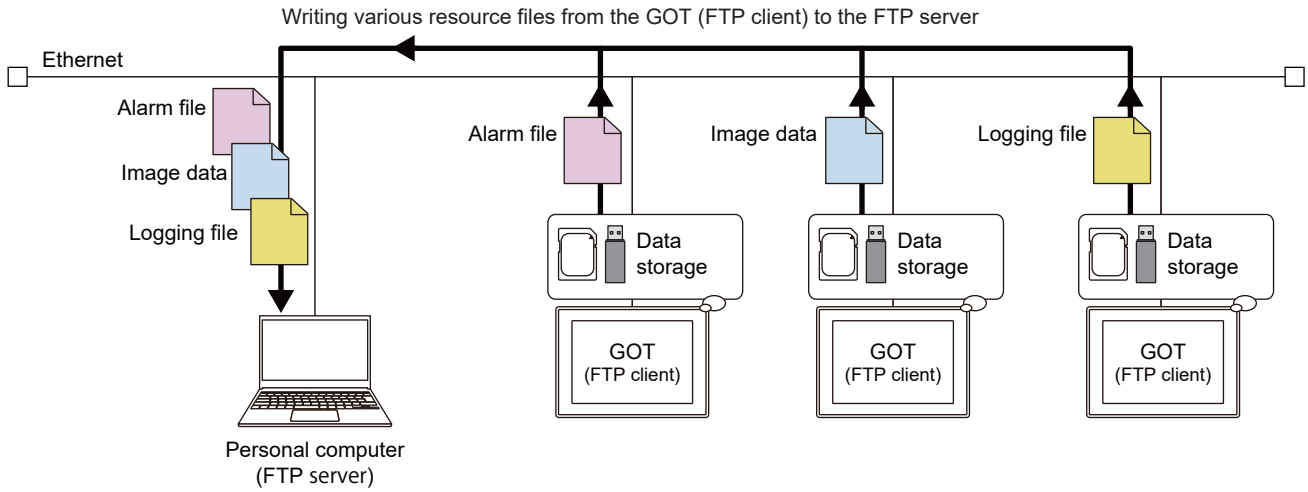
There are two types of file transfer functions: FTP transfer and GOT internal transfer.
FTP transfer enables you to read/write a file from/to an external FTP server via the GOT (FTP client).
GOT internal transfer enables you to copy or move files between folders within the GOT.
For information on GOT internal transfer, refer to the following.
☞ Page 2960 Transferring files between the GOT drives (file transfer function (GOT internal transfer))

Difference from the FTP server function

To read or write data between the GOT and an external device such as a personal computer, the FTP server function is also provided.
☞ Page 2904 Transferring files between the GOT and peripheral devices (FTP server function)
The FTP server function allows an FTP client, such as a personal computer, to read from or write to the GOT, which acts as an FTP server.
The file reading/writing timing depends on the operation of the personal computer and differs from the processing timing of the GOT.
To read the log file to the personal computer when the GOT has finished collecting logs, set up a method, for example, to monitor updates to the file using another application.
With the file transfer function (FTP transfer), the GOT can write/read the specified file to/from the FTP server when the trigger conditions are satisfied.
By performing trigger control, the GOT can manage the timing of file reading/writing, such as when files are generated or user operations occur.
This enables efficient data exchange with external personal computers.

Sending files from the GOT to the FTP server

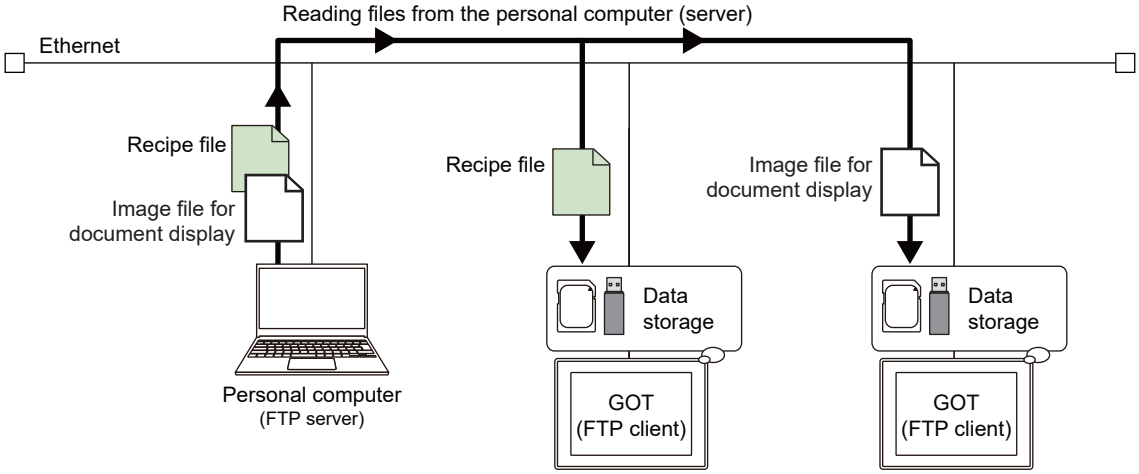
Resource files generated by the GOTs (alarm, logging, operation log, and other log files) and image files captured by the hard copy function are written to the personal computer (FTP server) via operations on the GOTs (FTP clients).



Obtaining the resource data from the FTP server

Files including resource data saved on the personal computer (FTP server) can be read via operations on the GOT (FTP client).

This function is used to obtain recipe files created on the personal computer and update the GOT recipe files, or to display image data saved on the personal computer on the GOT using a document display or other methods.



PART 28

86.2 Specifications of the file transfer function (FTP transfer)

GT37 SoftGOT3000

☞ Page 2932 System application (add-on function)
☞ Page 2932 Specifications of the FTP transfer
☞ Page 2933 FTP data transfer mode
☞ Page 2934 Encrypted communication
☞ Page 2934 Operation record (operation log)
☞ Page 2934 Character code
☞ Page 2934 Accessible range

86.2.1 System application (add-on function)

To use the file transfer function (FTP transfer), [File Transfer] must be selected from the system applications (add-on functions).
Selecting [Use the function of File Transfer] and configuring each setting in [File Transfer] in the [Controller Setting] window incorporate the application into the package data automatically.
☞ Page 2938 [File Transfer] (FTP transfer)

86.2.2 Specifications of the FTP transfer

The following shows the specifications of the file transfer function (FTP transfer).

Item	Specifications
Applicable FTP server	• FTP server compliant with RFC 959 • FTPS server compliant with RFC 2246 and RFC 4217 For the FTP servers whose operations have been validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin. 📖List of Devices Validated to Operate with the GOT3000 Series FTP Server Function/ File Transfer Function (GOT-A-0256)
Number of connectable FTP servers	Max. 64
Number of file transfer settings	Max. 100 (FTP transfer settings and GOT internal transfer settings in total; refer to Chapter 88)
Data communication methods and data formats	In the stream mode, the communication is performed with binary data.
Required devices for the file access	Data storage
Number of characters for file path	• <GOT folder path>\<Transfer file name>: Up to 78 one-byte alphanumeric characters and symbols in total (including backward slash marks) • <FTP server folder path>\<Transfer file name>: Up to 250 one-byte alphanumeric characters and symbols in total (including backward slash marks)

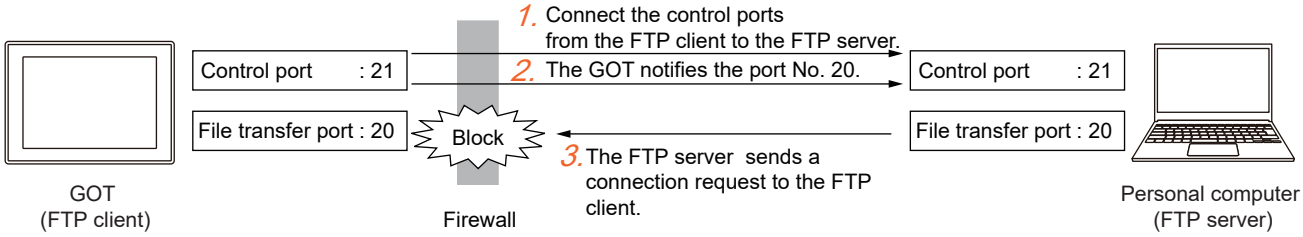
86.2.3 FTP data transfer mode

Specify PORT mode or PASV mode for the FTP connection method.

File transfer in PORT mode

1. Connect the control port of the GOT (FTP client) to the FTP server.
2. The GOT (FTP client) notifies the file transfer port number to the FTP server.
3. The FTP server sends a connection request to the GOT (FTP client) to send data using the notified port number.

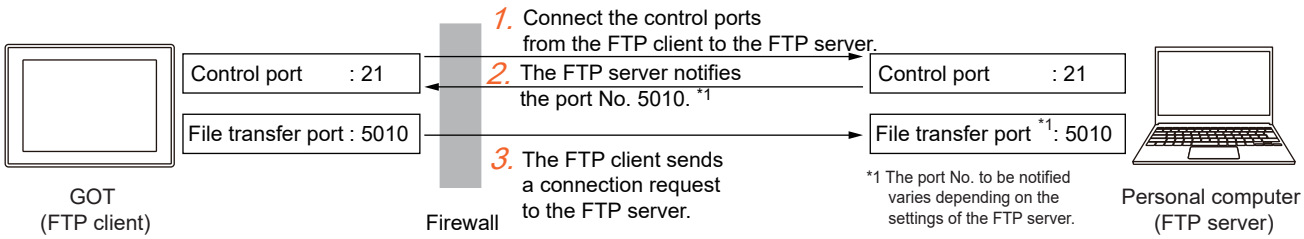
If the network is protected behind the firewall, the request is refused and thus the connection is not established.



File transfer in PASV mode

1. Connect the control port of the GOT (FTP client) to the FTP server.
2. The FTP server notifies the file transfer port number to the GOT (FTP client).
3. The GOT (FTP client) sends again a connection request to the FTP server for data communication using the notified port number.

Even if the network is protected behind the firewall, the connection is established.



PART 28

86.2.4 Encrypted communication

With the file transfer function (FTP transfer), you can specify whether to use FTPS, which encrypts the communication between the GOT and the FTP server.
FTPS can prevent problems caused by unauthorized access.
To use encrypted communication, configure the [Encryption Communication] setting in the [Destination FTP Server Setting] dialog.

86.2.5 Operation record (operation log)

Encrypted communication during use of the file transfer function (FTP transfer) is recorded in the operation log.
The following logs are recorded:

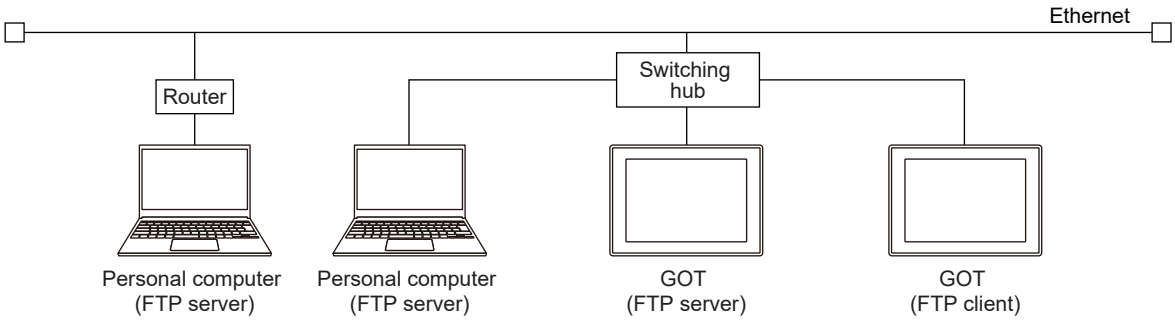
Log item	Event	FTP event	Remarks
Encrypted communication	Start of encrypted communication (connection)	When the FTPS connection starts	—
	Failed to start encrypted communication	When the FTPS connection fails to start	Certificate deficiencies or other issues
	End of encrypted communication (disconnection)	When the FTPS connection ends	—

86.2.6 Character code

The character code used for communication is UTF-8.
This also allows for reading and writing of files with multibyte character file names.

86.2.7 Accessible range

The GOT (FTP client) can access the FTP servers in the network to which the GOT is connected.
To connect to the FTP servers in a different network, the router is required.
The GOT (FTP client) also can access GOTs (FTP server).
If you use the GOT as an FTP server, write the project with the configured FTP server settings to the destination GOT.
☞ Page 2913 [FTP Server]

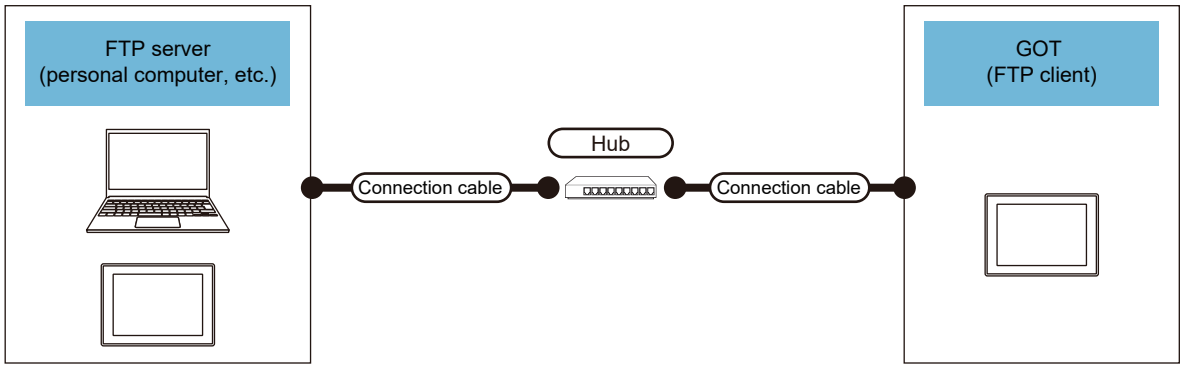


86.3 How to use the file transfer function (FTP transfer)

GT37 SoftGOT3000

☞ Page 2935 System configuration
☞ Page 2937 Setting procedure

86.3.1 System configuration



FTP server	Connection cable	GOT	
		Interface	Model
Personal computer GOT or other equipment	Shielded twisted pair cable	Built-in Ethernet interface of the GOT	GT37 SoftGOT3000

Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

A straight cable is usable.
When the GOT is directly connected to the personal computer via Ethernet cable, a cross cable is applicable.
The destination device connected with the twisted pair cable varies with the configuration of the Ethernet network system used.
Connect the cable to the Ethernet module, hub, or other system equipment corresponding to the applicable Ethernet network system.
Use cables, connectors, and hubs that meet the IEEE802.3 10BASE-T/100BASE-TX/1000BASE-T standards.

Maximum segment length

The maximum segment length (length between a hub and a node) is 100 m.
The maximum length depends on the Ethernet equipment used.
The following shows the number of connectable hubs when a repeater hub is used.

- 10BASE-T: Up to 4 cascade-connected hubs (within 500 m)
- 100BASE-TX: Up to 2 cascade-connected hubs (within 205 m)
- 1000BASE-T: The number differs depending on the hub to be used.

When switching hubs are used, there is no theoretical limit to the number of cascade connections between switching hubs.
For the limit, contact the switching hub manufacturer.

Precautions

■Countermeasures against access delay

When multiple network devices (including GOTs) are connected to the same segment, the network load increases and therefore the communication performance between the GOT and PLC may be degraded.

The following countermeasures may improve the communication performance.

- Use a switching hub compatible with 1000BASE-T (1 Gbps) or more.
- Reduce the number of devices monitored by the GOT.

■Connection to the intranet

If the system needs to be secured against unauthorized access to the intranet, consult a network service provider or network administrator (someone responsible for tasks such as network planning and IP address management), and implement your own countermeasures.

Mitsubishi Electric Corporation assumes no responsibility for any consequences that may arise from system troubles due to the intranet connection.

■When a firewall is used

If a firewall disconnects the communication of the file transfer function (FTP transfer), take countermeasures such as changing the firewall port number.

If the system needs to be secured against unauthorized access when changing the firewall port number, consult the network administrator (someone responsible for tasks such as network planning and IP address management), and implement your own countermeasures.

Mitsubishi Electric Corporation assumes no responsibility for consequences that may arise from system troubles due to the change of the port number.

86.3.2 Setting procedure

The following shows the setting procedure for using the file transfer function (FTP transfer).

1. Consider the configuration of the whole system.

- Configuration of the whole system including controllers and GOTs
- Controller settings (including device assignment)
- GOT settings (including IP address, network number, and station number)

2. Connect the GOT and the controller.

☞ Page 2935 System configuration

3. In the [Controller Setting] window displayed by selecting [Common] → [Controller Setting] from the GT Designer3 menu, select [File Transfer] and then select [Use the function of File Transfer].

4. Configure the required settings for [Destination FTP Server Setting] and [File Transfer Setting].

☞ Page 2938 [File Transfer] (FTP transfer)

5. To encrypt communication data using FTPS, refer to the following to enable encrypted communication.

☞ Page 3072 Target functions for encrypted communication and required settings

6. Write package data to the GOT.

For the communication method between the personal computer and the GOT, refer to the following.

☞ Page 408 Transferring data to the GOT

7. Check the operation of the file transfer function (FTP transfer).

☞ Page 2948 Operation of the file transfer function (FTP transfer)

86.4 [File Transfer] (FTP transfer)

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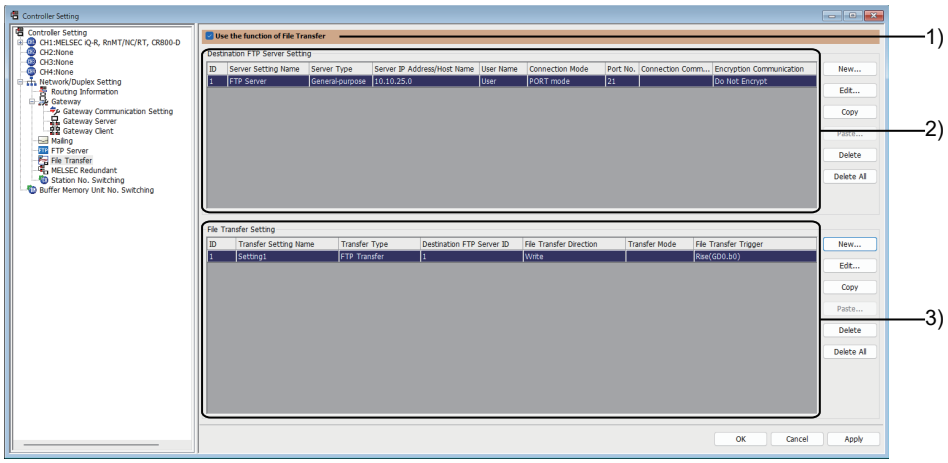
On the [File Transfer] settings screen, register the destination FTP server and configure the combination of file transfer condition settings (file transfer settings).

Window

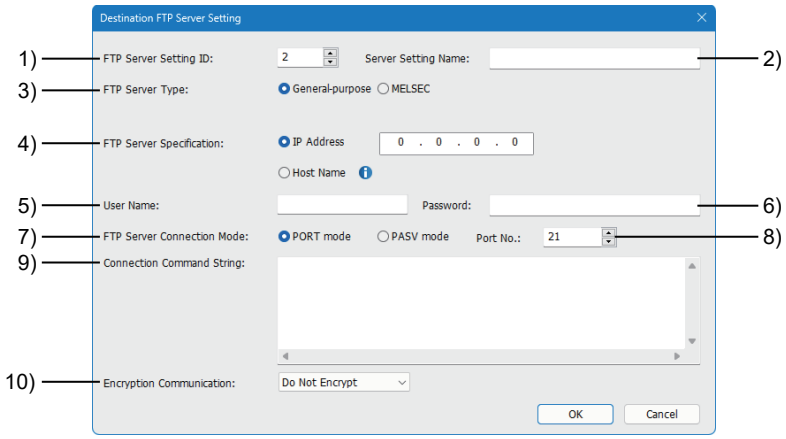
1. Select [Common] → [Controller Setting] from the menu to display the [Controller Setting] window.
2. Select [File Transfer] in the [Controller Setting] window.



Item			Description
1)	[Use the function of File Transfer]		Select this item when using the file transfer function.
2)	[Destination FTP Server Setting]	—	Lists the settings for connecting to FTP servers. Up to 64 FTP servers can be registered.
		[New] button	Adds a destination FTP server setting. Click the button to display the [Destination FTP Server Setting] dialog and add a new destination FTP server setting. ☞ Page 2939 [Destination FTP Server Setting] dialog
		[Edit] button	Changes a selected destination FTP server setting. Click the button to display the [Destination FTP Server Setting] dialog and edit the contents of the selected destination FTP server setting. ☞ Page 2939 [Destination FTP Server Setting] dialog
		[Copy] button	Click this button to copy the contents of the selected destination FTP server setting.
		[Paste] button	Pastes the copied contents of the destination FTP server setting. Click the button to display the [Destination FTP Server Setting] dialog and specify the destination FTP server setting ID.
		[Delete] button	Click this button to delete the contents of the selected destination FTP server setting.
		[Delete All] button	Click this button to delete the contents of all the destination FTP server settings.
3)	[File Transfer Setting]	—	Lists the file transfer settings. Up to 100 file transfer settings can be configured.
		[New] button	Adds a file transfer setting. Click the button to display the [File Transfer Setting] dialog and add a new file transfer setting. ☞ Page 2941 [File Transfer Setting] dialog (FTP transfer)
		[Edit] button	Changes a selected file transfer setting. Click the button to display the [File Transfer Setting] dialog and edit the contents of the selected file transfer setting. ☞ Page 2941 [File Transfer Setting] dialog (FTP transfer)
		[Copy] button	Copies the selected file transfer setting.
		[Paste] button	Pastes the copied file transfer setting to the specified destination. Click the button to display the [File Transfer Setting] dialog and specify the destination file transfer ID.
		[Delete] button	Deletes the selected file transfer setting.
		[Delete All] button	Deletes all the file transfer settings.

86.4.1 [Destination FTP Server Setting] dialog

Register the destination FTP server.



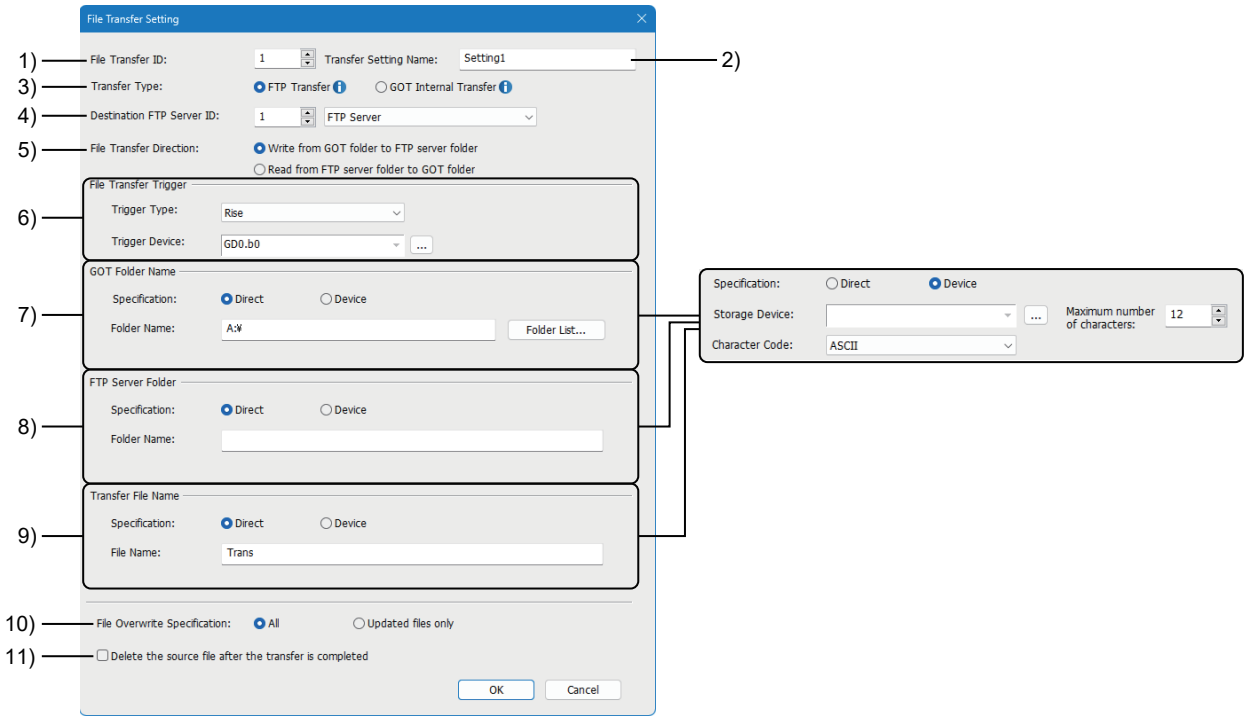
Item			Description
1)	[FTP Server Setting ID]		Set the ID to specify the destination FTP server setting. Set the number which does not overlap with that of other FTP server settings. The setting range is [1] to [32767].
2)	[Server Setting Name]		Set the name for the destination FTP server setting (optional). Up to 32 characters can be set.
3)	[FTP Server Type]	—	Select the type of the accessed FTP server. • [General-purpose] Select this item to access an FTP server other than a PLC. • [MELSEC] Select this item to access the FTP server function of the Mitsubishi Electric PLCs shown below. MELSEC MX Controller, MELSEC iQ-R series, MELSEC iQ-R (RnENCPU) series, MELSEC-QnUDV series, MELSEC-L series To access the MELSEC iQ-F series, select [General-purpose]. Even if you select [MELSEC] for the MELSEC iQ-F series, the GOT cannot communicate with the FTP server.
		[Remote Password]	This item appears when [MELSEC] is selected for [FTP Server Type]. Enter the remote password for the accessed PLC (FTP server).
4)	[FTP Server Specification]	—	Select the method of specifying the FTP server: [IP Address] or [Host Name].
		[IP Address]	Set the IP address of the destination FTP server. The setting range is [0.0.0.0] to [255.255.255.255].
		[Host Name]	Set the host name of the destination FTP server using up to 253 characters. One-byte alphanumeric characters (uppercase or lowercase) and symbols (hyphen (-) and period (.)) can be used. To specify the server with the host name, configure the DNS server settings in [GOT Ethernet Common Setting]. ☞ Page 717 [GOT Ethernet Common Setting]
5)	[User Name]		Up to 32 characters can be set as the user name for logging in to the FTP server. One-byte alphanumeric characters (uppercase or lowercase), one-byte spaces, and the following symbols can be used. ! " # $ % & ' ( ) * + , ` - . / : ; < = > ? @ [\ ] ^ _ { | } ~
6)	[Password]		Up to 32 characters can be set as the password for logging in to the FTP server. One-byte alphanumeric characters (uppercase or lowercase), one-byte spaces, and the following symbols can be used. ! " # $ % & ' ( ) * + , ` - . / : ; < = > ? @ [\ ] ^ _ { | } ~
7)	[FTP Server Connection Mode]		When [General-purpose] is selected for [FTP Server Type], set the connection mode for the FTP server. When [MELSEC] is selected for [FTP Server Type], this item is fixed to [PORT mode]. • [PORT mode] Select this item to connect in PORT mode. To access MELSEC iQ-F, select [PORT mode]. • [PASV mode] Select this item to establish connection in PASV mode.
8)	[Port No.]		Set the control port number of the FTP server to [21] or to a value between [1024] and [65535]. If an overlapped port No. is set, the communication with the FTP server may fail, or unexpected operation may occur in other equipment.

Item		Description
9)	[Connection Command String]	Set the command string to be issued when a connection with the FTP server is established. One-byte alphanumeric characters (uppercase or lowercase), one-byte spaces, and the following symbols can be used. ! " # $ % & ‘ ( ) * + , ` - . / : ; < = > ? @ [\ ] ^ _ { | } ~ Up to 10 lines with a maximum of 255 characters per line can be specified. For example, to enable writing to the GOT as an FTP server, specify [gtwr]. The available commands differ depending on FTP servers. For details, check the manual for the FTP server. The command string is sent only when the connection is established. It is not available for commands needed during the session.
10)	[Encryption Communication]	Specify whether to use encrypted communication when connecting to the FTP server. If you select [Encrypt (Explicit)] to encrypt communication data, refer to the following to enable encrypted communication. ☞ Page 3072 Target functions for encrypted communication and required settings

86.4.2 [File Transfer Setting] dialog (FTP transfer)

Set the transfer conditions.

Specify the destination FTP server, file transfer trigger, file transfer direction (write or read), write destination folder, transfer file name, and other details.



Item			Description
1)	[File Transfer ID]		Set the ID to specify the file transfer setting. Set the number which does not overlap with that of other file transfer settings. The setting range is [1] to [32767].
2)	[Transfer Setting Name]		Set the file transfer setting name (optional). Up to 32 characters can be set.
3)	[Transfer Type]		Select [FTP Transfer].
4)	[Destination FTP Server ID]		Set the destination FTP server setting ID for the file transfer. ☞ Page 2939 [Destination FTP Server Setting] dialog
5)	[File Transfer Direction]		Set the direction of the file transfer.
6)	[File Transfer Trigger]	—	Set the trigger to execute the file transfer.
		[Trigger Type]	Set the trigger type.
		[Trigger Device]	When selecting [Rise], [Fall], [ON Sampling], or [OFF Sampling] for the trigger type, set the bit device as the trigger device. ☞ Page 968 Trigger type settings

Item			Description
7)	[GOT Folder Name]	—	Set the folder path for the GOT (FTP client) to send and receive files. The folder division symbol "\" is not required at the end. The following drives are settable. Drive A Drive B Drive E Drive F Drive G Drive X (current drive) For the available drives by GOT model, refer to the following. ☞ 1Page 81 Drive configuration and capacity of the GOT For the restrictions on the folder name used in the GOT, refer to the following. ☞ 1Page 84 Restrictions for folder names and file names used in GOT
		[Specification]	Select a method to specify a GOT folder name. • [Direct] Select this item to enter the GOT folder name directly. • [Device] Select this item to specify the GOT folder indirectly with a device.
		[Folder Name]	When selecting [Direct] for [Specification], enter the folder name directly. Up to 76 one-byte alphanumeric characters and symbols can be entered for the folder path. If this field is left blank, the setting defaults to [A:\]. To select a GOT (FTP client) folder from the folders set in GT Designer3, click the [Folder List] button. Click the button to display the [Folder List] dialog and select the save destination folder name from the displayed list. ☞ Page 2945 [Folder List] dialog The selected item in the [Folder List] dialog is applied only to [GOT Folder Name]. It is not applied to [Transfer File Name].
		[Storage Device]	When selecting [Device] for [Specification], set the start device of consecutive word devices that store the GOT folder name. The number of the consecutive word devices is equal to half the set value of [Maximum number of characters] (fractions are rounded up). ☞ Page 2946 Indirect specification of folder names and file names
		[Maximum number of characters]	Set the maximum number of characters for the GOT folder name. The setting range is [8] to [76].
		[Character Code]	The folder name string is stored in the storage device using the specified character code.
8)	[FTP Server Folder]	—	Set the folder path for the FTP server to send and receive files. If the specified folder does not exist, the folder is automatically created. To access the default folder of the FTP server, do not specify a folder. Example) When the default folder of the FTP server is set to \root\ftp\file\ If no folder is specified, the GOT will access the default folder (\root\ftp\file\). If \hoge\ is specified, the GOT will access the specified folder (\root\ftp\file\hoge\). Up to 250 one-byte alphanumeric characters and symbols are settable for the folder path. The maximum number of characters and available characters differ depending on the specifications of the FTP server. Check the manual of the FTP server before setting. The folder division symbol "\" is not required at the end. For the restrictions on the folder name used in the GOT, refer to the following. ☞ 1Page 84 Restrictions for folder names and file names used in GOT
		[Specification]	Select the method of specifying the FTP server folder. • [Direct] Select this item to enter the FTP server folder name directly. • [Device] Select this item to specify the FTP server folder indirectly with a device.
		[Folder Name]	When selecting [Direct] for [Specification], enter the folder name directly.
		[Storage Device]	When selecting [Device] for [Specification], set the start device of consecutive word devices that store the FTP server folder name. The number of the consecutive word devices is equal to half the set value of [Maximum number of characters] (fractions are rounded up). ☞ Page 2946 Indirect specification of folder names and file names
		[Maximum number of characters]	Set the maximum number of characters for the FTP server folder name. The setting range is [8] to [250].
		[Character Code]	The folder name string is stored in the storage device using the specified character code.

Item			Description
9)	[Transfer File Name]	—	Set a transfer file name. Up to 75 one-byte alphanumeric characters and symbols are settable for the file name. One wildcard character can be used in the transfer file name. ☞ Page 2947 Specifying the transfer file with a wild card For the restrictions of the file name used in the GOT, refer to the following. ☞ 1Page 84 Restrictions for folder names and file names used in GOT
		[Specification]	Select the method of specifying the transfer file name. • [Direct] Select this item to enter the transfer file name directly. • [Device] Select this item to specify the transfer file name indirectly with a device.
		[File Name]	When selecting [Direct] for [Specification], enter the transfer file name directly.
		[Storage Device]	When selecting [Device] for [Specification], set the start device of consecutive word devices that store the transfer file name. The number of the consecutive word devices is equal to half the set value of [Maximum number of characters] (fractions are rounded up). ☞ Page 2946 [File Transfer Setting] dialog (FTP transfer)
		[Maximum number of characters]	Set the maximum number of characters for the transfer file name. The setting range is [8] to [75].
		[Character Code]	The file name string is stored in the storage device using the specified character code.
10)	[File Overwrite Specification]		Set the behavior to be performed when the transfer destination folder has a file with the same name as the transfer file. • [All] Overwrites files each time. • [Updated files only] Overwrites an existing file in the transfer destination folder only when the time stamp of the transfer file is equal to or newer than that of the existing file. Otherwise, the file is not transferred. For information on the time stamp of the transfer file, refer to the following. ☞ Page 2943 Time stamp of the transfer file ☞ Page 2943 GOT (FTP client) time and FTP server time
11)	[Delete the source file after the transfer is completed]		Select this item to delete the source file after the transfer is completed. Note the following when selecting this item. • Do not delete the files that the GOT refers to, such as a logging file, from the GOT folder. Otherwise, you cannot view such data on the GOT. • When specifying the transfer file name with a wildcard character, you may delete a required file unintentionally. If the transfer source folder has a required file, take one of the following measures. ◇Deselect [Delete the source file after the transfer is completed]. ◇Check in advance that only the files to be transferred are included when specifying the transfer file name with a wildcard character.

Point

To transfer only the logging files that are updated by the logging function, select [Updated files only]. Since the transferred files are not resent, the file transfer efficiency is increased.

Precautions

■Time stamp of the transfer file

The time stamp of the transfer file indicates the time taken from the destination FTP server when the file transfer to the destination folder is completed.

Depending on the destination FTP server, the time stamp of the transfer file may not be obtained.

In this case, the transfer file is overwritten each time regardless of the setting of [File Overwrite Specification].

■GOT (FTP client) time and FTP server time

When selecting [Updated files only] for [File Overwrite Specification], set the GOT (FTP client) time and FTP server time to be the same.

The time stamp of the transfer file indicates the time taken from the destination FTP server when the file transfer to the destination folder is completed.

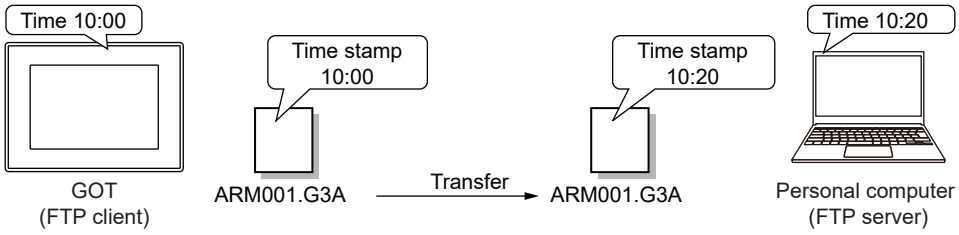
Therefore, when the GOT (FTP client) time and FTP server time are different, the latest file may be regarded as older than the file transferred last time.

In this case, the file is not transferred.

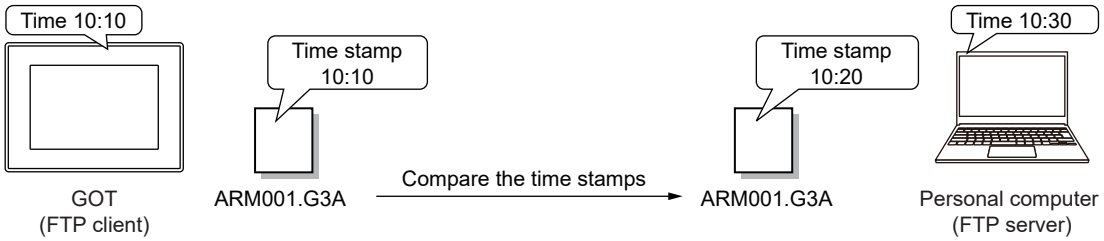
Ex.

When the time difference is 20 minutes between the GOT (FTP client) and personal computer (FTP server)

1. The GOT (FTP client) transfers the file created at 10:00.



2. The time stamps of the file created at 10:10 and the file on the server are compared.



3. Since the file is not recognized as the latest, the GOT does not transfer the file.

Select [All] for [File Overwrite Specification] if the time difference between the installation locations of the GOT (FTP client) and FTP server exists.

If the time difference between the installation locations exists, the GOT time and FTP server time may differ even the both time are set correctly. Therefore the time stamps cannot be compared properly.

■Indication in the file list of the FTP server

The GOT (FTP client) is compatible with the FTP servers that use alphanumerics to show the date and time information of the files in the file list.

If an FTP server uses characters other than alphanumerics such as Japanese kanji in the file list, the files cannot be transferred.

Configure the settings including the OS setting on the FTP server so that the FTP server uses alphanumerics to show the information in the file list.

To check the file list of the FTP server, issue a dir command or a list command in the command prompt on a personal computer that is connected to the FTP server.

Ex.

When the file list is displayed using alphanumeric characters

The server is compatible with the GOT (FTP client).

```
02-08-25  05:30PM              348000 sample1.txt
11-02-25  10:30AM              234000 sample2.txt
                                    :
```

Ex.

When the file list is displayed using alphanumeric characters

The server is compatible with the GOT (FTP client).

```
-rwxrwxrwx   1 owner   group      348000 Feb 8 17:30 sample1.txt
-rwxrwxrwx   1 owner   group      234000 Nov 2 10:30 sample2.txt
                                    :
```

Ex.

When the file list is displayed in Japanese characters

The FTP server is incompatible with the GOT (FTP client).

```
-rwxrwxrwx  1 owner  group      348000  2月 8日 17:30 sample1.txt
-rwxrwxrwx  1 owner  group      234000 11月 2日 10:30 sample2.txt
                                    :
```

■Folder path and transfer file name

The total number of characters of the folder path and transfer file name must be set as shown below.

If the total number of the characters exceeds the following limits, an error occurs.

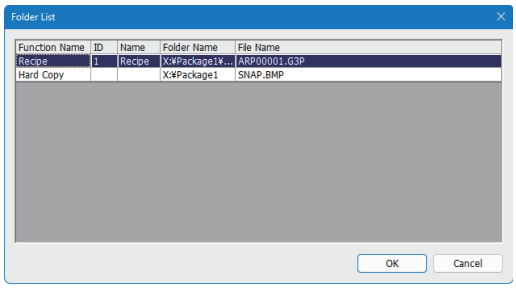
<GOT folder path>\<Transfer file name>: 78 characters or less (including backward slash marks)
<FTP server folder path>\<Transfer file name>: 250 characters or less (including backward slash marks)

Specify the folder path and transfer file name by using one-byte alphanumeric characters and symbols.

If you use two-byte characters, the specified file cannot be transferred.

[Folder List] dialog

When various function settings are configured in the project, the save destination folder names set for each function are displayed in the [Folder List] dialog.



The contents displayed in each item and display conditions are as follows.

Function name	Display condition	Items in the [Folder List] dialog			
		[ID]	[Name]	[Folder Name]	[File Name]
Comment	[Read comment data from the memory card] is selected in [Comment Group Property] - [Option Setting].	[Comment Group Property] - [Group No.]	Title field of [Comment Group Property]	[Drive Name] and [Folder Name] in the [Destination] dialog	[File Name] in the [Destination] dialog
User alarm monitoring	[Save alarm log files] is selected in [User Alarm Observation] - [File Save].	[User Alarm Observation] - [Basic] - [Alarm ID]	[User Alarm Observation] - [Basic] - [Alarm Name]	[Drive Name] and [Folder Name] for [Save Destination] in [File Save]	[File Save] - [Save Destination] - [File Name]
	[Save alarm log files] is selected in [User Alarm Observation] - [File Save], and [Destination] is set to [Change] in [User Alarm Observation] - [File Save] - [File Convert].			[Drive Name] and [Folder Name] for [Destination] in [File Save] - [File Convert]	[File Name] for [Destination] in [File Save] - [File Convert]
System alarm monitoring	[Save alarm log files] is selected in [System Alarm Observation] - [File Save].	(Blank)	(Blank)	[Drive Name] and [Folder Name] for [Save Destination] in [File Save]	[File Save] - [Save Destination] - [File Name]
	[Save alarm log files] is selected [System Alarm Observation] - [File Save], and [Destination] is set to [Change] in [System Alarm Observation] - [File Save] - [File Convert].			[Drive Name] and [Folder Name] for [Destination] in [File Save] - [File Convert]	[File Name] for [Destination] in [File Save] - [File Convert]

Function name	Display condition	Items in the [Folder List] dialog			
		[ID]	[Name]	[Folder Name]	[File Name]
Logging	When creating a logging setting (when [Logging List] - [(Logging List)] is not blank)	[Logging] - [Logging ID]	[Logging] - [Logging Name]	[Drive Name] and [Folder Name] in [Logging] - [Destination]	[File Name] in [Logging] - [Destination]
	[Output additional file] is selected in [Logging]			[Drive Name] and [Folder Name] in [Logging] - [Output additional file]	[File Name] in [Logging] - [Output additional file]
Recipe	[Data Storage (Recipe File)(read and write)] is selected in [Recipe] - [Basic] - [Recipe Data Save Location]	[Recipe] - [Basic] - [Recipe No.]	[Recipe] - [Basic] - [Recipe Name]	[Drive Name] and [Folder Name] in [Recipe] - [Basic]	[File name] in [Recipe] - [Basic]
	[Enable the file conversion external control] is selected in [Recipe] - [File Save].			[Drive Name] and [Folder Name] in [Recipe] - [File Save]	[File Name] in [Recipe] - [File Save]
Operation Log	[Collect operation logs] is selected in [GOT Environmental Setting] - [Operation Log] - [Basic].	(Blank)	(Blank)	[Save to] and [Folder Name] in [Basic]	[File Name] in [Basic]
	[Collect operation logs] is selected in [GOT Environmental Setting] - [Operation Log] - [Basic]. and [Save to] is set to [Change] in [GOT Environmental Setting] - [Operation Log] - [File Conversion].			[Drive Name] and [Folder Name] in [File Conversion]	[File Name] in [Drive Conversion]
Hard copy	[File] or [File + Printer] in [Hard Copy] - [Destination]	(Blank)	(Blank)	[Drive Name] and [Folder Name] for [File]	[File Name] for [File]
Digital image recording	[Operation Mode] is set to [Digital Image Recording] in [Digital Image Input/Recording]	(Blank)	(Blank)	[Drive Name] and [Folder Name] in [Recording Setting]	[File Name] in [Recording Setting]

Indirect specification of folder names and file names

When [Device] is selected for [Specification] in the folder name or file name setting, consecutive word devices starting from a specified device store the folder name or file name.

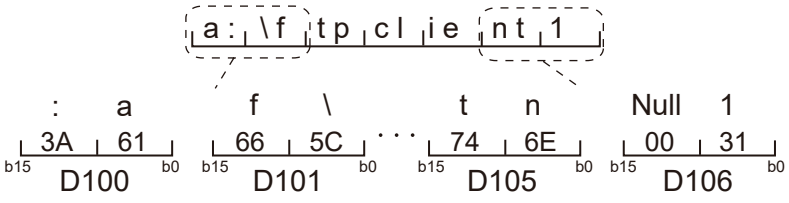
The number of the consecutive word devices is equal to half the set value of [Maximum number of characters] (fractions are rounded up).

Store the folder name or file name in ASCII code in each device, from the lower bit to the upper bit.

Store Null (0x00) at the end of the folder name.

Ex.

Example) Specifying the [ftpclient1] folder on drive A



Specifying the transfer file with a wild card

Use a wild card under the following conditions.

• Only [*] can be used as a wild card.

Example of valid use: [ARP*.DAT]

Example of invalid use: [ARP?????.DAT] .DAT]

• Only one [*] can be used.

However, only [*.*] is an exception.

Example of valid use: [*.DAT]

Example of invalid use: [ARP*.*]

• You can use [*] only immediately before [.] (period) for the file name.

Example of valid use: [ARP*.DAT]

Example of invalid use: [ARP*01.DAT]

• When you use [*] in the extension part of the file name, the extension must consist of the wild card only.

Example of valid use: [ARP00001.*]

Example of invalid use: [ARP00001.*AT]

Precautions

If the file name is specified with a wildcard character, a warning may be given at a file transfer.

Even if a warning is given, the file transfer process does not stop.

However, the file transfer may fail due to other causes, such as an invalid transfer file name or write-protect transfer destination folder.

Check the error code stored in the File Transfer Error No. (GS989), eliminate the cause, and then perform the file transfer again.

☞ Page 2958 Error codes for the file transfer function

PART 28

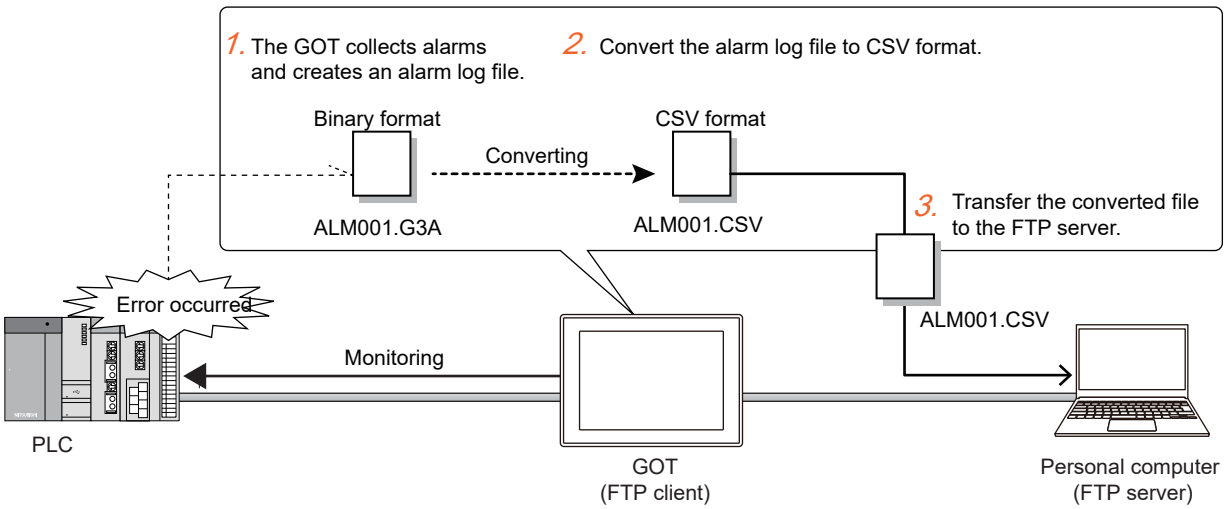
86.5 Operation of the file transfer function (FTP transfer)

GT37 SoftGOT3000

☞ Page 2948 Sending an alarm log file (application example)
☞ Page 2951 Checking the processing status
☞ Page 2953 Operation when the file transfer trigger conditions are satisfied

86.5.1 Sending an alarm log file (application example)

The following shows an example of converting the file of alarm logs collected by the GOT to a CSV file and writing it to an FTP server.
The file conversion is optional.



1. The GOT creates an alarm log file based on the collected alarm data.
2. Convert the alarm log file from the binary format to the CSV format by using the convert trigger device for the file.
3. Transfer the converted file to the FTP server.

Required settings

This application example requires the following settings.

■Alarm settings

Setting	Description		Reference
[Alarm Common Setting]	[Convert trigger device]	Set any bit device.	☞ Page 2043 [Alarm Common Setting] dialog
	[Convert-in-motion notification device]		
[User Alarm Observation]	[Basic] tab	Set the method of collecting the history. Select [Historical] or [Cumulative].	☞ Page 2045 [User Alarm Observation] dialog
	[Device] tab	Set the target device for observation.	
	[File Save] tab	Select [Save alarm log files] and set the save destination for the log file and the storage trigger. Select [Rise] for the trigger type of the storage trigger.	

■Settings of the file transfer function (FTP transfer)

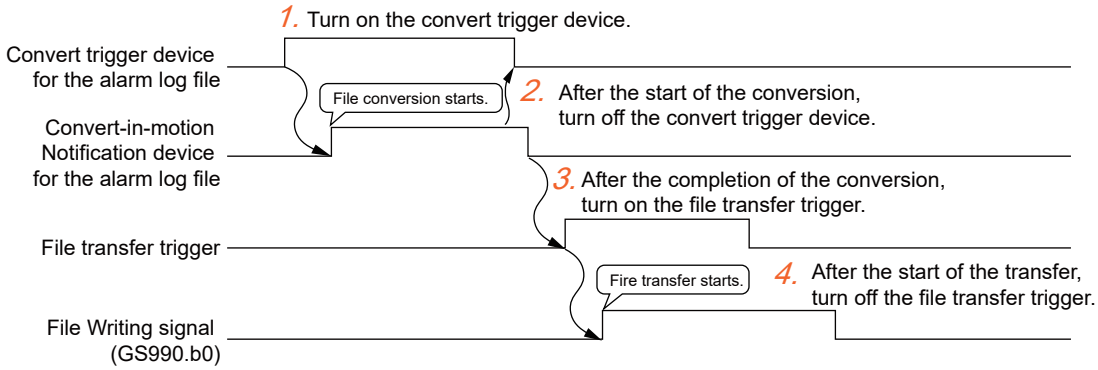
Setting	Description		Reference
[Destination FTP Server Setting]	Set the FTP server as the data transfer destination.		☞ Page 2939 [Destination FTP Server Setting] dialog
[File Transfer Setting]	[Transfer Type]	Select [FTP Transfer].	☞ Page 2941 [File Transfer Setting] dialog (FTP transfer)
	[File Transfer Trigger]	Set [Rise].	
	[Transfer File Name]	Set the name of the alarm log file specified in the alarm monitoring.	

■GOT special register (GS)

Setting	Description	Reference
GS990.b0	File Writing signal	☞ Page 2951 Write device

Action

The following shows an example of converting and transferring an alarm log file.



1. Turn on the convert trigger device for the alarm log file.

The GOT starts the file conversion and the Convert-in-motion Notification device turns on.

2. Turn off the convert trigger device after the start of the file conversion.

Upon completion of the file conversion, the Convert-in-motion Notification device turns off.

3. Turn on the file transfer trigger.

The GOT starts the file transfer and the File Writing signal (GS990.b0) turns on.

4. Turn off the file transfer trigger after the start of the file transfer.

Upon completion of the file transfer, the File Writing signal (GS990.b0) turns off.

For the convert trigger device for the alarm log file, refer to the following.

☞ Page 2043 [Alarm Common Setting] dialog

Turning on the file transfer trigger automatically

In the example above, the user needs to turn on the file transfer trigger after the file conversion.
The user also needs to turn off the convert trigger device for the alarm log file and file transfer trigger after the start of the processing.
Using two project scripts enables these operations to be performed automatically.
The following shows an example of settings.

■Device

Device name	Device number	Script which uses the device
Convert-in-motion Notification device for the alarm log file	GB100	Script No.1
Trigger device for script No.1		
Convert trigger device for the alarm log file	GB105	Script No.1
File transfer trigger	GB110	Script No.1, script No.2
File Writing signal	GS990.b0	Script No. 2
Trigger device for script No.2		

■Project script settings

Script No.	Description	Script
Script No.1	Set [Rise] for the trigger type. Use the Convert-in-motion Notification device for the alarm log file as the trigger device.	set([b: GB110]); //File transfer trigger ON rst([b: GB105]); // Alarm log file convert trigger OFF
Script No. 2	Set [Rise] for the trigger type. Use the File Writing signal (GS990.b0) as the trigger device.	rst([b: GB110]); //File transfer trigger OFF

86.5.2 Checking the processing status

With the file transfer function (FTP transfer), you can check the file transfer status, errors, and other relevant information by using GOT special registers (GS).

For details on the devices, refer to the following.

☞ Page 3581 GOT special register (GS)

Read device

Device	Name		Description
GS401	File Transfer Control		Controls the file transfer.
	b0	Clear File Transfer Error signal	Turn on this signal to clear the error code stored in the following device or to turn off the following signals. • File Transfer Error No. (GS989) • Warning signal (GS990.b14) • File Transfer Error signal (GS990.b15)
GS402	File Transfer Timeout Time		Set the timeout period for the file transfer. The default is 3 seconds. The setting range is [1] to [300] second(s). When the device value is set to 0 or 301 (or more), [3] seconds is applied.

Write device

Device	Name		Description
GS987	Executing File Transfer ID Notification		Stores the file transfer ID of the file transfer in execution.
GS988	Communicating FTP Server ID Notification		Stores the FTP server setting ID of the currently connected destination FTP server.
GS989	File Transfer Error No.		Stores the error code of an error that occurred in the file transfer. Turn on GS401.b0 to clear the stored error code. ☞ Page 2958 Error codes for the file transfer function
GS990	File Transfer Status		Notifies the file transfer processing status.
	b0	File Writing signal	Turns on when the GOT (FTP client) writes files to the FTP server. When [Trigger Type] is [Rise] or [Fall], this bit turns off when the trigger condition is dissatisfied after the file writing.
	b1	File Reading signal	Turns on when the GOT (FTP client) reads files from the FTP server.
	b2	FTP Server Connection Mode signal	Notifies the connection mode of the GOT (FTP client) and the FTP server. ON: PASV mode OFF: PORT mode
	b14	Warning signal	Turns on when the error with which the processing can be continued occurs during the file transfer. Turns off when the Clear File Transfer Error signal (GS401.b0) is turned on.
	b15	File Transfer Error signal	Turns on when the error with which the processing cannot be continued occurs during the file transfer. Files cannot be transferred while this signal is on. Turns off when the Clear File Transfer Error signal (GS401.b0) is turned on.
GS991	Number of Transfer Target Files		Stores the total number of files to be transferred. When the transfer file name is specified with the wild card, the total count includes the files which are not transferred due to an invalid number of characters for the folder name or other causes. However, the total count does not include files with invalid names, such as those consisting of two-byte characters. Holds the device value until the processing for the next file transfer ID is started.
GS992	Number of Transferred Files		Stores the total number of the files already transferred. The total count includes the files which are not transferred due to the error or other causes. Holds the device value until the processing for the next file transfer ID is started.

Precautions

■Handling of a file transfer error

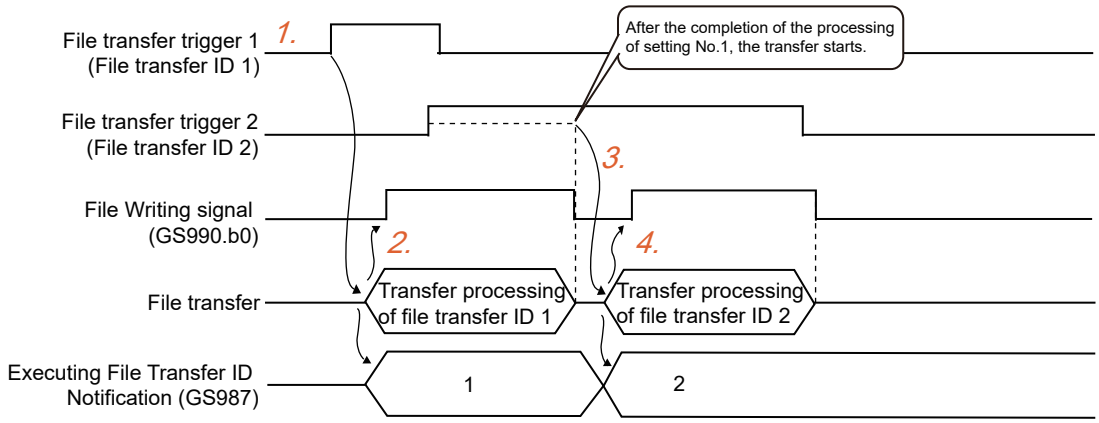
If an error occurs in the file transfer, turn on the Clear File Transfer Error signal (GS401.b0).

Upon turn-on of GS401.b0, the File Transfer Error signal (GS990.b15) is turned off.

While the File Transfer Error signal (GS990.b15) is on, the GOT does not start transferring the subsequent files because the file transfer is recognized to have an error.

86.5.3 Operation when the file transfer trigger conditions are satisfied

The following shows an operation example of the file transfer function when the conditions of two file transfer triggers are satisfied sequentially.



1. When the condition of file transfer trigger 1 is satisfied, the GOT starts the file transfer for file transfer ID 1.

2. The File Writing signal (GS990.b0) turns on, and the Executing File Transfer ID Notification device (GS987) stores 1.

3. While the File Writing signal (GS990.b0) is on, even if the condition of file transfer trigger 2 is satisfied, the GOT does not start the file transfer for file transfer ID 2.

Upon completion of the file transfer for file transfer ID 1, the File Writing signal (GS990.b0) turns off.

Then, the GOT starts the file transfer for file transfer ID 2.

4. The File Writing signal (GS990.b0) turns on, and the Executing File Transfer ID Notification device (GS987) stores 2.

Upon completion of the file transfer for file transfer ID 2, the File Writing signal (GS990.b0) turns off.

File transfer trigger at GOT startup

When the trigger type of the file transfer trigger is [Rise] and the trigger device is on at GOT startup, the trigger condition is satisfied.

When the trigger type is [Rise] and the trigger device is off, the trigger condition is also satisfied.

File transfer trigger condition satisfied during file transfer

A file transfer trigger condition satisfied during file transfer is processed as shown below.

■Trigger for the same file transfer setting

The file transfer trigger does not start the transfer even if the condition is satisfied.

■Trigger for a different file transfer setting

When the file transfer trigger condition is satisfied, the file is transferred after the previous file transfer is completed.

When multiple trigger conditions are satisfied during the file transfer, the files are transferred in order of the file transfer setting ID.

Trigger type of the file transfer trigger

When [Rise] or [Fall] is set for [Trigger Type] of the file transfer trigger, be sure to dissatisfy the trigger condition after the file transfer is started.

When the trigger condition remains satisfied, the File Writing Notification signal (GS990.b0) does not turn off even when the file transfer is completed.

86.6 Precautions

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☞ Page 2954 Precautions for transferring files
☞ Page 2955 Restrictions when using MELSEC iQ-F as an FTP server

86.6.1 Precautions for transferring files

The following shows the precautions for transferring files.

Offline status of the GOT

When the GOT becomes offline during the file transfer, the file transfer is interrupted.
During the file transfer, do not perform the operation that causes the GOT to be offline, such as establishing the communication with GT Designer3.

Using a recipe while a recipe file is transferred

Do not use the recipe while you transfer the recipe file to the GOT.
If the recipe file in the data storage is deleted while the recipe is processed, the function may not be performed properly.
If the recipe file is deleted even while the recipe is not processed, the error (system alarm: recipe file error) occurs when the recipe is performed next time.

Power off during the access to the data storage

Do not power off the GOT while the FTP server is accessing the file in the data storage of the GOT.
Doing so may cause the data corruption in the data storage.

File password when the FTP server function of a Mitsubishi Electric PLC is used

When the FTP server function of a Mitsubishi Electric PLC is used, the GOT cannot transfer a password-protected file.
Do not set a password for the file to be transferred with the file transfer function (FTP transfer).

Creating a folder when the FTP server function of a Mitsubishi Electric PLC is used

When you use the FTP server function of a Mitsubishi Electric PLC, the GOT cannot create a folder in the PLC by using the file transfer function (FTP transfer).
Create a file transfer destination folder in advance.

86.6.2 Restrictions when using MELSEC iQ-F as an FTP server

When using MELSEC iQ-F as an FTP server, note the following restrictions.

Setting the FTP server type

Select [General-purpose] for [FTP Server Type] in the [Destination FTP Server Setting] dialog.

If you select [MELSEC], the GOT cannot communicate with the FTP server.

Access in PASV mode

Set [FTP Server Connection Mode] to [PORT mode] in the [Destination FTP Server Setting] dialog.

The GOT cannot access the FTP server in PASV mode.

Writing files to the FTP server

Do not write files to the FTP server.

This operation is not available.

Only file reading is available.

86.7 Relevant settings

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Configure the relevant settings other than those specific to the file transfer function (FTP transfer) as required.

86.7.1 GOT internal devices

☞ Page 3581 GOT special register (GS)

Function	Setting item
Turning on this signal to clear an error that occurred in the file transfer	GS401.b0
Setting the timeout period for FTP communication	GS402
Storing the file transfer ID of the file transfer in execution	GS987
Storing the FTP server setting ID of the connected FTP server	GS988
Storing the error code of an error that occurred in the file transfer	GS989
Notifying the file transfer processing status	GS990
Storing the total number of files to be transferred	GS991
Storing the total number of transferred files	GS992

86.8 Troubleshooting

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☞ Page 2957 Troubleshooting for the file transfer function (FTP transfer)
☞ Page 2958 Error codes for the file transfer function

86.8.1 Troubleshooting for the file transfer function (FTP transfer)

The following shows the troubleshooting for the file transfer function (FTP transfer).

Symptom		Error details	Corrective action
The file transfer function (FTP transfer) does not work.	When all the bits of GS200 are off and the GOT does not respond to the ping command *1*2	The system application (add-on function) for the file transfer function is not installed on the GOT.	Write the package data that contains the system application (add-on function) for the file transfer function to the GOT.
		No IP address has been set for the GOT.	Set the IP address for the GOT in the utility of the GOT.
	If any bit of GS200 is on and the GOT responds to the ping command *1*2	—	Refer to the troubleshooting for the functions corresponding to the bits that are on, and take corrective actions.
File cannot be transferred.		The system application (add-on function) for the file transfer function is not installed on the GOT.	Write the package data that contains the system application (add-on function) for the file transfer function to the GOT. ☞ Page 408 Transferring data to the GOT
		The connection setting with the FTP server is not configured properly.	Check the followings in [Destination FTP Server Setting]. • FTP server IP address, connection mode, and port No. • User name and password
		The FTP server is not working.	Check if the FTP server has stopped.

*1 For details on the Gateway Common Information (GS200), refer to the following.
☞ Page 3581 GOT special register (GS)

*2 To check if the GOT responds to the ping command, execute it from the personal computer to the GOT.

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86.8.2 Error codes for the file transfer function

The following lists the error codes that are stored in the GOT special register, GS989 (File Transfer Error No.).

Error code	Error details	Corrective action
1	The connection to the FTP server has failed.	• Check the IP address of the FTP server. • Check if a cable is connected. • Check the connection status of the HUB. • Check if the FTP server is working on the target device. • Check if the setting in [Destination FTP Server Setting] is configured properly.
2	Authentication of the FTP server has failed.	Check if the login username and the password for the accessed FTP server are correct.
	The authentication using the remote password has failed.	Check if the remote password for the PLC is correct.
3	FTP server Busy	The FTP server is not ready to accept client requests (busy state). Wait until it is ready.
4	FTP communication timeout	• Check if the communication line has not been physically interrupted. • Check the communication congestion.
5	Access to the target file to be written has failed.	• Check if the write destination drive is enabled. • Check if the write destination drive has enough available space. • Check if the file is not write-prohibited. • When using the GOT as the FTP server, check if the GOT is in the write enable mode. • When using the FTP server function of the PLC, check if a write destination folder exists. If no write destination folder exists, create one. • When using the FTP server function of the PLC, check if a password is set for the file to be transferred. If a password is set, cancel the password protection.
6	Access to the target file to be read has failed.	• Check if the target file exists. • Check if the file name specified in [File Transfer Setting] is correct. • Check if the data storage has been installed on the GOT. • Check if the SD card cover has been closed. • Check that the write protection for the SD card is canceled. • When using the FTP server function of the PLC, check if a password is set for the file to be transferred. If a password is set, cancel the password protection.
7	The file whose size is the file supported by the GOT or more was attempted to be transferred.	Check if the size of the transfer file is less than 2 GB.
10	• For the FTP transfer The GOT folder name is invalid. • For the GOT internal transfer The transfer source folder name is invalid.	Check that the GOT folder name or the transfer source folder name does not contain invalid characters, such as two-byte characters, or characters that are not allowed with the character code specified for [Character Code] in the [File Transfer Setting] dialog.
11	The transfer file name is invalid.	Check that the transfer file name does not contain invalid characters, such as two-byte characters, or characters that cannot be used with the character code specified for [Character Code] in the [File Transfer Setting] dialog.
12	The transfer source folder and destination folder have the same path.	Set different paths to the transfer source folder and the transfer destination folder.
50	The drive specification on the PLC side is incorrect.	When a PLC is used as a FTP server, only drive 2 (Memory card (ROM)) is accessible. Check if the setting of [FTP Server Folder] specified in the [File Transfer Setting] dialog is correct.
100	The destination FTP server setting ID which does not exist has been specified.	• Check if the destination FTP server setting ID specified in [File Transfer Setting] is correct. • Add the required destination FTP server setting.
200	Access to the storage device has failed when the file name or folder name is specified indirectly.	Check if the device setting used for the indirect specification is correct.
507	The total number of characters of the folder path and transfer file name exceeds the limit.	Check that the total number of the characters does not exceed the limit as shown below. • <GOT folder path>\<Transfer file name>: 78 characters or less (including backward slash marks) • <FTP server folder path>\<Transfer file name>: 250 characters or less (including backward slash marks) • <Transfer source folder path>\<Transfer file name>: 78 characters or less (including backward slash marks) • <Transfer destination folder path>\<Transfer file name>: 78 characters or less (including backward slash marks)
600 *1	The file transfer has been skipped because the total number of characters of the folder path and transfer file name exceeds the limit (only when the file is specified with a wildcard character).	

Error code	Error details	Corrective action
601 *1	Since the transfer file name contains invalid characters, the transfer processing was skipped (only when the file is specified with a wildcard character).	Check that the transfer file name does not contain invalid characters, such as two-byte characters, or characters that cannot be used with the character code specified for [Character Code] in the [File Transfer Setting] dialog.
602 *1	Since the file write operation failed, the transfer processing was skipped (only when the file is specified with a wildcard character).	• Another function might have been using the transfer file. Transfer the file again. • Check if the write destination drive has enough available space.
603 *1	Since the file read operation failed, the transfer processing was skipped (only when the file is specified with a wildcard character).	• The file might have been deleted before being transferred. Check if all the files have been transferred to the destination folder. • Check if the data storage has been installed on the GOT. • Check if the SD card cover has been closed. • Check that the write protection for the SD card is canceled.
606 *1	Since the file specified by the wild card did not exist, the file was not transferred (only when the file is specified with a wildcard character).	Check if the specified file name is correct.
607 *1	A file that exceeds the size supported by the GOT was attempted for transfer (only when the file is specified with a wildcard character).	Check if the size of the transfer file is less than 2 GB.
610 *1	Deleting the source file has failed.	Check if the source file is in a state in which it can be deleted.

*1 Even if a warning is given, the file transfer process does not stop.

87 Transferring files between the GOT drives (file transfer function (GOT internal transfer))

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☞ Page 2960 Overview of the file transfer function (GOT internal transfer)
☞ Page 2961 Specifications of the file transfer function (GOT internal transfer)
☞ Page 2962 How to use the file transfer function (GOT internal transfer)
☞ Page 2963 [File Transfer] (GOT internal transfer)
☞ Page 2967 Operation of the file transfer function (GOT internal transfer)
☞ Page 2970 Precautions
☞ Page 2970 Relevant settings
☞ Page 2970 Troubleshooting

87.1 Overview of the file transfer function (GOT internal transfer)

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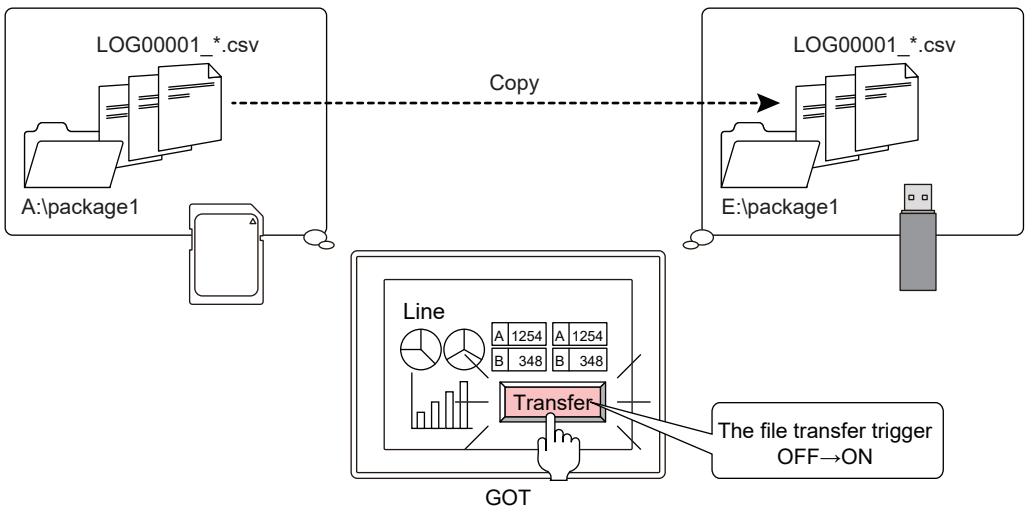
The file transfer function (GOT internal transfer) allows you to copy or move a file to another drive or folder within the GOT when the trigger conditions are satisfied.
By performing trigger control, the GOT can manage the timing of file transmission, such as when files are generated or user operations occur.

Copying the logging file from the SD card to the USB memory using a touch switch

The logging file saved on the SD card (drive A) can be copied to the front USB memory (drive E) by triggering an operation (device writing) using a touch switch.
Using a wild card to specify file names enables efficient copying of only updated files.



Point

Difference from the script function

When copying multiple files with a script, you need to first create a file list and then write a script that calls the copy function multiple times in a loop. With GOT internal transfer, you can easily copy and move files within the GOT by simply setting the source and destination folders, the transfer file names (wild cards supported), and a trigger.

87.2 Specifications of the file transfer function (GOT internal transfer)

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87.2.1 System application (add-on function)

To use the file transfer function (GOT internal transfer), [File Transfer] must be selected from the system applications (add-on functions).

Selecting [Use the function of File Transfer] and configuring the settings in [File Transfer] in the [Controller Setting] window incorporate the application into the package data automatically.

☞ Page 2963 [File Transfer] (GOT internal transfer)

87.2.2 Specifications of GOT internal transfer

The following shows the specifications of the file transfer function (GOT internal transfer).

Item	Specifications
Number of file transfer settings	Max. 100 (FTP transfer settings and GOT internal transfer settings in total)
Required devices for the file access	Data storage
Transfer target	Files in the transfer source folder The files in the sub folders are excluded.
Number of characters for file path	• <Transfer source folder path>\<Transfer file name>: Up to 78 one-byte alphanumeric characters and symbols in total (including backward slash marks) • <Transfer destination folder path>\<Transfer file name>: Up to 78 one-byte alphanumeric characters and symbols in total (including backward slash marks)

87.3 How to use the file transfer function (GOT internal transfer)

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87.3.1 Setting procedure

The following shows the setting procedure for using the file transfer function (GOT internal transfer).

1. In the [Controller Setting] window displayed by selecting [Common] → [Controller Setting] from the GT Designer3 menu, select [File Transfer] and then select [Use the function of File Transfer].
2. Click the [New] button in [File Transfer Setting], and configure the required settings in the displayed [File Transfer Setting] dialog.

☞ Page 2963 [File Transfer] (GOT internal transfer)

3. Write package data to the GOT.

For the communication method between the personal computer and the GOT, refer to the following.

☞ Page 408 Transferring data to the GOT

4. Check the operation of the file transfer function (GOT internal transfer) on the GOT.

☞ Page 2967 Operation of the file transfer function (GOT internal transfer)

87.4 [File Transfer] (GOT internal transfer)

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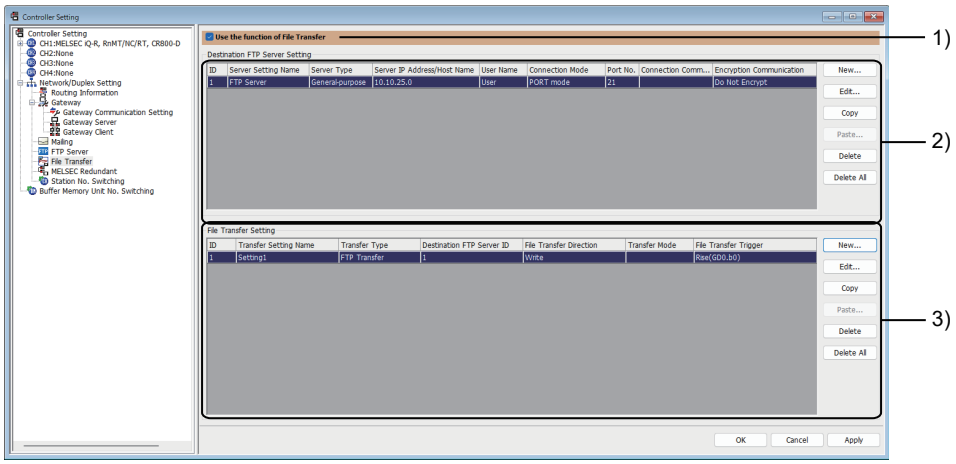
On the [File Transfer] settings screen, configure the combination of file transfer condition settings (file transfer settings).

Window

1. Select [Common] → [Controller Setting] from the menu to display the [Controller Setting] window.
2. Select [File Transfer] in the [Controller Setting] window.

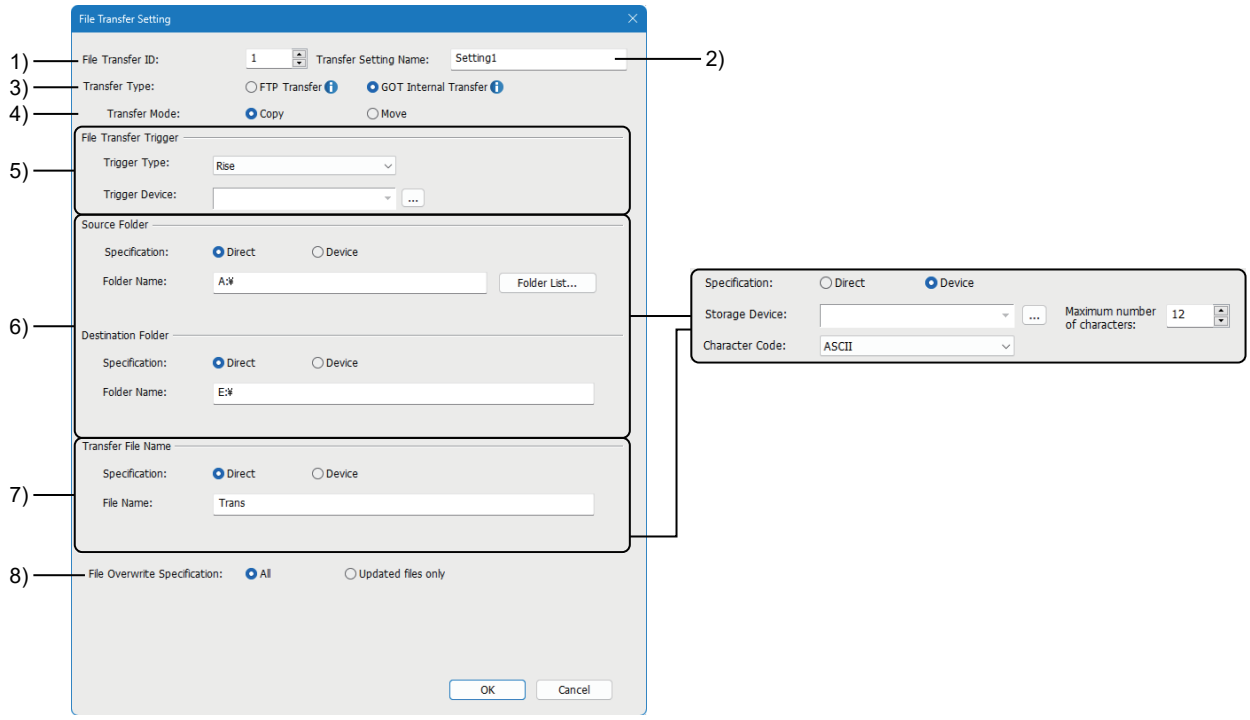


Item			Description
1)	[Use the function of File Transfer]		Select this item when using the file transfer function.
2)	[Destination FTP Server Setting]	—	Not used for GOT internal transfer.
3)	[File Transfer Setting]	—	Lists the file transfer settings. Up to 100 file transfer settings can be configured.
		[New] button	Adds a file transfer setting. Click the button to display the [File Transfer Setting] dialog and add a new file transfer setting. ☞ Page 2964 [File Transfer Setting] dialog (GOT internal transfer)
		[Edit] button	Changes a selected file transfer setting. Click the button to display the [File Transfer Setting] dialog and edit the contents of the selected file transfer setting. ☞ Page 2964 [File Transfer Setting] dialog (GOT internal transfer)
		[Copy] button	Copies the selected file transfer setting.
		[Paste] button	Pastes the copied file transfer setting to the specified destination. Click the button to display the [File Transfer Setting] dialog and specify the destination file transfer ID.
		[Delete] button	Deletes the selected file transfer setting.
		[Delete All] button	Deletes all the file transfer settings.

87.4.1 [File Transfer Setting] dialog (GOT internal transfer)

Set the transfer conditions.

Specify the file transfer trigger, transfer type (copy or move), transfer source and destination folders, and transfer file name.



Item			Description
1)	[File Transfer ID]		Set the ID to specify the file transfer setting. Set the number which does not overlap with that of other file transfer settings. The setting range is [1] to [32767].
2)	[Transfer Setting Name]		Set the file transfer setting name (optional). Up to 32 characters can be set.
3)	[Transfer Type]		Select [GOT Internal Transfer].
4)	[Transfer Mode]		Select the method of transferring a file.
5)	[File Transfer Trigger]	—	Set the trigger to execute the file transfer.
		[Trigger Type]	Set the trigger type.
		[Trigger Device]	When selecting [Rise], [Fall], [ON Sampling], or [OFF Sampling] for the trigger type, set the bit device as the trigger device. ☞ Page 968 Trigger type settings

Item			Description
6)	[Source Folder] [Destination Folder]	—	Specify the transfer source folder path. The folder division symbol "\" is not required at the end. The following drives are settable. Drive A Drive B Drive E Drive F Drive G Drive X (current drive) For the available drives by GOT model, refer to the following. ☞ 1Page 81 Drive configuration and capacity of the GOT For the restrictions on the folder name used in the GOT, refer to the following. ☞ 1Page 84 Restrictions for folder names and file names used in GOT
		[Specification]	Select how to specify the folder name. • [Direct] Select this item to enter the folder name directly. • [Device] Select this item to specify the folder indirectly with a device.
		[Folder Name]	When selecting [Direct] for [Specification], enter the folder name directly. Up to 76 one-byte alphanumeric characters and symbols can be entered for the folder path. To select a folder from the folders set in GT Designer3, click the [Folder List] button. Click the button to display the [Folder List] dialog and select the save destination folder name from the displayed list. The [Folder List] dialog is the same as that of FTP transfer. ☞ Page 2945 [Folder List] dialog The selected item in the [Folder List] dialog is applied only to [Source Folder]. It is not applied to [Transfer File Name].
		[Storage Device]	When selecting [Device] for [Specification], set the starting device of the consecutive word devices that store the folder name. The number of the consecutive word devices is equal to half the set value of [Maximum number of characters] (fractions are rounded up). ☞ Page 2966 Indirect specification of folder names and file names
		[Maximum number of characters]	Set the maximum number of characters for the folder name. The setting range is [8] to [76].
		[Character Code]	The folder name string is stored in the storage device using the specified character code.
7)	[Transfer File Name]	—	Set a transfer file name. Up to 75 one-byte alphanumeric characters and symbols are settable for the file name. One wildcard character can be used in the transfer file name. ☞ Page 2966 Specifying the transfer file with a wild card For the restrictions of the file name used in the GOT, refer to the following. ☞ 1Page 84 Restrictions for folder names and file names used in GOT
		[Specification]	Select the method of specifying the transfer file name. • [Direct] Select this item to enter the transfer file name directly. • [Device] Select this item to specify the transfer file name indirectly with a device.
		[File Name]	When selecting [Direct] for [Specification], enter the transfer file name directly.
		[Storage Device]	When selecting [Device] for [Specification], set the start device of consecutive word devices that store the transfer file name. The number of the consecutive word devices is equal to half the set value of [Maximum number of characters] (fractions are rounded up). ☞ Page 2964 [File Transfer Setting] dialog (GOT internal transfer)
		[Maximum number of characters]	Set the maximum number of characters for the transfer file name. The setting range is [8] to [75].
		[Character Code]	The folder name string is stored in the storage device using the specified character code.
8)	[File Overwrite Specification]		Set the behavior to be performed when the transfer destination folder has a file with the same name as the transfer file. • [All] Overwrites files each time. • [Updated files only] Overwrites an existing file in the transfer destination folder only when the time stamp of the transfer file is equal to or newer than that of the existing file. Otherwise, the file is not transferred.

Point

To transfer only the logging files that are updated by the logging function, select [Updated files only]. Since the transferred files are not resent, the file transfer efficiency is increased.

Precautions

■Moving a file

When selecting [Move] for [Transfer Mode], note the following.

• Moving a file that the GOT refers to

For a file (such as a logging file) that the GOT refers to, copy the file to another location instead of moving it.
Otherwise, you cannot view the file on the GOT because the file is deleted from the source folder after the file transfer is complete.

• Specifying the transfer file name with a wildcard character

When specifying the transfer file name with a wildcard character, you may delete a required file unintentionally.
If the transfer source folder has a required file, take one of the following measures.

◇Select [Copy] for [Transfer Mode].

◇Check in advance that only the files to be transferred are included when specifying the transfer file name with a wildcard character.

■Transferring files in the sub folders

The files in the sub folders of the transfer source folder are not transferred.

■Folder path and transfer file name

The total number of characters of the folder path and transfer file name must be set as shown below.
If the total number of the characters exceeds the following limits, an error occurs.

<Transfer source folder path>\<Transfer file name>: 78 characters or less (including backward slash marks)
<Transfer destination folder path>\<Transfer file name>: 78 characters or less (including backward slash marks)

Specify the folder path and transfer file name by using one-byte alphanumeric characters and symbols.
If you use two-byte characters, the specified file cannot be transferred.

Indirect specification of folder names and file names

When [Device] is selected for [Specification] in the folder name or file name setting, consecutive word devices starting from a specified device store the folder name or file name.
The details are the same as those of FTP transfer.
Refer to the following.

☞ Page 2946 Indirect specification of folder names and file names

Specifying the transfer file with a wild card

The conditions for using wild cards are the same as those for FTP transfer.
Refer to the following.

☞ Page 2947 Specifying the transfer file with a wild card

87.5 Operation of the file transfer function (GOT internal transfer)

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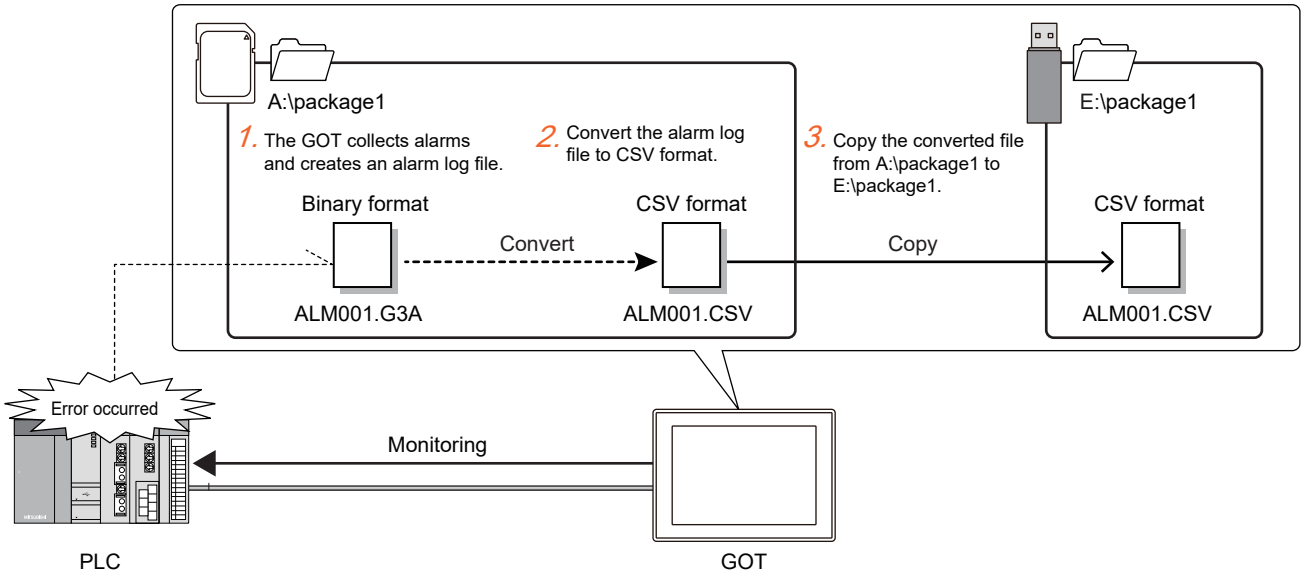
87.5.1 Copying an alarm log file to another drive (application example)

The following shows an example of converting the file of alarm logs collected by the GOT to a CSV file and copying it from the Package1 folder on drive A to the Package1 folder on drive E.
The file conversion is optional.



1. The GOT collects alarm data and creates an alarm log file in the Package1 folder on drive A.
2. Convert the alarm log file from the binary format to the CSV format by using the convert trigger device for the file.
3. Copy the converted file from folder Package1 on drive A to folder Package1 on drive E.

Required settings

This application example requires the following settings.

■Alarm settings

Setting	Description		Reference
[Alarm Common Setting]	[Convert trigger device]	Set any bit device.	☞ Page 2043 [Alarm Common Setting] dialog
	[Convert-in-motion notification device]		
[User Alarm Observation]	[Basic] tab	Set the method of collecting the history. Select [Historical] or [Cumulative].	☞ Page 2045 [User Alarm Observation] dialog
	[Device] tab	Set the target device for observation.	
	[File Save] tab	Select [Save alarm log files] and set the save destination for the log file and the storage trigger. Select [Rise] for the trigger type of the storage trigger.	

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■Settings of the file transfer function (GOT internal transfer)

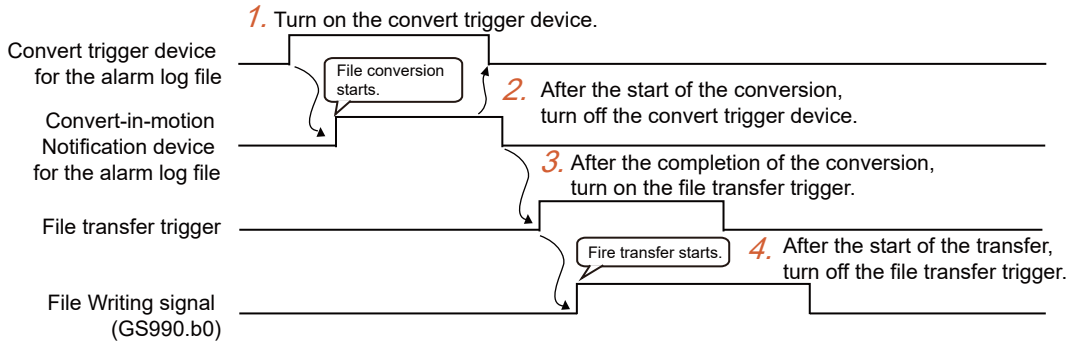
Setting	Description		Reference
[File Transfer Setting]	[Transfer Type]	Select [GOT Internal Transfer].	☞ Page 2964 [File Transfer Setting] dialog (GOT internal transfer)
	[Transfer Mode]	Select [Copy].	
	[File Transfer Trigger]	Set [Rise].	
	[Transfer File Name]	Set the name of the alarm log file specified in the alarm monitoring.	

■GOT special register (GS)

Setting	Description	Reference
GS990.b0	File Writing signal	☞ Page 2969 Write device

Action

The following shows an example of converting and transferring an alarm log file.



1. Turn on the convert trigger device for the alarm log file.

The GOT starts the file conversion and the Convert-in-motion Notification device turns on.

2. Turn off the convert trigger device after the start of the file conversion.

Upon completion of the file conversion, the Convert-in-motion Notification device turns off.

3. Turn on the file transfer trigger.

The GOT starts the file transfer and the File Writing signal (GS990.b0) turns on.

4. Turn off the file transfer trigger after the start of the file transfer.

Upon completion of the file transfer, the File Writing signal (GS990.b0) turns off.

For the convert trigger device for the alarm log file, refer to the following.

☞ Page 2043 [Alarm Common Setting] dialog

Turning on the file transfer trigger automatically

In the example above, the user needs to turn on the file transfer trigger after the file conversion.

The user also needs to turn off the convert trigger device for the alarm log file and file transfer trigger after the start of the processing.

Using two project scripts enables these operations to be performed automatically.

The setting example is the same as that of FTP transfer.

Refer to the following.

☞ Page 2950 Turning on the file transfer trigger automatically

87.5.2 Checking the processing status

With the file transfer function (GOT internal transfer), you can check the file transfer status, errors, and other relevant information by using GOT special registers (GS).
For details on the devices, refer to the following.
☞ Page 3581 GOT special register (GS)

Read device

Device	Name		Description
GS401	File Transfer Control		Controls the file transfer.
	b0	Clear File Transfer Error signal	Turn on this signal to clear the error code stored in the following device or to turn off the following signals. • File Transfer Error No. (GS989) • Warning signal (GS990.b14) • File Transfer Error signal (GS990.b15)

Write device

Device	Name		Description
GS987	Executing File Transfer ID Notification		Stores the file transfer ID of the file transfer in execution.
GS989	File Transfer Error No.		Stores the error code of an error that occurred in the file transfer. Turn on GS401.b0 to clear the stored error code. ☞ Page 2970 Error codes for the file transfer function
GS990	File Transfer Status		Notifies the file transfer processing status.
	b0	File Writing signal	Turns on during the file transfer. When [Trigger Type] is [Rise] or [Fall], this bit turns off when the trigger condition is dissatisfied after the file transfer.
	b14	Warning signal	Turns on when the error with which the processing can be continued occurs during the file transfer. Turns off when the Clear File Transfer Error signal (GS401.b0) is turned on.
	b15	File Transfer Error signal	Turns on when the error with which the processing cannot be continued occurs during the file transfer. Files cannot be transferred while this signal is on. Turns off when the Clear File Transfer Error signal (GS401.b0) is turned on.
GS991	Number of Transfer Target Files		Stores the total number of files to be transferred. When the transfer file name is specified with the wild card, the total count includes the files which are not transferred due to an invalid number of characters for the folder name or other causes. However, the total count does not include files with invalid names, such as those consisting of two-byte characters. Holds the device value until the processing for the next file transfer ID is started.
GS992	Number of Transferred Files		Stores the total number of the files already transferred. The total count includes the files which are not transferred due to the error or other causes. Holds the device value until the processing for the next file transfer ID is started.

Precautions

■Handling of a file transfer error

If an error occurs in the file transfer, turn on the Clear File Transfer Error signal (GS401.b0).
Upon turn-on of GS401.b0, the File Transfer Error signal (GS990.b15) is turned off.
While the File Transfer Error signal (GS990.b15) is on, the GOT does not start transferring the subsequent files because the file transfer is recognized to have an error.

87.5.3 Operation when the file transfer trigger conditions are satisfied

After the file transfer trigger conditions are satisfied, the operation is the same that of FTP transfer.
Refer to the following.
☞ Page 2953 Operation when the file transfer trigger conditions are satisfied

87.6 Precautions

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Offline status of the GOT

When the GOT becomes offline during the file transfer, the file transfer is interrupted.
During the file transfer, do not perform the operation that causes the GOT to be offline, such as establishing the communication with GT Designer3.

87.7 Relevant settings

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Configure the relevant settings other than those specific to the file transfer function (GOT internal transfer) as required.

GOT internal devices

☞ Page 3581 GOT special register (GS)

Function	Setting item
Turning on this signal to clear an error that occurred in the file transfer	GS401.b0
Storing the file transfer ID of the file transfer in execution	GS987
Storing the error code of an error that occurred in the file transfer	GS989
Notifying the file transfer processing status	GS990
Storing the total number of files to be transferred	GS991
Storing the total number of transferred files	GS992

87.8 Troubleshooting

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Troubleshooting for the file transfer function (GOT internal transfer)

The following shows the troubleshooting for the file transfer function (GOT internal transfer).

Symptom	Error details	Corrective action
File cannot be transferred.	The system application (add-on function) for the file transfer function is not installed on the GOT.	Write the package data that contains the system application (add-on function) for the file transfer function to the GOT.

Error codes for the file transfer function

The error codes stored in GOT special register GS989 (File Transfer Error No.) are the same as those of FTP transfer.
Refer to the following.

☞ Page 2958 Error codes for the file transfer function

PART 29 Security settings

88 Protecting a project by registering users (Project security)

89 Restricting GOT screen operations and access from external devices (operator authentication (Mode 2))

90 Restricting display and operation on the GOT (Screen security)

91 Configuring the security settings for operations in the utility (Functional operation security)

92 Configuring the security setting for transferring data (Data transfer security)

93 Protecting the files in the GOT (Information protection function)

94 Encrypting communication data (Encrypted communication function)

88 Protecting a project by registering users (Project security)

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☞ Page 2972 Overview of the project security
☞ Page 2974 Specifications of the project security
☞ Page 2980 How to use the project security
☞ Page 2984 [User Addition] dialog
☞ Page 2985 [User Management] dialog
☞ Page 2987 [Setup Access Authority] dialog
☞ Page 2988 [Change Password] dialog

88.1 Overview of the project security

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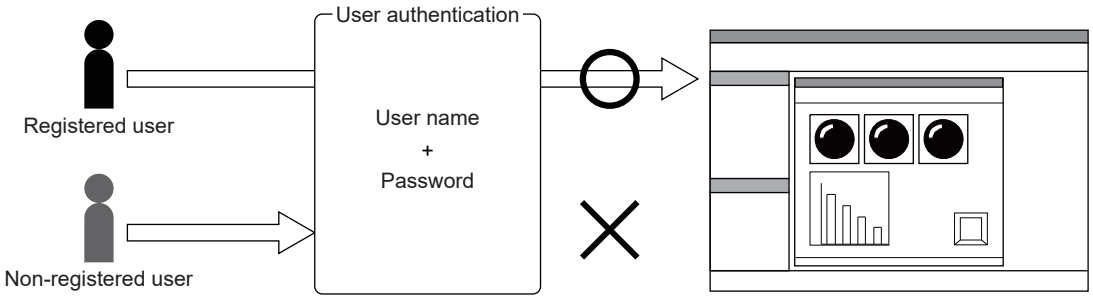
Setting the project security restricts displaying and editing a project.
For specifications and settings of the project security, refer to the following.

☞ Page 2974 Specifications of the project security
☞ Page 2980 How to use the project security

Preventing a project from being browsed by unauthorized people

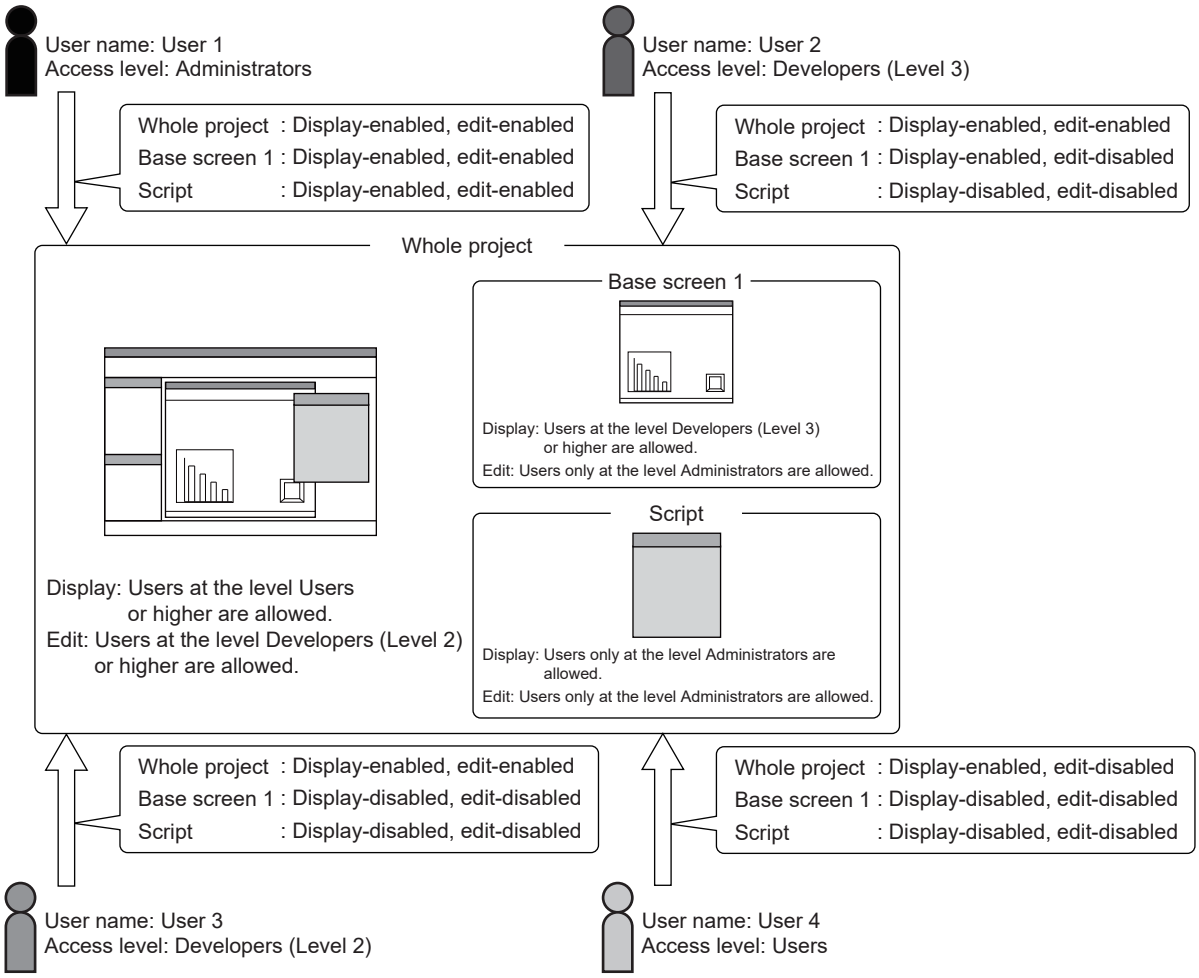
For the project which users are registered to, the user authentication is required for opening the project.
Only registered users can open the project.



Restricting for displaying and editing a project according to the access level of users

You can set restriction for displaying and editing the settings of the project according to the user's access level.

You can set restriction for displaying and editing specific screens and scripts individually besides the whole project.



88.2 Specifications of the project security

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☞ Page 2974 Operation restricted by the project security
☞ Page 2975 Concept of the project security
☞ Page 2977 Operating the project to which the project security is set
☞ Page 2978 Restricting the project operation by the access authority

88.2.1 Operation restricted by the project security

The project security restricts the following operations.

- Viewing and editing a project in GT Designer3
- Viewing and editing a project by screen according to the user access level
- Operation to open a project with GT SoftGOT3000

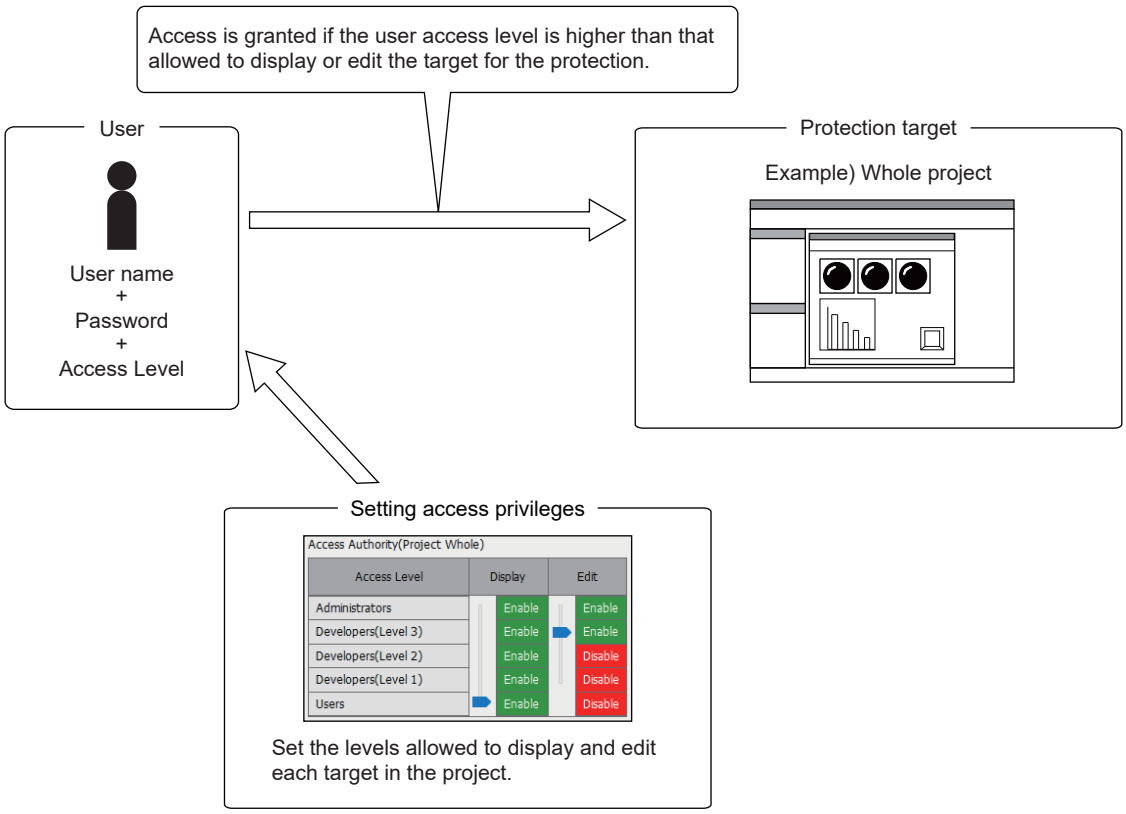
To restrict operations other than the above, configure other security function settings with reference to the following.

☞ Page 38 Security function

Using multiple security functions in combination further strengthens the security.

88.2.2 Concept of the project security

When registering users to the project, set their user names and passwords for authentication and their access level.
The access privilege set for the project, screens, or others and the user's access level determine whether the user can display and edit the project or not.

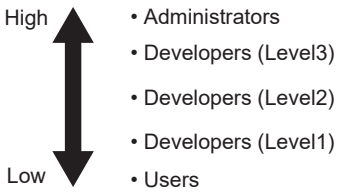


Number of registrable users

Up to 128 users can be registered.

Access level

The following five access levels are provided.



- Administrators
- Developers (Level3)
- Developers (Level2)
- Developers (Level1)
- Users

Access privilege type

The following two access privileges are provided.

Access privilege	Description
Display	Allows the user to display the project or screen settings. The users whose access levels do not allow them to display the project or settings cannot display the setting dialog or screen images.
Edit	Allows the user to edit, delete, and save the project or screen settings. The users whose access levels do not allow them to edit the project or settings can display the setting dialog or screen images, but cannot change the settings. If displaying is disabled, editing is always disabled.

Setting access privileges

You can set a bottom access level for displaying and editing each target in the project.
If displaying is disabled, editing is always disabled.

Access level	Access privilege	
	Display	Edit
Administrators	Enable (fixed)	Enable (fixed)
Developers(Level3)	Select Enable or Disable.	Select Enable or Disable.
Developers(Level2)	Select Enable or Disable.	Select Enable or Disable.
Developers(Level1)	Select Enable or Disable.	Select Enable or Disable.
Users	Select Enable or Disable.	Disable (fixed)

Protection target

The following shows the access privilege targets.

Access privilege target	Description
Whole project	You can collectively protect all settings in a project (such as the screen setting and common setting).
Base screen Window screen Mobile screen	Setting restriction stronger than the access privilege set for the whole project to the screens allows specific users to display or edit the screens. Access privileges can be set per screen.
Script	Setting restriction stronger than the access privilege set for the whole project to the scripts allows specific users to display or edit the scripts. The same access privilege is set for the project scripts, the screen scripts, the script symbols and the script list. The scripts of script parts objects, object scripts, and object script symbols are not protected.

Always set an access privilege for the whole project.
You can also set the access privilege for each base screen, window screen, and mobile screen, or those screens by screen type, and the whole of scripts. This allows specific users to display or edit the relevant screens or scripts.

88.2.3 Operating the project to which the project security is set

Logging in to a project

To open the project to which the project security is set, the user authentication is required.

Input the registered user name and password to log in to the project.

To log in to the project with another user name, close the project and open it again.

If any password or user information is changed, the changes are effective in the next login.

Package data transfer and the project security

■Writing package data

The setting of the project security is written to the GOT with the package data.

If a project with the project security in the GOT is overwritten by writing package data with different project security into the GOT, the project security in the GOT is overwritten as well.

The project security can be set even after the package data is written to the GOT.

■Reading the package data

If the project security is set to a project in the GOT and the project is read from the GOT, the project security is read as well.

To open the project read from the GOT, the user authentication is required.

To restrict reading of a project from the GOT, use a function different from the project security.

The function to be used differs depending on the security mode.

Security mode	Description
Mode 1	☞ Page 3062 Configuring the security setting for transferring data (Data transfer security)
Mode 2	☞ Page 2989 Restricting GOT screen operations and access from external devices (operator authentication (Mode 2))

Canceling the project security

Deleting all the registered users cancels the project security.

☞ Page 2982 Deleting a user

Opening a project with GT SoftGOT3000

The operation to open a project to which the project security is set differs depending on the security mode.

Security mode	Operation
Mode 1	User authentication is performed. Enter the registered user name and password to open the project.
Mode 2	User authentication using project security is not performed. Operator authentication (mode 2) is performed in mode 2. ☞ Page 2989 Restricting GOT screen operations and access from external devices (operator authentication (Mode 2))

88.2.4 Restricting the project operation by the access authority

The following shows available operations and unavailable operations according to the user's access privilege.

☞ Page 2978 Operations for the project
☞ Page 2979 Operations for the screens
☞ Page 2979 Operations for the scripts
☞ Page 2979 Operations for the libraries

Operations for the project

■Display-allowed and edit-allowed users

The users can open the project to add, change, or delete screens or settings including the common setting and save the project.

The same access privilege set for the whole project is applied to the screen that has been newly added.

The same access privilege set for the screen that has been overwritten is applied to the target screen to be overwritten.

If the access authority is set for screens or scripts individually, the following operations are restricted.

Operation	Restriction	Condition
Changing the GOT type	In the [GOT Type Setting] dialog, the change of [Type] cannot be determined.	The project includes a screen or a script that cannot be edited by the user who is logging in.
Changing the communication settings	In the [Controller Setting] window, the changes of [Manufacturer] and [Type] cannot be determined.	
Verifying projects between the GOT and GT Designer3	The project in GT Designer3 cannot be verified with the one in the GOT.	The project includes a screen or a script that cannot be displayed by the user who is logging in.
Verifying the project being opened with the saved project	The project being opened cannot be verified with the saved project.	

■Display-allowed and edit-prohibited users

The users can open the project, but cannot add, change, and delete the settings and save the project.

Only the following operations are allowed for those users.

- Deleting a project
- Writing package data to the GOT or the data storage
- Verifying projects between the GOT and GT Designer3
- Verifying the project being opened with the saved project
- Setting the project security
- Printing (Display-disabled screens or scripts cannot be printed.)

If the access authority is set for screens or scripts individually, the following operations are restricted.

Operation	Restriction	Condition
Verifying projects between the GOT and GT Designer3	The project in GT Designer3 cannot be verified with the one in the GOT.	The project includes a screen or a script that cannot be displayed by the user who is logging in.
Verifying the project being opened with the saved project	The project being opened cannot be verified with the saved project.	

■Display-prohibited and edit-prohibited users

The users cannot open the project.

The users cannot write package data to the GOT or the data storage.

Operations for the screens

■Display-allowed and edit-allowed users

The users can display, copy, change, and delete the screens.

If a screen to be displayed by the set overlay screen or in the window preview is display-disabled, a dummy screen will be displayed.

■Display-allowed and edit-prohibited users

The users can display and copy the screens, but cannot change or delete them.

The users can copy figures and objects on the screens, but cannot arrange, move, change, and delete them.

If a screen to be displayed by the set overlay screen or in the window preview is display-disabled, a dummy screen will be displayed.

■Display-prohibited and edit-prohibited users

The users cannot display, change, and delete the screens.

The information on the display-disabled screens is not displayed in the windows where the list of the settings is displayed such as the data browser.

The display-disabled screens are displayed when simulation is executed.

Operations for the scripts

■Display-allowed and edit-allowed users

The users can display and change the script setting.

Even when the users are allowed to edit scripts, they cannot edit the screen script set on an edit-disabled screen.

■Display-allowed and edit-prohibited users

The user can display the script setting, but cannot add, change or delete the setting.

■Display-prohibited and edit-prohibited users

The user cannot display the script setting.

The information on the scripts is not displayed in the windows where the list of the settings is displayed such as the data browser.

Operations for the libraries

Even the users who are not allowed to edit the project can register, change, and delete the library data.

88.3 How to use the project security

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☞ Page 2980 For the first setting of the project security
☞ Page 2981 Logging in to the project
☞ Page 2982 User management (addition, deletion, and change)
☞ Page 2983 Setting an access privilege
☞ Page 2983 Changing a password

88.3.1 For the first setting of the project security

First, register a user whose access level is Administrators.

1. Select [Project] → [Security] → [User Management] from the menu to display the [User Addition] dialog.
(After the first user is registered, the [User Management] dialog is displayed by the operation above.)

2. Set [User Name], [Access Level], [Password], [Re-enter Password] and click the [OK] button.
☞ Page 2984 [User Addition] dialog

3. The set user is registered and the user is logged in the project.

4. Overwrite the project.
☞ Page 224 Overwriting a project

5. Add other users and set the access privilege of them.
☞ Page 2982 User management (addition, deletion, and change)
☞ Page 2983 Setting an access privilege

Point

Do not forget the user name and the password for Administrators.
If you do so, you cannot open the project.

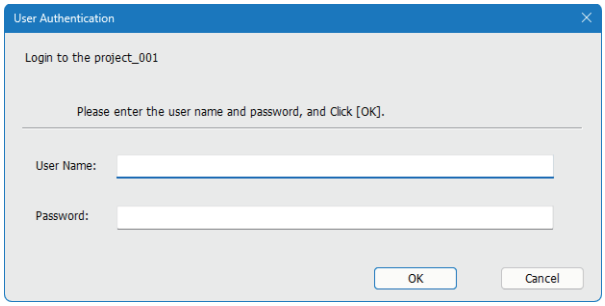
88.3.2 Logging in to the project

1. Open the project with GT Designer3.

☞ Page 216 Opening a project

2. The [User Authentication] dialog is displayed.

Input the user name and the password for logging in and click the [OK] button.



3. When the user is authorized, the project opens.

The name of the user who is logged in the project is displayed on the status bar of GT Designer3.

Point

When you forget a password, log in to the project as the user whose access level is Administrators and change the password.

If you forget the user name and the password for the user whose access level is Administrators, you cannot open the project.

Delete the project and create a new project.

88.3.3 User management (addition, deletion, and change)

Only the users who are allowed to edit the whole project can manage the user information.

The manageable range of users differs depending on the access level of the user who is logged in.

Access level	Manageable range of users
Administrators	The user can add other users and change the user information over the full range of the access levels.
Developers(Level3) Developers(Level2) Developers(Level1)	The user can add other users or change the user information. However, the access level of the users to be added or changed must be lower than that of the user who is logged in.
Users	The user cannot add other users and change the user information.

Adding a user

1. Select [Project] → [Security] → [User Management] from the menu to display the [User Management] dialog.

☞ Page 2985 [User Management] dialog

2. Click the [Add] button to display the [User Addition] dialog.

☞ Page 2984 [User Addition] dialog

3. Set [User Name], [Access Level], [Password], [Re-enter Password] and click the [OK] button to register the set user.
4. Click the [OK] button in the [User Management] dialog to determine the setting.

Deleting a user

1. Select [Project] → [Security] → [User Management] from the menu to display the [User Management] dialog.

☞ Page 2985 [User Management] dialog

2. Select a user to be deleted and click the [Delete] button to delete the user.
3. Click the [OK] button in the [User Management] dialog to determine the change.

Changing the user information

1. Select [Project] → [Security] → [User Management] from the menu to display the [User Management] dialog.

☞ Page 2985 [User Management] dialog

2. Select a user to be changed and click the [Replace] button to display the [Change User Data] dialog.

☞ Page 2986 [Change User Data] dialog

3. Set [User Name] and [Access Level] and click the [OK] button to change the user information.
4. Click the [OK] button in the [User Management] dialog to determine the change.

88.3.4 Setting an access privilege

Only the users who are allowed to edit the whole project can set the access privilege.

1. Select [Project] → [Security] → [Setup Access Authority] from the menu to display the [Setup Access Authority] dialog.

☞ Page 2987 [Setup Access Authority] dialog

2. Set the access privilege and click the [OK] button to determine the setting.

88.3.5 Changing a password

Only the users who are allowed to edit the whole project can change the passwords.

Changing the password of the user currently logging in

1. Select [Project] → [Security] → [Change Password] from the menu to display the [Change Password] dialog.

☞ Page 2988 [Change Password] dialog

2. Set [Old Password], [New Password], and [Re-enter Password] and click the [OK] button to change the password.

Changing the password of the user who is managed by the project

1. Select [Project] → [Security] → [User Management] from the menu to display the [User Management] dialog.

☞ Page 2985 [User Management] dialog

2. Select the user whose password is to be changed and click the [Password change] button to display the [Change Password] dialog.

☞ Page 2988 [Change Password] dialog

3. Set [New Password] and [Re-enter Password] and click the [OK] button to change the password.
4. Click the [OK] button in the [User Management] dialog to determine the change.

88.4 [User Addition] dialog

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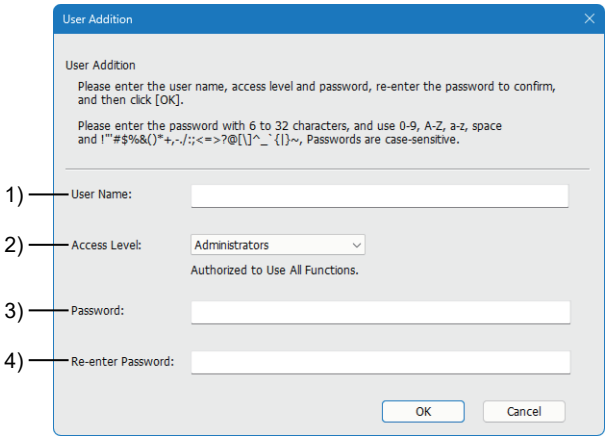

Item		Description
1)	[User Name]	Set a user name for authentication. Up to 20 characters can be set. Numeric characters, A to Z, a to z, a one-byte space, and the following symbols are available. !"#$%&()*+,-./:;<=>?@[\]^_`{|}~ The characters are case-sensitive. You cannot place a one-byte space at the end of a user name. You cannot set a user name which is already registered.
2)	[Access Level]	Select an access level for the user to be set. High • Administrators • Developers (Level3) • Developers (Level2) • Developers (Level1) Low • Users For the first setting of the project security, the user access level is fixed to [Administrators]. The Administrators level allows the user to select any access level. The Developers(Level3), Developers(Level2), and Developers(Level1) levels allow the user to select only an access level lower than that of the user who is logged in.
3)	[Password]	Set a password for authentication. The password must be between 6 to 32 characters. Numeric characters, A to Z, a to z, a one-byte space, and the following symbols are available. !"#$%&'()*+,-./:;<=>?@[\]^_`{|}~ The characters are case-sensitive. The input password is displayed as asterisks.
4)	[Re-enter Password]	Input the same password as the one input in [Password]. The input password is displayed as asterisks.

88.5 [User Management] dialog

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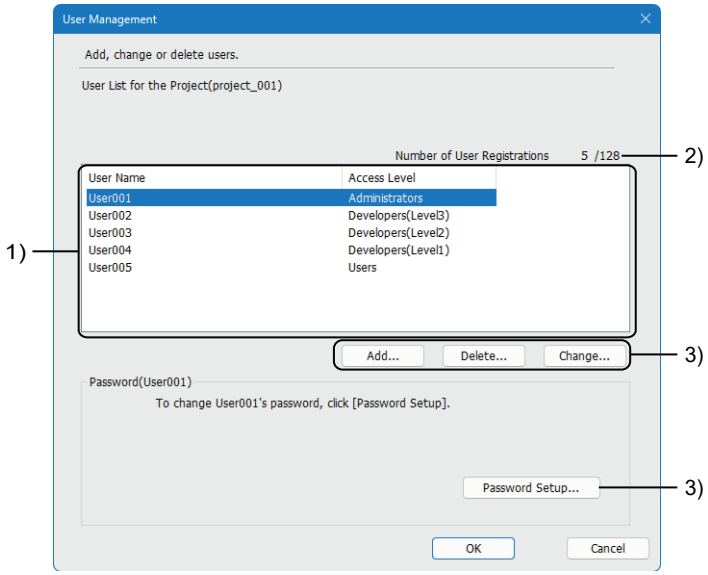

Item			Description
1)	User list		Displays the user names and the access levels of the registered users.
2)	[Number of User Registrations]		The number of registered users
3)	Management button	—	Use these buttons to manage the users. The Administrators level allows the user to add other users and change the user information across all access levels. The Developers(Level3), Developers(Level2), and Developers(Level1) levels allow the user to add other users and change the user information within access levels lower than those of the user who is logged in.
		[Add] button	Displays the [User Addition] dialog. Click this button to add a user. ☞ Page 2984 [User Addition] dialog
		[Delete] button	Deletes the user selected in the user list. Deleting all the registered users cancels the security setting.
		[Change] button	Displays the [Change User Data] dialog. You can change the access level and the password of the user selected in the user list. ☞ Page 2986 [Change User Data] dialog
		[Password Setup] button	Displays the [Change Password] dialog. You can change the password of the user selected in the user list. ☞ Page 2988 [Change Password] dialog

88.5.1 [Change User Data] dialog

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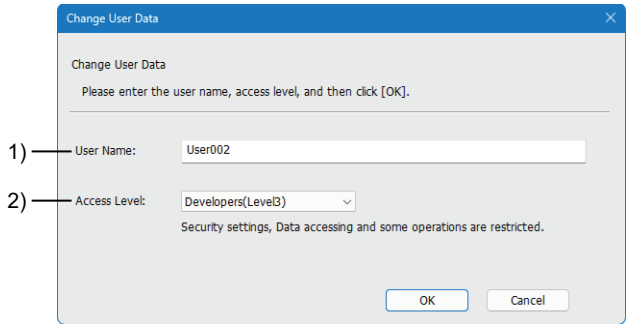

Item		Description
1)	[User Name]	Set a user name for authentication. Up to 20 characters can be set. Numeric characters, A to Z, a to z, a one-byte space, and the following symbols are available. !"#$%&()*+,-./:;<=>?@[\]^_`{|}~ The characters are case-sensitive. You cannot place a one-byte space at the end of a user name. You cannot set a user name which is already registered.
2)	[Access Level]	Select an access level for the user to be set. High • Administrators • Developers (Level3) • Developers (Level2) • Developers (Level1) Low • Users The Administrators level allows the user to select any access level. The Developers(Level3), Developers(Level2), and Developers(Level1) levels allow the user to select only an access level lower than that of the user who is logged in.

88.6 [Setup Access Authority] dialog

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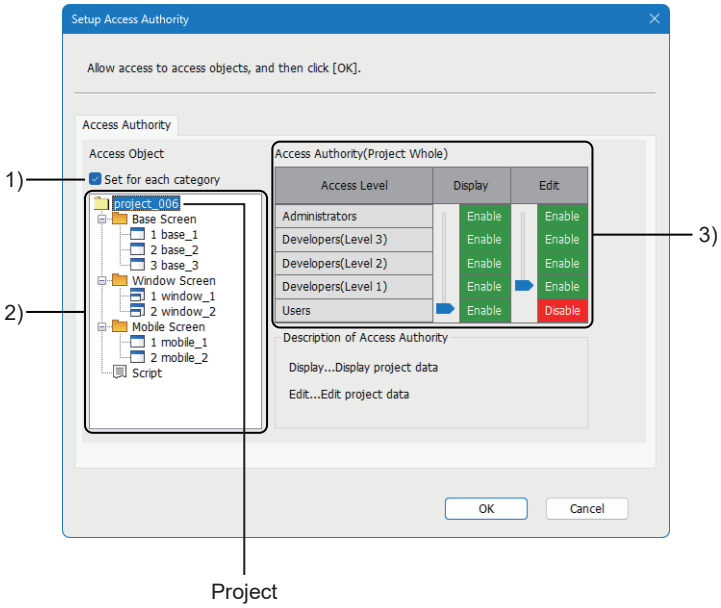
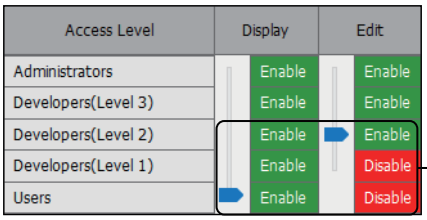
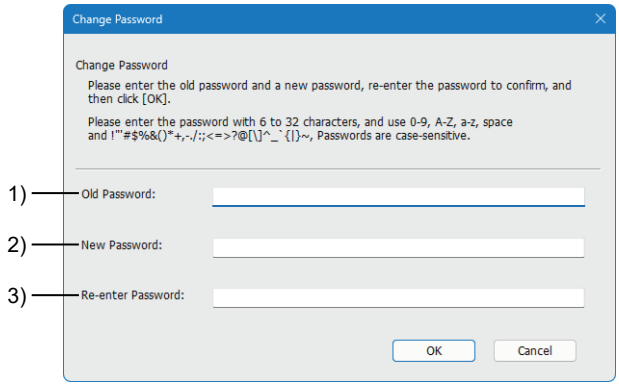


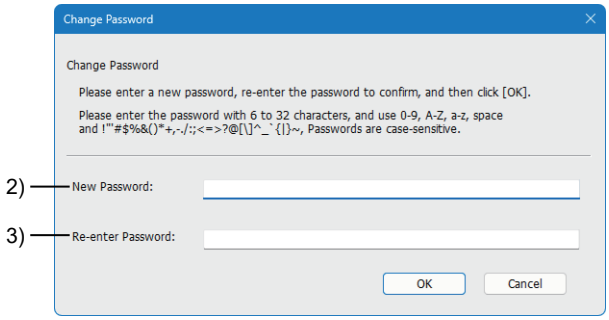
Item			Description
1)	[Set for each category]		Allows you to set the access privilege for the base screens, window screens, mobile screens, or the whole of scripts. Displays the targets for which the access privilege are set in the tree view in the access target list.
2)	Access target list	—	Select a target for which the access privilege is set.
		Project	Set an access privilege for the whole project.
		[Base Screen] [Window Screen] [Mobile Screen]	Lists the base screens, window screens, and mobile screens. The access privilege is settable for each screen. To set the access privilege by screen type, select [Base Screen], [Window Screen], or [Mobile Screen].
			Even if users are disallowed to edit a screen, an edit-enabled part, script, or others set for the screen is not protected.
		[Script]	Sets the same access privilege for the project scripts, screen scripts, script lists, and the whole script symbols. This setting is not applied to script parts, object scripts, and object script symbols.
3)	[Access Authority]	—	Move each slider up and down to set an access privilege for a target selected from the access target list. The Administrators level allows the user to set an access privilege across all access levels. The Developers(Level3), Developers(Level2), and Developers(Level1) levels allow the user to set an access privilege within access levels lower than those of the user who is logged in. Example) For the user whose access level is Developers(Level2)  If the access privilege is set for the screens and scripts individually, only the user who is allowed to edit the screens or the scripts can change their access levels.
		[Display]	Set a bottom access level for displaying the target selected in the access target list.
		[Edit]	Set a bottom access level for editing the target selected in the access target list.

88.7 [Change Password] dialog

GT37 SoftGOT3000



When the password of a login user is changed



When the password of a user who is not logged in is changed

Item		Description
1)	[Old Password]	Input the current password for authentication. The input password is displayed as asterisks.
2)	[New Password]	Set a new password. The password must be between 6 to 32 characters. Numeric characters, A to Z, a to z, a one-byte space, and the following symbols are available. !"#$%&'()*+,-./:;<=>?@[\]^_`{|}~ The characters are case-sensitive. The input password is displayed as asterisks.
3)	[Re-enter Password]	Input the same password as the one input in [New Password]. The input password is displayed as asterisks.

89 Restricting GOT screen operations and access from external devices (operator authentication (Mode 2))

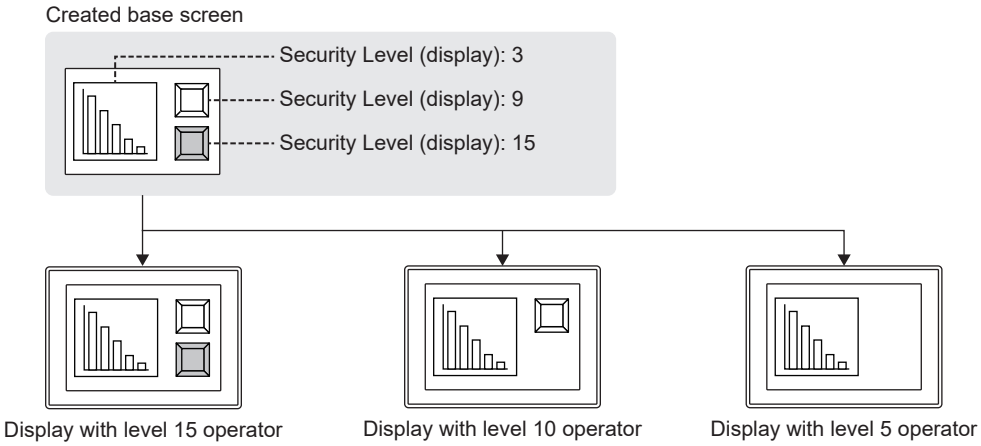
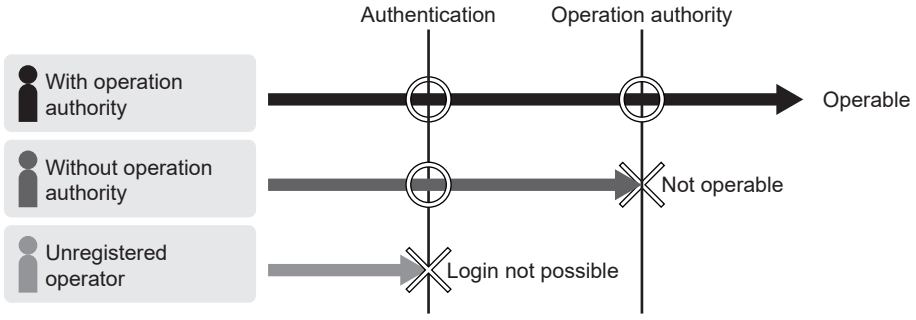
GT37 SoftGOT3000

☞ Page 2991 Specifications of the operator authentication (Mode 2)
☞ Page 3002 How to set the operator authentication (Mode 2)
☞ Page 3003 Registering or editing an operator or group
☞ Page 3004 Editing an operator on a personal computer
☞ Page 3032 Common settings relevant to authentication (Operator authentication setting)
☞ Page 3034 Login
☞ Page 3034 Logout
☞ Page 3035 [Security] ([Screen Security] tab) (Mode 2)
☞ Page 3037 Relevant settings

Point

This function can be used when the security mode is set to mode 2.

The operator authentication (Mode 2) is a function to register operators to the GOT and restrict GOT screen operations and access from external devices.
Each operator has the operator information including the operator name, password, level, and group.
Restrict operations and access as follows.

Restriction system	Description
Restriction by level	Set security levels for screens and objects, which enable display and operation of the screens and objects. An operator can operate the screens and objects with the levels equal to or lower than the level of the operator. Example) Restrict displayable objects for each operator. 
Restriction by operation authority	Each operator belongs to one group and is granted the operation authority of the group to which the operator belongs. The operator can perform operations covered by the granted operation authority only. 

The information on the operator who performed an operation is recorded in the operation log, allowing you to check who did what operation and when.

☞ Page 1909 Configuring the settings for collecting the GOT operation history ([Operation Log])

89.1 Specifications of the operator authentication (Mode 2)

GT37 SoftGOT3000

☞ Page 2991 Protection target
☞ Page 2991 Authentication type
☞ Page 2992 Operator specifications
☞ Page 2993 Group specifications
☞ Page 3001 Operator management information

89.1.1 Protection target

The following table lists the operations and functions protected by the operator authentication (Mode 2).

Protection target		Restriction system	Description
GOT screen operation	Switching to the utility	Restriction by operation authority	Only operators with the corresponding operation authorities can perform these operations.
	Displaying each setting screen from the utility		
	Switching between user-created screens	Restriction by level	Set security levels for screens and objects, which enable display and operation of the screens and objects. An operator can operate the screens and objects with the levels equal to or lower than the level of the operator.
	Displaying an object		
	Operating an object		
Data transfer		Restriction by operation authority	Authentication is performed when the GOT is accessed from GT Designer3 or Data Transfer Tool. Only operators with the operation authority which allows the data transfer can transfer data.
GOT Mobile function			Authentication is performed when the server (GOT) is accessed from a client. Only operators with the corresponding operation authorities can access the server (GOT).
OPC UA server function			
FTP server function			

For the operation authorities and corresponding operations, refer to the following.

☞ Page 2994 Operation authorities

89.1.2 Authentication type

Operators are authenticated with the operator name and password.

Authentication with a barcode reader or RFID controller (external authentication) can also be used for authentication to operate GOT screens.

☞ Page 3033 External authentication

89.1.3 Operator specifications

Up to 1000 operators can be registered to one GOT.

For information on how to register or edit an operator, refer to the following.

Method	Reference
With the utility	☞ Page 3003 Registering or editing an operator or group
With a personal computer	☞ Page 3004 Editing an operator on a personal computer

Each operator has the following operator information.

Operator information	Description
Operator name	An identifier to determine the operator. The setting range is 1 character to 16 characters. Alphanumeric characters, one-byte spaces, and the following symbols are usable. ! " # $ % & ' ( ) * + , ` - . / : ; < = > ? @ [¥] ^ _ { | } ~ A one-byte space at the end of a string is invalidated. Alphabetic characters are case-sensitive. Duplication is not possible.
Password	A password used to authenticate the operator. The character type and the number of characters are determined by [Password requirement settings] set in the [Operator authentication management] screen ([Authentication setting] tab). ☞ Page 3032 Common settings relevant to authentication (Operator authentication setting)
Group	Each operator belongs to one group. The operation authority is set for each group, and the operator is grated the operation authority of the group to which the operator belongs. ☞ Page 2993 Group specifications
Operator ID	An ID assigned to each operator. The ID of the logged-in operator is stored in the specified device when [Store operator ID to the device] is enabled in the [Environmental Setting] window ([Security]). The setting range is [1] to [32767]. Duplication is not possible.
Level	A value to specify the display and operation to be allowed. An operator can operate the screens and objects with the levels equal to or lower than the level of the operator. The setting range is [0] to [15].
Making a password indefinite	The password expiration date can be made indefinite. If it is not made indefinite, [Password expiration date] set in the [Operator authentication management] screen ([Authentication setting] tab) is applied.
Disabling an operator account	Login attempts to a disabled operator account fail. Use this function in the following cases. • To avoid deleting the operator information • To disable the operator temporarily
Changing the password at the next login	The password must be changed at the next login. This function is used to prompt the operator to change the password set by the administrator. The message will not appear after the password is changed at the next login.
External authentication	Set whether to use an external device for the authentication. When performing external authentication, set the external authentication ID. The external authentication ID is used to perform authentication using information read with an external device such as an RFID controller. In the information read with an external device, the data (starting position and available byte number) used as the external authentication ID is determined by [External authentication ID] set in the [Operator authentication management] screen ([Authentication setting] tab).
Operator account lock	If the same operator fails authentication consecutively within 5 minutes, the account for that operator is locked. For the number of consecutive failures before the account is locked, [Lock operator individually after login failures] set in the [Operator authentication management] screen ([Authentication setting] tab) is applied. Login attempts to a locked operator account fail. The locked state is not cleared until an operator with either of the following operation authorities unlocks the account in the [Operator authentication management] screen ([Operator information] tab). • [Edit operator information] • [Sub-administrator authority]
Password history	The history of passwords used in the past. For the number of passwords saved in the history, [Specify number of pwd histories] set in the [Operator authentication management] screen ([Authentication setting] tab) is applied.
Password change date	The last date and time the password was changed.

89.1.4 Group specifications

Up to 16 groups can be registered to one GOT.

You can register or edit a group in the utility.

☞ Page 3003 Registering or editing an operator or group

The following shows the group types.

Group type	Description
Administrators group	This group has all the operation authorities. The group is provided by default and cannot be edited. At least one operator must belong to the Administrators group.
Users group	This group can operate user-created screens. The group is provided by default and cannot be edited.
User-defined group	This group can be created by users. The group name and operation authority can be edited. Up to 14 groups can be registered.

Each group has the following group information.

Item	Description
Group number	This item is fixed to [1] for the Administrators group and [2] for the Users group. The setting range for user-defined groups is [3] to [16]. Duplication is not possible.
Group name	Name of the group. This item is fixed to [Administrators] for the Administrators group and [Users] for the Users group. The setting range is 1 character to 20 characters. Alphanumeric characters, one-byte spaces, and the following symbols are usable. ! " # $ % & ' ( ) * + , ` - . / : ; < = > ? @ [¥] ^ _ { | } ~ A one-byte space at the end of a string is invalidated. Alphabetic characters are case-sensitive. Duplication is not possible.
Operation authority	Authority to operate GOT screens and access information assets. ☞ Page 2994 Operation authorities

Operation authorities

The following shows the operation authorities that can be granted to groups.

Operation authority	Authority by group			Model
	Administrators group	Users group	User-defined group	
☞ Page 2994 User screen operation	Authorized	Authorized	Authorized	GT37 SoftGOT3000
☞ Page 2995 [Current drive reading]	Authorized	Not authorized	Editable	
☞ Page 2995 [Current drive writing]	Authorized	Not authorized	Editable	
☞ Page 2995 [Non-current drive reading/writing]	Authorized	Not authorized	Editable	
☞ Page 2995 [GOT settings in the utility]	Authorized	Not authorized	Editable	
☞ Page 2995 [Startup package data reading/writing / F/W update]	Authorized	Not authorized	Editable	GT37 SoftGOT3000
☞ Page 2996 [Open a project data / Start monitoring]	Authorized	Not authorized	Editable	GT37 SoftGOT3000
☞ Page 2996 [Reading/writing a device from an external device]	Authorized	Not authorized	Editable	GT37 SoftGOT3000
☞ Page 2996 [Edit operator information]	Authorized	Not authorized	Editable*1	
☞ Page 2996 [Sub-administrator authority]	Not authorized	Not authorized	Editable*1	
☞ Page 2996 [GOT Full Initialization / Security Mode change]	Authorized	Not authorized	Editable	GT37 SoftGOT3000
☞ Page 2996 [Security Mode change]	Authorized	Not authorized	Editable	GT37 SoftGOT3000

*1 Only [Edit operator information] or [Sub-administrator authority] can be granted.

■User screen operation

Operators with this authority can perform the following operations.

Operation	Remarks
Displaying an object	Only the objects with the security levels (display) equal to or lower than the level of the operator are displayed.
Operating an object	Only the objects with the security levels (operation) equal to or lower than the level of the operator can be operated.
Switching between user-created screens	The screen can be switched to a user-created screen with the security level equal to or lower than the level of the operator only. The following shows the target screens. • Base screen • Window screen • Mobile screen Switching to the utility is not supported by this authority.

■[Current drive reading]

Operators with this authority can perform the following operations.

Operation	Remarks
Switching to the utility	A user-created screen can be switched to the utility.
Copying files and folders	Files and folders on the current drive can be copied using the utility. For utility menu items that can be displayed by operators with this authority, refer to the following. ☞ Page 2997 Operation authorities and utility display restrictions To copy files and folders on a drive other than the current drive, the [Non-current drive reading/writing] authority is required.
Reading files and folders	Files and folders on the current drive can be read using GT Designer3 or Data Transfer Tool.

■[Current drive writing]

Operators with this authority can perform the following operations.

Operation	Remarks
Switching to the utility	A user-created screen can be switched to the utility.
Editing files and folders	Files and folders on the current drive can be converted, moved, renamed, or deleted, or a new folder can be created using the utility. For utility menu items that can be displayed by operators with this authority, refer to the following. ☞ Page 2997 Operation authorities and utility display restrictions Even with only this authority, the operator can specify a drive other than the current drive as the destination for file conversion or movement.
Writing files and folders	Files and folders can be written using GT Designer3 or Data Transfer Tool to the current drive.

■[Non-current drive reading/writing]

Operators with this authority can perform the following operations.

Operation	Remarks
Switching to the utility	A user-created screen can be switched to the utility.
Editing files and folders	Files and folders not on the current drive can be converted, copied, moved, renamed, or deleted, or a new folder can be created using the utility. For utility menu items that can be displayed by operators with this authority, refer to the following. ☞ Page 2997 Operation authorities and utility display restrictions Even with only this authority, the operator can specify the current drive as the destination for file conversion, copy, or movement.
Reading/writing files and folders	Files and folders can be read from/written to a drive other than the current drive using GT Designer3 or Data Transfer Tool.

■[GOT settings in the utility]

Operators with this authority can perform the following operations.

Operation	Remarks
Switching to the utility	A user-created screen can be switched to the utility.
Displaying each setting screen from the utility	For utility menu items that can be displayed by operators with this authority, refer to the following. ☞ Page 2997 Operation authorities and utility display restrictions

■[Startup package data reading/writing / F/W update]

Operators with this authority can perform the following operations.

Some operations require access authority to the destination drive.

Operation	Remarks
Switching to the utility	A user-created screen can be switched to the utility.
Displaying each setting screen from the utility	For utility menu items that can be displayed by operators with this authority, refer to the following. ☞ Page 2997 Operation authorities and utility display restrictions
Reading/writing package data	Package data can be read or written using GT Designer3 or Data Transfer Tool. Access privilege is not required for the destination drive.
Installing the BootOS	The BootOS can be installed from GT Designer3. Access privilege is not required for the destination drive.
Installing the BootOS or CoreOS via a data storage	The BootOS or CoreOS copied to a data storage can be installed to the GOT. Access privilege is not required for the destination drive.

■[Open a project data / Start monitoring]

Operators with this authority can perform the following operations.

Operation	Remarks
Switching to the utility	A user-created screen can be switched to the utility.
Displaying each setting screen from the utility	For utility menu items that can be displayed by operators with this authority, refer to the following. ☞ Page 2997 Operation authorities and utility display restrictions
Opening a project with GT SoftGOT3000	A project to be monitored can be changed. (The authority to start monitoring is not required.)
Starting monitoring with GT SoftGOT3000 using the SoftGOT-GOT link function	Monitoring is started for a project read from the GOT using the SoftGOT-GOT link function.

■[Reading/writing a device from an external device]

Operators with this authority can perform the following operations.

Operation	Remarks
Access from an OPC UA client	The OPC UA server (GOT) can be accessed from an OPC UA client.
Internal device interface function	You can monitor the GOT internal devices of GT SoftGOT3000 from a user-created application.

■[Edit operator information]

Operators with this authority can perform the following operations.

Operation	Remarks
Switching to the utility	A user-created screen can be switched to the utility.
Displaying each setting screen from the utility	For utility menu items that can be displayed by operators with this authority, refer to the following. ☞ Page 2997 Operation authorities and utility display restrictions

■[Sub-administrator authority]

Operators with this authority can perform the following operations.

Operation	Remarks
Switching to the utility	A user-created screen can be switched to the utility.
Displaying each setting screen from the utility	For utility menu items that can be displayed by operators with this authority, refer to the following. ☞ Page 2997 Operation authorities and utility display restrictions

The settings related to the operators with the [Sub-administrator authority] rights, such as the level that allows change of the operator authentication settings, are configured on the [Authentication setting] tab of the [Operator authentication management] screen.

The settings can be configured only by the operators with the [Edit Operator Management Information] rights.

☞ Page 3032 Common settings relevant to authentication (Operator authentication setting)

■[GOT Full Initialization / Security Mode change]

Operators with this authority can perform the following operations.

Operation	Remarks
Switching to the utility	A user-created screen can be switched to the utility.
All GOT data initialization	The [Full GOT reset] screen of the utility can be displayed.
Changing the security mode	The package data can be written to the GOT and the security mode can be changed.

■[Security Mode change]

Operators with this authority can perform the following operations.

Operation	Remarks
Switching to the utility	A user-created screen can be switched to the utility.
Changing the security mode	The security mode can be changed.

Operation authorities and utility display restrictions

The display of some utility menu items is restricted by operator's operation authority.
The following shows the operation authorities required to display each menu item.
If an operator has any of the required operation authorities, the corresponding menu item will be displayed.
In this section, operation authorities are represented by the numbers shown below.

No.	Operation authority
1	User screen operation
2	[Current drive reading]
3	[Current drive writing]
4	[Non-current drive reading/writing]
5	[GOT settings in the utility]
6	[Startup package data reading/writing / F/W update]
7	[Open a project data / Start monitoring]
8	[Reading/writing a device from an external device]
9	[Edit operator information]
10	[Sub-administrator authority]
11	[GOT Full Initialization / Security Mode change]

☞ Page 2998 [GOT basic set]
☞ Page 2999 [Add-on setting]
☞ Page 2999 [Maintenance]
☞ Page 3000 [Monitor]
☞ Page 3000 [Data mng.]

■[GOT basic set]

○: Menu items are displayed (screen transitions can be performed by touch).

—: Menu items are not displayed.

Menu item		Operation authority										
		1*1	2*2	3*3	4*4	5*5	6*6	7*7	8*8	9*9	10*10	11*11
[Display]		—	—	—	—	○	○	○	—	—	—	—
[Language]		—	—	—	—	○	○	○	—	—	—	—
[Unique info]		—	—	—	—	○	○	—	—	—	—	—
[IP address]		—	—	—	—	○	○	—	—	—	—	—
[IP filter setting]		—	—	—	—	○	○	—	—	—	—	—
[Operation]		—	—	—	—	○	○	○	—	—	—	—
[Utility call key]		—	—	—	—	○	○	○	—	—	—	—
[USB device/host]		—	—	—	—	○	○	—	—	—	—	—
[Time]		—	—	—	—	○	○	—	—	—	—	—
[Controller]		—	—	—	—	○	○	—	—	—	—	—
[Ethernet]		—	—	—	—	○	○	—	—	—	—	—
[Transparent mode]		—	—	—	—	○	○	—	—	—	—	—
[GOT internal device monitor]		—	—	—	—	○	○	—	—	—	—	—
[Opr authn. mgmt.]	[Operator information] tab	—	—	—	—	—	—	—	—	○	○*12	—
	[Group information] tab	—	—	—	—	—	—	—	—	○	—	—
	[Authentication setting] tab	—	—	—	—	—	—	—	—	○	○*13	—
[Opr authn. Password change]		—	○	○	○	○	○	○	—	○	○	○
[Brightness adjustment]		—	—	—	—	○	○	—	—	—	—	—

*1 User screen operation
*2 [Current drive reading]
*3 [Current drive writing]
*4 [Non-current drive reading/writing]
*5 [GOT settings in the utility]
*6 [Startup package data reading/writing / F/W update]
*7 [Open a project data / Start monitoring]
*8 [Reading/writing a device from an external device]
*9 [Edit operator information]
*10 [Sub-administrator authority]
*11 [GOT Full Initialization / Security Mode change]
*12 Operator information on the operators with levels equal to or lower than the level of the logged-in operator can be edited.
Operators with [Sub-administrator authority] cannot import data.
*13 The settings other than [Sub-administrator authority settings] are editable.
The settings on this tab can be edited only by operators with levels that allow changes to the operator authentication settings.

■[Add-on setting]

○: Menu items are displayed (screen transitions can be performed by touch).

—: Menu items are not displayed.

Menu item	Operation authority										
	1*1	2*2	3*3	4*4	5*5	6*6	7*7	8*8	9*9	10*10	11*11
[SoftGOT-GOT link function]	—	—	—	—	○	○	—	—	—	—	—
[VNC server function]	—	—	—	—	○	○	—	—	—	—	—
[Seq. program monitor]	—	—	—	—	○	○	—	—	—	—	—
[Backup restoration]	—	—	—	—	○	○	○	—	—	—	—
[License management]	—	—*12	—	—*12	○	○	—	—	—	—	—
[System launcher]	—	—	—	—	○	○	○	—	—	—	—
[iQSS utility]	—	—	—	—	○	○	—	—	—	—	—
[Web browser function]	—	—	—	—	○	○	—	—	—	—	—
[ANDON connection]	—	—	—	—	○	○	○	—	—	—	—
[VPN connection function]	—	—	—	—	○	○	—	—	—	—	—
[Contactless tag function]	—	—	—	—	○	○	—	—	—	—	—

*1 User screen operation
*2 [Current drive reading]
*3 [Current drive writing]
*4 [Non-current drive reading/writing]
*5 [GOT settings in the utility]
*6 [Startup package data reading/writing / F/W update]
*7 [Open a project data / Start monitoring]
*8 [Reading/writing a device from an external device]
*9 [Edit operator information]
*10 [Sub-administrator authority]
*11 [GOT Full Initialization / Security Mode change]
*12 To register or deregister a license, the [Current drive reading] and [Non-current drive reading/writing] authorities are required.

■[Maintenance]

○: Menu items are displayed (screen transitions can be performed by touch).

—: Menu items are not displayed.

Menu item	Operation authority										
	1*1	2*2	3*3	4*4	5*5	6*6	7*7	8*8	9*9	10*10	11*11
[Batch self check]	—	—	○	○	—	—	—	—	—	—	—
[USB device management]	—	○	○	○	○	○	—	—	—	—	—
[Screen cleaning]	There are no display restrictions applied by the operation authority.										
[Touch panel calibration]	There are no display restrictions applied by the operation authority.										
[System alarm]	There are no display restrictions applied by the operation authority.										
[Drawing check]	There are no display restrictions applied by the operation authority.										
[Font check]	There are no display restrictions applied by the operation authority.										
[Touch panel check]	There are no display restrictions applied by the operation authority.										
[I/O check]	There are no display restrictions applied by the operation authority.										
[Ethernet status check]	There are no display restrictions applied by the operation authority.										
[GOT information]	There are no display restrictions applied by the operation authority.										
[GOT Mobile information]	There are no display restrictions applied by the operation authority.										

*1 User screen operation
*2 [Current drive reading]
*3 [Current drive writing]
*4 [Non-current drive reading/writing]
*5 [GOT settings in the utility]
*6 [Startup package data reading/writing / F/W update]
*7 [Open a project data / Start monitoring]
*8 [Reading/writing a device from an external device]
*9 [Edit operator information]
*10 [Sub-administrator authority]
*11 [GOT Full Initialization / Security Mode change]

■[Monitor]

There are no display restrictions applied by the operation authority.

■[Data mng.]

○: Menu items are displayed (screen transitions can be performed by touch).

—: Menu items are not displayed.

Menu item	Operation authority										
	1*1	2*2	3*3	4*4	5*5	6*6	7*7	8*8	9*9	10*10	11*11
[Alarm information]	—	○	○	○	—	—	—	—	—	—	—
[Image file management]	—	○	○	○	—	—	—	—	—	—	—
[Recipe information]	—	○	○	○	—	—	—	—	—	—	—
[Logging information]	—	○	○	○	—	—	—	—	—	—	—
[Operation log information]	—	○	○	○	—	—	—	—	—	—	—
[File manager]	—	○	○	○	—	—	—	—	—	—	—
[Package management]	—	—	—	—	○	○	○	—	—	—	—
[Backup restoration]	—	○	○	○	—	—	—	—	—	—	—
[NVRAM management]	—	○	○	—	—	—	—	—	—	—	—
[Memory card format]	—	—	○	○	—	—	—	—	—	—	—
[Memory check]	—	—	○	○	—	—	—	—	—	—	—
[GOT data pkg. acquisition]	—	—	—	—	—	○	—	—	—	—	—
[GOT Full Initialization]	—	—	—	—	—	—	—	—	—	—	○
[Certificate management]	—	—	—	—	○	○	○	—	—	—	—

*1 User screen operation
*2 [Current drive reading]
*3 [Current drive writing]
*4 [Non-current drive reading/writing]
*5 [GOT settings in the utility]
*6 [Startup package data reading/writing / F/W update]
*7 [Open a project data / Start monitoring]
*8 [Reading/writing a device from an external device]
*9 [Edit operator information]
*10 [Sub-administrator authority]
*11 [GOT Full Initialization / Security Mode change]

89.1.5 Operator management information

Information on registered operators and common settings related to authentication are called operator management information.

The operator management information can be exported to a data storage as the operator management information file and edited on a personal computer.

☞ Page 3004 Editing an operator on a personal computer

Performing one of the following operations deletes the file from the GOT.

Operation	Description
Installing the BootOS to the GOT	The information is deleted when data is written with the following settings configured on the [GOT Write] tab of the [Communicate with GOT] dialog. • Select [BootOS] for [Write Data]. • Select [Write after deleting all the package folders with the same name in GOT].
Installing the BootOS or CoreOS to the GOT via a data storage	The file is deleted when data is written from the memory card where it is written to the GOT with the following settings configured on the [BootOS/CoreOS Write] tab of the [Communicate with Memory Card] dialog. • Select [BootOS] or [CoreOS] for [Write Data]. • Select [Delete the package data on write].
Executing all GOT data initialization in the utility	📖GOT3000 Series User's Manual (Utility & Maintenance Functions)
Changing the security mode	The information is deleted when package data in security mode 1 is written to the GOT in security mode 2.

89.2 How to set the operator authentication (Mode 2)

GT37 SoftGOT3000

When the security mode is mode 2, the operator authentication (Mode 2) is always enabled.

Point

If operator management information in security mode 1 exists on the GOT, writing package data in security mode 2 will delete the operator management information in security mode 1.

1. Configure the following settings in GT Designer3 as necessary.

Item		Required setting
GOT screen operation	Switching between user-created screens	For each screen, set a security level from which the screen switching is allowed. ☞ Page 313 Base screen properties ☞ Page 323 Window screen properties ☞ Page 2831 Mobile screen properties
	Displaying an object	Set a security level for each object to allow display and operation. For objects that can be operated such as touch switches and numerical inputs, set security levels for both display and operation. ☞ Setting dialog for each object ([Extended] tab)
	Operating an object	
	Special function switch for login/logout	Place a special function switch, and set [Action] in the [Function Setting] tab to [Login/Logout (Operator)].
	External authentication	For the settings required for authentication using a barcode reader or RFID controller, refer to the following. ☞ Page 3033 External authentication
External notification of the information on the logged-in operator		Set the items in the [Environmental Setting] window ([Security]) displayed by selecting [Common] → [GOT Environmental Setting] → [Security] from the menu. ☞ Page 3035 [Security] ([Screen Security] tab) (Mode 2)
Specifying the screen to be displayed after logout		

2. The operation depends on the GOT.

GOT	Setting
GOT (except GT SoftGOT3000)	Write package data to the GOT. When package data is written for the first time, a dialog to register an operator appears. To write package data to a GOT to which any operators are registered, authentication with the operator having the corresponding operation authority is required.
GT SoftGOT3000	Start GT SoftGOT3000 and open the package data. If no operator belongs to the Administrators group, a screen to register an operator appears.

3. Register the operator in the utility.

☞ Page 3003 Registering or editing an operator or group

89.2.1 When forgetting the operator name and password

When forgetting the operator name and password of an operator who has operation rights for [Edit operator information] or [Sub-administrator authority], operations such as writing package data or unlocking the operator will be disabled.

If such operation becomes disabled, install CoreOS to reset the GOT to its factory settings, and re-register the operator.

When creating an SD card for installing CoreOS on the GOT, select [Delete the package data on write] in the [Communicate with Memory Card] dialog ([BootOS/CoreOS Write] tab) to eliminate the need for operator authentication during the installation of CoreOS.

For instructions on installing CoreOS on the GOT, refer to the following.

☞ Page 448 Installing CoreOS on the GOT

89.3 Registering or editing an operator or group

GT37 SoftGOT3000

An operator or group can be registered or edited in the utility.

Touch [Operator authentication] on the [GOT basic set] tab of the utility to display the [Operator authentication management] screen.

For information on the operation method, refer to the following.

GOT3000 Series User's Manual (Utility & Maintenance Functions)

Operation	Method
Registering/editing an operator	Set it on the [Operator information] tab of the [Operator authentication management] screen. For information on the operator specifications, refer to the following. ☞ Page 2992 Operator specifications
Editing a group (granting operation authorities)	Set it on the [Group information] tab of the [Operator authentication management] screen. For information on the group specifications, refer to the following. ☞ Page 2993 Group specifications

To display the screen, perform authentication with the operator having the corresponding operation authority.

Editable settings depend on the operation authority and level of the logged-in operator.

☞ Page 2994 Operation authorities

89.4 Editing an operator on a personal computer

☞ Page 3005 Operating procedure
☞ Page 3011 GOT Operator Management Information Conversion Tool Ver. 3

This section describes information on both the security modes 1 and 2.

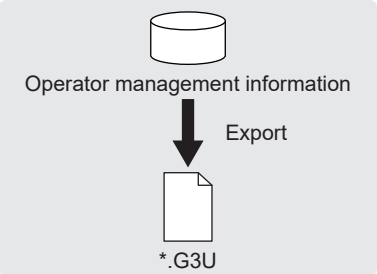
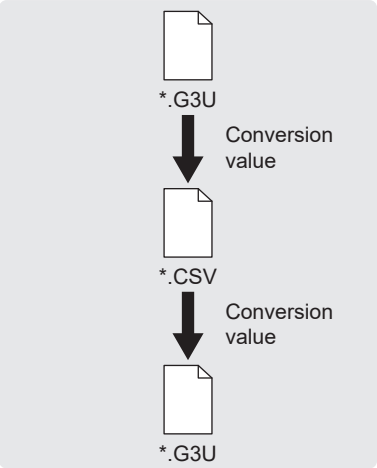
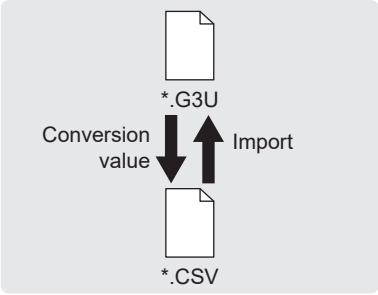
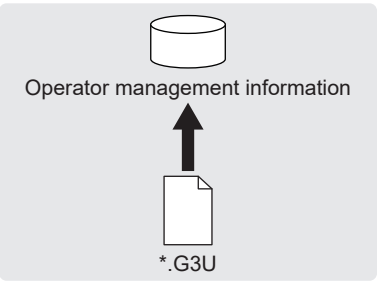
Information on registered operators can be exported to a data storage as the operator management information file and edited on a personal computer.

Importing the edited file into the GOT updates the operator information in the GOT.

To edit the operator management information file on the personal computer, convert the file format using GOT Operator Management Information Conversion Tool Ver. 3.

89.4.1 Operating procedure

Operator authentication is performed for each operation.
Available operations depend on the operator to be authenticated.

Operation step		Operator to be authenticated		
		Mode 1: Administrator Mode 2: Operator with operation authority for [Edit operator information]	**Mode 1: Sub administrator**	**Mode 2: Operator with [Sub-administrator authority]**
1	☞ Page 3006 Operation on the GOT (export)			
2	☞ Page 3007 Operation on a personal computer (G3U → CSV) ☞ Page 3008 Operation on a personal computer (CSV → G3U)		 Only the information editable by the operator authenticated at the time of conversion and import is imported from the CSV file into the G3U file.	
3	☞ Page 3010 Operation on the GOT (import)	 Only the information editable by the operator authenticated at the time of import is imported into the operator management information in the GOT.		Information cannot be imported.

Precautions

■Resetting the password expiration date

When the expiration date of the password is set to a value other than 0 days, setting the password in the CSV file and importing the converted G3U file into the GOT reset the number of remaining days until the expiration date.
If the password expiration date was set to 30 days and the operator information is edited on the personal computer after 25 days, the number of remaining days until the expiration date becomes as follows.

Operation	Password expiration date after the G3U file is imported
When the password is edited in the CSV file	Editing the password in the CSV file resets the number of remaining days until the expiration date to 30.
When the password is not edited in the CSV file	The number of remaining days until the expiration date remains 5.

Operation on the GOT (export)

1. Log in any one of the following operators.

Security mode	Operator	Reference
Mode 1	Administrator	☞ Page 3051 Login for the operator authentication with a password
	Sub administrator	
Mode 2	Operator with operation authority for [Edit operator information]	☞ Page 3034 Login
	Operator with [Sub-administrator authority]	

2. Touch [Operator authentication] on the [GOT basic set] tab of the utility to display the [Operator authentication management] screen.

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

3. Touching the [Export] button in the [Operator information] tab displays a dialog to select the drive.

When the security mode is mode 2, the selectable drives depend on the operation authority the operator has.

4. Select a drive, and touch the [OK] button to display a dialog to set the encryption password.

5. Enter an encryption password, and then touch the [Enter] button to display a dialog to confirm the encryption password.

The password must be eight characters or more and include at least two of the following character types.

- Uppercase alphabet (A to Z)
- Lowercase alphabet (a to z)
- Numbers
- Symbols

6. Enter the same password again, and touch the [Enter] button. The operator management information file (AUTHINF.G3U) is exported directly under the selected drive.

7. Perform either of the following operations according to the GOT model.

GOT model	Operation
GOT (except GT SoftGOT3000)	Store the G3U file in the data storage, and remove it from the GOT. For information on how to remove the data storage, refer to the following. 📖GOT3000 Series User's Manual (Hardware)
GT SoftGOT3000	Use the G3U file stored in the virtual drive. ☞ Page 83 Drive configuration and capacity of GT SoftGOT3000

Convert the G3U file into a CSV file using GOT Operator Management Information Conversion Tool Ver. 3, and edit it.

☞ Page 3007 Operation on a personal computer (G3U → CSV)

Operation on a personal computer (G3U → CSV)

1. Perform either of the following operations according to the GOT model.

GOT model	Operation
GOT (except GT SoftGOT3000)	Install the data storage that contains the G3U file to the personal computer. For information on how to install the data storage, refer to the following. GOT3000 Series User's Manual (Hardware)
GT SoftGOT3000	Use the G3U file stored in the virtual drive. ☞ Page 83 Drive configuration and capacity of GT SoftGOT3000

2. Start GOT Operator Management Information Conversion Tool Ver. 3.

☞ Page 3012 How to start GOT operator management information conversion tool

3. Configure the following settings, and click the [Convert] button.

☞ Page 3012 Setting items of GOT Operator Management Information Conversion Tool Ver. 3

- Select [Convert operator management information file into CSV file].
- Enter the full path of the G3U file name in [Source file].

4. In the [Enter encryption password] dialog displayed, enter the encryption password and click the [OK] button.

5. Perform any one of the following operations according to the dialog displayed.

Security mode	Dialog	Operation
Mode 1	[Administrator password entry] dialog	Enter the administrator password.
	[Administrator authentication] dialog	Enter the operator name and password of a sub administrator.
Mode 2	[Administrator authentication] dialog	Enter the operator name and password of any one of the following operators. • Operator with operation authority for [Edit operator information] • Operator with [Sub-administrator authority]

Contents to be output to the CSV file depend on the operator to be authenticated.

The following contents affect the processing of the operation on a personal computer (CSV → G3U).

Security mode	Operator	Content to be output
Mode 1	Administrator	[SUB_ADMIN_FORMAT] is not output in the header part.
	Sub administrator	[SUB_ADMIN_FORMAT] is output in the header part.
Mode 2	Operator with operation authority for [Edit operator information]	[SUB_ADMIN_FORMAT] is not output in the header part.
	Operator with [Sub-administrator authority]	[SUB_ADMIN_FORMAT] is output in the header part.

6. After the [OK] button is clicked and authentication succeeds, a CSV file is created in the folder where the conversion source file is stored.

If a file with the same name as the destination file already exists, the file is renamed to the backup file name (AUTHINF.CSV.BAK).

The backup file can be used as a CSV file by removing the [.BAK] at the end.

7. Check the configuration and edit the operator information.

Editable information depends on the authenticated operator.

☞ Page 3014 CSV file (AUTHINF.CSV) configuration (Mode 1)

☞ Page 3020 CSV file (AUTHINF.CSV) configuration (Mode 2)

After editing the CSV file, convert it into a G3U file using GOT Operator Management Information Conversion Tool Ver. 3.

☞ Page 3008 Operation on a personal computer (CSV → G3U)

Operation on a personal computer (CSV → G3U)

The processing depends on the configuration of the CSV file to be converted.

Configuration of CSV file	Reference
[SUB_ADMIN_FORMAT] not described in the header part	☞ Page 3008 Converting a CSV file into G3U format
[SUB_ADMIN_FORMAT] described in the header part	☞ Page 3009 Importing contents of a CSV file into a G3U file

If an error occurs at the conversion, an error log file is output.

☞ Page 3009 Error log file (GTOperatorInfoConv.log) during conversion

■Converting a CSV file into G3U format

1. Start GOT Operator Management Information Conversion Tool Ver. 3.

☞ Page 3012 How to start GOT operator management information conversion tool

2. Configure the following settings, and click the [Convert] button.

☞ Page 3012 Setting items of GOT Operator Management Information Conversion Tool Ver. 3

- Select [Generate operator management information file from CSV file].
- Enter the full path of the CSV file name in [Source file].

3. In the [Enter encryption password] dialog displayed, enter the encryption password and click the [OK] button.

4. In the [Enter encryption password] dialog displayed, enter the same password again and click the [OK] button.

A G3U file is created in the folder where the CSV file is stored.

If a file with the same name as the destination file already exists, the file is renamed to the backup file name (AUTHINF.G3U.BAK).

The backup file can be used as a G3U file by removing the [.BAK] at the end.

5. Perform either of the following operations according to the GOT model.

GOT model	Operation
GOT (except GT SoftGOT3000)	Store the G3U file in the data storage, and remove it from the personal computer.
GT SoftGOT3000	When the G3U file is stored in a drive other than the virtual drive, move it directly under the virtual drive. ☞ Page 83 Drive configuration and capacity of GT SoftGOT3000

Importing the G3U file into the utility updates the operator management information in the GOT.

☞ Page 3010 Operation on the GOT (import)

■Importing contents of a CSV file into a G3U file

1. Store the following files in the same folder.

- Edited CSV file
- G3U file converted into the CSV file

2. Start GOT Operator Management Information Conversion Tool Ver. 3.

☞ Page 3012 How to start GOT operator management information conversion tool

3. Configure the following settings, and click the [Convert] button.

☞ Page 3012 Setting items of GOT Operator Management Information Conversion Tool Ver. 3

- Select [Generate operator management information file from CSV file].
- Enter the full path of the CSV file name in [Source file].

4. In the [Enter encryption password] dialog displayed, enter the encryption password and click the [OK] button.

5. In the [Administrator authentication] dialog displayed, enter the operator name and password of either of the following operators, and click the [OK] button.

Security mode	Operator
Mode 1	Sub administrator
Mode 2	Operator with [Sub-administrator authority]

A G3U file in which the contents of the CSV file are imported is created in the same folder.

Only the information editable by the operator authenticated at the time of import is imported into the G3U file.

The file name of the G3U file before the import is changed to AUTHINF.G3U.BAK.

The backup file can be used as a G3U file by removing the [.BAK] at the end.

6. Perform either of the following operations according to the GOT model.

GOT model	Operation
GOT (except GT SoftGOT3000)	Store the G3U file in the data storage, and remove it from the personal computer.
GT SoftGOT3000	When the G3U file is stored in a drive other than the virtual drive, move it directly under the virtual drive. ☞ Page 83 Drive configuration and capacity of GT SoftGOT3000

Importing the G3U file into the utility updates the operator management information in the GOT.

☞ Page 3010 Operation on the GOT (import)

■Error log file (GTOperatorInfoConv.log) during conversion

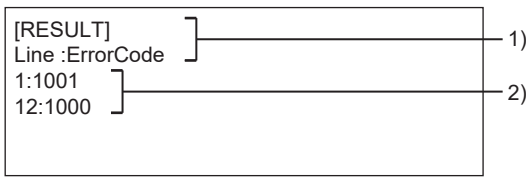
If an error occurs during the conversion/import from a CSV file into a G3U file, an error log file (GTOperatorInfoConv.log) is created in the same folder as the conversion source file.

If the folder already has a file with the same name, the file is overwritten.

In the following cases, the error log file is not output.

- No error has occurred.
- The security mode of the CSV file is incorrect.

Checking the error location (line) in the CSV file and the error cause (error code) is available.



Item		Description
1)	Header part	The header part of the error file. (The character strings are fixed.)
2)	Error code	The error line numbers and the error codes are displayed. (Line number: Error code) ☞ Page 3028 Error code list

Operation on the GOT (import)

1. Perform either of the following operations according to the GOT model.

GOT model	Operation
GOT (except GT SoftGOT3000)	Install the data storage that contains the G3U file to the GOT. For information on how to install the data storage, refer to the following. GOT3000 Series User's Manual (Hardware)
GT SoftGOT3000	Use the G3U file stored in the virtual drive. ☞ Page 83 Drive configuration and capacity of GT SoftGOT3000

2. Log in any one of the following operators.

Security mode	Operator	Reference
Mode 1	Administrator	☞ Page 3051 Login for the operator authentication with a password
	Sub administrator	
Mode 2	Operator with operation authority for [Edit operator information]	☞ Page 3034 Login

3. Touch the [Import] button on the [Operator information] tab of the [Operator authentication management] screen to display a dialog to select a drive.

When the security mode is mode 2, the selectable drives depend on the operation authority the operator has.

4. Select a drive and touch the [OK] button to display the [Admin password authentication] dialog.

Depending on the screen displayed, perform any one of the following operations.

Security mode		Operation
Mode 1	When the sub-administrator is disabled	Enter the administrator password.
	When the sub-administrator is enabled	Enter the operator name and password of any one of the following operators. • Administrator • Sub-administrator (only a sub-administrator registered in the G3U file to be imported and not disabled)
Mode 2		Enter the operator name and password of an operator with operation authority for [Edit operator information].

5. Touch the [Enter] button to display a dialog to enter the encryption password.

6. Enter the password set at the creation of the G3U file, and then touch the [Enter] button.

When the authentication is successful, the operator management information on the GOT is updated with the imported contents.

Only the information editable by the operator authenticated at the time of import is imported.

89.4.2 GOT Operator Management Information Conversion Tool Ver. 3

☞ Page 3011 How to obtain the tool
☞ Page 3011 Operating environment
☞ Page 3012 How to start GOT operator management information conversion tool
☞ Page 3012 Setting items of GOT Operator Management Information Conversion Tool Ver. 3
☞ Page 3012 Execution with a command line
☞ Page 3014 CSV file (AUTHINF.CSV) configuration (Mode 1)
☞ Page 3020 CSV file (AUTHINF.CSV) configuration (Mode 2)
☞ Page 3028 Error code list

GOT Operator Management Information Conversion Tool Ver. 3 is a tool to convert the file format of the operator management information file for GOT3000.

Conversion between the following file formats is supported.

File format		Remarks
Conversion source	Conversion destination	
G3U	CSV	—
CSV	G3U	Only the CSV files with the data structure supported by GOT Operator Management Information Conversion Tool Ver. 3 can be converted.

How to obtain the tool

Consult your local sales office.

Operating environment

Item	Description
Model	Personal computer that runs Windows
OS*1*2	• Microsoft Windows 11 Education (64-bit) • Microsoft Windows 11 Enterprise (64-bit) • Microsoft Windows 11 Pro (64-bit) • Microsoft Windows 11 Home (64-bit) • Microsoft Windows 10 Enterprise (32-bit, 64-bit) • Microsoft Windows 10 Pro (32-bit, 64-bit) • Microsoft Windows 10 Home (32-bit, 64-bit)
CPU	The system requirements for the above OSs must be met. For the system requirements for the OSs, refer to the following. ☞ Microsoft official website
Memory	
Hard disk space	500 KB or more
Display	Resolution: SVGA (800 × 600 dots) or higher
Display color	High Color (16 bits) or higher

*1 Japanese version of GOT Operator Management Information Conversion Tool Ver. 3 is compatible with the Japanese version of Windows.
English version of GOT Operator Management Information Conversion Tool Ver. 3 is compatible with the English version of Windows.

*2 The following functions are not supported.
Touch feature
Modern UI Style
Operation in a virtual environment such as Hyper-V
Tablet mode
Unified Write Filter
Operation in an environment with the text cursor indicator turned on

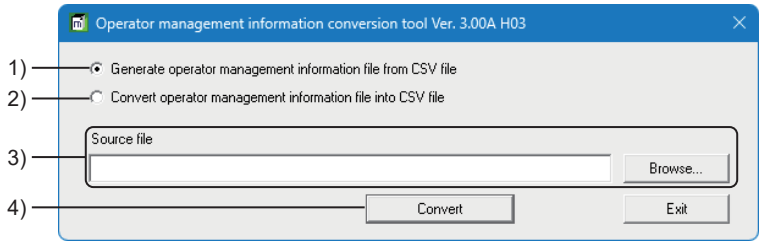
How to start GOT operator management information conversion tool

Installing GOT Operator Management Information Conversion Tool Ver. 3 is not required.

Copy the execution file (GTOperatorInfoConv.exe) in a folder, and then execute the file in the folder.

Starting multiple windows of this tool at the same time is not supported.

Setting items of GOT Operator Management Information Conversion Tool Ver. 3



Item		Description	
1)	[Generate operator management information file from CSV file]	Converts a CSV file into an operator management information file. Clicking the [Convert] button performs the operation according to the contents of the CSV file.	
		[SUB_ADMIN_FORMAT] not described in the header part	A G3U file is created from the CSV file specified in [Source file].
		[SUB_ADMIN_FORMAT] described in the header part	The contents of the CSV file specified in [Source file] are imported into the G3U file. Before the conversion, make sure to store the CSV file and the G3U file in the same folder. After the conversion, a log file is output.
2)	[Convert operator management information file into CSV file]	Converts a G3U file into a CSV file. Select this item and click the [Convert] button to convert the G3U file specified in [Source file] into a CSV file. After the conversion, the CSV file and the conversion source file are stored in the same folder.	
3)	[Source file]	Specify a path of the conversion source file. By clicking the [Brouse] button, the path of the conversion source file can be specified in the [Open CSV file] dialog. The setting range is up to 255 one-byte characters.	
4)	[Convert] button	Click this button to execute the file conversion.	

Execution with a command line

You can execute GOT Operator Management Information Conversion Tool Ver. 3 with a command line.

Perform either of the following operations to start Command Prompt.

- From the Windows start menu, select [All] → [Windows Tools], and double-click [Command Prompt] in the displayed [Windows Tools] (for Windows 11).
- Type "cmd" in the search box on the taskbar and execute.

Describe a command line in the following formats.

Security mode	Format
Mode 1	GTOperatorInfoConv.exe filename /p Cryptography_Password [Operator_Password] [/f] [/l] [/-c] [/s opname] [/help] [/?]
Mode 2	GTOperatorInfoConv.exe filename Cryptography_Password opname [Operator_Password] [/f] [/l] [/-c] [/help] [/?]

The options in square brackets are omittable.

The following table lists the details on commands and options.

Type	Format	Description		
Command	GTOperatorInfoConv.exe	The file conversion is performed as shown below.		
		G3U → CSV		Converts a G3U file into a CSV file.
		CSV → G3U	[SUB_ADMIN_FORMAT] not described in the header part	Creates a G3U file in the same folder as the conversion source CSV file.
			[SUB_ADMIN_FORMAT] described in the header part	Imports the contents of the conversion source CSV file into the G3U file stored in the same folder. After the conversion, another command prompt starts and displays the conversion result.
Option	filename*1*2	Specify the operator management information file to be converted (*.CSV or *.G3U) with the absolute path.		
	/p	Available only in mode 1. Specify Cryptography_Password (encryption password) after /p.		
	Cryptography_Password*1*2	Enter the encryption password for the operator management information file. In mode 1, it can be specified after /p.		
	opname*1*2	Enter the operator name. Enter the operator name as shown below depending on the type of conversion.		
		Mode 1	G3U (sub-administrator registered) → CSV	Operator name of an administrator or sub administrator
			G3U (sub-administrator not registered) → CSV	Not required
			CSV → G3U (file conversion)	Not required
			CSV→G3U (import)	Operator name of a sub administrator
		Mode 2	G3U → CSV	Operator name of an operator with either of the following operation authorities • [Edit operator information] • [Sub-administrator authority]
			File conversion from CSV into G3U	Operator name of an operator with operation authority for [Edit operator information]
			Import from CSV into G3U	Operator name of an operator with [Sub-administrator authority]
	Operator_Password*1*2	Enter the password for the operator. For the password, the same string as any options cannot be specified. If specified, it is treated as an option instead of a password.		
	/f	If the conversion destination folder already has a file with the same name, the file is overwritten. When the contents of a CSV file are imported to the G3U file by the following operators, this option is invalid. • Mode 1: Sub administrator • Mode 2: Operator with [Sub-administrator authority]		
	/l	Outputs the conversion result to an operator management information conversion log file. The operator management information conversion log file is output to the folder where the conversion source file is stored. If the folder already has a file with the same name as that of the operator management information conversion log file, the file is overwritten. ☞ Page 3014 Operator management information conversion log file (GTOperatorInfoConvResult.txt) configuration		
	/-c	Does not start the command prompt to display the conversion result.		
	/s	Available only in mode 1. Specifies a sub-administrator to execute the file conversion. Specify opname (operator name) after /s.		
	/help	Displays how to use options on the command prompt. If these options are specified, the other options are ignored and the conversion is not executed.		
	/?			

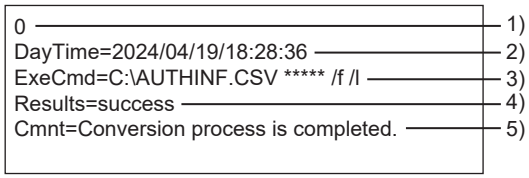
*1 If the path or password satisfies any of the following conditions, enclose it in double quotation marks (" ").
• Includes a one-byte space.
• Begins with a double quotation mark (").
A string in which a one-byte space and double quotation mark (") are next to each other cannot be used even if it is enclosed in double quotation marks (" ").

*2 If the path or password satisfies all the following conditions, a command error may occur when the command is executed.
• Includes a special symbol (such as &, |, >, and <).
• Includes a double quotation mark (").
Any path or password which causes a command error cannot be used in the command prompt.

■Operator management information conversion log file (GTOperatorInfoConvResult.txt) configuration

The operator management information conversion log file is output when the conversion is executed with a command line.

The file is output to the folder where the conversion source file is stored.



Item		Description
1)	Conversion result code	The conversion result code is output in the following formats. • [0]: Normal end • [1]: Abnormal end
2)	Conversion date	It is output in the following format: Year/Month/Day/Hour:Minute:Second
3)	Executed command	The executed command is output. The encryption password and operator password are output as [*****].
4)	Conversion result	The conversion result is output in the following formats. • [success]: Normal end • [failure]: Abnormal end
5)	Message	The message at the conversion completion is output.

CSV file (AUTHINF.CSV) configuration (Mode 1)

A CSV file consists of the header part and the operator part.

Set each setting item without changing the order of the items.

☞ Page 3015 Header part (Mode 1)

☞ Page 3018 Operator part (Mode 1)

Precautions

■When the data format is invalid

In the following cases, the data format is invalid and a CSV file is not converted into an operator management information file.

- A necessary setting item is deleted.
- When the order of the setting items is changed
- When any of the settings is incorrect
- An unnecessary item exists.

■Header part (Mode 1)

In the header part, configure the common setting for each operator information.

Items to be output vary with the settings, such as administrator privileges.

1)	GOT_OPERATOR_AUTHENTICATION_INFO_GOT3000		
2)	DATA_VERSION	1	
3)	SECURITY_MODE	1	
5)	AUTH_TYPE	EXT_AUTH+P	
6)	PASS_TYPE	ENCRYPTED	
7)	AUTO_LOGOUT_TIME	300	
8)	PASS_EXP_DATE	42	
9)	EXT_AUTH_ID_TOP	2	
10)	EXT_AUTH_ID_LEN	4	
11)	EXT_UNIT_CH	8	
12)	LOGIN_LOCK_NUM	0	
13)	LOGIN_LOCK_CANCEL_TIME	10	
14)	LOGIN_LOCK_TIME	5	
15)	OPE_LOCK_NUM	3	
16)	OPE_LOCK_TIME	5	
17)	PASS_REQ_TYPE	0	
18)	PASS_REQ_MIN_LEN	1	
19)	PASS_REQ_STR_TYPE	0	
20)	PASS_EXP_NOTICE	0	
21)	SUB_ADMIN_FLG	0	
22)	OUTPUT_ALL_OPE	0	
23)	IS_FUNC_SET	0	
24)	FUNC_SET_LEVEL	15	
25)	PASS_HIST_NUM	1	

Created by an administrator

1)	GOT_OPERATOR_AUTHENTICATION_INFO_GOT3000		
2)	DATA_VERSION	1	
3)	SECURITY_MODE	1	
4)	SUB_ADMIN_FORMAT	USER:user4	15
5)	AUTH_TYPE	EXT_AUTH+P	
6)	PASS_TYPE	ENCRYPTED	
7)	AUTO_LOGOUT_TIME	300	
8)	PASS_EXP_DATE	42	
9)	EXT_AUTH_ID_TOP	2	
10)	EXT_AUTH_ID_LEN	4	
11)	EXT_UNIT_CH	8	
12)	LOGIN_LOCK_NUM	0	
13)	LOGIN_LOCK_CANCEL_TIME	10	
14)	LOGIN_LOCK_TIME	5	
15)	OPE_LOCK_NUM	3	
16)	OPE_LOCK_TIME	5	
17)	PASS_REQ_TYPE	0	
18)	PASS_REQ_MIN_LEN	1	
19)	PASS_REQ_STR_TYPE	0	
20)	PASS_EXP_NOTICE	0	
22)	OUTPUT_ALL_OPE	1	
24)	FUNC_SET_LEVEL	15	
25)	PASS_HIST_NUM	1	

Created by a sub-administrator

Item		Description	
1)	[GOT_OPERATOR_AUTHENTICATION_INFO_GOT3000]	Keyword to declare that the file is an operator management information file for GOT3000. This item cannot be edited.	
2)	[DATA_VERSION]	Data structure version of the CSV file.	
3)	[SECURITY_MODE]	Security mode. This item cannot be edited.	
4)	[SUB_ADMIN_FORMAT]	Keyword to indicate that the CSV file is converted from a G3U file by a sub administrator. After the keyword, the operator name and level of the operator who has performed the file conversion are output. The operator name is output in the following format: [USER:Username]. The security level is output in the range from [0] to [15]. This item is output only in CSV files created by a sub administrator. This item cannot be edited.	
5)	[AUTH_TYPE]*1	Authentication type of the operator authentication.	
		[ID_PASS]	Authentication is performed with the operator name and password.
		[EXT_AUTH]	Authentication is performed with the external device connected to the RS232/422/485 interface of the GOT.
		[EXT_AUTH+P]	Authentication is performed with the external device connected to the RS232/422/485 interface of the GOT. Authentication with the operator name and password can be performed as well. (Auxiliary authentication)
		[EXT_AUTHUSB]	Authentication is performed with the external device connected to the USB interface of the GOT.
		[EXT_AUTHUSB+P]	Authentication is performed with the external device connected to the USB interface of the GOT. Authentication with the operator name and password can be performed as well. (Auxiliary authentication)
6)	[PASS_TYPE]	Setting method of the password.	
		[ENCRYPTED]	The password is encrypted. An unencrypted password is encrypted when the file is converted into a CSV file.
		[PLAIN]	The password is not encrypted.

Item		Description	
7)	[AUTO_LOGOUT_TIME]*1	Time period from when the last operation is performed until when the automatic logout is performed. The setting range is [0] (Invalid) or [60] seconds to [7200] seconds.	
8)	[PASS_EXP_DATE]*1	Number of days until the password expiration date The setting range is [0] (Invalid), or [1] to [1000] days.	
9)	[EXT_AUTH_ID_TOP]*1	Starting position of the data used as the external authentication ID in the information read with an external device. The setting range is [0] to [1998] bytes. The total set value of [EXT_AUTH_ID_TOP] and [EXT_AUTH_ID_LEN] must be 2000 or less. If the total set value exceeds 2000, the file cannot be converted correctly.	
10)	[EXT_AUTH_ID_LEN]*1	Length of the data used as the external authentication ID in the information read with an external device. The setting range is [2] to [16] bytes. The total set value of [EXT_AUTH_ID_TOP] and [EXT_AUTH_ID_LEN] must be 2000 or less. If the total set value exceeds 2000, the file cannot be converted correctly.	
11)	[EXT_UNIT_CH]*1	Channel for connecting an external device to be used for external authentication. This item is fixed to [8].	
12)	[LOGIN_LOCK_NUM]*1	Number of consecutive failed login attempts for the GOT to recognize an incorrect login. The setting range is [0] (Invalid), or [3] to [10] times.	
13)	[LOGIN_LOCK_CANCEL_TIME]*1	Time period during which the re-authentication operation is disabled after it is judged that incorrect login attempts have been made. The setting range is [1] second to [3600] seconds.	
14)	[LOGIN_LOCK_TIME]*1	Time period in which consecutive failed login attempts increment the failed login count. This item is fixed to [5] minutes.	
15)	[OPE_LOCK_NUM]*1	Number of consecutive failed login attempts to the same operator account for the GOT to recognize an incorrect login. The setting range is [0] (Invalid), or [3] to [10] times.	
16)	[OPE_LOCK_TIME]*1	Time period in which consecutive failed login attempts to the same operator increment the failed login count. This item is fixed to [5] minutes.	
17)	[PASS_REQ_TYPE]*1	Password requirements.	
		[0]	Up to 64 characters can be set. The character types are not checked.
		[1]	This item depends on the settings of [PASS_REQ_MIN_LEN] and [PASS_REQ_STR_TYPE].
18)	[PASS_REQ_MIN_LEN]*1	This item is used only when [PASS_REQ_TYPE] is [1]. Minimum number of characters of a password to be a password requirement. The setting range is [1] character to [64] characters.	
19)	[PASS_REQ_STR_TYPE]*1	This item is used only when [PASS_REQ_TYPE] is [1]. Character type requirements for a password.	
		[0]	The character types are not checked.
		[1]	Checks if a password contains at least two of the following character types. • Alphabet (A to Z and a to z) • Numbers, symbols, and one-byte spaces
		[2]	Checks if a password contains at least three of the following character types. • Alphabet (A to Z and a to z) • Numbers • Symbols and one-byte spaces
		[3]	Checks if a password contains the following four types of characters. • Uppercase alphabet (A to Z) • Lowercase alphabet (a to z) • Numbers • Symbols and one-byte spaces
20)	[PASS_EXP_NOTICE]*1	Setting to notify the user that the password expiration date is approaching. When the number of remaining days until the password expiration date is equal to or less than the set number of days, a message prompting you to change the password appears at login. The setting range is [0] days (Invalid), or [1] to [30] days.	
21)	[SUB_ADMIN_FLG]	Setting to enable or disable sub administrators. • [0]: Disabled • [1]: Enabled This item is output only in CSV files created by an administrator.	

Item		Description
22)	[OUTPUT_ALL_OPE]	When a sub-administrator performs a G3U → CSV conversion, this setting determines whether to output the operator information uneditable by the sub-administrator to the operator part. • [0]: Not output • [1]: Output This item is output only in CSV files created by either of the following operators. • Administrator • Sub-administrator who has both editing permissions for operator authentication settings and security level 15 When [SUB_ADMIN_FLG] is set to [0] (disabling the sub-administrator), converting a CSV file to a G3U file changes the value to [0].
23)	[IS_FUNC_SET]	Editability of the header part (operator authentication setting) by sub administrators. • [0]: Not allowed • [1]: Allowed This item is output only in CSV files created by an administrator. When [SUB_ADMIN_FLG] is set to [0] (disabling the sub-administrator), converting a CSV file to a G3U file changes the value to [0].
24)	[FUNC_SET_LEVEL]	Level of sub administrators from which editing the operator authentication setting is enabled. The setting range is [0] to [15]. This item is output only in CSV files created by either of the following operators. • Administrator • Sub-administrator who has both editing permissions for operator authentication settings and security level 15
25)	[PASS_HIST_NUM]*1	Number of previously set passwords saved in the history. The setting range is [0] (Invalid), or [1] to [5] times.

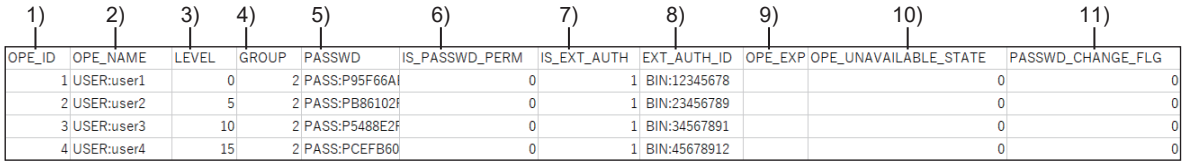
*1 This item is output only in CSV files created by operators with levels where changing the operator authentication setting is allowed.

■Operator part (Mode 1)

In the operator part, set the individual operator information.

Information to be output depends on the operator authenticated at the time of the CSV file creation.

Authenticated operator		Output information
Administrator		Information on all operators other than the administrator is output.
Sub-administrator (level 15)	[Enable op auth settings change] is selected	Information on all operators including the administrator is output.
	Other than the above	Only the operator information that satisfies the following condition is output. • Operators with levels equal to or lower than the authenticated operator
Sub-administrator (level 14 or lower)	• [Show non-editable operators] is selected • [Enable op auth settings change] is deselected	Information on all operators other than the administrator is output. The following operators' information is invalid even if edited. • Operators with levels higher than the authenticated operator
	Other than the above	Only the operator information that satisfies the following condition is output. • Operators with levels equal to or lower than the authenticated operator



1) OPE_ID	2) OPE_NAME	3) LEVEL	4) GROUP	5) PASSWD	6) IS_PASSWD_PERM	7) IS_EXT_AUTH	8) EXT_AUTH_ID	9) OPE_EXP	10) OPE_UNAVAILABLE_STATE	11) PASSWD_CHANGE_FLG
1	USER:user1	0	2	PASS:P95F66A	0	1	BIN:12345678		0	0
2	USER:user2	5	2	PASS:PB86102	0	1	BIN:23456789		0	0
3	USER:user3	10	2	PASS:P5488E2	0	1	BIN:34567891		0	0
4	USER:user4	15	2	PASS:PCEFB60	0	1	BIN:45678912		0	0

Item		Description	
1)	[OPE_ID][*1][*2]	Operator ID. The setting range is [1] to [32766].	
2)	[OPE_NAME][*2]	Operator name. For information on the operator name specifications, refer to the following. ☞ Page 3044 Operator management information When editing a CSV file directly, add [USER:] to the start of data. Otherwise, an error occurs when the file is converted to a G3U file. Not editable in the administrator row. Even if edited, the editing is not reflected in the G3U file.	
3)	[LEVEL][*1][*2]	Operator level. The setting range is [0] to [15]. When edited by a sub-administrator, this item can be set to the level of the sub-administrator or lower.	
4)	[GROUP][*1][*2]	Group number of the group to which the operator belongs. • [2]: Users group • [3]: Sub Admins group	
5)	[PASSWD]	Password for the operator. Up to 64 one-byte alphanumeric characters (a to z, A to Z, 0 to 9) and symbols as shown below can be used. (Alphabetic characters are case sensitive.) • ! " # $ % & ' ( ) * + , ` - . / : ; < = > ? @ [¥] ^ _ { | } ~ • One-byte space (However, a one-byte space used at the end of the operator name is invalid.) When you set a password in a CSV file, prepend the string "PASS:" to the password. Otherwise, an error occurs when the file is converted to a G3U file. [PASS:] is not included in the password's character count.	
		Since the password entered in the CSV file is displayed as it is, be careful when handling the CSV file. The following methods are available as measures against password leakage.	
		Setting the password in the utility	Leave the password not set in the CSV file, and set it after the operator management information is imported into the GOT.
		Encrypting the password by reconversion	Set [ENCRYPTED] for [PASS_TYPE] in the header part. ☞ Page 3015 Header part (Mode 1) Convert the file format from CSV into G3U using GOT Operator Management Information Conversion Tool Ver. 3. The password can be encrypted by converting the converted G3U file into a CSV file again using GOT Operator Management Information Conversion Tool Ver. 3.
6)	[IS_PASSWD_PERM][*1]	Setting to determine whether the password is permanent. The following shows the setting range. • [0]: The password is not permanent. • [1]: The password is permanent.	

Item		Description
7)	[IS_EXT_AUTH][*1]	Whether to use external authentication. The following shows the setting range. • [0]: Not used • [1]: Used When [AUTH_TYPE] in the operator part is set to [ID_PASS] (authentication with operator name and password), converting a CSV file to a G3U file changes the value to [0].
8)	[EXT_AUTH_ID][*1]	External authentication ID. The number of bytes depends on the set value of [EXT_AUTH_ID_LEN] in the header part. Set the external authentication ID with hexadecimal numbers. When editing a CSV file directly, add [BIN:] to the start of data. Otherwise, an error occurs when the file is converted to a G3U file. If [AUTH_TYPE] is set to [ID_PASS] in the header part, setting this item is not required because external authentication is not used.
9)	[OPE_EXP]	Not used Leave the area blank.
10)	[OPE_UNAVAILABLE_STATE][*2]	Whether to enable or disable the operator. The following shows the setting range. • [0]: Enables the operator account. • [1]: Disables the operator account.
11)	[PASSWD_CHANGE_FLG][*1]	Setting whether to display a message requesting a password change at next login. The following shows the setting range. • [0]: Does not display the message. • [1]: Displays the message.

*1 A hyphen (-) is output in the administrator row.

*2 Editing is not available for the row of the sub-administrator authenticated to generate a CSV file for editing.
Even if edited, the editing is not reflected in the G3U file.

CSV file (AUTHINF.CSV) configuration (Mode 2)

A CSV file consists of the header part, group part, and the operator part.

Set each setting item without changing the order of the items.

☞ Page 3021 Header part (Mode 2)
☞ Page 3024 Group part (Mode 2)
☞ Page 3026 Operator part (Mode 2)

Precautions

■When the data format is invalid

In the following cases, the data format is invalid and a CSV file is not converted into an operator management information file.

- A necessary setting item is deleted.
- When the order of the setting items is changed
- When any of the settings is incorrect
- An unnecessary item exists.

■Header part (Mode 2)

In the header part, configure the common setting for each operator information.

Items to be output vary with the settings, such as administrator privileges.

1)	GOT_OPERATOR_AUTHENTICATION_INFO_GOT3000	
2)	DATA_VERSION	1
3)	SECURITY_MODE	2
5)	AUTH_TYPE	ID_PASS
6)	PASS_TYPE	ENCRYPTED
7)	AUTO_LOGOUT_TIME	300
8)	PASS_EXP_DATE	42
9)	EXT_AUTH_ID_TOP	0
10)	EXT_AUTH_ID_LEN	4
11)	EXT_UNIT_CH	8
12)	LOGIN_LOCK_NUM	0
13)	LOGIN_LOCK_CANCEL_TIME	10
14)	LOGIN_LOCK_TIME	5
15)	OPE_LOCK_NUM	3
16)	OPE_LOCK_TIME	5
17)	PASS_REQ_TYPE	3
18)	PASS_REQ_MIN_LEN	8
19)	PASS_REQ_STR_TYPE	3
20)	PASS_EXP_NOTICE	0
21)	OUTPUT_ALL_OPE	1
22)	IS_FUNC_SET	1
23)	FUNC_SET_LEVEL	15
24)	PASS_HIST_NUM	1
25)	EDITABLE_GROUP	2_3_4

Created by an operator with operation authority for [Edit operator information]

1)	GOT_OPERATOR_AUTHENTICATION_INFO_GOT3000	
2)	DATA_VERSION	1
3)	SECURITY_MODE	2
4)	SUB_ADMIN_FORMAT	USER:USER2
5)	AUTH_TYPE	ID_PASS
6)	PASS_TYPE	ENCRYPTED
7)	AUTO_LOGOUT_TIME	300
8)	PASS_EXP_DATE	42
9)	EXT_AUTH_ID_TOP	0
10)	EXT_AUTH_ID_LEN	4
11)	EXT_UNIT_CH	8
12)	LOGIN_LOCK_NUM	0
13)	LOGIN_LOCK_CANCEL_TIME	10
14)	LOGIN_LOCK_TIME	5
15)	OPE_LOCK_NUM	3
16)	OPE_LOCK_TIME	5
17)	PASS_REQ_TYPE	3
18)	PASS_REQ_MIN_LEN	8
19)	PASS_REQ_STR_TYPE	3
20)	PASS_EXP_NOTICE	0
24)	PASS_HIST_NUM	1

Created by an operator with [Sub-administrator authority]

Item		Description	
1)	[GOT_OPERATOR_AUTHENTICATION_INFO_GOT3000]	Keyword to declare that the file is an operator management information file for GOT3000. This item cannot be edited.	
2)	[DATA_VERSION]	Data structure version of the CSV file.	
3)	[SECURITY_MODE]	Security mode. This item cannot be edited.	
4)	[SUB_ADMIN_FORMAT]	Keyword to indicate that the CSV file is converted from a G3U file by an operator with [Sub-administrator authority]. After the keyword, the operator name and level of the operator who has performed the file conversion are output. The operator name is output in the following format: [USER:Username]. The security level is output in the range from [0] to [15]. This item is output only in CSV files created by operators with [Sub-administrator authority]. This item cannot be edited.	
5)	[AUTH_TYPE]*1	Authentication type of the operator authentication.	
		[ID_PASS]	Authentication is performed with the operator name and password.
		[EXT_AUTH+P]	Authentication is performed with the external device connected to the RS232/422/485 interface of the GOT. Authentication with the operator name and password can be performed as well. (Auxiliary authentication)
		[EXT_AUTHUSB+P]	Authentication is performed with the external device connected to the USB interface of the GOT. Authentication with the operator name and password can be performed as well. (Auxiliary authentication)
6)	[PASS_TYPE]	Setting method of the password.	
		[ENCRYPTED]	The password is encrypted. An unencrypted password is encrypted when the file is converted into a CSV file.
		[PLAIN]	The password is not encrypted.
7)	[AUTO_LOGOUT_TIME]*1	Time period from when the last operation is performed until when the automatic logout is performed. The setting range is [0] (Invalid) or [60] seconds to [7200] seconds.	
8)	[PASS_EXP_DATE]*1	Number of days until the password expiration date The setting range is [0] (Invalid), or [1] to [1000] days.	

Item		Description	
9)	[EXT_AUTH_ID_TOP]*1	Starting position of the data used as the external authentication ID in the information read with an external device. The setting range is [0] to [1998] bytes. The total set value of [EXT_AUTH_ID_TOP] and [EXT_AUTH_ID_LEN] must be 2000 or less. If the total set value exceeds 2000, the file cannot be converted correctly.	
10)	[EXT_AUTH_ID_LEN]*1	Length of the data used as the external authentication ID in the information read with an external device. The setting range is [2] to [16] bytes. The total set value of [EXT_AUTH_ID_TOP] and [EXT_AUTH_ID_LEN] must be 2000 or less. If the total set value exceeds 2000, the file cannot be converted correctly.	
11)	[EXT_UNIT_CH]*1	Channel for connecting an external device to be used for external authentication. This item is fixed to [8].	
12)	[LOGIN_LOCK_NUM]*1	Number of consecutive failed login attempts for the GOT to recognize an incorrect login. The setting range is [0] (Invalid), or [3] to [10] times.	
13)	[LOGIN_LOCK_CANCEL_TIME]*1	Time period during which the re-authentication operation is disabled after it is judged that incorrect login attempts have been made. The setting range is [1] second to [3600] seconds.	
14)	[LOGIN_LOCK_TIME]*1	Time period in which consecutive failed login attempts increment the failed login count. This item is fixed to [5] minutes.	
15)	[OPE_LOCK_NUM]*1	Number of consecutive failed login attempts to the same operator account for the GOT to recognize an incorrect login. The setting range is [0] (Invalid), or [3] to [10] times.	
16)	[OPE_LOCK_TIME]*1	Time period in which consecutive failed login attempts to the same operator increment the failed login count. This item is fixed to [5] minutes.	
17)	[PASS_REQ_TYPE]*1	Password requirements.	
		[0]	Up to 64 characters can be set. The character types are not checked.
		[1]	This item depends on the settings of [PASS_REQ_MIN_LEN] and [PASS_REQ_STR_TYPE].
		[2]	The setting range is 8 to 64 characters. Checks if a password contains at least two of the following character types. • Alphabet (A to Z and a to z) • Numbers, symbols, and one-byte spaces
		[3]	The setting range is 8 to 64 characters. Checks if a password contains at least three of the following character types. • Alphabet (A to Z and a to z) • Numbers • Symbols and one-byte spaces
18)	[PASS_REQ_MIN_LEN]*1	This item is used only when [PASS_REQ_TYPE] is [1]. Minimum number of characters of a password to be a password requirement. The setting range is [1] character to [64] characters.	
19)	[PASS_REQ_STR_TYPE]*1	This item is used only when [PASS_REQ_TYPE] is [1]. Character type requirements for a password.	
		[0]	The character types are not checked.
		[1]	Checks if a password contains at least two of the following character types. • Alphabet (A to Z and a to z) • Numbers, symbols, and one-byte spaces
		[2]	Checks if a password contains at least three of the following character types. • Alphabet (A to Z and a to z) • Numbers • Symbols and one-byte spaces
		[3]	Checks if a password contains the following four types of characters. • Uppercase alphabet (A to Z) • Lowercase alphabet (a to z) • Numbers • Symbols and one-byte spaces
20)	[PASS_EXP_NOTICE]*1	Setting to notify the user that the password expiration date is approaching. When the number of remaining days until the password expiration date is equal to or less than the set number of days, a message prompting you to change the password appears at login. The setting range is [0] days (Invalid), or [1] to [30] days.	
21)	[OUTPUT_ALL_OPE]*2	When a sub-administrator with [Sub-administrator authority] performs a G3U to CSV file conversion, this setting determines whether to output the operator information uneditable by the sub-administrator to the operator part. • [0]: Not output • [1]: Output	

Item		Description
22)	[IS_FUNC_SET]*2	Editability of the header part (operator authentication setting) by operators with [Sub-administrator authority]. • [0]: Not allowed • [1]: Allowed
23)	[FUNC_SET_LEVEL]*2	Level of operators from which editing the operator authentication setting is enabled. The setting range is [0] to [15].
24)	[PASS_HIST_NUM]*1	Number of previously set passwords saved in the history. The setting range is [0] (Invalid), or [1] to [5] times.
25)	[EDITABLE_GROUP]*2	Set the group where the operator authentication setting can be edited. The setting range is [2] to [16]. Example) When group numbers 2, 8, and 16 are editable, the setting value is 2_8_16. For the groups set as editable groups, the following operations can be performed. • Adding operators to the group • Editing operators who belong to the group

*1 This item is output only in CSV files created by operators with levels where changing the operator authentication setting is allowed.

*2 This item is output only in CSV files created by operators with operation authority for [Edit operator information].

■Group part (Mode 2)

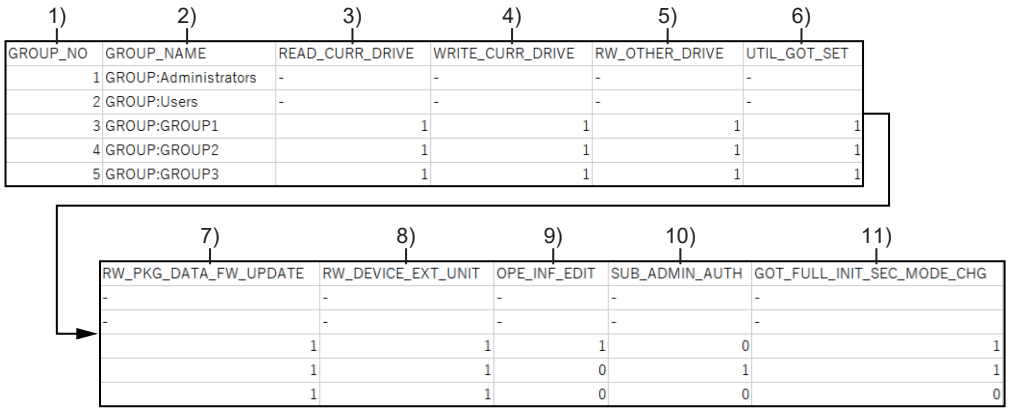
In the group part, set the individual group information.

For information on the group specifications, refer to the following.

☞ Page 2993 Group specifications

Information to be output and editability depend on the operator authenticated at the time of the CSV file creation.

Authenticated operator	Output information	Editability
Operator with operation authority for [Edit operator information]	Information on all groups is output.	Only user-defined groups can be edited.
Operator with [Sub-administrator authority]	Only the information on groups set as editable groups in the editable group setting is output.	This item cannot be edited.



Item		Description
1)	[GROUP_NO]	Group number. The setting range is [1] to [16]. This setting is fixed to [1] for the Administrators group and [2] for the Users group.
2)	[GROUP_NAME]	Group name. For information on the group name specifications, refer to the following. ☞ Page 2993 Group specifications The group name is output in the following format: [GROUP:Group name]. When editing a CSV file directly, add [GROUP:] to the start of data.
3)	[READ_CURR_DRIVE]*1	For details on the operation rights, refer to the following. ☞ Page 2995 [Current drive reading] • [0]: Without operation authority • [1]: With operation authority
4)	[WRITE_CURR_DRIVE]*1	For details on the operation rights, refer to the following. ☞ Page 2995 [Current drive writing] • [0]: Without operation authority • [1]: With operation authority
5)	[RW_OTHER_DRIVE]*1	For details on the operation rights, refer to the following. ☞ Page 2995 [Non-current drive reading/writing] • [0]: Without operation authority • [1]: With operation authority
6)	[UTIL_GOT_SET]*1	For details on the operation rights, refer to the following. ☞ Page 2995 [GOT settings in the utility] • [0]: Without operation authority • [1]: With operation authority
7)	[RW_PKG_DATA_FW_UPDATE]*1	The type of operation rights differ depending on the GOT model. For details on the operation authority on the GOT (except GT SoftGOT3000), refer to the following. ☞ Page 2995 [Startup package data reading/writing / F/W update] • [0]: Without operation authority • [1]: With operation authority
8)	[RW_DEVICE_EXT_UNIT]*1	For details on the operation rights, refer to the following. ☞ Page 2996 [Reading/writing a device from an external device] • [0]: Without operation authority • [1]: With operation authority
9)	[OPE_INF_EDIT]*1	For details on the operation rights, refer to the following. ☞ Page 2996 [Edit operator information] • [0]: Without operation authority • [1]: With operation authority

Item		Description
10)	[SUB_ADMIN_AUTH]*1	For details on the operation rights, refer to the following. ☞ Page 2996 [Sub-administrator authority] • [0]: Without operation authority • [1]: With operation authority
11)	[GOT_FULL_INIT_SEC_MODE_CHG]*1	For details on the operation rights, refer to the following. ☞ Page 2996 [GOT Full Initialization / Security Mode change] • [0]: Without operation authority • [1]: With operation authority

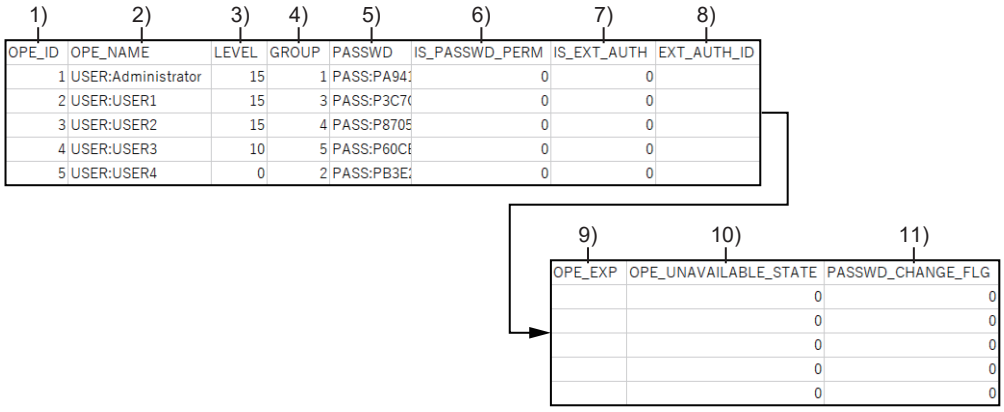
*1 This item is output only in CSV files created by operators with operation authority for [Edit operator information].

■Operator part (Mode 2)

In the operator part, set the individual operator information.

Information to be output depends on the operator authenticated at the time of the CSV file creation.

Authenticated operator		Output information
Operator with operation authority for [Edit operator information]		Information on all operators is output.
Operator with [Sub-administrator authority]	[Show non-editable operators] is selected	Information on all operators is output. The following operators' information is invalid even if edited. • Operators with levels higher than the authenticated operator • Operators who belong to groups not editable
	[Show non-editable operators] is deselected	Only the operator information that satisfies all of the following conditions is output. • Operators with levels equal to or lower than the authenticated operator • The operators belong to editable groups.



Item		Description	
1)	[OPE_ID]*1	Operator ID. The setting range is [1] to [32767].	
2)	[OPE_NAME]*1	Operator name. For information on the operator name specifications, refer to the following. ☞ Page 2992 Operator specifications When editing a CSV file directly, add [USER:] to the start of data. Otherwise, an error occurs when the file is converted to a G3U file.	
3)	[LEVEL]*1	Operator level. The setting range is [0] to [15]. When edited by an operator with [Sub-administrator authority], this item can be set to the level of the operator or lower.	
4)	[GROUP]*1	Group number of the group to which the operator belongs.	
		Operator with operation authority for [Edit operator information]	The setting range is [1] to [16].
		Operator with [Sub-administrator authority]	Only the group numbers of groups set as editable groups in the editable group setting can be set.
5)	[PASSWD]	Password for the operator. The character type and the number of characters are determined by [Password requirement settings] set in the [Operator authentication management] screen ([Authentication setting] tab). ☞ Page 3032 Common settings relevant to authentication (Operator authentication setting) When you set a password in a CSV file, prepend the string "PASS:" to the password. Otherwise, an error occurs when the file is converted to a G3U file. [PASS:] is not included in the password's character count.	
		Since the password entered in the CSV file is displayed as it is, be careful when handling the CSV file. The following methods are available as measures against password leakage.	
		Setting the password in the utility	Leave the password not set in the CSV file, and set it after the operator management information is imported into the GOT.
		Encrypting the password by reconversion	Set [ENCRYPTED] for [PASS_TYPE] in the header part. ☞ Page 3021 Header part (Mode 2) Convert the CSV file into a G3U file using GOT Operator Management Information Conversion Tool Ver. 3. The password can be encrypted by converting the converted G3U file into a CSV file again using GOT Operator Management Information Conversion Tool Ver. 3.

Item		Description
6)	[IS_PASSWD_PERM]	Setting to determine whether the password is permanent. The following shows the setting range. • [0]: The password is not permanent. • [1]: The password is permanent.
7)	[IS_EXT_AUTH]	Whether to use external authentication. The following shows the setting range. • [0]: Not used • [1]: Used When [AUTH_TYPE] in the operator part is set to [ID_PASS] (authentication with operator name and password), converting a CSV file to a G3U file changes the value to [0].
8)	[EXT_AUTH_ID]	External authentication ID. The number of bytes depends on the set value of [EXT_AUTH_ID_LEN] in the header part. Set the external authentication ID with hexadecimal numbers. When editing a CSV file directly, add [BIN:] to the start of data. Otherwise, an error occurs when the file is converted to a G3U file. If [AUTH_TYPE] is set to [ID_PASS] in the header part, setting this item is not required because external authentication is not used.
9)	[OPE_EXP]	Not used Leave the area blank.
10)	[OPE_UNAVAILABLE_STATE][*1]	Whether to enable or disable the operator. The following shows the setting range. • [0]: Enables the operator account. • [1]: Disables the operator account.
11)	[PASSWD_CHANGE_FLG]	Setting whether to display a message requesting a password change at next login. The following shows the setting range. • [0]: Does not display the message. • [1]: Displays the message.

*1 Editing is not available for the row of the sub-administrator authenticated to generate a CSV file for editing.
Even if edited, the editing is not reflected in the G3U file.

Error code list

The following shows the errors and the corrective actions corresponding to the error codes output to the error log file and others.

Only one error related to the settings of each group or operator is detected per line in the CSV file.

Some errors depend on the security mode.

○: Applicable

—: Not applicable

Error code	Error message	Corrective action	Mode 1	Mode 2
1000	The configuration of the CSV file is invalid. An error other than the errors corresponding to error codes 1001 to 1016.	Check if the specified CSV file is correct.	○	○
1001	The header part of the CSV file is invalid.	Check that the order of the keywords, the character strings, and the set values in the header part are correct. Correct them as necessary.	○	○
	The operator name or level following [SUB_ADMIN_FORMAT] in the header part is invalid.	Check that the operator name string following [SUB_ADMIN_FORMAT] and the setting value for the level are correct. Correct them as necessary.	○	○
	The CSV file ends in the middle of the header section.	Check if the format of the specified CSV file is correct.	○	○
	The number of rows in the header part of the CSV file is invalid.	Check if the header part includes any empty row. Correct the header part as necessary.	○	○
1010	The specified operator ID number is invalid.	Check that each operator ID number in the operator part is within the setting range and does not contain invalid characters. Correct the operator ID number as necessary.	○	○
1011	The operator name is invalid.	Check that each operator name in the operator part is within the setting range and does not contain invalid characters. Correct the operator name as necessary.	○	○
1012	The specified operator level is invalid.	Check that each security level in the operator part is within the setting range and does not contain invalid characters. Correct the security level as necessary.	○	○
1013	The specified password is invalid.	Check the following and correct the password as necessary. • The character string and the number of characters in the operator part of the password are correct. • If the password is not encrypted, it satisfies the password requirements. • If the password is encrypted, it is represented as a hexadecimal value.	○	○
1014	The value to set the password permanent is invalid.	Check that the value to set the password permanent is valid. Correct the value as necessary.	○	○
1015	The set value of the setting whether to set the external authentication ID is invalid.	Check that the set value is valid. Correct the value as necessary.	○	○
1016	The specified external authentication ID number is invalid.	Check that each external authentication ID number is valid. Correct the ID number as necessary. Check that the authentication type set in the header part requires the setting of external authentication ID numbers.	○	○
1017	The set value of the setting whether to disable an operator account is invalid.	Check that the set value is valid. Correct the value as necessary.	○	○
1018	The set value of the setting whether to change the password at the next login is invalid.	Check that the set value is valid. Correct the value as necessary.	○	○
1019	An item uneditable by the authenticated sub-administrator is specified.	Import the file with a sub-administrator account with the level where editing the item is allowed.	○	—
	An item uneditable by the authenticated operator is specified.	Import the file with an operator account with [Sub-administrator authority] and the level where editing the item is allowed.	—	○

Error code	Error message	Corrective action	Mode 1	Mode 2
1020	Any operator who satisfies all the following conditions is set in the CSV file. • The set level is higher than that of the sub-administrator authenticated at the time of import. • The operator does not exist in the G3U file (import destination).	Import the file with a sub-administrator account with the level where editing the item is allowed.	○	—
	Settings of the CSV file satisfy all the following conditions. • Any operator whose level is higher than that of the sub-administrator authenticated at the time of import is set. • [OUTPUT_ALL_OPE] (setting for displaying non-editable operators) is [0] (not output).			
	Any operator who satisfies all the following conditions is set in the CSV file. • The set level is higher than that of the operator authenticated at the time of import. • The operators belong to editable groups. • The operator does not exist in the G3U file (import destination) or is editable.	Import the file with an operator account with [Sub-administrator authority] and the level where editing the item is allowed.	—	○
	Settings of the CSV file satisfy all the following conditions. • Any operator whose level is higher than that of the sub-administrator authenticated at the time of import is set. • [OUTPUT_ALL_OPE] (setting for displaying non-editable operators) is [0] (not output). • An operator belonging to a non-editable group in the imported G3U file is set.			
1021	The specified operator name has already existed.	Change the operator name to a different one.	○	○
1022	The specified operator ID number has already existed.	Change the operator ID to a different one.	○	○
1023	The specified external authentication ID number has already existed.	Change the external authentication ID to a different one.	○	○
1024	The number of operator accounts has exceeded the registration limit.	Delete some operator accounts so that the number of accounts except administrators becomes 1000 or less.	○	—
		Delete some operator accounts so that the number of accounts becomes 1000 or less.	—	○
1025	The specified Administrator is invalid.	Check the specified Administrator. In the Administrator settings, only the following items can be edited. • [PASSWD] (Password) • [OPE_UNAVAILABLE_STATE] (Disabling an operator account) The set values of items other than [OPE_NAME] and the above are [-].	○	—
	An Administrator exists in the CSV file, except in the following case. • The authenticated sub-administrator is at level 15, and also [IS_FUNC_SET] (which determines if an operator with sub-administrator privileges can edit the header section (operator authentication settings)) is set to [1] (enabled).	Delete the Administrator from the CSV file.	○	—

Error code	Error message	Corrective action	Mode 1	Mode 2
1026	Information on the sub-administrator entered in [SUB_ADMIN_FORMAT] in the header part is not entered in the operator part.	Enter the information on the operator entered in [SUB_ADMIN_FORMAT] in the header part in the operator part.	○	—
	Any of the following uneditable items has been edited in the sub-administrator information. • [PASSWD] (Password) • [IS_PASSWD_PERM] (Setting to set the password permanent) • [EXT_AUTH_ID] (External authentication ID) • [PASSWD_CHANGE_FLG] (Changing a password at the next login)	Edit the editable items only.	○	—
	Information on the operator entered in [SUB_ADMIN_FORMAT] in the header part is not entered in the operator part.	Enter the information on the operator entered in [SUB_ADMIN_FORMAT] in the header part in the operator part.	—	○
	Any of the uneditable items has been edited in information on an operator with [Sub-administrator authority]. If the operator is not in an editable group, no item can be edited. If the operator is in an editable group, the following items cannot be edited. • [PASSWD] (Password) • [IS_PASSWD_PERM] (Setting to set the password permanent) • [EXT_AUTH_ID] (External authentication ID) • [PASSWD_CHANGE_FLG] (Changing a password at the next login)	Edit the editable items only.	—	○
1028	The specified group is invalid.	Check for any settings that apply to the following. Correct the setting as necessary. • A value outside the setting range is set. • An invalid character string is set. • When importing a CSV file to a G3U file, a group No. that cannot be edited is set. • A nonexistent group No. is set.	—	○
1030	The specified group name has already existed.	Change the group name to a different one.	—	○
1031	The specified group No. has already existed.	Change the group number to a different one.	—	○
1033	No operator belongs to the Administrators group.	Set one or more operators in the Administrators group.	○	○
1034	The specified group No. is invalid.	Check that the group No. set in the group part falls within the setting range and that no invalid characters are used. Correct the setting as necessary.	—	○
1035	The specified group name is invalid.	Check that the group name set in the group part does not exceed the maximum character limit and that no invalid characters are used. Correct the setting as necessary.	—	○
1036	The setting value for [READ_CURR_DRIVE] (operation authority for [Current drive reading]) is invalid.	Check that the setting value for [READ_CURR_DRIVE] is valid. Correct the value as necessary.	—	○
1037	The setting value for [WRITE_CURR_DRIVE] (operation authority for [Current drive writing]) is invalid.	Check that the setting value for [WRITE_CURR_DRIVE] is valid. Correct the value as necessary.	—	○
1038	The setting value for [RW_OTHER_DRIVE] (operation authority for [Non-current drive reading/writing]) is invalid.	Check that the setting value for [RW_OTHER_DRIVE] is valid. Correct the value as necessary.	—	○
1039	The setting value for [UTIL_GOT_SET] (operation authority for [GOT settings in the utility]) is invalid.	Check that the setting value for [UTIL_GOT_SET] is valid. Correct the value as necessary.	—	○
1040	For GOT (except GT SoftGOT3000), the setting value for [RW_PKG_DATA_FW_UPDATE] (operation authority for [Startup package data reading/writing / F/W update]) is invalid.	Check that the setting value for [RW_PKG_DATA_FW_UPDATE] is valid. Correct the value as necessary.	—	○
1041	The setting value for [RW_DEVICE_EXT_UNIT] (operation authority for [Reading/writing a device from an external device]) is invalid.	Check that the setting value for [RW_DEVICE_EXT_UNIT] is valid. Correct the value as necessary.	—	○
1042	The setting value for [OPE_INF_EDIT] (operation authority for [Edit operator information]) is invalid.	Check that the setting value for [OPE_INF_EDIT] is valid. Correct the value as necessary.	—	○

Error code	Error message	Corrective action	Mode 1	Mode 2
1043	The setting value for [SUB_ADMIN_AUTH] (operation authority for [Sub-administrator authority]) is invalid. Or, both [OPE_INF_EDIT] (operation authority for [Edit operator information]) and [SUB_ADMIN_AUTH] (operation authority for [Sub-administrator authority]) are enabled.	Check for any settings that apply to the following. Correct the setting as necessary. • The setting value for [SUB_ADMIN_AUTH] is invalid. • Both [OPE_INF_EDIT] and [SUB_ADMIN_AUTH] are enabled.	—	○
1044	The setting value for [GOT_FULL_INIT_SEC_MODE_CHG] (operation authority for [GOT Full Initialization / Security Mode change]) is invalid.	Check that the setting value for [GOT_FULL_INIT_SEC_MODE_CHG] is valid. Correct the value as necessary.	—	○
1045	The Administrators group or the Users group does not exist in the group part.	Check that the Administrators group or the Users group exists in the CSV file. Correct the setting as necessary.	—	○
1046	The editable group does not match between the CSV file and the G3U file (import destination).	Check that the editable group matches between the CSV file and the G3U file (import destination). Correct the group as necessary.	—	○
1047	A group number that does not exist in the group part exists in the editable group of the header part.	Set only the group number that exists in the group part for the editable group.	—	○
2000	The file format of the operator management information file is invalid.	Check if the specified operator management information file is correct.	○	○
2001	The level of the authenticated sub-administrator differs from the level entered in [SUB_ADMIN_FORMAT] in the header part.	Perform authentication with an account with the same level as [SUB_ADMIN_FORMAT] in the header part.	○	—
	The level of the authenticated operator differs from the level entered in [SUB_ADMIN_FORMAT] in the header part.	Perform authentication with an account with the same level as [SUB_ADMIN_FORMAT] in the header part.	—	○
3000	The file path after conversion exceeds 255 characters.	The converted file is output to the same folder as the source file. Change the storage destination of the conversion source file so that the path is short.	○	○
3001	The security mode does not match between the CSV file and the G3U file (import destination).	Check that the security mode matches between the CSV file and the G3U file (import destination). Import a CSV file to a G3U file with the same security mode.	○	○
4294967295	An unexpected error has occurred.	Contact us.	○	○

89.5 Common settings relevant to authentication (Operator authentication setting)

GT37 SoftGOT3000

Configure common settings relevant to authentication in the utility.

Touch [Operator authentication] on the [GOT basic set] tab of the utility to display the [Operator authentication management] screen.

In the [Operator authentication management] screen, select the [Authentication setting] tab.

For information on the operation method, refer to the following.

GOT3000 Series User's Manual (Utility & Maintenance Functions)

On the [Authentication setting] tab, configure the following settings.

Item	Description	
Automatic logout time	Set the time period from when the last operation is performed until when the automatic logout is performed.	
Password expiration date	Set the password expiration date. For an operator account whose password has been expired, a dialog prompting you to change the password appears when the authentication succeeds.	
Password expiration prenotification	Set the number of remaining days for prenotification of the password expiration date. A dialog notifying the number of remaining days until the expiration date appears when the number of remaining days until the expiration date is equal to or less than the set number of days.	
Authentication type for screen operation	Select the authentication method for operating GOT screens. For external authentication, you can set whether the authentication method can be switched to the one using the operator name and password in case the external device fails. (Auxiliary authentication)	
	[Operator name + password]	Authentication is performed with the operator name and password. The login screen is displayed during login attempts.
	[External authentication (serial)]	Authentication is performed with the external device connected to channel number 8. The external authentication login screen is displayed during login attempts. For the external authentication, refer to the following. ☞ Page 3033 External authentication
	[External authentication (USB)]	Not available for GT SoftGOT3000. Authentication is performed with the external device connected via USB (host). The external authentication login screen is displayed during login attempts. For the external authentication, refer to the following. ☞ Page 3033 External authentication
External authentication ID	Set the data used as the external authentication ID in the information read with an external device with the starting position and available byte number.	
Settings relevant to incorrect login detection	When the number of consecutive failed login attempts exceeds the specified number of times within five minutes, it is judged that incorrect login attempts have been made. The number of consecutive failed login attempts is managed for each protection target function. ☞ Page 2991 Protection target When incorrect login attempts are detected, login attempts to all operator accounts are disabled for a certain period. Set the number of consecutive failed login attempts for judging incorrect login attempts and the period for which login attempts are prohibited when it is judged that incorrect login attempts have been made.	
Settings relevant to operator account lock	When the number of consecutive failed login attempts with the same operator name exceeds the specified number of times within five minutes, the operator account is locked. The number of consecutive failed login attempts is managed for each operator. ☞ Page 2992 Operator specifications Set the number of consecutive failed login attempts until the operator account is locked.	

Item	Description	
Password requirement setting	Set the requirements for operator passwords. The following character types can be used. • Uppercase alphabet (A to Z) • Lowercase alphabet (a to z) • Numbers • Symbols, one-byte spaces (One-byte spaces at the end are invalid.) The following symbols can be used. ! " # $ % & ' ( ) * + , ` - . / : ; < = > ? @ [¥] ^ _ { | }~	
	[Strong]	The setting range is 8 to 64 characters. Whether the password contains at least three of the available character types is checked.
	[Middle]	The setting range is 8 to 64 characters. Whether the password contains at least two of the available character types is checked.
	[Customize]	Set the requirement for the number of characters in [Specify min number of characters]. Set the requirement for the character type in [Specify by character type].
	[None]	Up to 64 characters can be set. The character types are not checked.
Number of passwords used	Set the number of previously set passwords saved in the history.	
Sub-administrator authority setting	Configure the settings for operators with [Sub-administrator authority].	
	[Show non-editable operators]	Set whether to display the operator information uneditable by the logged-in operator.
	[Enable op auth settings change]	Set the editability of the operator authentication setting and the level of operators from which editing is enabled.
	[Editable groups]	Set editable groups. For the groups set as editable groups, the following operations can be performed. • Adding operators to the group • Editing operators who belong to the group

89.5.1 External authentication

For GOT screen operations, authentication can be performed with an external device.

For external authentication, the external authentication ID is used instead of the operator name and password.

For the usable external devices, refer to the following Technical Bulletin.

📖List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

The following shows the settings for using an external device.

External device used	Required setting	
	Setting in the [Operator authentication management] screen ([Authentication setting] tab) of the utility	Settings in GT Designer3
USB barcode reader	Select [External authentication (USB)] for [Authentication method for screen operation].	For the settings to use a USB barcode reader, refer to the following. ☞ Page 2564 Using a barcode reader with the GOT (barcode function) Turning on b1 of the set control device enables external authentication with a USB barcode reader.
RFID controller	Select [External authentication (serial] for [Authentication method for screen operation].	For the settings to use an RFID controller, refer to the following. ☞ Page 2588 Using an RFID with the GOT (RFID function)

For the utility setting, refer to the following.

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

89.6 Login

GT37 SoftGOT3000

This section describes the operations and processing for which login is required.
When a login attempt is made and the authentication succeeds, the operator account becomes the logged in state.
The login status is managed for each of the following functions.

Function	Description
GOT screen operation	Touching the special function switch ([Login/Logout (Operator)]) in the logged out state displays the login screen. Follow the login screen instructions to perform the login operation. Upon successful authentication, you are logged in. Only one operator account can be logged in.
	The login screen is also displayed during the following operations. • When the screen is switched to the one with security level 1 or more in the logged out state • When the screen is switched to the one with a security level higher than that of the logged in operator • When the [Switch] button is touched in the operator switching/logout selection dialog • When an operation which requires the operation authority is performed in the logged out state
	Displays a login completion notification dialog upon successful authentication. The behavior of this dialog can be changed to either of the following based on the setting. • Not displaying the dialog • Automatically closing the dialog after the specified time has elapsed ☞ Page 3035 [Security] ([Screen Security] tab) (Mode 2)
Data transfer	Authentication is performed when the GOT is accessed from GT Designer3 or Data Transfer Tool. Enter the operator name and password in the displayed dialog. Only operators with the operation authority which allows the data transfer can transfer data. Only one operator account can be logged in.
GOT Mobile function	Authentication is performed when the server (GOT) is accessed from a client. Only operators with the corresponding operation authorities can access the server (GOT). Simultaneous logins from multiple clients (operators) are supported.
OPC UA server function	
FTP server function	

Even if the following processing occurs, any changes to the settings and status do not affect the logged-in operator account, and the login status is maintained.

- Updating the operator management information
- Disabling an operator account
- Operator account lock

89.7 Logout

GT37 SoftGOT3000

This section describes the operations and processing by which logout is performed.

Function	Description
GOT screen operation	Touching the special function switch for which [Login/Logout (Operator)] is set in the logged in state displays the operator switching/logout selection dialog. Touch the [Logout] button to log out.
	When the time without operation exceeds the automatic logout time, automatic logout occurs. However, while the [Operator authentication management] screen is displayed, automatic logout does not occur even if the time without operation exceeds the automatic logout time.
	Logout is performed in the following cases as well. • When the GOT is restarted because of package data writing or others • When the [Switch] button in the operator switching/logout selection dialog is touched and another operator is successfully authenticated on the displayed login screen
Data transfer	Logout is performed when writing or reading is completed using GT Designer3 or Data Transfer Tool.

89.8 [Security] ([Screen Security] tab) (Mode 2)

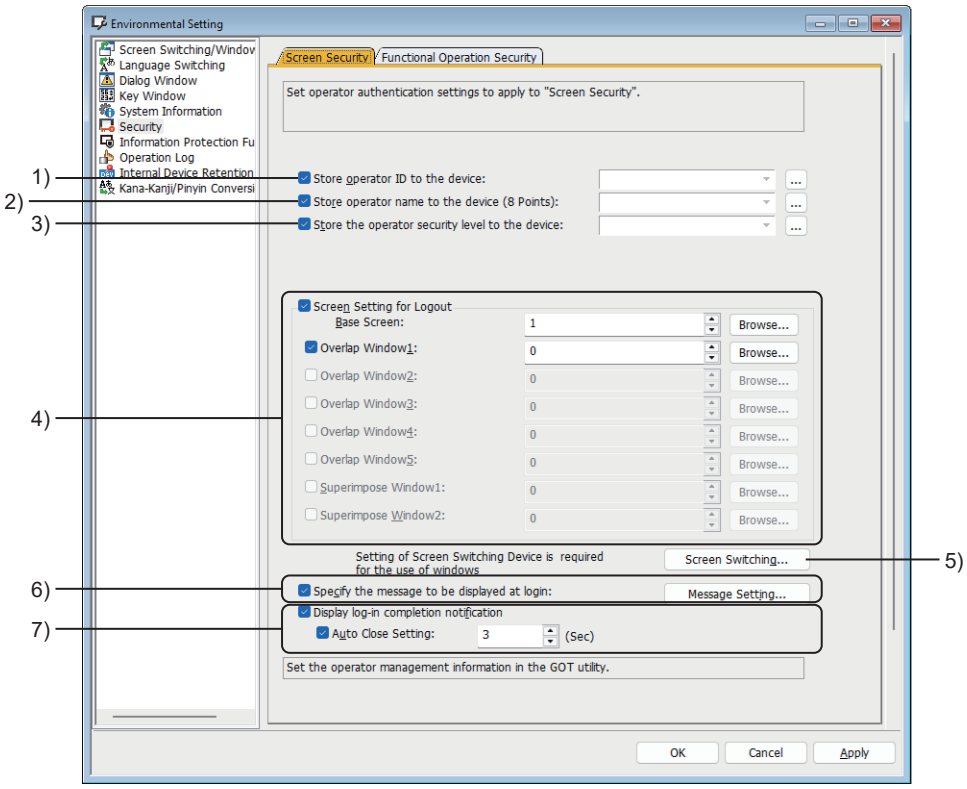
GT37 SoftGOT3000

Configure the operator authentication (Mode 2) settings.

When the security mode is mode 2, the operator authentication is always enabled.

For the screens that are displayed when the security mode is mode 1, refer to the following.

☞ Page 3053 [Security] ([Screen Security] tab) (Mode 1)

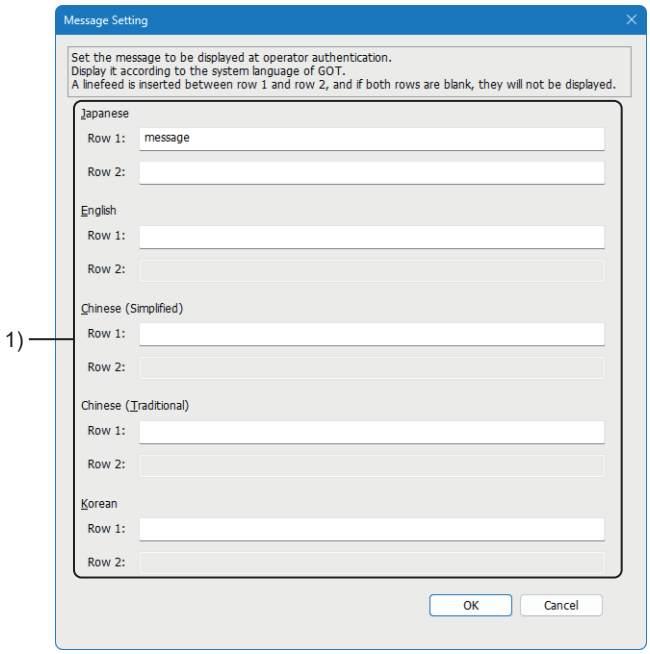


Item		Description
1)	[Store operator ID to the device]	Set a device to store the operator ID of the logged-in operator (operator ID external notification device). You can specify a word device or word-specified bit device. ☞ Page 834 How to set devices, labels, and tags The operator ID external notification device stores 0 when the operator logs out.
2)	[Store operator name to the device (8 Points)]	Set a device to store the operator name of the logged-in operator (operator name external notification device). You can specify a word device or word-specified bit device. ☞ Page 834 How to set devices, labels, and tags From the set device, 8 points of the word device or 128 points of the bit device is used. If the operator name contains less than 16 characters, blank devices store 0. If no operator is logged in, all devices store 0.
3)	[Store the operator security level to the device]	Set a device to store the security level of the logged-in operator (operator level external notification device). You can specify a word device or word-specified bit device. ☞ Page 834 How to set devices, labels, and tags If no operator is logged in, the device stores 0.
4)	[Screen Setting for Logout]	Set a screen to be displayed at logout. To specify the window screen to be displayed when logout is performed, select each window. Setting the checkbox of each window is enabled by setting the screen switching device corresponding to the window.
5)	[Screen Switching] button	Displays [Screen Switching/Window] of the [Environmental Setting] window. ☞ Page 542 [Screen Switching/Window]

Item			Description
6)	[Specify the message to be displayed at login]		Set the message to be displayed on the GOT screen at login. The message is set in the [Message Setting] dialog that opens from the [Message Setting] button. ☞ Page 3036 [Message Setting] dialog
7)	[Display log-in completion notification]	—	Displays the login completion notification dialog upon successful authentication. This setting applies to the dialog that appears upon successful authentication during the login operation on the GOT3000 screen. Set the behavior of the dialog that appears upon successful authentication during the login operation on the client of the GOT Mobile function in the [GOT Mobile Setting] window ([Security]). ☞ Page 2825 [Security]
		[Auto Close Setting]	Automatically closes the login completion notification dialog after it is displayed. When this item is selected, set the time until the dialog is automatically closed. The setting range is [1] second to [60] seconds.

89.8.1 [Message Setting] dialog

Set the message to be displayed on the GOT screen at login using operator authentication (mode 2).



Item		Description
1)	[Japanese] [English] [Chinese (Simplified)] [Chinese (Traditional)] [Korean]	Set a message for each system language. When a message is set for [Row 1], a message can be set for [Row 2]. Up to 58 characters can be set per line. A two-byte character is counted as two characters. The following symbols can be used. ! " # $ % & ' ( ) * + , ` - . / : ; < = > ? @ [¥] ^ _ { | } ~

89.9 Relevant settings

GT37 SoftGOT3000

Configure the relevant settings other than the specific settings for the operator authentication (Mode 2) as required.
The following shows the functions that are available by configuring the relevant settings.

89.9.1 GOT internal device

GT37 SoftGOT3000

☞ Page 3581 GOT special register (GS)

Function	Setting item
Notifying that the authentication with the external device is successful	GS240.b0
Notifying that the authentication with the external device failed	GS240.b1
Notifying that the login screen or operator re-authentication screen is being displayed regardless of authentication method.	GS240.b13
Notifying that the login screen for authentication with the external device is being displayed	GS240.b14
Notifying that the external authentication ID input key window is displayed.	GS240.b15
Notifying the screen that cannot be displayed because of the insufficient security level.	GS241.b1 to b4, b8 to b12 GS1241.b0 to b2, b8 to b10
Notifying that the login is blocked due to incorrect login attempts	GS242.b0
Notifying that an operator ID is locked due to incorrect login attempts	GS242.b1
Prohibiting deletion of the existing operator information	GS621.b0
Prohibiting editing of the inactivated operator information	GS621.b1
Inactivating the [Import] button on the [Operator information] tab in the [Operator authentication management] screen of the utility	GS621.b2

90 Restricting display and operation on the GOT (Screen security)

GT37 SoftGOT3000

☞ Page 3039 Restricting display and operation on the GOT with level authentication
☞ Page 3042 Restricting display and operation on the GOT with operator authentication (mode 1)
☞ Page 3053 [Security] ([Screen Security] tab) (Mode 1)

Point

This function can be used with GOT2000 when the security mode is set to mode 1.
Changing the security mode to mode 2 further strengthens the security function.

Set the security level for screens and objects to control the screen display.
Security setting is available as shown below.

Target	Description
Base screen Window screen Mobile screen	You can set a security level for the screen itself.
Object	You can set a security level for individual objects placed on the screen. For numerical input, numerical display, text input, and text display, you can set different security levels for input objects and display objects.

To restrict operations other than GOT screen display and object operations, configure other security function settings with reference to the following.
☞ Page 38 Security function
Using multiple security functions in combination further strengthens the security.

Precautions

When designing screens, do not set security to the initial screen appearing upon startup of the GOT. You can use the screen switching function or others to switch the initial screen to a screen with security.

Authentication method

The following two authentication methods are available.

Authentication method	Description
Level authentication	The level authentication is an authentication method with a password set for each security level. ☞ Page 3039 Restricting display and operation on the GOT with level authentication
Operator authentication (Mode 1)	The operator authentication is an authentication method with the operator management information set for each operator. ☞ Page 3042 Restricting display and operation on the GOT with operator authentication (mode 1)

90.1 Restricting display and operation on the GOT with level authentication

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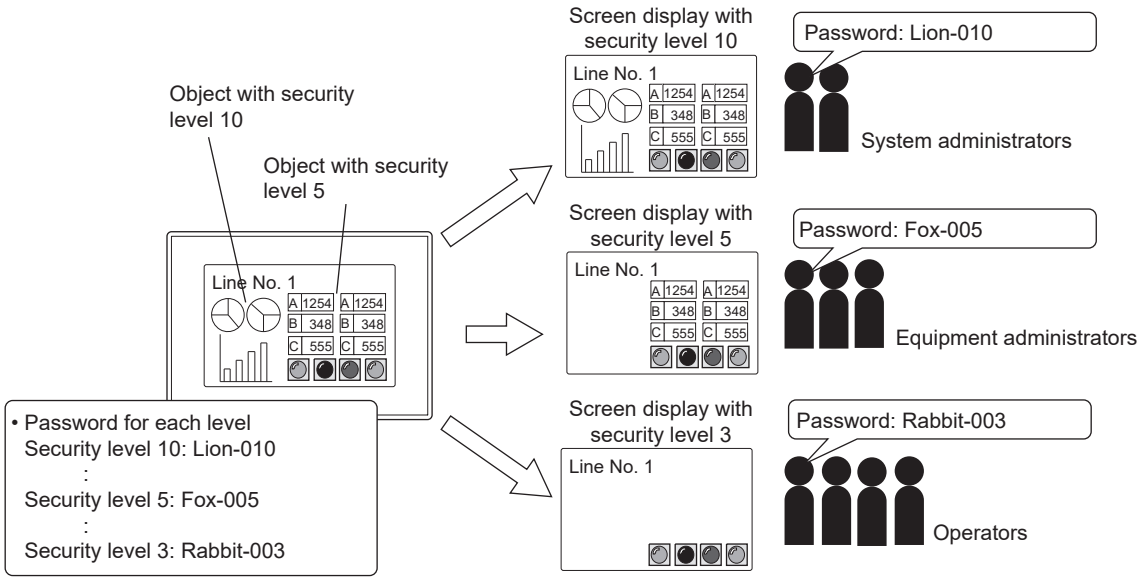
☞ Page 3039 Settings for the level authentication
☞ Page 3040 How to switch the security level in the GOT

The level authentication is performed using user-specified passwords corresponding to each security level.
Use the level authentication to configure a system which allows the operators in upper hierarchies to control all the operations which can be made by the operators in lower hierarchies.



90.1.1 Settings for the level authentication

The following shows the procedure for configuring the level authentication settings.

1. Configure the project settings in GT Designer3.

Display [Security] of the [Environmental Setting] window and configure the following settings in the [Screen Security] tab.

☞ Page 3054 Level authentication

Item	Setting
[Authentication Method]	Select [Level].
[Security Level Device]	Set any word device or bit device specified as a word device.
[Security Level Password]	Set a password for each security level. Passwords may not be duplicated across security levels.

2. Set the security level for each screen and objects on the screens.

Target	Reference
Base screen Window screen Mobile screen	Set a security level for each screen. ☞ Page 313 Base screen properties ☞ Page 323 Window screen properties ☞ Page 2831 Mobile screen properties
Object	Set a security level for each object to allow display and operation. For objects that can be operated such as touch switches and numerical inputs, set security levels for both display and operation. ☞ Setting dialog for each object ([Extended] tab)

90.1.2 How to switch the security level in the GOT

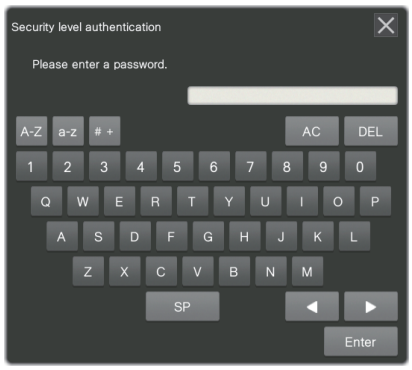
Two methods are available for switching the security level in the GOT as follows.

☞ Page 3040 Inputting passwords for each security level in the [Security level authentication] dialog
☞ Page 3041 Storing the security level value to the security level device
☞ Page 3041 Precautions on switching the security level

Inputting passwords for each security level in the [Security level authentication] dialog

The [Security level authentication] dialog is displayed by the following operations.

- Touch the special function switch to which [Password (Security Level)] is set.
- Display the utility and touch the [Password authentication] button or [Security] in the [GOT basic set] tab.



[Security level authentication] dialog

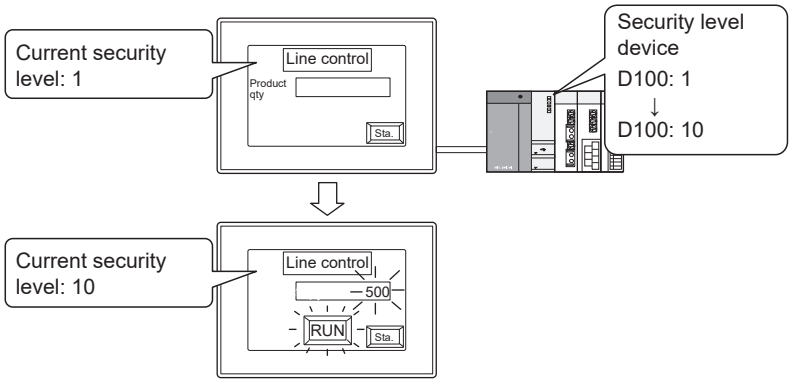
The [Security level authentication] dialog is also displayed when an operation is performed for which the current security level is insufficient.

When the dialog appears due to an insufficient security level during screen switching, changing the security level device to resolve the issue will close the dialog and switch the screen.

☞ Page 3041 Storing the security level value to the security level device

Storing the security level value to the security level device

The security level device is used to notify and change the current security level.
Store the value of the security level to this device, and the security level is switched accordingly.
For example, when the security level is [1], writing [10] to the security level device [D100] switches the security level to [10].



The display changes according to the security level.

Place a word switch to which security levels are assigned on the screen, so that the user can switch between the security levels with a single touch on the switch.
For a user who switches the security level between the high security level for maintenance and inspection and security level for regular operation, the switch is useful when switching the security level to the level for regular operation.
The switch eliminates the need for distributing multiple passwords according to the operation level.

Point

The processing, such as the following, performed at screen switching is also performed when the value in the security level device changes.

- Initial operation of a project script, screen script, or script parts object

Precautions on switching the security level

When switching the security level temporarily to a higher level for maintenance and inspection or other operations, make sure to return the security level to the level for regular users after the operation.
Otherwise, an unauthorized user can perform operation that must not be performed by that user.

90.2 Restricting display and operation on the GOT with operator authentication (mode 1)

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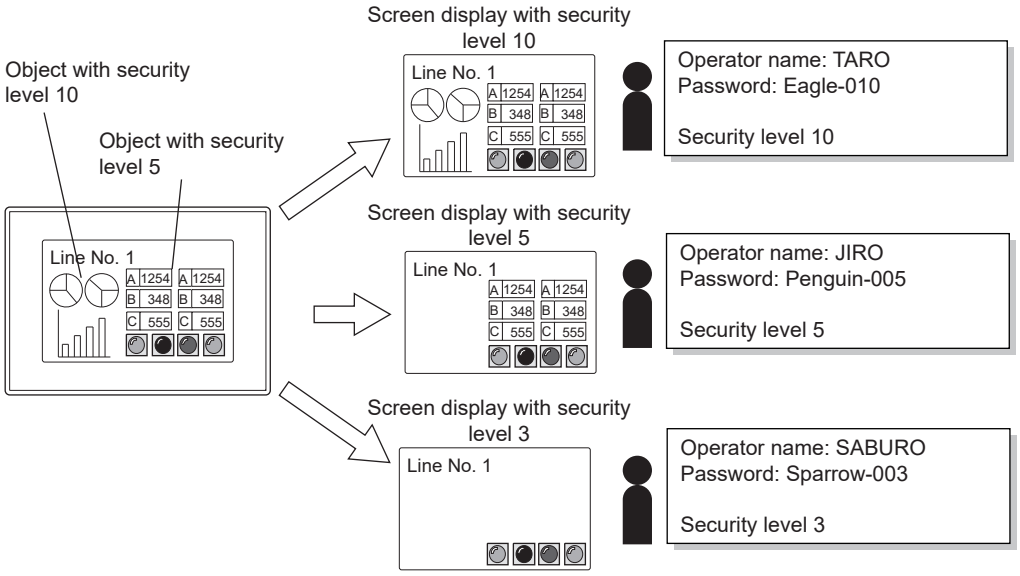
☞ Page 3043 Specifications of the operator authentication (Mode 1)
☞ Page 3049 Operator authentication (Mode 1) settings
☞ Page 3051 How to use the operator authentication (Mode 1)
☞ Page 3052 Editing the operator management information on a personal computer
☞ Page 3052 Relevant settings

The operator authentication (Mode 1) is performed based on the operator management information corresponding to each operator.

To record the operator login information, use the operation log function in combination.

With setting the automatic logout and the password expiration date, the security can be enhanced.

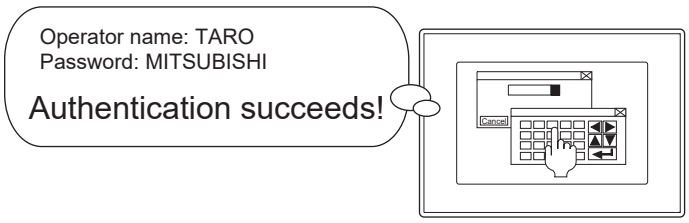
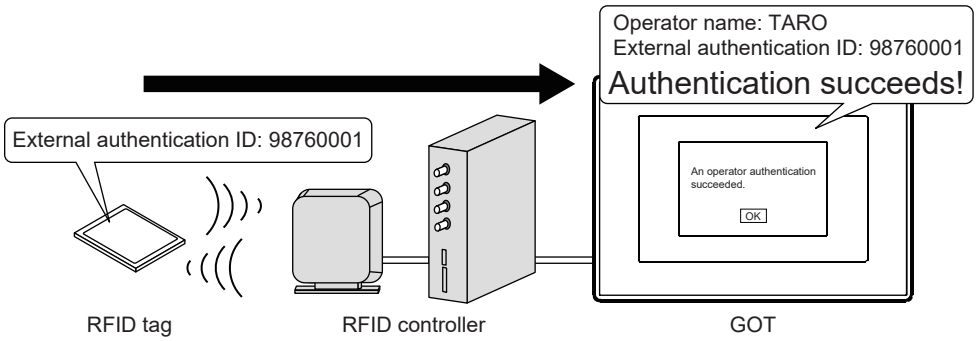


90.2.1 Specifications of the operator authentication (Mode 1)

☞ Page 3043 Authentication method
☞ Page 3044 Operator management information
☞ Page 3045 Group
☞ Page 3046 Password expiration date
☞ Page 3046 Password expiration prenotification
☞ Page 3047 Saving the password history
☞ Page 3047 Automatic logout
☞ Page 3047 Security level control from an external device
☞ Page 3047 Forced logout
☞ Page 3047 Auxiliary authentication
☞ Page 3048 Block of login due to incorrect login attempts
☞ Page 3048 Lock of an operator account due to incorrect login attempts
☞ Page 3048 Password requirements

Authentication method

The operator authentication (Mode 1) includes the following authentication types.

Authentication method	Description
Authentication with a password	The operator is authenticated with an operator name and password that are input by the operator. 
Authentication with an external device	The operator is authenticated with the external authentication ID that is input using an external device. For the usable external devices, refer to the following Technical Bulletin. 📖List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233) Example) When using an RFID controller as an external device 

Operator management information

The operator management information is the information to determine and authenticate the login operator, which includes the operator name and the password.

Except for the administrator, up to 1000 operators can be registered in one GOT.

Input the operator management information with the [Operator information management] screen of the utility or a personal computer.

For information on how to input the operator management information from the GOT utility, refer to the following.

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

For editing the operator management information on a personal computer, refer to the following.

☞ Page 3052 Editing the operator management information on a personal computer

The following shows the detailed operator management information.

Item	Description
Operator name	A name for determine the operator. Up to 16 alphanumeric characters (capital letters and small letters), one-byte spaces, and the following symbols are available for the operator name. ! " # $ % & ' ( ) * + , ` - . / : ; < = > ? @ [\ ] ^ _ { | } ~ (The administrator name is fixed to [Administrator].)
Operator ID	Numbers that are assigned to each operator. The setting range is 1 to 32766. (The administrator ID number is fixed to [-].)
Group	Each operator belongs to one group. The privileges of an operator are determined by the group to which the operator belongs. ☞ Page 3045 Group
Password	A password to log in the GOT. Up to 64 uppercase and lowercase alphabetic characters, numbers, one-byte spaces, and the symbols below are usable for a password. ! " # $ % & ' ( ) * + , ` - . / : ; < = > ? @ [\ ] ^ _ { | } ~ It is recommended to make a complicated password by combining alphanumeric characters (capital letters and small letters) and symbols.
External authentication ID	ID number to be input from an external device when an operator is authenticated with the device. This item cannot be set for the administrator account. The setting range is 4 to 32 digits (up to 8 words) in hexadecimal. When you do not use an external device, inputting the external authentication ID can be omitted.
Security level	A security level to which an operator belongs. This item cannot be set for the administrator account. The setting range is [0] to [15].
Password expiration date setting	Set whether to enable or disable the password expiration date. This item cannot be set for the administrator account.
Disabling an operator account	Set whether to enable or disable each operator account. The disabled operator account is not usable for login. (The administrator account or a sub-administrator account can be disabled.)
Changing a password at the next login	Set whether to display a message prompting for a password change at the next login. The message does not appear after the password change. This setting prompts each operator to change the initial password set by the administrator.
Administrator privileges	Set whether to grant administrator privileges to an operator. An operator with administrator privileges becomes a sub administrator.
Password history	The specified number of passwords used are saved. The setting range is [0] (Invalid), or [1] to [5] times.

You can export the set operator management information to the data storage and import to other GOTs.

Performing one of the following operations deletes the file from the GOT.

Operation	Description
Installing the BootOS to the GOT	The information is deleted when data is written with the following settings configured on the [GOT Write] tab of the [Communicate with GOT] dialog. • Select [BootOS] for [Write Data]. • Select [Write after deleting all the package folders with the same name in GOT].
Installing the BootOS or CoreOS to the GOT via a data storage	Set the following items in the [BootOS/CoreOS Write] tab of the [Communicate with Memory Card] dialog. The information is deleted when the installation of the BootOS or CoreOS is executed using a data storage in which data is written. • Select [BootOS] or [CoreOS] for [Write Data]. • Select [Delete the package data on write].

Operation	Description
Executing all GOT data initialization in the utility	GOT3000 Series User's Manual (Utility & Maintenance Functions)
Changing the security mode	The information is deleted when package data in security mode 2 is written to the GOT in security mode 1.

Group

You cannot register or edit groups.

The following shows the group types.

Group type	Description
Administrators group	Operators who belong to this group are administrators. ☞ Page 3045 Administrator Only operators whose name is [Administrator] can belong to this group.
Sub admins group	Operators who belong to this group are sub administrators. ☞ Page 3045 Sub administrator
Users group	Operators who belong to this group can operate the user-created screens.

■Administrator

Administrator refers to the account preset in the GOT for management use only.

You cannot delete this account.

The following items must always be set as follows for the operator management information.

Item	Setting
[Operator Name]	[Administrator]
[Operator ID]	[-]
[Group]	[Administrators]

Administrators can only edit the operator management information and operator authentication settings.

An administrator account cannot be used as an operator account to perform operations on the GOT.

For details on the operations that can be performed by administrators, refer to the following.

☞ Page 3046 Operations that can be performed by administrators and sub administrators

■Sub administrator

Sub-administrator refers to an operator with administrator privileges.

To register an operator as a sub administrator, set the following items in the [Operator authentication management] screen of the utility.

GOT3000 Series User's Manual (Utility & Maintenance Functions)

Setting	Description
[Operator information] tab	Set [Group] to [Sub Adminis] for the operator to be a sub administrator.
[Authentication setting] tab	Select [Use sub administrator].

Sub administrators can perform the following operations.

- Editing information on operators having a lower security level (Deleting itself is not allowed.)
- Editing some of the operator authentication settings

For details on the operations that can be performed by sub administrators, refer to the following.

☞ Page 3046 Operations that can be performed by administrators and sub administrators

Even if you are already logged in as a sub administrator, you must be authenticated by an administrator to perform operations that require administrator privileges.

■Operations that can be performed by administrators and sub administrators

The following table shows the operations that can be performed by administrators and sub administrators on the [Operator authentication management] screen of the utility.

Operations that can be performed by sub administrators depend on the security level and operator authentication settings.

○: Operable

—: Not operable

[Operator authentication management] screen			Administrator	Sub administrator		
				[Enable op auth settings change] is selected		[Enable op auth settings change] is deselected
				Level 15	Level 14 or lower	
[Operator Management] tab	Registering, editing, or deleting the operator management information		○	○*1	○*1	○*1
	Editing the operator management information on the administrator		○	○	—	—
[Authentication setting] tab	Settings other than the administrator setting		○	○*2	○*2	—
	Administrator setting	[Use sub administrator]	○	—	—	—
		[Show non-editable operators]	○	○	—	—
		[Enable op auth settings change]	○	—	—	—
		[Level that can be changed]	○	○	—	—

*1 A sub-administrator can manipulate the operator management information on operators having a lower security level.

*2 This operation is not allowed if the sub-administrator has a lower level than the level specified in [Enable op auth settings change].

Password expiration date

You can set an expiration date for a password.

Set the expiration date for the password in the [Operator authentication management] screen ([Authentication setting] tab) of the utility.

For information on how to set the expiration date for the password, refer to the following.

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

You can enable or disable the set password expiration date for each operator by using the setting of the operator management information.

For details on the operator management information, refer to the following.

☞ Page 3044 Operator management information

Password expiration prenotification

You can display a dialog prenotifying the password expiration date at login.

Set the password expiration prenotification in the [Operator authentication management] screen ([Authentication setting] tab) of the utility.

For setting the password expiration prenotification, refer to the following.

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

Saving the password history

The history of passwords used is saved.

When saving the password history is enabled, you cannot set the same password as the one saved in the history.

Enable saving the password history in the [Operator authentication management] screen ([Authentication setting] tab) of the utility.

For the setting method, refer to the following.

GOT3000 Series User's Manual (Utility & Maintenance Functions)

Automatic logout

You can set operator accounts to automatically log out after a certain period of inactivity.

Set the automatic logout in the [Operator authentication management] screen ([Authentication setting] tab) of the utility.

For information on how to set the automatic logout, refer to the following.

GOT3000 Series User's Manual (Utility & Maintenance Functions)

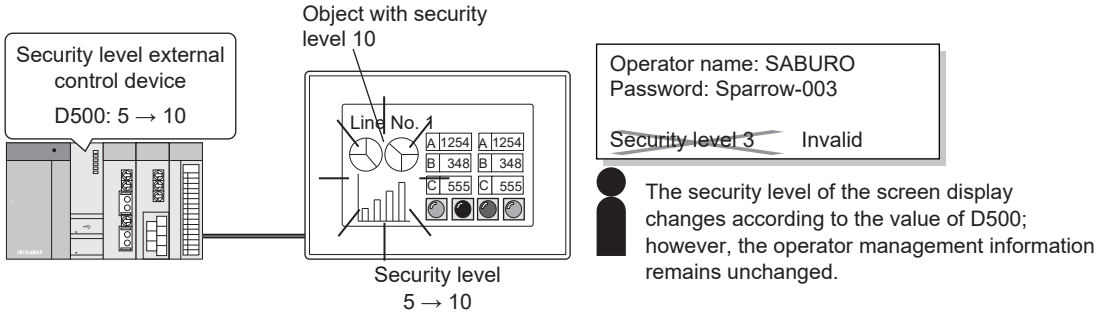
Security level control from an external device

You can control the security level of the targets that can be displayed by the operator who is logged in the GOT from an external device.

Store the security level value to the security level external control device to change the security level of the operator.

In this case, the new security level is not reflected to the relevant operator management information.

When this setting is enabled, the security level specified in the operator management information becomes invalid.



To enable the security level control from an external device, select [Externally control the security Level] in the [Screen Security] tab in [Security] of the [Environmental Setting] window.

Then, set the security level external control device.

☞ Page 3055 Operator authentication (Mode 1)

Forced logout

When the operator authentication external control device is set, operators can be forcibly logged out by turning on the Forced Logout signal (.b0).

For information on how to set the operator authentication external control device, refer to the following.

☞ Page 3056 Operator authentication external control device

Auxiliary authentication

For the operator authentication with an external device, the operator authentication may not be properly performed due to an error such as a device failure.

Enable the auxiliary authentication beforehand so that the authentication is executed by switching to the operator authentication with a password.

For information on how to set the auxiliary authentication, refer to the following.

GOT3000 Series User's Manual (Utility & Maintenance Functions)

Block of login due to incorrect login attempts

When login attempts fail consecutively more than the specified number of failed login times ([Invalid login count]) within five minutes, the GOT recognizes an incorrect login.

In such a case, the GOT enters the invalid login state and operators cannot log in until the login block time elapses.

To clear the invalid login state during the block time, perform one of the following operations.

- Display the [Operator authentication management] screen of the utility.
- Restart the GOT.

Set the invalid login count and login block time in the [Operator authentication management] screen ([Authentication setting] tab) of the utility.

For the setting method, refer to the following.

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

You can monitor the invalid login state with a GOT special register (GS).

When the login is blocked within the login block time period, GS242.b0 turns on.

For details on GS242 (Incorrect Login signal), refer to the following.

☞ Page 3600 Unauthorized Log-in Operation Notification (GS242)

Lock of an operator account due to incorrect login attempts

If an operator consecutively fails to log in more than the specified number of failed login times ([Operator lock count]), the operator account is locked.

The locked operator account is not usable for logins until the administrator or a sub-administrator unlocks this account.

Unlock an operator account in the [Operator authentication management] screen ([Operator information] tab) of the utility.

Set the operator lock count in the [Operator authentication management] screen ([Authentication setting] tab) of the utility.

For the setting method, refer to the following.

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

You can check whether an operator account is locked with a GOT special register (GS).

When an operator account is locked, GS242.b1 turns on.

For details on GS242 (Incorrect Login signal), refer to the following.

☞ Page 3600 Unauthorized Log-in Operation Notification (GS242)

Password requirements

You can set the minimum number of characters and the character types as password requirements.

When you set a password on the GOT, the password is checked for password requirements.

The passwords set before the requirements are specified, and the passwords set in the operator management information file (*.CSV) are not checked.

For setting the password requirements, refer to the following.

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

90.2.2 Operator authentication (Mode 1) settings

To perform the operator authentication (mode 1), configure the relevant settings in GT Designer3 and the GOT.

☞ Page 3049 Settings in GT Designer3
☞ Page 3050 Settings on the GOT

Point

If operator management information in security mode 2 exists on the GOT, writing package data in security mode 1 will delete the operator management information in security mode 2.

Settings in GT Designer3

1. Configure the project settings in GT Designer3.

Open the [Security] setting screen of the [Environmental Setting] window. Select [Operator] for [Authentication Method] of the [Screen Security] tab.

Configure other settings and set various devices as necessary.

☞ Page 3055 Operator authentication (Mode 1)
☞ Page 3052 Relevant settings

2. To use external devices, configure the settings as shown below.

External device used	Required setting
Serial barcode reader	For the settings to use serial barcodes, refer to the following. ☞ Page 2564 Using a barcode reader with the GOT (barcode function) As for the channel to which the serial barcode reader is connected, select [8] for [CH No.] in the [I/F Communication Setting]. ☞ Page 713 Setting the GOT Ethernet interface ([GOT Ethernet Setting])
USB barcode reader	For the settings to use a USB barcode reader, refer to the following. ☞ Page 2564 Using a barcode reader with the GOT (barcode function) Turning on b1 of the set control device enables external authentication with a USB barcode reader.
RFID controller	For the settings to use an RFID controller, refer to the following. ☞ Page 2588 Using an RFID with the GOT (RFID function)

3. Set the security level for each screen and objects on the screens.

Target	Reference
Base screen Window screen Mobile screen	For each screen, set a security level from which the screen switching is allowed. ☞ Page 313 Base screen properties ☞ Page 323 Window screen properties ☞ Page 2831 Mobile screen properties
Object	Set a security level for each object to allow display and operation. For objects that can be operated such as touch switches and numerical inputs, set security levels for both display and operation. ☞ Setting dialog for each object ([Extended] tab)

4. Write package data to the GOT.

Precautions

■Precautions for drawing

Set the security level of 0 for the screen displayed when logging out of the GOT.

When a security level (1 or more) is set for the screen displayed when logging out of the GOT, the screen for login is displayed after logging out of the GOT.

Settings on the GOT

1. At the first startup, set the administrator password.

In the [Operator information management] screen, set a password for the administrator.

2. Configure the settings common to operator authentication (operator authentication settings).

Touch [Operator authentication] on the [GOT basic set] tab of the utility to display the [Operator authentication management] screen.

3. Select the [Authentication setting] tab and configure the following settings according to the authentication method used.

GOT3000 Series User's Manual (Utility & Maintenance Functions)

Authentication method	Setting	
Authentication with a password	[Auth method]: Select [Operator name + password].	
Authentication with an external device	[Authentication Method]	Select [External auth (serial)] or [External auth (USB)].
	[Initial position input]	Set the starting position of the external authentication ID in the data read from the external device.
	[Valid byte count input]	Set the number of bytes for the external authentication ID.
	Example) When the character string of the received data is as follows and the external authentication ID is [25A3B7] • Received character string: [STX] 2 5 A 3 B 7 [ETX] • Hexadecimal notation: 02 32 35 41 33 42 37 03 Set the following values. • [Initial position input]: 0 • [Valid byte count input]: 6	

4. Display the [Operator information] tab of the [Operator authentication management] screen and register the operator management information.

The following shows the items to set.

- Operator name
- Operator ID
- Password
- Security level

For details on the operator management information, refer to the following.

☞ Page 3044 Operator management information

Precautions

■Password management

Delete the operator management information on the operator who has stopped using the GOT.

Leaving the operator management information increases the risk of invalid operations.

The administrator password cannot be checked later. Therefore, always make a note of the password.

When the administrator password is forgotten, the operator management information cannot be registered, edited, and deleted.

■Solutions when forgetting the password or external authentication ID

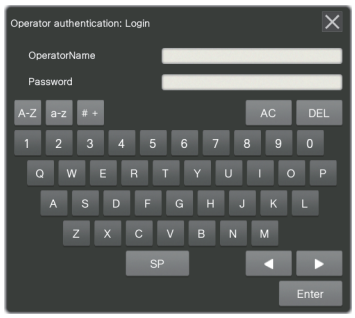
Situation	Solution
When forgetting the password	Delete the information on the operator who forgot the password from the [Operator authentication management] screen ([Operator information] tab), and register the operator management information again.
When forgetting the external authentication ID	Check the external authentication ID in the [Operator authentication management] screen ([Operator information] tab), and set the external authentication ID for the external device again.
When forgetting the administrator password	Delete the operator management information, and register all operator management information again. For the deletion of the operator management information, refer to the following. ☞ Page 3044 Operator management information

90.2.3 How to use the operator authentication (Mode 1)

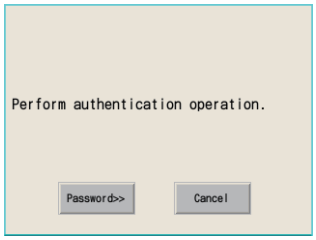
☞ Page 3051 Login for the operator authentication with a password
☞ Page 3051 Logout
☞ Page 3051 Forced logout

Login for the operator authentication with a password

1. Display the login screen.



Login screen for password authentication



Login screen for external device authentication

Display the login screen using either of the following methods.

- Touch the special function switch to which [Log-in/Log-out (Operator Authentication)] is set.
- Touch the [Login/Logout] button in the utility.

The login screen is also displayed when operation for which the level of the logged in operator is insufficient is performed.
When the login screen appears due to an insufficient level during screen switching, changing the value of the external control device to resolve the issue will close the login screen and switch the screen.

☞ Page 3047 Security level control from an external device

2. The operation differs depending on the authentication type.

Authentication type	Operation
Authentication with a password	Input an operator name and password, and touch the [Enter] button. ☞ Page 2831 Mobile screen properties
Authentication with an external device	Input the external authentication ID by using an external device such as an RFID controller.

3. For the operator authentication with a password, you can log in when the correct user name and password are input.
For the operator authentication with an external device, you can log in when the correct external authentication ID is input.

Logout

1. Perform either of the following operations to display a dialog for switching the operator or logging out.

- Touch the special function switch to which [Log-in/Log-out (Operator Authentication)] is set.
- Touch the [Login/Logout] button in the utility.

2. To log out, touch the [Logout] button.

To switch the operator, touch the [Switch] button to display the login screen.
The current operator account is still in the logged-in state.
To cancel logging out, touch the [Cancel] button.

Forced logout

You can force the operator to log out by turning on the Forced Logout signal (.b0) of the operator authentication external control device.
Do not leave this signal on because the forced logout is triggered with each turn-on of this signal.
For details on the operator authentication external control device, refer to the following.

☞ Page 3056 Operator authentication external control device

90.2.4 Editing the operator management information on a personal computer

Refer to the following.

☞ Page 3004 Editing an operator on a personal computer

90.2.5 Relevant settings

Configure the relevant settings other than the specific settings for the operator authentication (mode 1) as required.

The following shows the functions that are available by configuring the relevant settings.

GOT internal device

☞ Page 3581 GOT special register (GS)

Function	Setting item
Notifying that the authentication with the external device is successful	GS240.b0
Notifying that the authentication with the external device failed	GS240.b1
Notifying that the login screen or operator re-authentication screen is being displayed regardless of authentication method.	GS240.b13
Notifying that the login screen for authentication with the external device is being displayed	GS240.b14
Notifying that the external authentication ID input key window is displayed.	GS240.b15
Notifying the screen that cannot be displayed because of the insufficient security level.	GS241.b1 to b4, b8 to b12 GS1241.b0 to b2, b8 to b10
Notifying that the login is blocked due to incorrect login attempts	GS242.b0
Notifying that an operator ID is locked due to incorrect login attempts	GS242.b1
Prohibiting deletion of the existing operator information	GS621.b0
Prohibiting editing of the inactivated operator information	GS621.b1
Inactivating the [Import] button on the [Operator information] tab in the [Operator authentication management] screen of the utility	GS621.b2

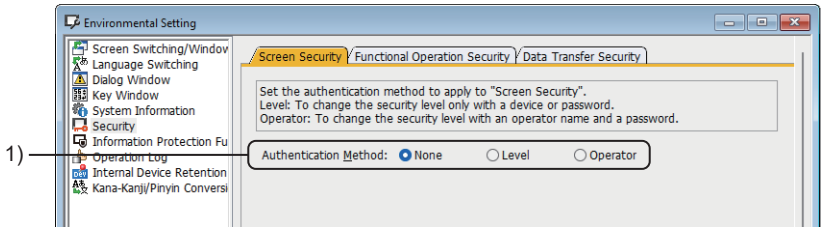
90.3 [Security] ([Screen Security] tab) (Mode 1)

GT37 SoftGOT3000

Set the security for the GOT in [Security].

Select [Common] → [GOT Environmental Setting] → [Security] from the menu to display this window.

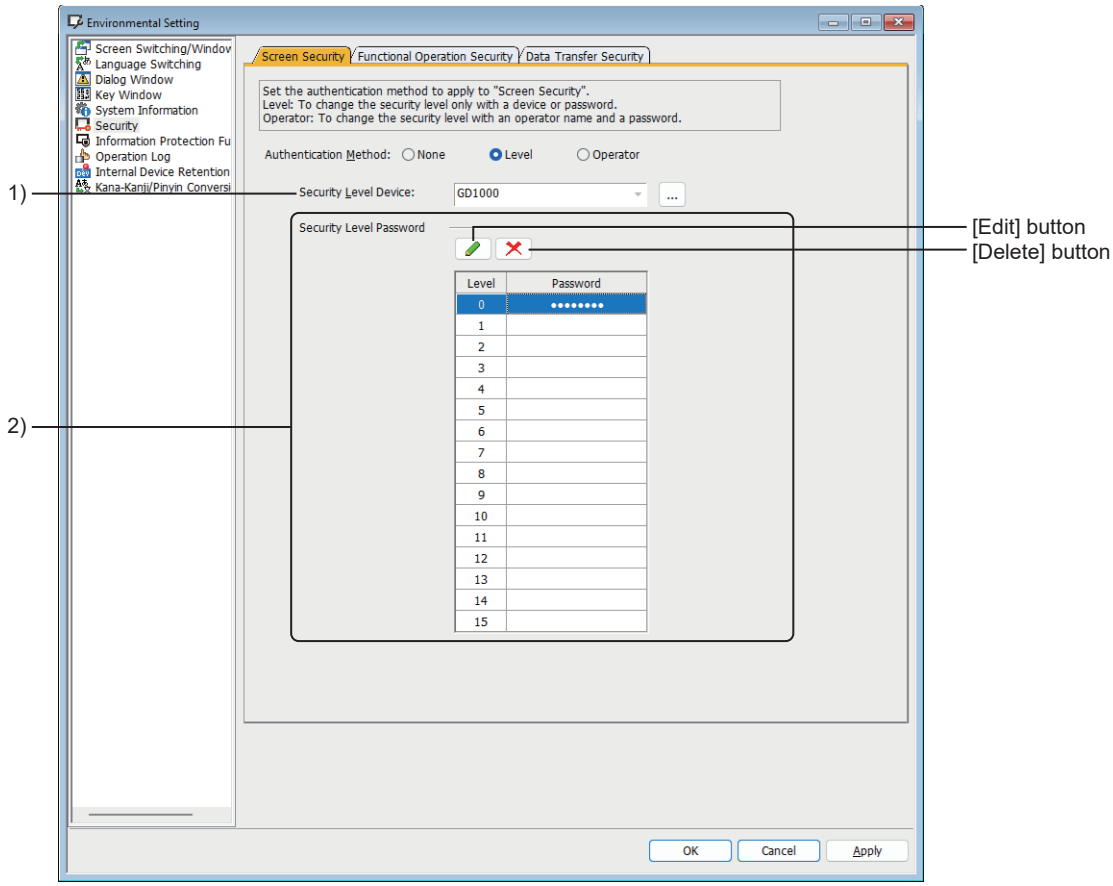
Display the [Screen Security] tab and select the authentication method used in [Authentication Method].



Item		Description
1)	[Authentication Method]	Select the authentication method for the screen security. ☞ Page 3054 Level authentication ☞ Page 3055 Operator authentication (Mode 1) When not performing authentication, select [Do not use].

90.3.1 Level authentication

Set the level authentication.



Item		Description
1)	[Security Level Device]	Set the device to which the security level value of the screen displayed on the GOT is stored. Set the device to set a password for each security level in [Security Level Password]. To change the security level, change the level device value from a controller.
2)	[Security Level Password]	The authentication password for each security level is displayed in a list. The password is displayed in [********]. Select the security level and click the [Edit] button to display the [Password Edit] dialog, where you will register or edit a password. Selecting the security level and clicking the [Delete] button delete the password. When deleting the password, inputting the current password is not required.

Precautions

The level authentication increases the risk of invalid operations because all operators can know the password for each security level.

When using the level authentication, manage the password strictly by changing the password frequently.

The registered password cannot be checked later. Therefore, always make a note of the password.

When the password is forgotten, security levels cannot be changed.

If you forget the password, delete the password and set a new password with GT Designer3.

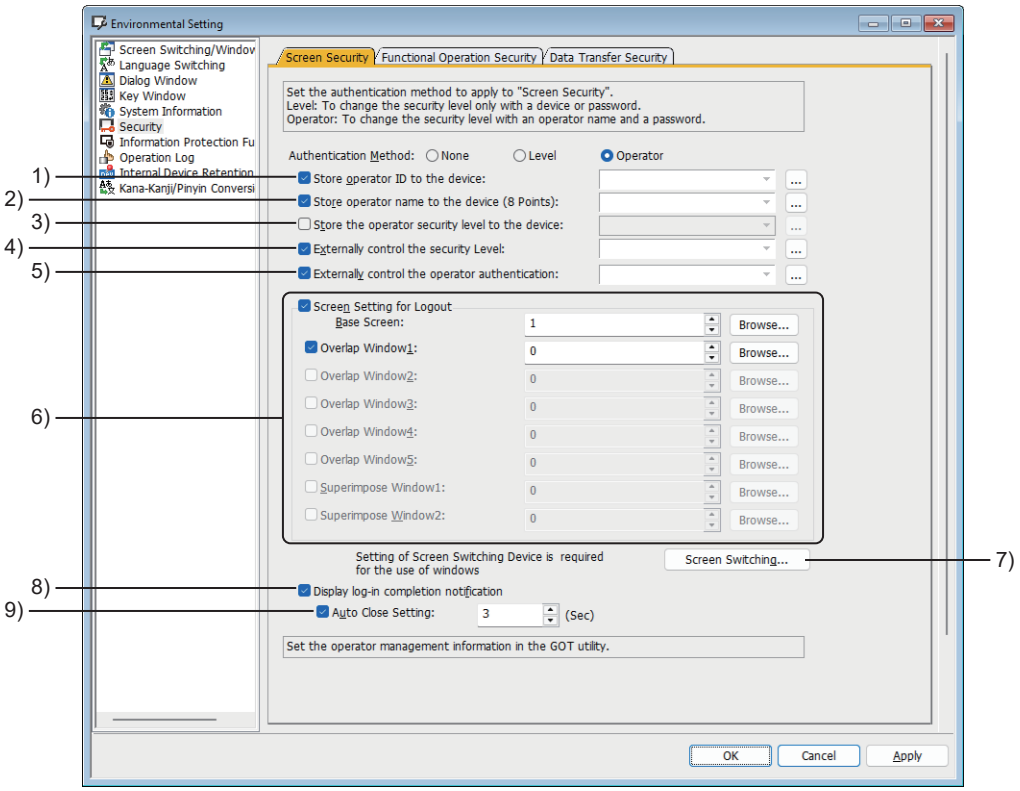
After setting, write the project to the GOT again.

90.3.2 Operator authentication (Mode 1)

Configure the operator authentication (mode 1) settings.

For the screens that are displayed when the security mode is mode 2, refer to the following.

☞ Page 3035 [Security] ([Screen Security] tab) (Mode 2)



Item		Description
1)	[Store operator ID to the device]	Set a device to store the operator ID of the logged-in operator (operator ID external notification device). You can specify a word device or word-specified bit device. ☞ Page 834 How to set devices, labels, and tags The specified device stores 0 when the operator logs out.
2)	[Store operator name to the device (8 Points)]	Set a device to store the operator name of the logged-in operator (operator name external notification device). You can specify a word device or word-specified bit device. ☞ Page 834 How to set devices, labels, and tags Setting the device reserves 8 points of the word device or 128 points of the bit device. If the operator name contains less than 16 characters, blank devices store 0. All the devices store 0 when the operator logs out.
3)	[Store the operator security level to the device]	Set a device to store the security level of the logged-in operator (operator level external notification device). You can specify a word device or word-specified bit device. ☞ Page 834 How to set devices, labels, and tags The specified device stores 0 when the operator logs out.
4)	[Externally control the security level]	Set a device to change the security level of the login operator externally (security level external control device). You can specify a word device or word-specified bit device. ☞ Page 834 How to set devices, labels, and tags ☞ Page 3047 Security level control from an external device
5)	[Externally control the operator authentication]	Set a device to control the operator authentication externally (operator authentication external control device). You can specify a word device or word-specified bit device. ☞ Page 834 How to set devices, labels, and tags ☞ Page 3056 Operator authentication external control device
6)	[Screen Setting for Logout]	Set a screen to be displayed at logout. Select each window screen to set a window screen displayed when logging out of the GOT. To set a window screen, set the screen switching device. Timing to display the set screen differs according to operation when logging out of the GOT. After logging out of the GOT by a touch switch (special function switch) or the automatic logout function, the set screen is displayed. If you have logged out using the utility, the specified screen will be displayed when you move from the utility to the user-created screen after logging out.

Item		Description
7)	[Screen Switching] button	Displays [Screen Switching/Window] of the [Environmental Setting] window. ☞ Page 542 [Screen Switching/Window]
8)	[Display log-in completion notification]	Displays a login completion notification dialog upon login.
9)	[Auto Close Setting]	Closes the login completion notification dialog automatically. Select this item, and specify the time period from when the login completion notification dialog appears until it closes. The setting range is [1] second to [60] seconds.

Operator authentication external control device

Bit number	Signal name	Description
b0	Forced Logout signal	Turning on this signal forcibly logs out an operator currently logging in. The Forced Logout signal operates at the signal rising. Therefore, this signal does not operate even if it is always turned on. Also, without the user login, this signal does not operate even if it is turned on. Before turning off this signal, check that the Operator ID External Notification device stores 0.
b1 to b15	—	Use prohibited

Point

Security level after the forced logout

When an operator security level becomes lower than the one set for the currently-displaying screen after the forced logout, each screen operates as follows.

• Base screen

The login screen is displayed.

• Window screen

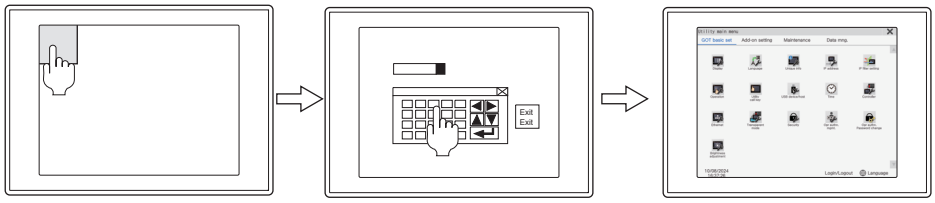
The window screens (overlap windows and superimposed windows) are deleted.

91 Configuring the security settings for operations in the utility (Functional operation security)

GT37 SoftGOT3000

☞ Page 3057 Operations restricted by functional operation security
☞ Page 3057 Settings for the functional operation security
☞ Page 3058 [Security] ([Functional Operation Security] tab)

The functional operation security restricts the display of the utility and the editing of parameters for some monitoring functions.



Switching to the utility screen | Input a password. | The utility appears when the input password is correct.

To restrict operations other than utility startup, configure other security function settings with reference to the following.

☞ Page 38 Security function

Using multiple security functions in combination further strengthens the security.

91.1 Operations restricted by functional operation security

GT37 SoftGOT3000

The following operations are restricted by functional operation security.

○: Supported

—: Unsupported

Restricted item		Security mode	
		Mode 1	Mode 2
Utility startup		○	—
R motion monitor	Display of the [Param. Setting] screen	○	○
Sequence program monitor (ladder display)	Display of the device test window	○	○
	Display of the [Ladder editor] screen	○	○

*1 In mode 2, utility startup is restricted by the operator's operation authority.

☞ Page 2994 Operation authorities

91.2 Settings for the functional operation security

GT37 SoftGOT3000

The following shows the procedure for setting the functional operation security.

1. Select [Common] → [GOT Environmental Setting] → [Security] from the menu to display the [Environmental Setting] window ([Security]).
2. In the [Functional Operation Security] tab, set the password.

☞ Page 3058 [Security] ([Functional Operation Security] tab)

91.3 [Security] ([Functional Operation Security] tab)

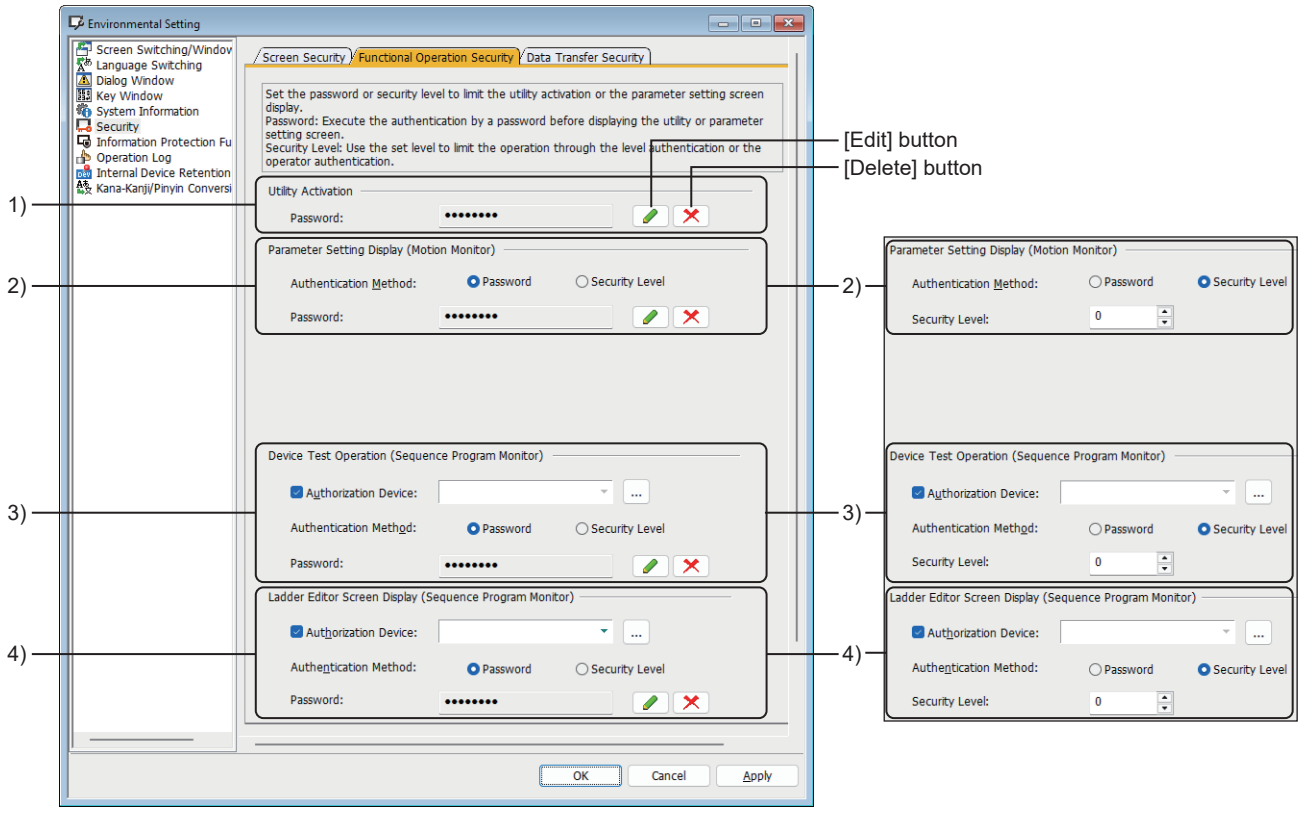
GT37 SoftGOT3000

The displayed content varies depending on the security mode.

☞ Page 3058 [Functional Operation Security] tab (mode 1)
☞ Page 3060 [Functional Operation Security] tab (mode 2)

91.3.1 [Functional Operation Security] tab (mode 1)

GT37 SoftGOT3000



Item			Description
1)	[Utility]	[Password]	Set a password to restrict starting up the utility. When the password is set, [********] is displayed. Click the [Edit] button to display the [Password Edit] dialog for registering or editing a password. Clicking the [Delete] button deletes the password.

Item			Description
2)	[Parameter Setting Display (Motion Monitor)]	[Authentication Method]	This item appears when an option other than [None] is selected for [Authentication Method] in the [Screen Security] tab. Set a method to restrict the display of the [Param. Setting] screen for the R motion monitor.
		[Password]	This item appears in either of the following conditions. • [None] is selected for [Authentication Method] in the [Screen Security] tab. • [Password] is selected for [Authentication Method]. Set a password to restrict the display of the screen. When the password is set, [********] is displayed. Click the [Edit] button to display the [Password Edit] dialog for registering or editing a password. Clicking the [Delete] button deletes the password.
		[Security Level]	This item appears when [Security Level] is selected for [Authentication Method]. Set the required security level for the screen display. The screen display is allowed when the security level is equal to or higher than the set security level.
3)	[Device Test Operation (Sequence Program Monitor)]	—	Restricts the display of the device test window for the sequence program monitor (ladder display).
		[Authorization Device]	Restricts the display of the screen using an authorization device (bit device). When the authorization device is on, the screen display is allowed.
		[Authentication Method]	This item appears when an option other than [None] is selected for [Authentication Method] in the [Screen Security] tab. Select a method to restrict the display of the screen.
		[Password]	This item appears in either of the following conditions. • [None] is selected for [Authentication Method] in the [Screen Security] tab. • [Password] is selected for [Authentication Method]. Set a password to restrict the display of the screen. When the password is set, [********] is displayed. Click the [Edit] button to display the [Password Edit] dialog for registering or editing a password. Clicking the [Delete] button deletes the password.
		[Security Level]	This item appears when [Security Level] is selected for [Authentication Method]. Set the required security level for the screen display. The screen display is allowed when the security level is equal to or higher than the set security level.
4)	[Ladder Editor Screen Display (Sequence Program Monitor)]	—	Restricts the display of the [Ladder editor] screen for the sequence program monitor (ladder display).
		[Authorization Device]	Restricts the display of the screen using an authorization device (bit device). When the authorization device is on, the screen display is allowed.
		[Authentication Method]	This item appears when an option other than [None] is selected for [Authentication Method] in the [Screen Security] tab. Select a method to restrict the display of the screen.
		[Password]	This item appears in either of the following conditions. • [None] is selected for [Authentication Method] in the [Screen Security] tab. • [Password] is selected for [Authentication Method]. Set a password to restrict the display of the screen. When the password is set, [********] is displayed. Click the [Edit] button to display the [Password Edit] dialog for registering or editing a password. Clicking the [Delete] button deletes the password.
		[Security Level]	This item appears when [Security Level] is selected for [Authentication Method]. Set the required security level for the screen display. The screen display is allowed when the security level is equal to or higher than the set security level.

Precautions

The registered password cannot be checked later. Therefore, always make a note of the password.

If you forget the password, use [Utilize Project] to create a new project.

☞ Page 226 Utilizing other project data

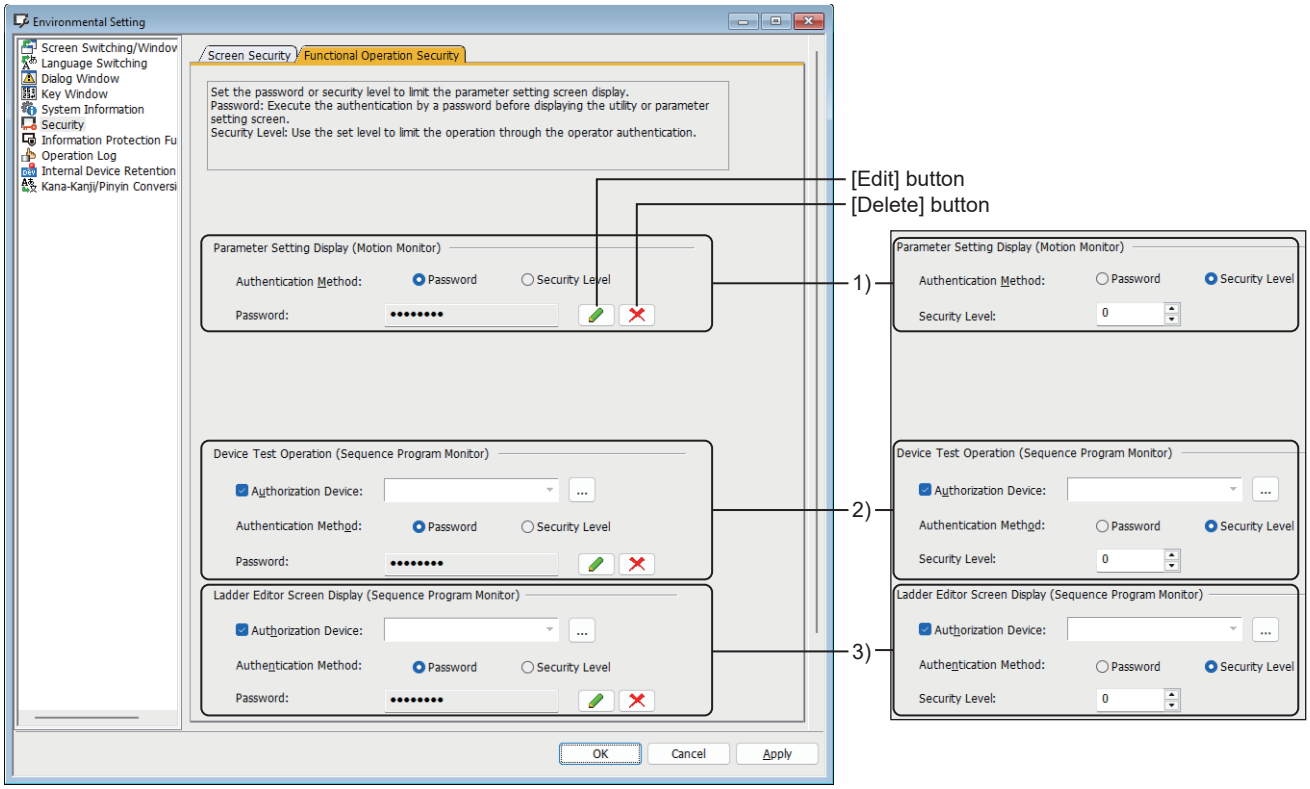
Deselect [GOT Environmental Setting/GOT Setup] from items to be utilized to initialize all the settings for the GOT environmental settings and the GOT setup.

At this time, the password is deleted.

After configuring the settings for the GOT environmental settings and the GOT setup, write the created project to the GOT.

91.3.2 [Functional Operation Security] tab (mode 2)

GT37 SoftGOT3000



Item			Description
1)	[Parameter Setting Display (Motion Monitor)]	[Authentication Method]	Set a password to restrict the display of the [Param. Setting] screen for the R motion monitor.
		[Password]	This item appears when [Password] is selected for [Authentication Method]. Set a password to restrict the display of the screen. When the password is set, [********] is displayed. Click the [Edit] button to display the [Password Edit] dialog for registering or editing a password. Clicking the [Delete] button deletes the password.
		[Security Level]	This item appears when [Security Level] is selected for [Authentication Method]. Set the required security level for the screen display. The screen display is allowed when the security level of the login operator is equal to or higher than the set security level.
2)	[Device Test Operation (Sequence Program Monitor)]	—	Restricts the display of the device test window for the sequence program monitor (ladder display).
		[Authorization Device]	Restricts the display of the screen using an authorization device (bit device). When the authorization device is on, the screen display is allowed.
		[Authentication Method]	Select a method to restrict the display of the screen.
		[Password]	This item appears when [Password] is selected for [Authentication Method]. Set a password to restrict the display of the screen. When the password is set, [********] is displayed. Click the [Edit] button to display the [Password Edit] dialog for registering or editing a password. Clicking the [Delete] button deletes the password.
		[Security Level]	This item appears when [Security Level] is selected for [Authentication Method]. Set the required security level for the screen display. The screen display is allowed when the security level of the login operator is equal to or higher than the set security level.

Item			Description
3)	[Ladder Editor Screen Display (Sequence Program Monitor)]	—	Restricts the display of the [Ladder editor] screen for the sequence program monitor (ladder display).
		[Authorization Device]	Restricts the display of the screen using an authorization device (bit device). When the authorization device is on, the screen display is allowed.
		[Authentication Method]	Select a method to restrict the display of the screen.
		[Password]	This item appears when [Password] is selected for [Authentication Method]. Set a password to restrict the display of the screen. When the password is set, [********] is displayed. Click the [Edit] button to display the [Password Edit] dialog for registering or editing a password. Clicking the [Delete] button deletes the password.
		[Security Level]	This item appears when [Security Level] is selected for [Authentication Method]. Set the required security level for the screen display. The screen display is allowed when the security level of the login operator is equal to or higher than the set security level.

Precautions

The registered password cannot be checked later. Therefore, always make a note of the password.

If you forget the password, use [Utilize Project] to create a new project.

☞ Page 226 Utilizing other project data

Deselect [GOT Environmental Setting/GOT Setup] from items to be utilized to initialize all the settings for the GOT environmental settings and the GOT setup.

At this time, the password is deleted.

After configuring the settings for the GOT environmental settings and the GOT setup, write the created project to the GOT.

92 Configuring the security setting for transferring data (Data transfer security)

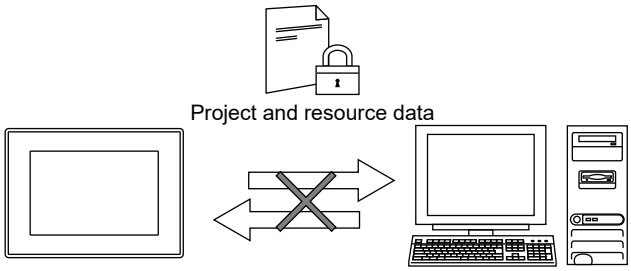
GT37 SoftGOT3000

☞ Page 3064 Settings for the data transfer security
☞ Page 3064 [Security] ([Data Transfer Security] tab)

Point

This function can be used when the security mode is set to mode 1.

The data transfer security prevents unauthorized reading and writing of a project and resource data by password-based authentication.



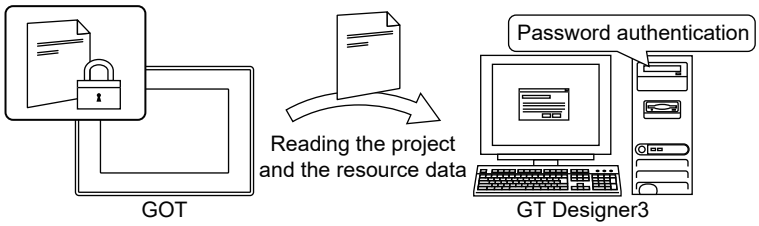
To restrict operations other than data transfer, configure other security function settings with reference to the following.

☞ Page 38 Security function

Using multiple security functions in combination further strengthens the security.

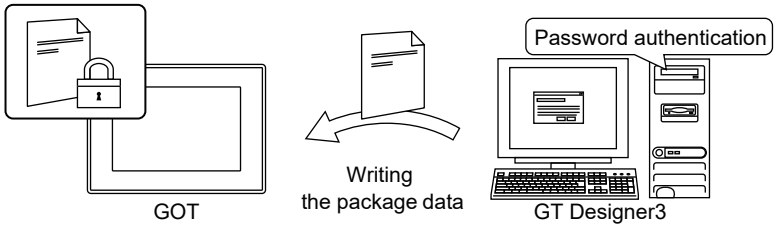
Restricting reading the project and the resource data

After the data transfer security is set for the project, an authentication with a password is required for reading the project or the resource data.



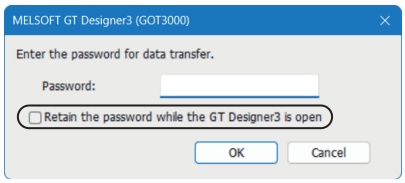
Protecting the project written to the GOT

For the project which the data transfer security is set to, an authentication with a password is required for overwriting.



When all the following conditions are satisfied, inputting a password is not required because the authentication is performed automatically.

- The project IDs or package folder names match each other between the project contained in package data to be written and the existing project in the GOT.
- The set data transfer passwords match each other between the project contained in package data to be written and the existing project in the GOT.
- At the first writing of package data, [Retain the password while the GT Designer3 is open] was selected in the dialog for inputting the data transfer password.



You can check and change the project ID in the [Project Information] dialog.

☞ Page 224 Giving a title to a project

92.1 Settings for the data transfer security

GT37 SoftGOT3000

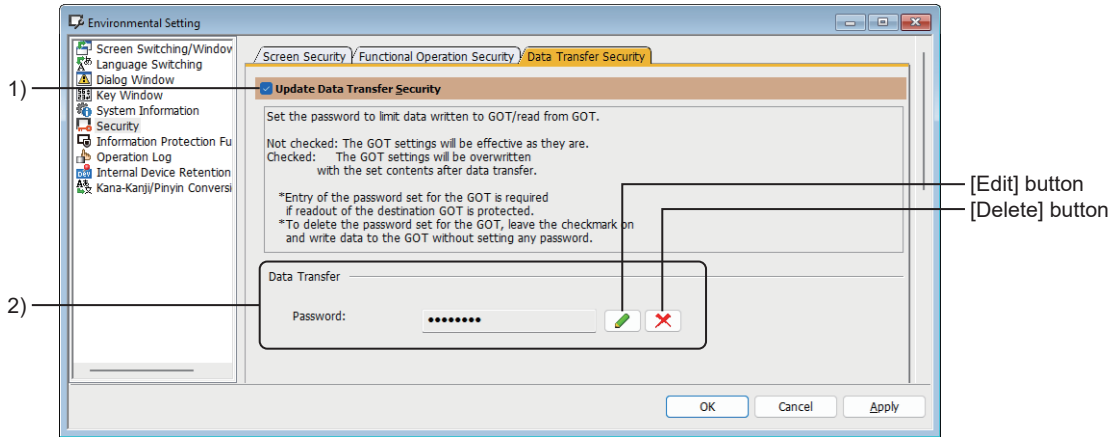
The following shows the procedure for setting the data transfer security.

1. Select [Common] → [GOT Environmental Setting] → [Security] from the menu to display the [Environmental Setting] window ([Security]).
2. In the [Data Transfer Security] tab, set the password.

☞ Page 3064 [Security] ([Data Transfer Security] tab)

92.2 [Security] ([Data Transfer Security] tab)

GT37 SoftGOT3000



Item			Description
1)	[Update Data Transfer Security]		Overwrites the data transfer security set with GT Designer3 to the GOT when the package data is written. Select this item to set [Data Transfer] items.
2)	[Data Transfer]	—	Set a password to restrict data transfer.
		Password	When the password is set, [********] is displayed. Click the [Edit] button to display the [Password Edit] dialog for registering or editing a password. Clicking the [Delete] button deletes the password.

Precautions

The registered password cannot be checked later. Therefore, always make a note of the password.

If you forget the password, install the BootOS again.

Installing the BootOS again deletes all data in the GOT, such as the project and the resource data.

93 Protecting the files in the GOT (Information protection function)

GT37 SoftGOT3000

☞ Page 3065 File tampering check function
☞ Page 3066 Confidentiality protection function
☞ Page 3067 How to set the information protection function
☞ Page 3068 [File Protection]

The information protection function protects the files in the GOT.

The function is composed of the following functions.

- File tampering check function
- Confidentiality protection function

93.1 File tampering check function

This function verities that files affecting the control of the GOT have not been tampered with.

The function prevents unauthorized changes to data due to operation mistakes or other factors.

No setting is required because the file tampering check function is always enabled.

93.2 Confidentiality protection function

GT37 SoftGOT3000

This function protects the confidentiality by setting passwords for files in the GOT (such as a project and resource data).
To enable the confidentiality protection function, select [Use file protection function] in the [File Protection] tab of the [Environmental Setting] window ([Information Protection Function]).
☞ Page 3068 [File Protection]

93.2.1 Encryption target and password setting method

The following files require authentication for operations such as writing and reading by setting a password.

Encryption target		Password setting method
Project		Set a password for the following operations. • Writing the package data to the GOT • Writing the package data to a memory card ☞ Page 412 File protection
Package data		Set a password for saving the package data. ☞ Page 223 Naming and saving the project as package data (*.GTYS)
GT SoftGOT3000 execution file		Set a password for saving the GT SoftGOT3000 execution file. ☞ Page 222 Naming and saving the project as project data (*.GTY) or a GT SoftGOT3000 execution file (*.GTYP)
Resource data	Operation log file	Set a password on the [File Protection] tab in the [Environmental Setting] window ([Information Protection Function]). ☞ Page 3068 [File Protection]
	Alarm file	
	Logging file	
	Recipe file	

93.3 How to set the information protection function

GT37 SoftGOT3000

The following shows how to set the information protection function.

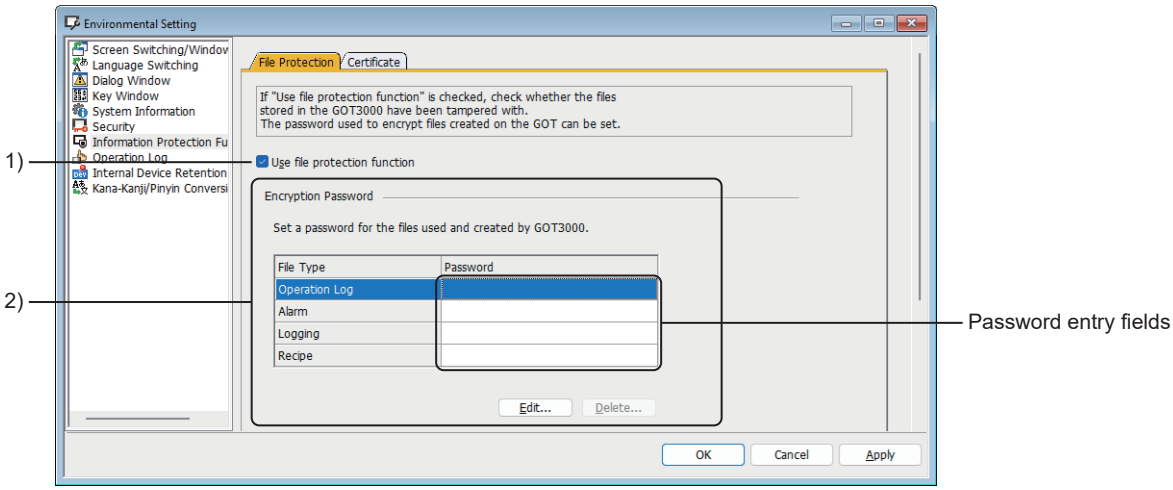
1. Select [Common] → [GOT Environmental Setting] → [Information Protection Function] from the menu to display the [Environmental Setting] window ([Information Protection Function]).
2. Configure the settings in the [File Protection] tab.

☞ Page 3068 [File Protection]

93.4 [File Protection]

GT37 SoftGOT3000

Configure the information protection function settings.



Item		Description
1)	[Use file protection function]	Enables the following functions. • File tampering check function • Confidentiality protection function For details on each function, refer to the following. ☞ Page 3065 File tampering check function ☞ Page 3066 Confidentiality protection function
2)	[Encryption Password]	Set a password for each type of resource file generated by the GOT. The resource file is encrypted and a password is required for conversion. Selecting a password entry field and clicking the [Edit] button displays the [Password Edit] dialog that allows you to register or edit the password. Selecting the password entry field and clicking the [Delete] button deletes the password.

Point

For information on how to set a password for the project or package data, refer to the following.
☞ Page 3066 Encryption target and password setting method

Precautions

■Changing or deleting the password

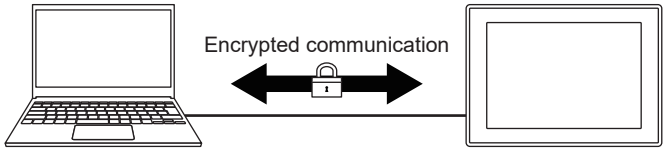
Even after the registered password is changed or deleted, the old password is required to convert the resource file generated before the password change or deletion.

94 Encrypting communication data (Encrypted communication function)

GT37 SoftGOT3000

☞ Page 3070 Specifications of the encrypted communication function
☞ Page 3072 Target functions for encrypted communication and required settings
☞ Page 3076 Creating and managing the certificate
☞ Page 3078 [Certificate]

The encrypted communication function encrypts communication data when the GOT communicates with an external device.
Encryption only applies to communications between the GOT and devices directly connected by Ethernet.
Communications via a PLC or other controllers are not encrypted.



To perform encrypted communications, a digital certificate (hereafter "certificate") is required for the GOT and controllers.
Certificates are data used for passing keys for encrypted communications to controllers.
There are the following types of certificates.

Certificate	Description
Server certificate	A certificate created by the server. The server presents this certificate to prove its authenticity in response to a request from the client during server authentication. The server certificate created by the GOT is a self-signed certificate that has not been approved by a certificate authority.
Client certificate	A certificate created by the client. The client presents this certificate to prove its authenticity in response to a request from the server during client authentication.
Certificate issued by a certificate authority (Root certificate and intermediate certificate)	A certificate issued and published by a certificate authority. It is used to verify the authenticity of a certificate.

The required certificate differs depending on the target function for encrypted communication.
☞ Page 3072 Target functions for encrypted communication and required settings

94.1 Specifications of the encrypted communication function

GT37 SoftGOT3000

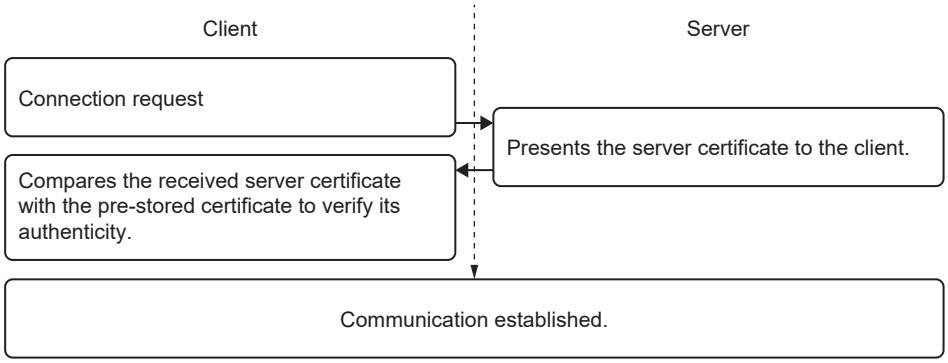
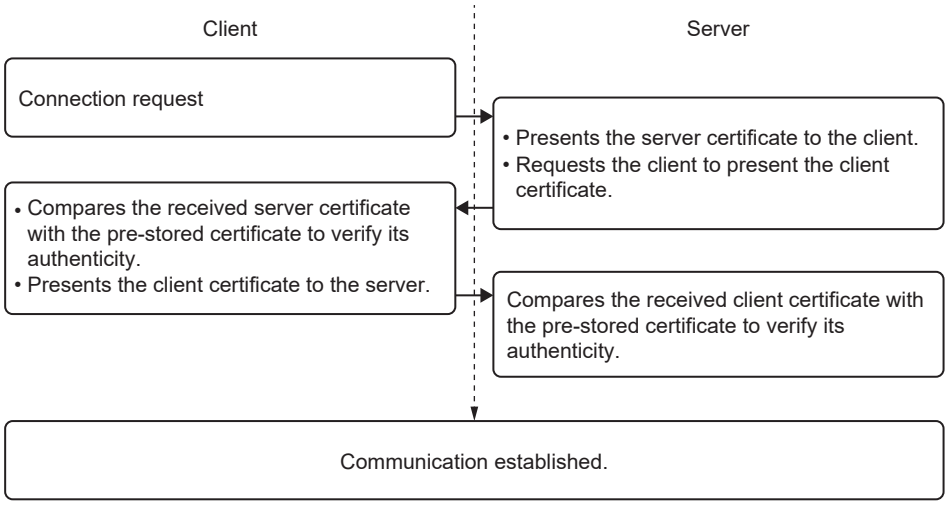
☞ Page 3070 Certificate specifications
☞ Page 3070 Authentication method
☞ Page 3071 Checking the certificate expiration date

94.1.1 Certificate specifications

Item	Description
Format	X509 format
Encrypted communication protocol	• TLS1.2, TLS1.3 • DTLS1.2 • SSH2.0

94.1.2 Authentication method

The following shows the authentication methods between the server and client.

Authentication method	Description
Server authentication	The client authenticates the server. 
Client authentication	The server and client mutually authenticate. 

94.1.3 Checking the certificate expiration date

The GOT interprets the expiration date set for each certificate as UTC±0 and checks for expiration by comparing it with the GOT's clock.

The certificate expiration date check is performed at the following timing.

GOT model	Check timing	Check target	Remarks
GOT (except GT SoftGOT3000)	GOT startup	Other than certificates issued by a certificate authority	Performed after the time setting at the GOT startup.
	Fixed interval	Other than certificates issued by a certificate authority	Performed every other day after the GOT startup.
	When used	Certificate to be used	—
GT SoftGOT3000	At the start of monitoring	All the certificates stored in the started module	Performed after the time setting at the GOT startup.
	Fixed interval	All the certificates stored in the started module	Performed every other day after the GOT startup.
	When used	Certificate to be used	—

The GOT issues system alarm 752 to notify that the certificate is about to expire 90 days before the expiration date.

When a certificate expires, system alarm 753 occurs.

When the GOT Mobile function is used in GT SoftGOT3000, no notifications regarding the certificate expiration date are provided.

Precautions

■Changing the GOT's clock

The certificate expiration date check uses the following clocks.

- GOT (except GT SoftGOT3000): GOT's clock
- GT SoftGOT3000: Personal computer's clock

If the clocks of the GOT and personal computer have been changed, the certificate may be valid or invalid.

■Time zone setting

Match the time zone settings between the GOT and the controller to be connected.

The GOT's clock with the time zone applied is used to create a certificate or perform encrypted communication.

94.2 Target functions for encrypted communication and required settings

The following table lists the functions where communication data is encrypted and the required settings for encryption.

☞ Page 3072 Function where the GOT serves as a server
☞ Page 3074 Function where the GOT serves as a client

94.2.1 Function where the GOT serves as a server

Target function for encrypted communication	Required setting	Model
Communication with GT Designer3 and Data Transfer Tool	☞ Page 3072 Communication with GT Designer3 and Data Transfer Tool	GT37 SoftGOT3000
SoftGOT-GOT link function	☞ Page 3072 SoftGOT-GOT link function	
FTP server function	☞ Page 3073 FTP server function	
VNC server function	The communication data is encrypted using SSH port forwarding. No certificate is used. ☞ Page 2638 Viewing the GOT from a personal computer (VNC server function)	
GOT network interaction function	☞ Page 3073 GOT network interaction function	GT37 SoftGOT3000
GOT Mobile function	☞ Page 3073 GOT Mobile function	GT37 SoftGOT3000
OPC UA server function	Client authentication is performed when a client accesses the server (GOT). The GOT requires a server certificate and the client certificate of the controller. ☞ Page 2839 Monitoring controllers through the GOT (OPC UA server function)	GT37 SoftGOT3000

Communication with GT Designer3 and Data Transfer Tool

When the personal computer and GOT are directly connected via Ethernet, server authentication is performed during data transfer.

Configure the following settings in GT Designer3.

Setting	Description
Opening the port for encrypted communication	Set the port for encrypted communication to open. (The default setting is open.) If it is set to close, communication cannot be established. ☞ Page 717 [GOT Ethernet Common Setting]
Enabling encrypted communication	Select [Perform the encryption communication] in the [Communication Configuration] dialog. ☞ Page 451 [Communication Configuration] dialog

SoftGOT-GOT link function

Server authentication is performed when GT SoftGOT3000 accesses a server.

Device	Setting	Description
GOT	Creating a server certificate	Set the certificate setting information in GT Designer3 and update the server certificate with the GOT. ☞ Page 3076 Updating the server certificate with the GOT (except GT SoftGOT3000)
GT SoftGOT3000	Enabling encrypted communication	In the [Set] dialog of GT SoftGOT3000, select [Execute Encrypted Communication] under [SoftGOT-GOT Link Function]. 📖GT SoftGOT3000 User's Manual
	Importing the certificate	Import the server certificate to the personal computer with GT SoftGOT3000 installed.

FTP server function

Server authentication is performed when a client accesses the server (GOT).

Device	Setting	Description
GOT	Enabling encrypted communication	Select [FTPS] under [Communication] in the [Controller Setting] window ([FTP Server]). (Default setting: Selected) ☞ Page 2913 [FTP Server]
	Creating a server certificate	Set the certificate setting information in GT Designer3 and update the server certificate with the GOT. ☞ Page 3076 Updating the server certificate with the GOT (except GT SoftGOT3000)
Client	Importing the certificate	Import the GOT server certificate to the client terminal.

GOT network interaction function

Server authentication is performed when a client accesses a server.

Device	Setting		Description
Server	Enabling encrypted communication		Select [Perform Encryption Communication with Server Certificates] in the [GOT Network Interaction] dialog. ☞ Page 772 [GOT Network Interaction] dialog
	Creating a server certificate	GOT (except GT SoftGOT3000)	Set the certificate setting information in GT Designer3 and update the server certificate with the GOT. ☞ Page 3076 Updating the server certificate with the GOT (except GT SoftGOT3000)
		GT SoftGOT3000	Set the certificate setting information in GT Designer3 and create a server certificate in GT SoftGOT3000. ☞ Page 3077 Creating a server certificate in GT SoftGOT3000
Client	Importing the certificate		Import the server certificate to the client terminal.

GOT Mobile function

Server authentication or client authentication is performed when a client accesses the server (GOT).

Device	Setting		Description
GOT	Enabling encrypted communication		Select [HTTPS(SSL)] for [Communication Method] in the [GOT Mobile Setting] window ([Basic Setting]). (The default setting is [HTTPS(SSL)].) ☞ Page 2818 [Basic Setting] Select [Perform authentication with client certificates] to enable client authentication. (It is recommended to enhance security for the ANDON connection.) When this item is selected, create a client certificate on the client terminal and import it to the server (GOT).
	Creating a server certificate	GOT (except GT SoftGOT3000)	Set the certificate setting information in GT Designer3 and update the server certificate with the GOT. ☞ Page 3076 Updating the server certificate with the GOT (except GT SoftGOT3000)
		GT SoftGOT3000	Create a server certificate with Internet Information Services (IIS). ☞ Page 2780 Settings for encrypted communication (GT SoftGOT3000)
	Importing the client certificate	GOT (except GT SoftGOT3000)	Required when [Perform authentication with client certificates] is selected in [Basic Setting] in the [GOT Mobile Setting] window. ☞ Page 2775 Creating and importing the client certificate (client, server (GOT))
		GT SoftGOT3000	Required when [Perform authentication with client certificates] is selected in [Basic Setting] in the [GOT Mobile Setting] window. ☞ Page 2795 Creating and importing the client certificate and importing it to GT SoftGOT3000 (client, server (GOT))
Client	Importing the server certificate	GOT (except GT SoftGOT3000)	Import the GOT server certificate to the client terminal.
		GT SoftGOT3000	To connect a client to the GOT, enter the URL of the destination GOT into the address bar of the client's browser. The URL must have a subject alternative name.
	Creating the client certificate		Required when [Perform authentication with client certificates] is selected in [Basic Setting] in the [GOT Mobile Setting] window. Create the client certificate in the client terminal. ☞ Page 2775 Creating and importing the client certificate (client, server (GOT))

94.2.2 Function where the GOT serves as a client

Target function for encrypted communication	Required setting	Model
Encrypted communication with the MELSEC MX Controller	The GOT requires the server certificate of the connected device. GOT3000 Series User's Manual (Connection)	GT37 SoftGOT3000
OPC UA client	Client authentication is performed when the client (GOT) accesses a server. The GOT requires the client certificate and server certificate of the connected device. Page 3074 OPC UA client	GT37 SoftGOT3000
VPN connection function	The communication data is encrypted using Secomea's products. No certificate is used. Page 671 Setting the VPN connection function of the GOT ([VPN Connection])	GT37 SoftGOT3000
Web browser function	Server authentication is performed using a certificate issued by a certificate authority when accessing an HTTPS-enabled web server. The certificate issued by the certificate authority is transferred to the GOT when the [Web Browser] function of the system application (add-on function) is written.	GT37 SoftGOT3000
Mail send function	Server authentication is performed when the client (GOT) accesses a server. The GOT requires the server certificate of the connected device. The certificate issued by the certificate authority is transferred to the GOT when the [Mail Send] function of the system application (add-on function) is written. Page 3075 Mail send function	GT37 SoftGOT3000
File transfer (FTP client) function	Server authentication is performed when the client (GOT) accesses a server. The GOT requires the server certificate of the connected device. Page 3075 File transfer (FTP client) function	GT37 SoftGOT3000
Remote personal computer operation function (Ethernet)	The communication data is encrypted using SSH port forwarding. No certificate is used. Page 2628 How to install and configure the SSH server	GT37 SoftGOT3000

OPC UA client

Server authentication is performed when the OPC UA client (GOT) accesses the OPC UA server.

Device	Setting	Description
OPC UA server	Creating a server certificate	Create a server certificate on the OPC UA server. For information on settings and operations on the OPC UA server, refer to the following. Manual of the OPC UA server used
	Importing the client certificate	Import the GOT client certificate to the OPC UA server terminal.
OPC UA client (GOT)	Creating the client certificate	Set the certificate setting information in GT Designer3 and create a client certificate with the GOT. Page 3077 Creating a client certificate with the GOT (except GT SoftGOT3000) Page 3077 Creating a client certificate with GT SoftGOT3000
	Importing the server certificate	Import the OPC UA server certificate to the OPC UA client (GOT).

Mail send function

Server authentication is performed when the client (GOT) accesses a server.

Device	Setting	Description
Server	Creating a server certificate	Create a server certificate. For information on settings and operations on the server, refer to the following. Manual of the server used
Client (GOT)	Importing the certificate	Import the server certificate to the client (GOT).

File transfer (FTP client) function

Server authentication is performed when the client (GOT) accesses a server.

Device	Setting	Description
Server	Creating a server certificate	Create a server certificate. For information on settings and operations on the server, refer to the following. Manual of the server used
Client (GOT)	Importing the certificate	Import the server certificate to the client (GOT).

94.3 Creating and managing the certificate

GT37 SoftGOT3000

You can perform operations related to certificates in [Certificate management] of the utility.

Device	Operation	Reference
Certificate of the GOT (Server certificate)	Update	📖GOT3000 Series User's Manual (Utility & Maintenance Functions)
	Export	
Certificate of the GOT (client certificate)	Create	
	Update	
	Delete	
	Export	
Certificate of the controller	Delete	Store the file exported from the controller to the data storage. Then, install it to the GOT and import the certificate of the controller in the utility. 📖GOT3000 Series User's Manual (Utility & Maintenance Functions)
	Import	
	Register to the trusted certificate	

The following shows the procedures to configure the certificate settings in GT Designer3, create the certificate, and update it with the GOT.

☞ Page 3076 Updating the server certificate with the GOT (except GT SoftGOT3000)
☞ Page 3077 Creating a client certificate with the GOT (except GT SoftGOT3000)
☞ Page 3077 Creating a server certificate in GT SoftGOT3000
☞ Page 3077 Creating a client certificate with GT SoftGOT3000

94.3.1 Updating the server certificate with the GOT (except GT SoftGOT3000)

Point

If there is no server certificate, the GOT automatically creates a server certificate at timings such as when the GOT is started so that the data transfer from/to GT Designer3 or Data Transfer Tool can be always encrypted. To apply the setting information on the certificate configured in GT Designer3, update the certificate with the GOT.

Operating procedure

1. Select [Common] → [GOT Environmental Setting] → [Information Protection Function] from the menu to display the [Environmental Setting] window ([Information Protection Function]).
2. Configure the settings on the [Certificate] tab.

☞ Page 3078 [Certificate]

3. Write the package data to the GOT.

☞ Page 408 Transferring data to the GOT

4. Display the [Certificate management] screen ([Certificate of GOT] tab) in the utility and check if a message prompting you to update the server certificate is displayed.

If the message is displayed, select [Server certificate] and touch the [Update] button to update the server certificate.
📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

94.3.2 Creating a client certificate with the GOT (except GT SoftGOT3000)

Operating procedure

1. Select [Common] → [GOT Environmental Setting] → [Information Protection Function] from the menu to display the [Environmental Setting] window ([Information Protection Function]).
2. Configure the settings on the [Certificate] tab.

☞ Page 3078 [Certificate]

3. Write the package data to the GOT.

☞ Page 408 Transferring data to the GOT

4. Display the [Certificate management] screen ([Certificate of GOT] tab) in the utility, select [Client certificate], and touch the [Create] button to create a client certificate.

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

94.3.3 Creating a server certificate in GT SoftGOT3000

Operating procedure

1. Select [Common] → [GOT Environmental Setting] → [Information Protection Function] from the menu to display the [Environmental Setting] window ([Information Protection Function]).
2. Configure the settings on the [Certificate] tab.

☞ Page 3078 [Certificate]

3. Open the project with GT SoftGOT3000 and start monitoring.

When monitoring starts, a server certificate is automatically created.

📖GT SoftGOT3000 User's Manual

94.3.4 Creating a client certificate with GT SoftGOT3000

Operating procedure

1. Select [Common] → [GOT Environmental Setting] → [Information Protection Function] from the menu to display the [Environmental Setting] window ([Information Protection Function]).
2. Configure the settings on the [Certificate] tab.

☞ Page 3078 [Certificate]

3. Open the project with GT SoftGOT3000 and start monitoring.

📖GT SoftGOT3000 User's Manual

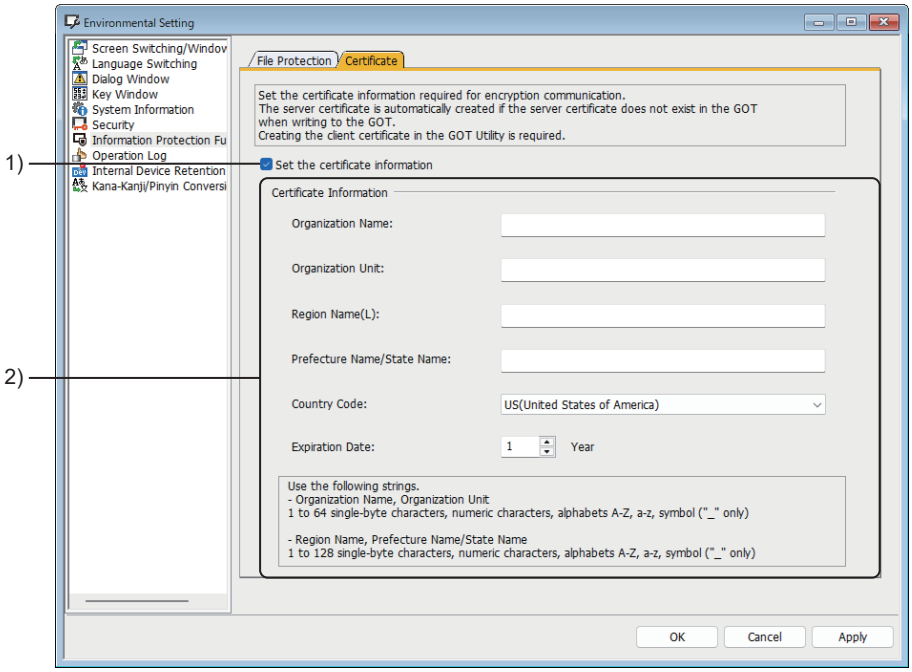
4. Display the [Certificate management] screen ([Certificate of GOT] tab) in the utility, select [Client certificate], and touch the [Create] button to create a client certificate.

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

94.4 [Certificate]

GT37 SoftGOT3000

Configure the settings to create a server certificate and client certificate with the GOT.



Item			Description
1)	[Set the certificate information]		Enable the encrypted communication function and configure the certificate settings. For procedures from configuring certificate settings in GT Designer3 to creating and updating certificates on the GOT, refer to the following. ☞ Page 3076 Updating the server certificate with the GOT (except GT SoftGOT3000) ☞ Page 3077 Creating a client certificate with the GOT (except GT SoftGOT3000) ☞ Page 3077 Creating a server certificate in GT SoftGOT3000 ☞ Page 3077 Creating a client certificate with GT SoftGOT3000
2)	[Certificate Information]	—	Settings for creating a certificate with the GOT.
		[Organization Name]	Set the organization name.
		[Organization Unit]	Set the division name.
		[Region Name]	Set the city name.
		[Prefecture Name/State Name]	Set the prefecture name or state name.
		[Country Code]	Select the country code.
		[Expiration Date]	Set the expiration date of the certificate. The setting range is [1] year to [20] years.

PART 30 Troubleshooting

95 Checking the causes and corrective actions for errors (GOT diagnostics)

96 Reproducing GOT operations offline (GOT offline monitor)

95 Checking the causes and corrective actions for errors (GOT diagnostics)

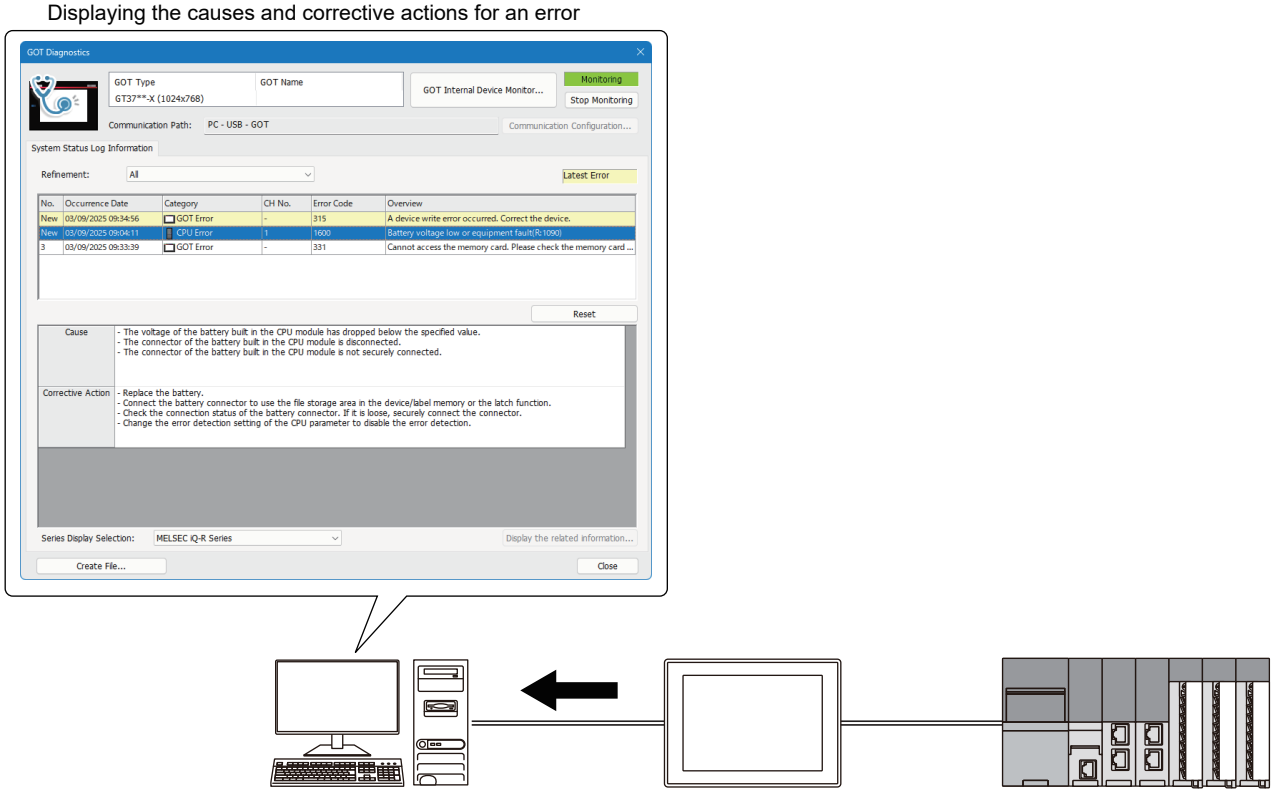
GT37 SoftGOT3000

☞ Page 3080 Overview of GOT diagnostics
☞ Page 3081 Specifications of the GOT diagnostics
☞ Page 3083 Displaying GOT error information
☞ Page 3085 Saving the contents of the error list to a file
☞ Page 3086 Monitoring GOT internal devices
☞ Page 3089 [GOT Diagnostics] dialog

95.1 Overview of GOT diagnostics

GOT diagnostics is a function that obtains error information from the connected GOT and displays the error details, causes, and corrective actions on the screen.
With GT Designer3 on a personal computer, you can check error information for the GOT, connected devices, and networks, allowing for quick troubleshooting without needing to go on-site.

Displaying the causes and corrective actions for an error



GOT diagnostics mainly provides the following three functions.

Function	Description
☞ Page 3083 Displaying GOT error information	Obtains error information from the connected GOT and displays the error details, causes, and corrective actions on the screen.
☞ Page 3085 Saving the contents of the error list to a file	The error information displayed on the screen can be saved to a file. Saving the information to a file enables its use in analyzing the cause of the error.
☞ Page 3086 Monitoring GOT internal devices	The GOT internal device monitor function allows you to monitor current values of GOT internal devices on the screen and rewrite them as needed.

95.2 Specifications of the GOT diagnostics

GT37 SoftGOT3000

☞ Page 3081 Errors identified through GOT diagnostics
☞ Page 3081 Operation related to the security mode
☞ Page 3081 Encrypted communication
☞ Page 3082 Precautions

95.2.1 Errors identified through GOT diagnostics

GOT diagnostics can detect the following errors.
Script parts are not covered by GOT diagnostics.

Error monitored by GOT diagnostics	Description
System alarm	• GOT error • CPU error • Network error
Script error	• Project script • Screen script • Object script

95.2.2 Operation related to the security mode

When the security mode of the connected GOT is mode 2, operator authentication is performed before GOT diagnostics.

95.2.3 Encrypted communication

When the personal computer and GOT are directly connected by Ethernet, communication data can be encrypted when transferred.
To encrypt the communication, open [Encryption Communication Port No.] in the [GOT Ethernet Setting] window and select [Perform encryption communication] in the [Communication Configuration] dialog.

☞ Page 717 [GOT Ethernet Common Setting]
☞ Page 451 [Communication Configuration] dialog

95.2.4 Precautions

The following shows the precautions for using GOT diagnostics.

Power saving function of the personal computer

Before performing the GOT diagnostics, disable the power saving function of the personal computer and Windows.
For details on power saving function settings, refer to the manual of the personal computer or Windows Help.

Performing the GOT diagnostics while the FA transparent function is used

While the controller programming software communicates with a controller by using the FA transparent function, the GOT diagnostics cannot start.
To perform the GOT diagnostics, make sure that the FA transparent function is not in use.

GOT diagnostics while firmware update is in progress

The GOT diagnostics cannot start while firmware update of the communication unit mounted on the GOT is in progress.
To perform the GOT diagnostics, make sure that the firmware update is not in progress.

System alarms (CPU errors and network errors) displayed in the GOT diagnostics and the controller status

In the GOT diagnostics, system alarms (CPU errors and network errors) are displayed based on the error history recorded in the GOT (System status log). Therefore, the alarms does not indicate the controller status.
To check the latest controller status, use one of the following methods.

- Using a diagnostics function of the controller programming software

Manual for the programming software used

- Checking system alarms by selecting [Maintenance] → [System alarm] in the GOT utility

GOT3000 Series User's Manual (Utility & Maintenance Functions)

Resetting script error data

You cannot reset scrip error data in the following cases.

- The GOT displays a screen in which no script is set.
- The GOT displays the utility screen.

Reset scrip error data while the GOT displays a screen in which a script is set.

Precautions for using the CC-Link IE TSN connection

When a controller is monitored using the CC-Link IE TSN connection, system alarms (CPU errors) are not displayed.

95.3 Displaying GOT error information

The following shows the procedure for executing GOT diagnostics and displaying GOT error information on the screen.

1. Connect the personal computer to the GOT.

For the connection method, refer to the following.

☞ Page 420 Connecting a personal computer to the GOT

2. Select [Debug/Check] → [GOT Diagnostics] from the GT Designer3 menu.

The [Communication Configuration] dialog appears.

☞ Page 451 [Communication Configuration] dialog

If either of the following settings is configured, the [GOT Diagnostics] dialog appears. Proceed to Step 4.

- On the [Operation] tab in the [Options] dialog, [Display the dialog of Communication Setting before displaying the dialog of Communicate with GOT/GOT Diagnostics] is deselected.
- In the [Communication Configuration] dialog, [Display the dialog of [Communication Configuration] the next time as well] is deselected.

3. In the [Communication Configuration] dialog, configure the settings according to the communication path between the GOT and the personal computer, and click the [OK] button.

The [GOT Diagnostics] dialog appears.

☞ Page 3089 [GOT Diagnostics] dialog

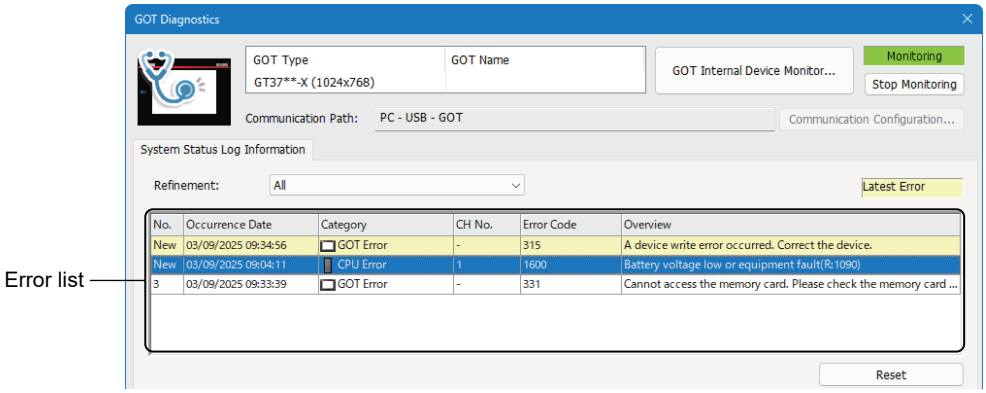
4. As needed, narrow down the errors displayed on the screen by selecting the following items.

Setting item	Description
[Refinement]	Select the type of errors to be displayed on the screen.
[Series Display Selection]	This item appears when a system alarm (CPU error) of MITSUBISHI equipment is selected in the error list. Select the controller series to which the display contents of [Overview], [Cause], and [Corrective Action] for the system alarm (CPU error) correspond. Click the [Start Monitoring] button to automatically identify the series of the controller in which a selected error occurred.

5. Click the [Start Monitoring] button.

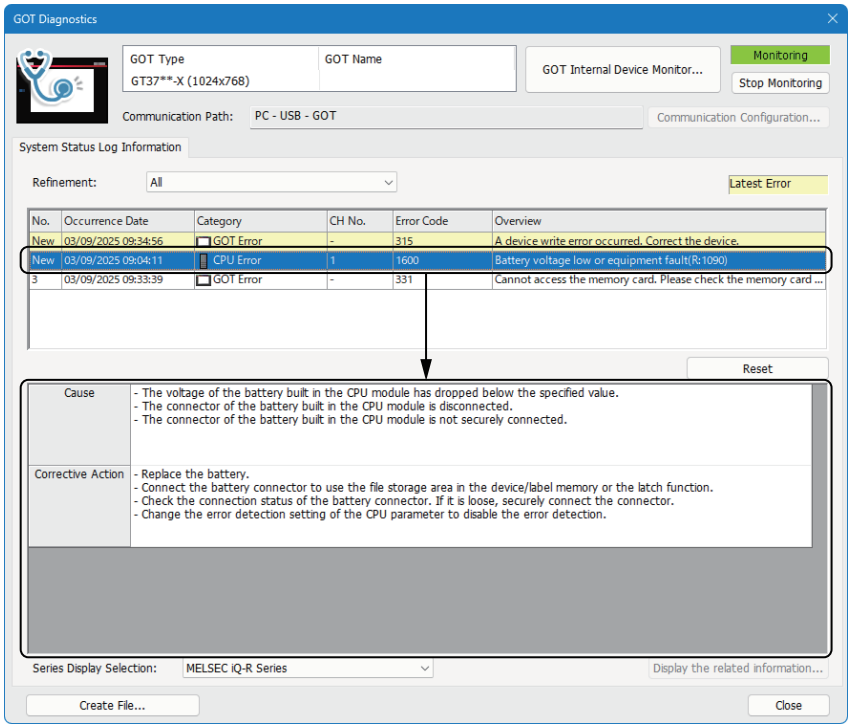
The errors currently occurring in the GOT are displayed in a list.

The errors are displayed in order of occurrence date and time.



6. Click an error in the error list to display its causes and corrective actions.

If an error with supplementary information is selected, click the [Related information] button to display a relevant page of GT Designer3 Help.



7. After the error is resolved, click the [Reset] button to clear the error details.

Errors resolved during monitoring will remain on the screen until they are reset.

Click the [Reset] button to obtain the latest error information and display it on the screen.

95.4 Saving the contents of the error list to a file

You can save the list of errors displayed in the [GOT Diagnosis] dialog to a CSV file or a Unicode text file.
Saving the information to a file enables its use in analyzing the cause of the error.

1. Display the [GOT Diagnostics] dialog and click the [Start Monitoring] button.

☞ Page 3083 Displaying GOT error information

2. If necessary, set [Refinement] and [Series Display Selection] to narrow down the error information to be displayed on the screen.

Only the error information displayed on the screen is output to a file.
To output all errors, set [Refinement] to [All].

3. Select the [Create File] button to save the file.

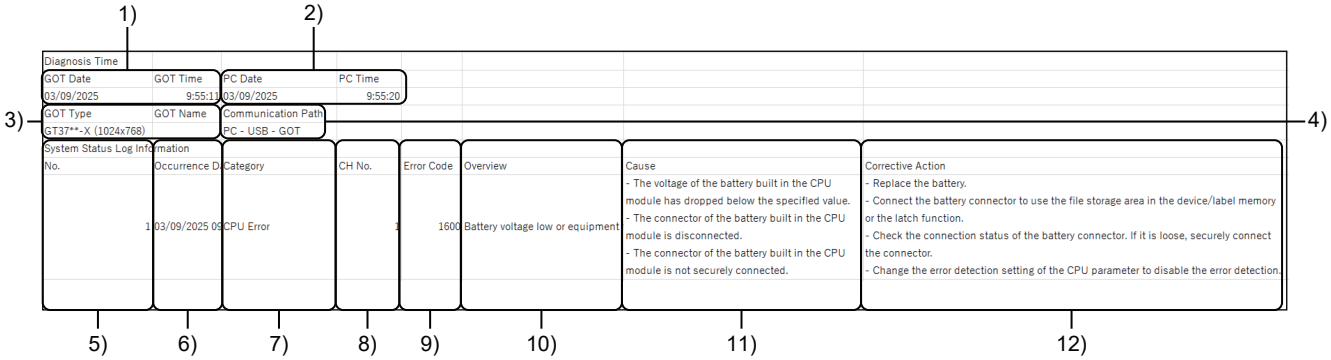
For the format of the saved file, refer to the following.

☞ Page 3085 Format of the saved file

Format of the saved file

The following shows the format of a saved file containing error information.

Ex.
CSV file



Item		Description
1)	GOT date, GOT time	GOT date and time when GT Designer3 obtained the last error information
2)	Personal computer date, personal computer time	Personal computer date and time when the error information was saved to a file
3)	Connected GOT	Type and name of the connected GOT
4)	[Communication Path]	Communication path between the personal computer and the GOT
5)	[No.]	Number indicating the order of displaying errors
6)	[Occurrence Date]	Date and time on which an error occurred
7)	[Category]	Error category
8)	[CH No.]	Number of the channel where an error occurred
9)	[Error Code]	Error code for a system alarm or script error
10)	[Overview]	Details on a system alarm or script error
11)	[Cause]	Causes of an error
12)	[Corrective Action]	Corrective actions for an error

95.5 Monitoring GOT internal devices

The GOT internal device monitor is provided to monitor the internal devices of the connected GOT in GT Designer3.
Use the free registration list function to manage the GOT internal devices to be monitored.
By registering an internal device in the free registration list, you can check the current value of the device.
You can also change the device value by rewriting it in the free registration list.
The free registration list can be created to suit your needs for each project, screen (base screen or window screen), or internal device to be monitored.
The free registration list includes import and export functions, allowing you to use spreadsheet software or other tools to register and edit devices.
☞ Page 3086 Specifications of the GOT internal device monitor
☞ Page 3087 How to use the GOT internal device monitor

95.5.1 Specifications of the GOT internal device monitor

☞ Page 3086 Devices that can be monitored
☞ Page 3086 Specifications of the free registration list

Devices that can be monitored

You can monitor the GOT internal devices (GB, GD, and GS) and change their current values.
☞ Page 3577 GOT internal devices
However, the current values of the following devices are not user-changeable.
- GB0 to GB63
- Write devices of the GOT special registers (GS)

Specifications of the free registration list

A created free registration list is retained after GT Designer3 exits.
Up to 32 free registration lists can be created.
Up to 32 characters are available for a free registration list name.
The following characters cannot be used in a free registration list name.
\ / : ; * ? " < > | .
Up to 6 free registration windows can be open simultaneously.
Up to 256 devices are registrable in one free registration list.

95.5.2 How to use the GOT internal device monitor

☞ Page 3087 Monitoring GOT internal devices
☞ Page 3087 Creating a free registration list

Monitoring GOT internal devices

The following shows the procedure for monitoring GOT internal devices.

1. Configure the settings to enable the GOT internal device monitor.

In the [GOT Setup] window ([GOT Internal Device Monitor]), select the following items.

- [Update the GOT internal device monitor setting]
- [Use GOT internal device monitor in the GOT diagnostics function]

To change the values of GOT internal devices by using the GOT internal device monitor, select [Allow GOT internal devices to be changed].

☞ Page 644 Configuring the settings for the GOT internal device monitor ([GOT Internal Device Monitor])

2. Write the package data to the GOT.

For the communication method between the personal computer (GT Designer3) and the GOT, refer to the following.

☞ Page 408 Transferring data to the GOT

3. Select [Debug/Check] → [GOT Diagnostics] from the GT Designer3 menu to display the [GOT Diagnostics] dialog.

☞ Page 3089 [GOT Diagnostics] dialog

4. In the [GOT Diagnostics] dialog, click [GOT Internal Device Monitor] to display the [GOT Internal Device Monitor] window.

5. Register the GOT internal devices to be monitored in a free registration list.

☞ Page 3087 Creating a free registration list

6. Starts monitoring using the GOT internal device monitor.

When [Monitoring] is displayed in the [GOT Diagnostics] dialog, monitoring starts immediately.

Perform one of the following operations if [Monitoring] is not displayed.

- Select [Online] → [Start] from the menu.
- Click the [Start connection to GOT] button on the toolbar.
- Click the [Start Monitoring] button in the [GOT Diagnostics] dialog.

☞ Page 3088 [GOT Internal Device Monitor] window

Monitoring of the internal GOT devices starts, and the device values appear in the [Current Value] field.

If the setting allows value changes, changing the value in the [Current Value] field immediately stores the updated value in the device.

Precautions

- With the GOT internal device monitor, the values of GOT internal devices can be changed in GT Designer3. In such cases, the GOT may not behave as intended.

To prevent device values from being changed in GT Designer3, deselect [Allow GOT internal devices to be changed] in the [GOT Setup] window ([GOT Internal Device Monitor]).

- The current value cannot be displayed or changed when byte or quad word data format is specified for the GOT internal device monitor.

[--] is displayed in the cell for the current value.

Creating a free registration list

You can create a free registration list by either registering a device or importing an already-exported file containing existing free registration lists.

The creation method is the same as that for the free registration list used in the simulator.

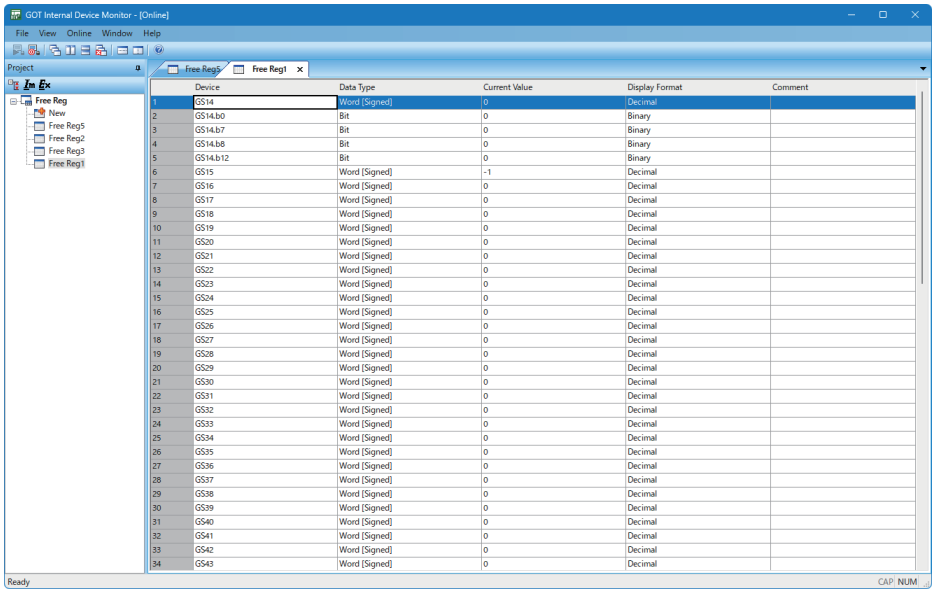
For details, refer to the following.

☞ Page 398 Creating a free registration list

[GOT Internal Device Monitor] window

Items in the [GOT Internal Device Monitor] window are the same as those in the simulator's [Device Monitor] window. For details, refer to the following.

☞ Page 401 [Device Monitor] window

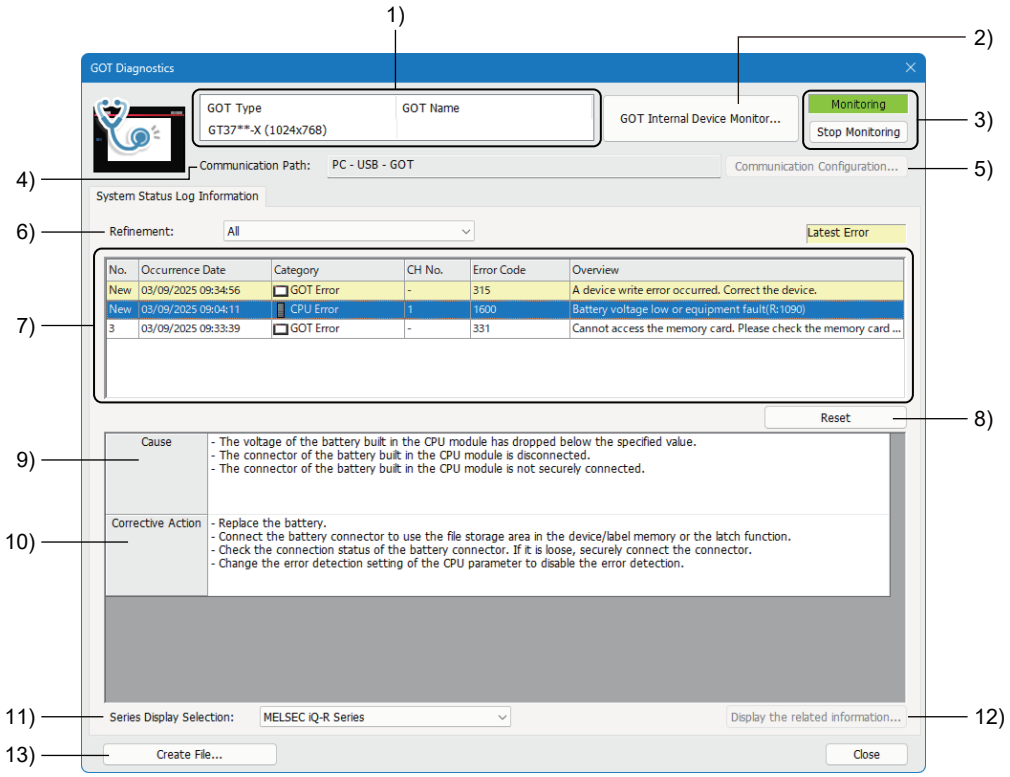


95.6 [GOT Diagnostics] dialog

The [GOT Diagnostics] dialog displays a list of information on errors currently occurring in the connected GOT. When you select an error to check, the cause and corrective actions are listed.

The errors displayed on the screen can be narrowed down by error type.

To display this window, select [Debug/Check] → [GOT Diagnostics] from the menu.



Item		Description
1)	Connected GOT	Displays the GOT type and GOT name obtained from the connected GOT.
2)	[GOT Internal Device Monitor] button	Press the button to display the [GOT Internal Device Monitor] window. ☞ Page 3088 [GOT Internal Device Monitor] window
3)	[Start Monitoring] button, [Stop Monitoring] button	Starts or stops the GOT diagnostics.
4)	[Communication Path]	Displays the communication path between the personal computer and the GOT.
5)	[Communication Configuration] button	Displays the [Communication Configuration] dialog. Set the communication path between the personal computer and the GOT. ☞ Page 451 [Communication Configuration] dialog
6)	[Refinement]	Select the category of errors to be displayed in the error list.
7)	Error list	Lists the errors currently occurring on the connected GOT. Errors are displayed in reverse chronological order. If the number of errors exceeds the maximum number of displayed errors, earlier errors are not displayed. The latest errors in each category are indicated with [New] in the [No.] column. The maximum number of displayed errors depends on the error type. • System alarm (GOT error): 30 • System alarm (CPU error or network error): 30 • Script error (Project script or screen script): 15 • Object script error: 15 For the system alarm (GOT error), script error, and object script error, correct an error and click the [Reset] button to delete the error from the error list. For the precautions on the system alarm, refer to the following. ☞ Page 1543 Specifications of the system alarm display
8)	[Reset] button	Resets error data in the GOT, and updates the error list. Corrected system alarms (GOT errors) and script errors are deleted from the error list. Others remain in the list.
9)	[Cause]	Causes of an error selected in the error list
10)	[Corrective Action]	Corrective actions to correct an error selected in the error list

Item		Description
11)	[Series Display Selection]	This item appears when a system alarm (CPU error) of MITSUBISHI equipment is selected in the error list. Select the controller series to which the display contents of [Overview], [Cause], and [Corrective Action] for the system alarm (CPU error) correspond. Upon updating the error list, selecting a relevant error automatically identifies the series of the controller in which the error occurred.
12)	[Related information] button	Appears when a script error with supplementary information is selected. Displays GT Designer3 Help, showing a relevant page for an error selected in the error list.
13)	[Create File] button	Saves the contents of the error list to a CSV or Unicode text file. ☞ Page 3085 Saving the contents of the error list to a file

96 Reproducing GOT operations offline (GOT offline monitor)

GT37 SoftGOT3000

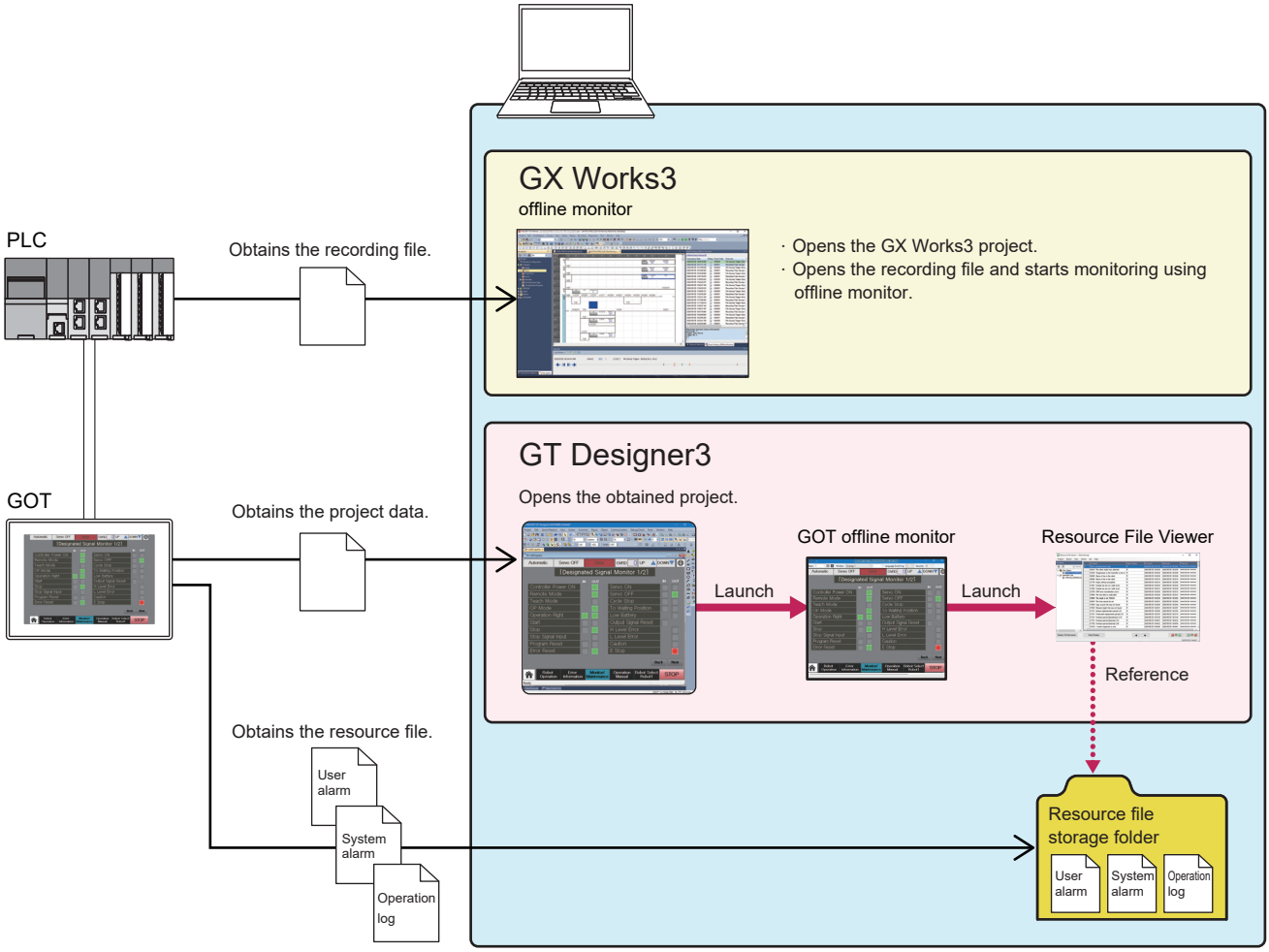
☞ Page 3092 Outline of the GOT offline monitor
☞ Page 3095 Specifications of the GOT offline monitor
☞ Page 3105 Procedure for using the GOT offline monitor
☞ Page 3106 Screen layout of the GOT offline monitor
☞ Page 3108 Connection and environmental settings for the GOT offline monitor
☞ Page 3112 Basic operations of the GOT offline monitor
☞ Page 3114 Useful functions of the GOT offline monitor
☞ Page 3117 How to use a Resource File Viewer module

96.1 Outline of the GOT offline monitor

The GOT offline monitor function reproduces the operation of the on-site GOT monitor screen on a personal computer using a recording file created by the system recorder.

Multiple data sources, such as GX Works3 recording files, GX Works3 project files, GT Designer3 project files, and GOT-generated resource files, can be integrated and checked, enabling you to understand the overall system and quickly pinpoint the causes of errors.

Since data can be checked and analyzed offline without visiting the site, remote troubleshooting is possible.



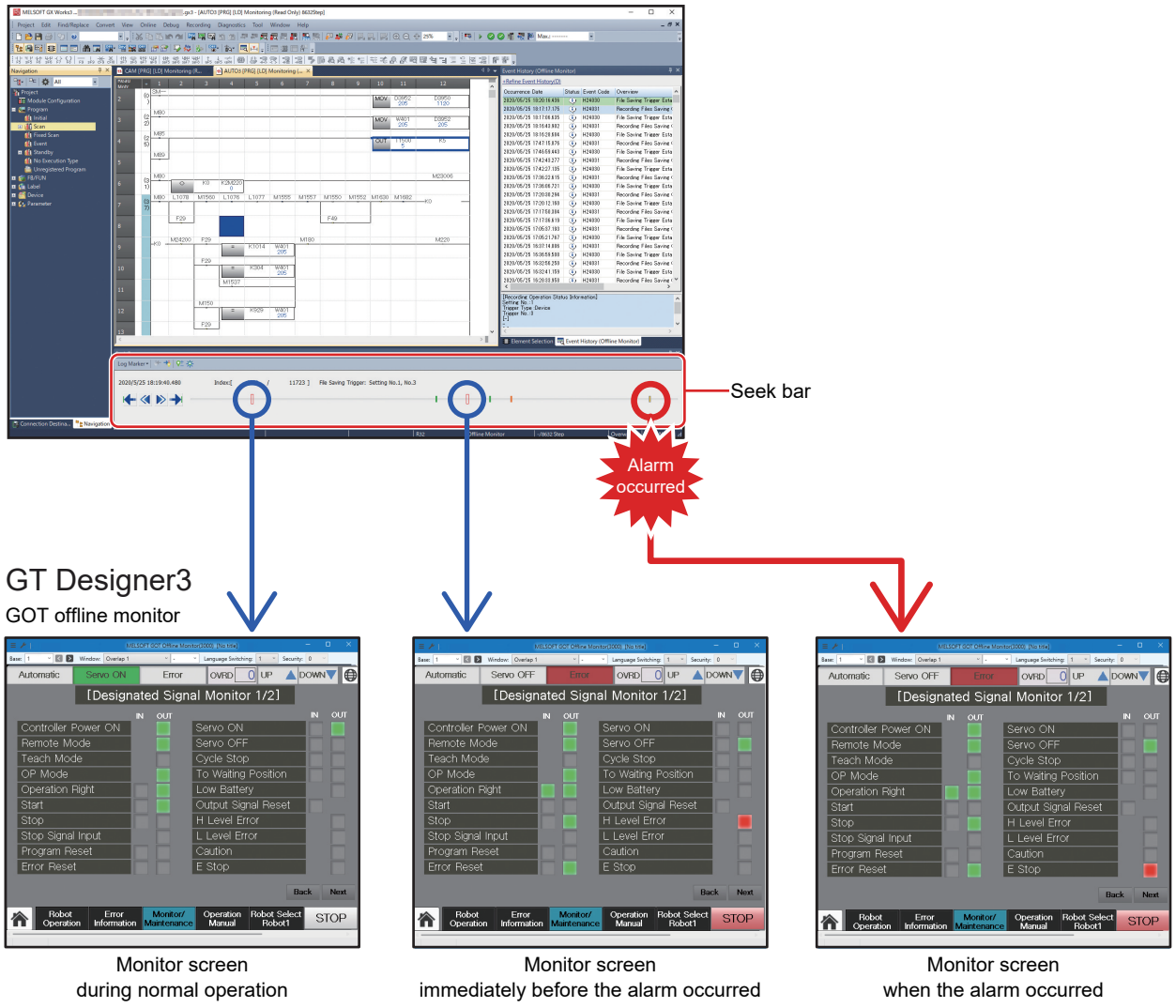
The following shows the main functions of the GOT offline monitor.

☞ Page 3093 Interaction with GX Works3
☞ Page 3093 Device monitor
☞ Page 3094 Resource File Viewer

Interaction with GX Works3

Connecting to the offline monitor with GX Works3 recording files enables reproduction of the situation when a trouble occurred, using GOT project data on the monitor screen.

By reproducing the GOT operation screen in sync with the seek bar in the GX Works3 offline monitor, you can correlate the GOT operations and the waveforms and programs on the GX Works3 side.



Monitor screen during normal operation

Monitor screen immediately before the alarm occurred

Monitor screen when the alarm occurred

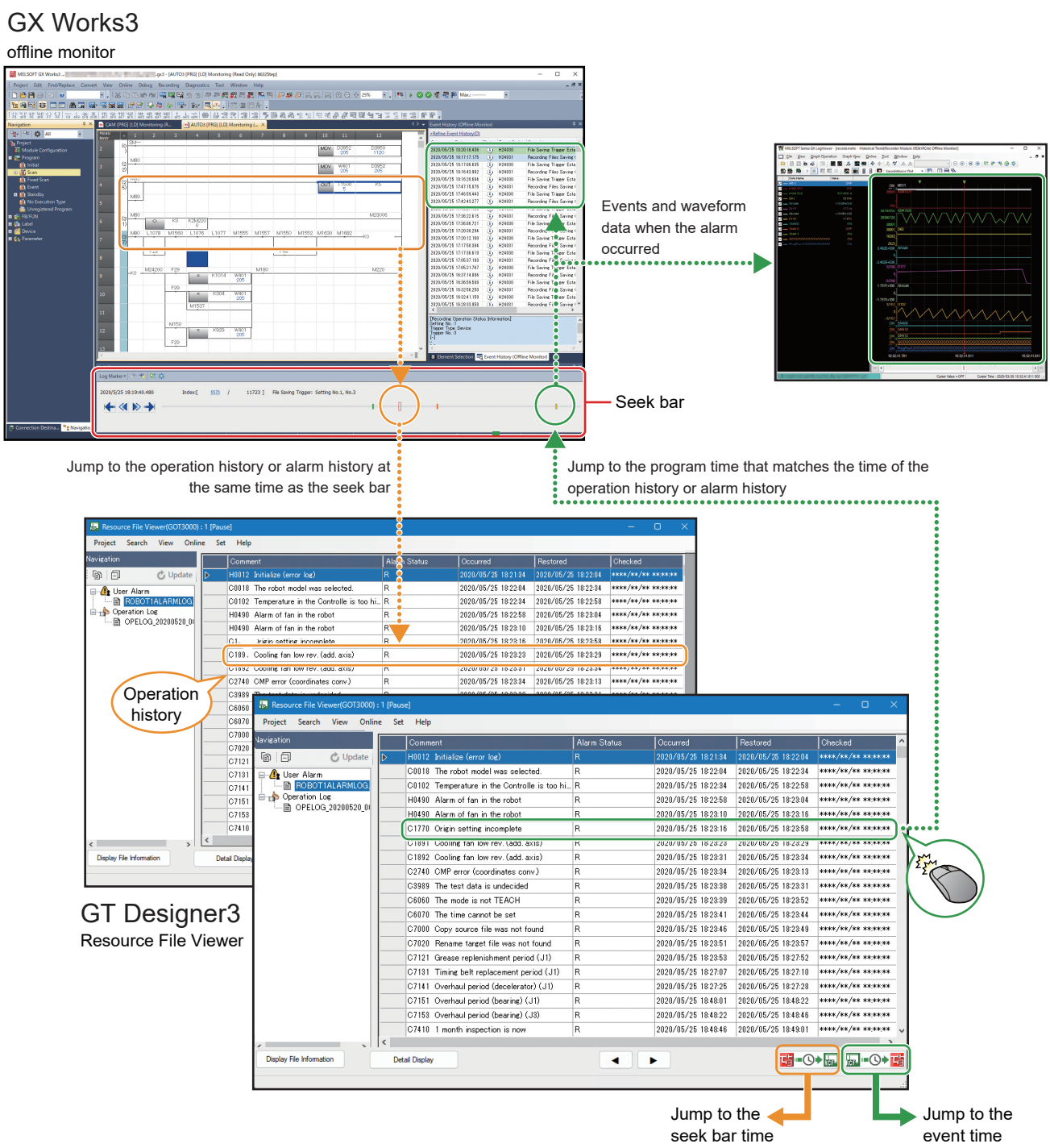
Device monitor

With the device monitor, you can rewind in time using the GX Works3 seek bar and check the device value at a specific point.

Resource File Viewer

Resource File Viewer is a function that allows you to precisely review the operation and alarm histories before and after a trouble occurs, using the data recorded by the GOT.

The seek bar time of the GX Works3 offline monitor can be synchronized with the times of GOT events (such as operation history and alarm history), allowing you to clearly identify which GOT operation caused the problem.



96.2 Specifications of the GOT offline monitor

GT37 SoftGOT3000

☞ Page 3095 GOTs compatible with the offline monitor function
☞ Page 3095 Supported GX Works3 software version
☞ Page 3095 Number of GX Works3 offline monitors that can be monitored
☞ Page 3096 Required data
☞ Page 3096 Device range for monitoring
☞ Page 3096 Monitoring-supported channels
☞ Page 3097 Functions supported by the offline monitor
☞ Page 3103 Destination to save data
☞ Page 3104 Clock specifications

96.2.1 GOTs compatible with the offline monitor function

The following GOTs are compatible with the GOT offline monitor function.

- GT37**-FH
- GT37**-WX
- GT37**-X
- GT SoftGOT3000

Precautions

■Display of the GOT offline monitor and the GOT

The display of the GOT offline monitor may differ from the display of the GOT.
Check the actual display of the GOT.

■Precautions when the GOT type is GT SoftGOT3000

- Unavailable GOT internal devices

GOT internal devices (GS493 to GS498, GS500 to GS507) are unavailable for the GOT offline monitor.

- Unavailable functions

The following functions are unavailable for the GOT offline monitor.
◇Application start-up
◇SoftGOT-GOT link function

96.2.2 Supported GX Works3 software version

Use GX Works3 version 1.110Q or later.

96.2.3 Number of GX Works3 offline monitors that can be monitored

One GX Works3 offline monitor can be monitored.

96.2.4 Required data

The following files are required to use the GOT offline monitor:

- GX Works3 recording file (required)
- GX Works3 project file (used to create a recording file) (required)
- GT Designer3 project file (used to create a recording file) (required)
- GOT alarm file, operation log file (used to create a recording file) (required when using Resource File Viewer)

96.2.5 Device range for monitoring

The following shows the device range for monitoring.

Read only devices

The devices that satisfy all of the following requirements can be read.

Writing is not available.

Requirement	Reference
Devices that can be monitored by GX Works3	📖GX Works3 Operating Manual
Devices that can be monitored by the GOT (Except the timer set value (TS) and counter set value (CS) of the Mitsubishi Electric PLC)	☞ Page 3128 Device range and settings of Mitsubishi Electric equipment

Readable/writable devices

The following shows the readable/writable devices.

- GOT internal devices
- SoftGOT3000 internal devices

96.2.6 Monitoring-supported channels

If the project data supports multiple channels, only channel 1 can be monitored.

The other channels are ignored.

To monitor a device on a channel other than channel 1, select [Search/Replace] → [Batch Edit] → [CH No.] from the menu and set channel 1 for the debug target channel in GT Designer3.

Ex.

When channel 1 and 2 are used and channel 2 is to be monitored

1. Change channel 1 to channel 3 in a batch.
2. Change channel 2 to channel 1 in a batch.

For the batch edit of the channels, refer to the following.

☞ Page 147 Changing the set values collectively (Batch Edit)

96.2.7 Functions supported by the offline monitor

The following shows the functions that are supported or not supported by the GOT offline monitor.

☞ Page 3097 Figures and objects
☞ Page 3098 Functions running in the background
☞ Page 3099 Functions used with peripheral devices
☞ Page 3100 Common functions for screen display/control and other relevant/extended functions
☞ Page 3101 Utility function

Figures and objects

○: Supported, △: Partially supported, —: Not supported

Function	Support	Supplement
Figure	○	—
Logo text	○	—
Touch switch	△	Writing to devices will not work.
Lamp	○	—
Numerical display	○	—
Numerical input	△	Writing to devices will not work.
Text display	○	—
Text input	△	Writing to devices will not work.
Key window	○	—
Date display, time display	○	—
Time notification (HMI → PLC)	—	—
Time setting (PLC → HMI)	—	—
Comment display	○	—
Parts display	○	—
Historical data list display	—	—
Simple alarm display	—	—
System alarm display	—	—
Alarm display (user)	—	—
Alarm display (system)	—	—
Recipe display (record list)	△	If the notification signal is a PLC device, writing is not possible. Even if the recipe is executed, writing to the PLC is disabled.
Line graph	○	—
Trend graph	○	—
Bar graph	○	—
Statistics bar graph	○	—
Statistics pie graph	○	—
Scatter graph	△	If the notification signal is a PLC device, writing is not possible.
Historical trend graph	—	—
Graphical meter	○	—
Level	○	—
Panel meter	○	—
Slider	△	Writing to devices will not work.
Document display	△	If the notification signal is a PLC device, writing is not possible.
Script parts	△	Only internal devices and temporary devices can be written to.
Frame animation display	○	—
Hyperlink	—	—

Precautions

- When [Real] is set for [Format] in [Numerical Display], if the specified device stores an invalid value, the GOT offline monitor displays that value (the GOT displays [non]).

Functions running in the background

○: Supported, △: Partially supported, —: Not supported

Function	Support	Supplement
Logging	—	—
Operation log	—	—
Recipe	△	Writing to devices will not work.
Device data transfer	△	Writing to devices will not work.
Trigger action	○	—
Time action	—	—
System information	△	Writing to devices will not work.
Hard copy	○	Only available for file output.
Project script, screen script	△	Writing to devices will not work.
Object script	△	Writing to devices will not work.

Precautions

• The following hard copy functions do not support simulation.

◇[Invert]

◇[Writing Notification Device]

◇[Take a hard copy of a screen other than the displayed monitor screen]

◇Output to a PDF file

◇System information about the hard copy function

Functions used with peripheral devices

○: Supported, △: Partially supported, —: Not supported

Function	Support	Supplement
Barcode function	—	—
RFID function	—	—
GOT Mobile Setting	—	—
Remote personal computer operation (Ethernet) function	—	—
VNC server function	—	—
Digital image input/recording function	—	—
Video output function	—	—
Sound output function	○	—
External I/O function	—	—
Operation panel function	—	—
Server function, client function	—	—
Mail send function	—	—
FTP server function	—	—
File transfer function (FTP transfer)	—	—
File transfer function (GOT internal transfer)	—	—
USB mouse/keyboard function	○	—
Web browser function	—	—
Contactless tag function	—	—
OPC UA server function	—	—
VPN connection function	—	—

Precautions

• The sound output function is executed with the sound function (sound card) or speaker of the personal computer.
If the personal computer to be used cannot output sound, the sound output function is unavailable.

• If the GOT offline monitor is muted in the Windows sound settings, it will automatically unmute when it starts.
However, if you mute all sounds on Windows, the GOT offline monitor remains mute.

Common functions for screen display/control and other relevant/extended functions

○: Supported, △: Partially supported, —: Not supported

Function	Support	Supplement
Base screen	○	—
Overlap window	△	—
Superimpose window	○	—
Dialog window	○	—
Mobile screen	—	—
Key window	○	—
Screen switching	△	—
System language switching	○	—
User language switching	△	—
Monitoring of the labels or tags set to the monitored device	○	—
FA transparent	—	—
Multi-channel function	—	—
Station No. switching	○	—
Buffer memory unit No. switching	○	—
CPU number switching	○	—
Module number switching (indirect specification with a GD device)	—	—
Servo axis switching (indirect specification with a GD device)	—	—
Offset	○	—
Startup logo	○	—
Screen gesture	—	—
IP filter function	—	—
Vertical display	○	—
Kana-Kanji/Pinyin conversion	○	—
SoftGOT-GOT link	—	—
Backup/restore	—	—
GOT network interaction function	—	—
Transition to the utility	△	—
Level authentication	○	—
Operator authentication (Mode 1)	—	—
Sequence program monitor	—	—
iQSS utility	—	—

Utility function

○: Supported, △: Partially supported, —: Not supported

Function	Support	Supplement
[GOT basic set]	[Display]	○
	[Language]	○
	[Unique info]	—
	[IP address]	—
	[IP filter setting]	—
	[Operation]	○
	[Utility call key]	○
	[USB device/host]	—
	[Time]	—
	[Controller]	—
	[Ethernet]	—
	[Transparent mode]	—
	[GOT internal device monitor]	—
	[Security]	○
	[Operator authentication management]	○
	[Opr authn. Password change]	○
	[Brightness adjustment]	—
[Add-on setting]	[SoftGOT-GOT link function]	—
	[VNC server function]	—
	[Seq. program mon.]	—
	[Backup restoration]	—
	[License management]	—
	[File transfer]	—
	[Mail]	—
	[System launcher]	—
	[iQSS utility]	—
	[Web browser function]	—
	[ANDON connection]	—
	[VPN connection function]	—
	[Contactless tag function]	—
[Maintenance]	[Batch self check]	—
	[USB device management]	—
	[Screen cleaning]	—
	[Touch panel calibration]	—
	[System alarm]	○
	[Drawing check]	—
	[Font check]	—
	[Touch panel check]	—
	[I/O check]	—
	[Ethernet status check]	—
	[GOT information]	—
	[GOT Mobile information]	—
[Monitor]	[System launcher]	—
	[Sequence Program Monitor(Q/L Ladder)]	—
	[Sequence Program Monitor(iQ-R/iQ-L Ladder)]	—
	[Sequence Program Monitor(iQ-F Ladder)]	—
	[R motion monitor]	—
	[Network status display]	—
	[iQSS utility]	—
	[CC-Link IE diagnostics]	—

Function	Support	Supplement
[Data mng.]	[File manager]	—
	[Image file management]	○
	[Recipe information]	○
	[Logging information]	○
	[Operation log information]	○
	[Alarm information]	○
	[Package management]	○*1
	[Backup Restoration]	—
	[NVRAM management]	○*2
	[Memory card format]	—
	[Memory check]	—
	[GOT data pkg. acquisition]	—
	[GOT Full Initialization]	—
	[Certificate management]	—

*1 [Delete all labels] and [Sort out labels] are supported.
*2 [Initialize all] and [Initialize selected area] are supported.

96.2.8 Destination to save data

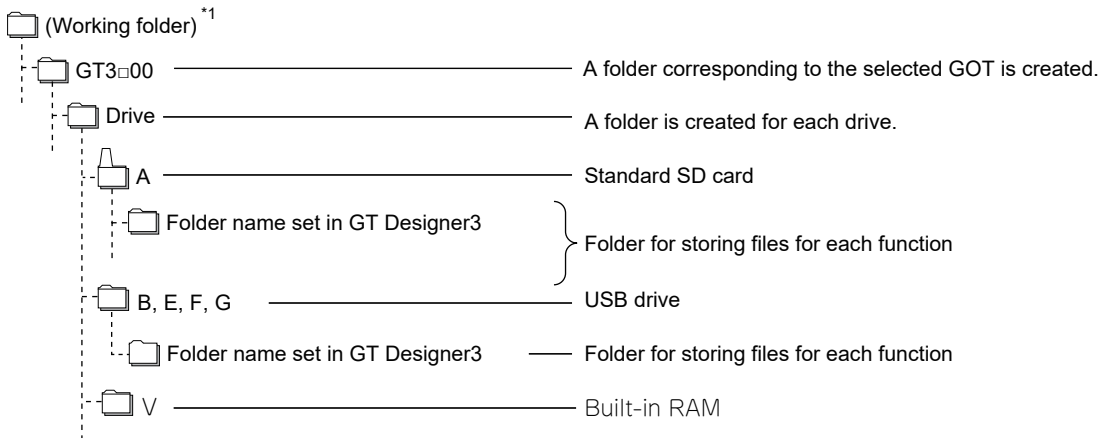
Folders in the hard disk of the personal computer are handled by the GOT offline monitor as the virtual drive.

☞ Page 3103 For functions saving data into a data storage or file server
☞ Page 3104 For functions requiring the user to save data into a data storage
☞ Page 3104 Working folder

For functions saving data into a data storage or file server

When a data storage is specified to save files for functions including object functions and add-on functions, data is saved onto the hard drive of the personal computer.

The files for each function are saved into the folders as shown below.



The drive unavailable to the monitoring target GOT is not usable.

*1 For the working folder, refer to the following.

☞ Page 3104 Working folder

Precautions

To store image files in drive V and use them for parts displays, satisfy all the following conditions.

- Store the image files directly under drive V using the FTP server function or other Windows-supported functions.
- Use IMG1.jpg, IMG2.jpg, IMG3.jpg, and IMG4.jpg only for the file name and extension.
- Do not store any file other than IMG1.jpg, IMG2.jpg, IMG3.jpg, and IMG4.jpg.
- Limit the total file size to less than 8 MB.

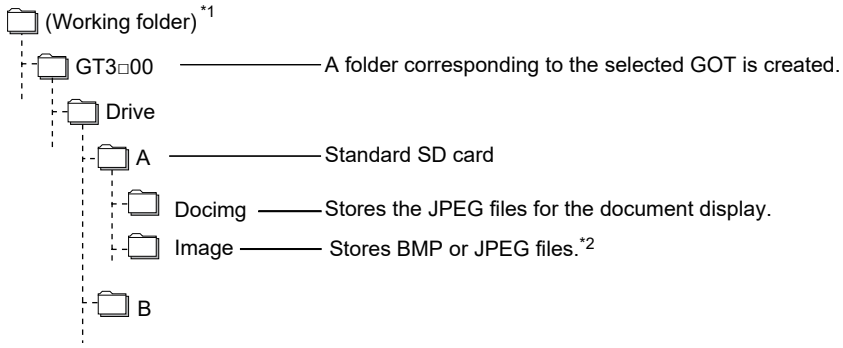
The files in drive V are deleted at the start or end of monitoring.

For functions requiring the user to save data into a data storage

When registering BMP, JPEG, or PNG files used as parts, or data for document display, save them in the hard disk of the personal computer.

Store each data in the following (user-created) folders.

(The drive to be used depends on the specifications of the object or setting.)



*1 For the working folder, refer to the following.
☞ Page 3104 Working folder

*2 You can change the file name.
For information on how to use BMP or JPEG files, refer to the following.
☞ Page 816 How to use parts ([Parts])

Working folder

The following shows a working folder.

Users\(user name)\AppData\Local\MITSUBISHI\GSS3_3000

To display the following hidden folders, configure the setting in Windows.

Users\(user name)\AppData\Local

96.2.9 Clock specifications

The clock display during monitoring with the GOT offline monitor uses the clock data from the personal computer (the GOT reads and uses the clock data from the PLC CPU).

[Adjust for daylight saving time automatically] on the personal computer is not applicable. Do not enable this setting.

96.3 Procedure for using the GOT offline monitor

GT37 SoftGOT3000

The following shows the procedure for using the GOT offline monitor.
Before starting the GOT offline monitor, start GX Works3, open the project used for monitoring, and ensure that the relevant recording file is read in the GX Works3 offline monitor.

1. Start GX Works3, open the project file used for monitoring, read the recording file to be monitored, and start offline monitoring.

GX Works3 Operating Manual

2. Start GT Designer3 and open the project to be monitored in the GOT offline monitor.

3. Perform either of the following operations to display the GOT offline monitor settings dialog.

- Select [Debug/Check] → [GOT Offline Monitor] → [Setting] from the menu.
- Click the [GOT Offline Monitor: Set] button on the toolbar.

4. Configure each setting in [Connection] and click the [OK] button.

Setting	Description
[File path]	Set the path to the recording file read from the GX Works3 offline monitor.
[Detail Setting] [Option]	Configure each setting. When another station is set in the built-in Ethernet port setting or station No. 0 is set for the module in GX Works3, the network information cannot be acquired automatically. Apply the network information to [Additional Allocation] in the [Setting] dialog ([Communication Setup] tab). For details, refer to the following. ☞ Page 3109 [Connection]

5. Perform either of the following operations to start the GOT offline monitor.

- Select [Debug/Check] → [GOT Offline Monitor] → [Activate] from the menu.
- Click the [GOT Offline Monitor: Activate] button on the toolbar.

The GOT offline monitor starts and connects to the GX Works3 offline monitor to start monitoring.
If you skip Step 4 (recording file path setting) to start the GOT offline monitor, the [Recording File Setting] dialog appears for the first time. In the [Recording File Setting] dialog, select the recording file to be monitored and click the [OK] button to start monitoring.

6. Move the GX Works3 seek bar.

As the seek bar moves, the GOT offline monitor reproduces the GOT operation screen and program status for the corresponding time.

☞ Page 3112 Basic operations of the GOT offline monitor
☞ Page 3114 Useful functions of the GOT offline monitor

7. Select [Project] → [Exit] from the GOT offline monitor menu.

This will exit the GOT offline monitor.
If GT Designer3 is exited while the GOT offline monitor is running, the GOT offline monitor started from GT Designer3 also exits. If you perform [New], [Utilize], [Open], or [Close] for a project in GT Designer3 while the GOT offline monitor is running, the GOT offline monitor will exit.

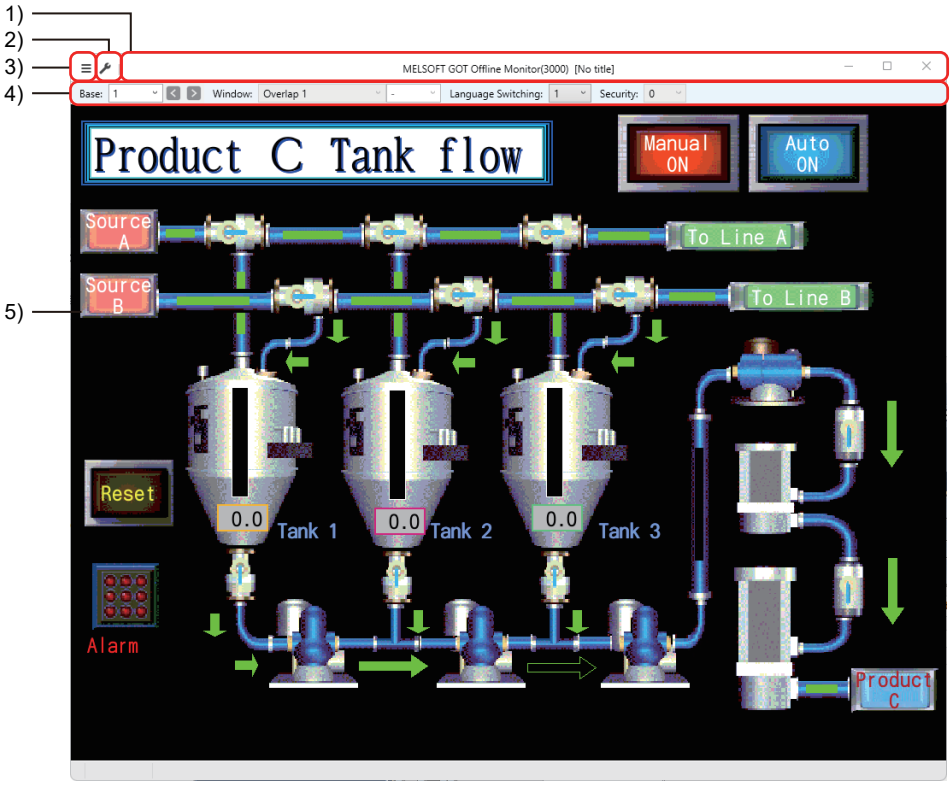
Precautions

■Reconnection after exiting the GX Works3 offline monitor

When the GOT offline monitor and the GX Works3 offline monitor are connected, exiting the GX Works3 offline monitor disconnects the GOT offline monitor.
For reconnection, exit the GOT offline monitor and Resource File Viewer, then start the GX Works3 offline monitor. After that, start the GOT offline monitor and Resource File Viewer.

96.4 Screen layout of the GOT offline monitor

GT37 SoftGOT3000



Item		Description
1)	Title bar	Displays the software name and the project name. The icons to minimize, maximize, and close the screen are also displayed. Select [Debug/Check] → [GOT Offline Monitor] → [Setting] from the GT Designer3 menu, then select the items to be displayed in the setting dialog ([Items displayed in the title bar] in [Display]).
2)	[Setting] button	Click this button to display the GOT offline monitor settings dialog. ☞ Page 3108 Connection and environmental settings for the GOT offline monitor
3)	Menu button	Click this button to display the GOT offline monitor operation menu. ☞ Page 3107 Menu
4)	Toolbar	Enables you to operate the monitored base screen or window, switch between languages, and perform security operations. ☞ Page 3107 Toolbar
5)	Monitor screen	Monitored contents are displayed. Each operation can also be performed from the right-click menu on the screen.

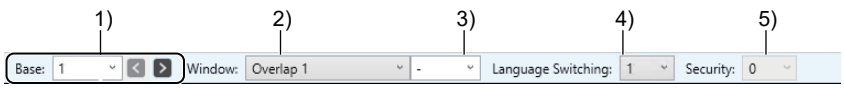
96.4.1 Menu

The following shows the menu structure. Menu items other than [Project] can also be executed from the right-click menu on the monitor screen.

Menu		Description	Shortcut key
[Project]	[Snap Shot]	Saves a screen as a file. (BMP format and JPEG format) ☞ Page 393 Taking snap shots	Ctrl + H
	[Print Setup]	Set a printer. ☞ Page 394 Configuring the printer settings	—
	[Page Setup]	Adjusts the page layout for printing. ☞ Page 394 Page settings	—
	[Print Preview]	Displays a print preview. ☞ Page 394 Previewing print image	—
	[Print]	Outputs the settings of the project into a file. ☞ Page 394 Printing	Ctrl + P
[Display]	[Scroll Bar]	Switches display or non-display of a scroll bar. ☞ Page 395 Displaying scroll bars	—
	[Full Screen Mode]	Sets and cancels the full screen mode. ☞ Page 396 Displaying the screen in full screen mode	Alt + F9
[Set]		Displays the [Set] dialog. ☞ Page 3108 Connection and environmental settings for the GOT offline monitor	—
[Tool]	[Start of Device Monitor] [End of Device Monitor]	Starts or ends the device monitor. ☞ Page 3114 Using the device monitor	—
	[Resource Data]	Refers to the resource data. ☞ Page 3116 Opening resource data files	Ctrl + R
	[Keyboard]	Enables or disables the keyboard input. ☞ Page 395 Operating the numerical input or text input with a keyboard	—
[Resource File Viewer]	[Resource File Viewer Operation]	Displays the [Resource File Viewer Operation] window. ☞ Page 3117 Setting the resource files to be monitored in each module	—
	[Start All]	Starts all enabled Resource File Viewer modules in the [Resource File Viewer Operation] window.	—
	[Activate All]	Activates all currently running Resource File Viewer modules.	—
	[End All]	Ends all currently running Resource File Viewer modules.	—
	[Start Resource File Viewer n] [End Resource File Viewer n]	Starts or ends Resource File Viewer n. "n" represents a number from 1 to 8.	—
[Help]	[GT Designer3 Help]	Displays GT Designer3 Help.	F1
[Exit]		Exits the GOT offline monitor.	Alt + F4

96.4.2 Toolbar

The toolbar provides the following functions:
In full screen display, the toolbar is hidden.



Item		Description
1)	Base	Switch the number of the base screen to be displayed on the monitor screen using the pull-down menu or the arrow buttons.
2)	Window	Select the type of the window screen to be displayed on the monitor screen.
3)	Window screen number	Switch the number of the window screen to be displayed on the monitor screen from the pull-down menu.
4)	Language switching	Select the column number for a comment group to be displayed. The selectable numbers range from [1] to [30].
5)	Screen security	Switch the security level. The selectable levels range from [0] to [15].

96.5 Connection and environmental settings for the GOT offline monitor

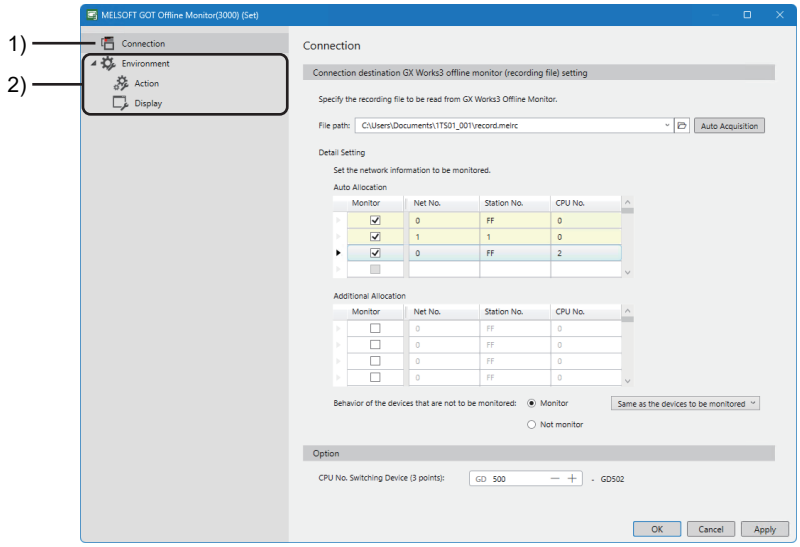
GT37 SoftGOT3000

Before using the GOT offline monitor, configure the connection and environmental settings.

1. Select [Debug/Check] → [GOT Offline Monitor] → [Setting] from the GT Designer3 menu.

The settings screen appears.

2. Select the setting category from the setting tree on the left.



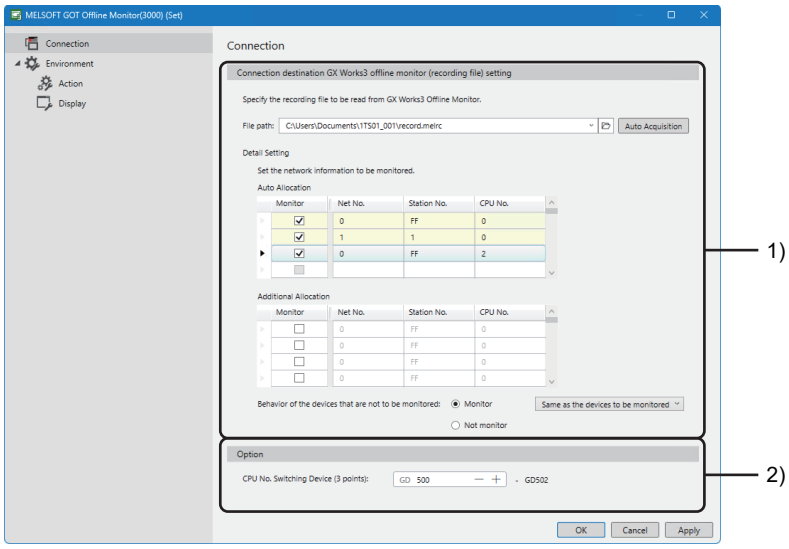
Setting		Description
1)	☞ Page 3109 [Connection]	Configure the connection settings for the controller to be monitored.
2)	☞ Page 3110 [Environment]	Configure the operation and screen display settings to execute monitoring.

3. Click the [Apply] button to save the settings.

Click the [OK] button to save the settings and close the screen.

96.5.1 [Connection]

Configure the connection settings for the controller to be monitored.



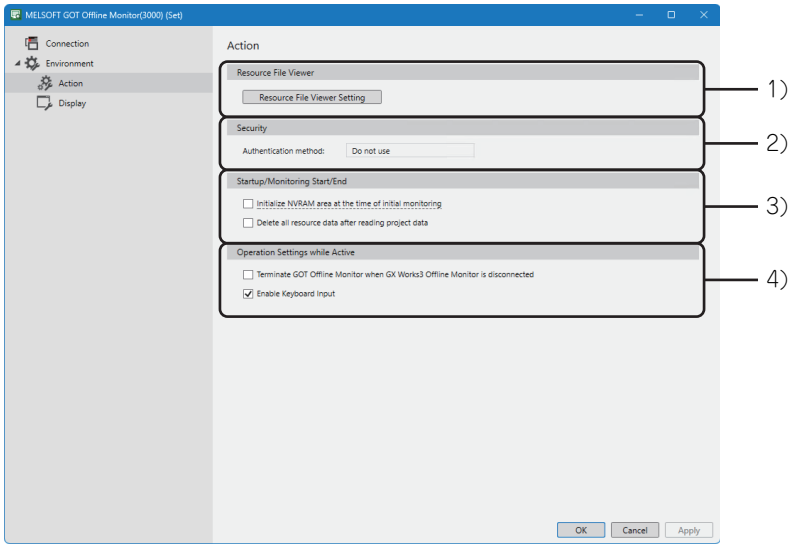
Item		Description
1)	[File path]	Set the path to the recording file read from the GX Works3 offline monitor. • When the GX Works3 offline monitor is not running Click the folder icon to select a recording file. • When the GX Works3 offline monitor is running Click the [Auto Acquisition] button to acquire the path to the recording file read from the GX Works3 offline monitor.
	[Auto Allocation]	Select the network information of the controllers to be monitored. The first and second lines display default values. The third and subsequent lines display [Net No.], [Station No.], and [CPU No.] of the GX Works3 offline monitor, which are automatically obtained from the file path. If any of [Net No.], [Station No.], or [CPU No.] is not obtained, no information is displayed in the cell.
	[Additional Allocation]	To monitor another station, set the network information of the target controller for monitoring.
	[Behavior of the devices of the stations that are not to be monitored]	Select whether to monitor the devices of station numbers not targeted for monitoring in [Auto Allocation] or [Additional Allocation].
	How to monitor the devices	Select how to display the devices when [Monitor] is selected for [Behavior of the devices that are not to be monitored].
2)	[CPU No. Switching Device (3 points)]	Set the start device number of the GOT data registers (GD) to specify a CPU number. The setting range is [0] to [65520]. Specify the value of [CPU No. switching GD device first No. (3 points)] set in the [Controller Setting] window in GT Designer3. If you set a different number, proper monitoring is not performed.

96.5.2 [Environment]

Configure the operation and screen display settings to execute the GOT offline monitor.

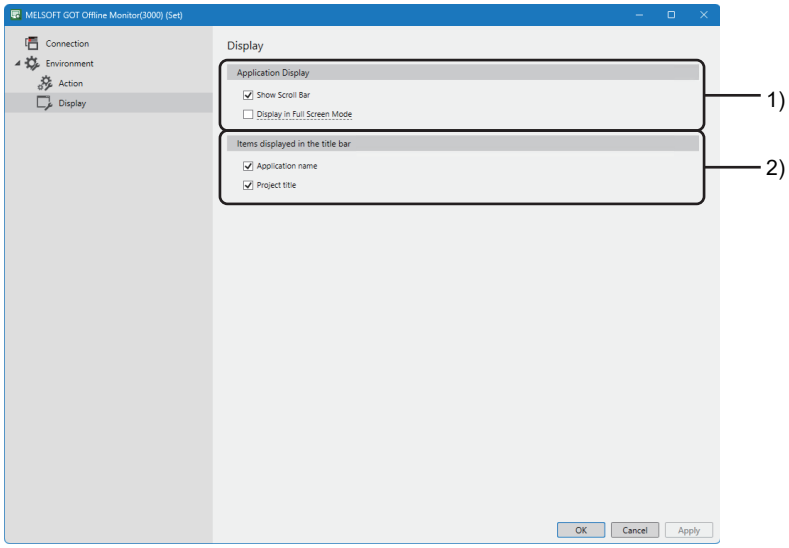
☞ Page 3110 [Action]
☞ Page 3111 [Display]

[Action]



Item			Description
1)	[Resource File Viewer]		Configure the settings of Resource File Viewer. Click the [Resource File Viewer Setting] button to display the [Resource File Viewer Setting] dialog. ☞ Page 3118 [Resource File Viewer Operation] window
2)	[Security]	[Authentication method]	Displays the authentication method set in the project data.
3)	[Startup/Monitoring Start/End]	[Initialize NVRAM area at the time of initial monitoring]	Select this item to initialize the nonvolatile RAM area when monitoring starts for the first time. The following functions save data to the nonvolatile RAM area. • User alarm monitoring • System alarm monitoring • Logging • Recipe • Internal device retention
		[Delete all resource data after reading project data]	Select this item to delete all the user data in the working folder when monitoring starts for the first time. Hierarchies under folders A, B, E, F, and G found in "Users\(User name)\AppData\Local\MITSUBISHI\GSS3_3000" When this setting is enabled, system alarms can be prevented if the recipe settings or alarm history settings of the read screen data differ from the recipe files or alarm data in the working folder.
		[Terminate GOT Offline Monitor when GX Works3 Offline Monitor is disconnected]	Select whether to end the GOT offline monitor when the GX Works3 offline monitor is disconnected.
4)	[Operation Settings while Active]	[Enable Keyboard Input]	Select this item to enable keyboard input during monitoring.

[Display]



Item			Description
1)	[Application Display]	[Show Scroll Bar]	Select this item to display scroll bars on the monitor screen.
		[Display in Full Screen Mode]	Select this item to execute full screen display (with the title bar and status bar hidden) when starting the monitoring.
2)	[Items displayed in the title bar]		Select the options to be displayed in the title bar.

96.6 Basic operations of the GOT offline monitor

GT37 SoftGOT3000

☞ Page 3112 Starting the GOT offline monitor
☞ Page 3112 Exiting the GOT offline monitor
☞ Page 3113 Switching the screen to be monitored
☞ Page 3113 Switching the display language
☞ Page 3113 Switching the security level

96.6.1 Starting the GOT offline monitor

Refer to the following.

☞ Page 3105 Procedure for using the GOT offline monitor

96.6.2 Exiting the GOT offline monitor

Exit the GOT offline monitor from GT Designer3 or the GOT offline monitor itself.

When the GOT offline monitor is exited, the connection to the GX Works3 offline monitor is terminated.

☞ Page 3112 In GT Designer3
☞ Page 3112 In the GOT offline monitor
☞ Page 3112 At disconnection of the GX Works3 offline monitor

In GT Designer3

End the GOT offline monitor by either of the following methods.

- Select [Debug/Check] → [GOT Offline Monitor] → [Exit] from the menu.
- Click the [GOT Offline Monitor: Exit] button on the toolbar.

In the GOT offline monitor

End the GOT offline monitor by either of the following methods.

- Select [Project] → [Exit] from the menu.
- Select [Online] → [Monitor Stop] from the menu.
- Click the [×] button.

At disconnection of the GX Works3 offline monitor

When [End GOT Offline Monitor when connecting to GX Works3 Offline Monitor] is selected in the [Action Setup] tab in the [Setting] dialog, the GOT offline monitor automatically ends when the GX Works3 offline monitor is disconnected.

☞ Page 3110 [Action]

96.6.3 Switching the screen to be monitored

Switch the currently monitored screen in the project by either of the following methods.

- Use the pull-down menu on the toolbar or arrow buttons.

☞ Page 3107 Toolbar

- Use a Go To Screen switch.

Switching by using a device is not available.

☞ Page 1220 [Go To Screen Switch] dialog

For details on the screen switching, refer to the following.

☞ Page 530 Setting for switching screens to be displayed on the GOT ([Screen Switching/Window])

96.6.4 Switching the display language

The GOT switches comments displayed on the object by changing the value (column number of the comment group) using the pull-down menu on the toolbar.

By registering messages in each language in the columns of the comment group, you can switch the language of the displayed comments.

☞ Page 3107 Toolbar

For details on the language switching, refer to the following.

☞ Page 546 Setting for switching the language displayed on the GOT ([Language Switching])

96.6.5 Switching the security level

Switch the security level using the pull-down menu on the toolbar.

By switching between security levels, you can check the displayed content and operability of the screen for each security level.

☞ Page 3107 Toolbar

For details on the screen security, refer to the following.

☞ Page 3035 [Security] ([Screen Security] tab) (Mode 2)

☞ Page 3038 Restricting display and operation on the GOT (Screen security)

96.7 Useful functions of the GOT offline monitor

GT37 SoftGOT3000

The following shows useful functions available in the GOT offline monitor.

☞ Page 3114 Using the device monitor
☞ Page 3116 Opening resource data files
☞ Page 3116 Checking the GOT operation logs and alarm history (Resource File Viewer)

The operations for the following functions are the same as those in the simulator.
Refer to each section.

☞ Page 393 Taking snap shots
☞ Page 394 Printing the screen
☞ Page 395 Operating the numerical input or text input with a keyboard
☞ Page 395 Displaying scroll bars
☞ Page 396 Displaying the screen in full screen mode

96.7.1 Using the device monitor

You can monitor the virtual devices of a controller connected to the GOT offline monitor using the device monitor.
Internal devices not set on the GOT screen, as well as any devices of the controller can be monitored, allowing you to check device values when an error occurs.
Manage monitored devices using the free registration list function.
By registering an internal device in the free registration list, you can check the current value of the device.
You can also change the device value by rewriting it in the free registration list.
As a result, you can efficiently check the operation of the project after the device value changes.
Multiple free registration lists can be created to suit your needs for each project, screen (base or window), or device to be monitored (such as X devices and GD devices).
The free registration list includes import and export functions, allowing you to use spreadsheet software or other tools to register and edit devices.

☞ Page 3114 Specifications of the device monitor
☞ Page 3115 Starting and ending the device monitor
☞ Page 3115 Checking and changing the device value in the free registration list
☞ Page 3115 Creating a free registration list
☞ Page 3116 [Device Monitor] window

Specifications of the device monitor

■Starting the device monitor

The device monitor can only be started when the GOT offline monitor and the GX Works3 offline monitor are connected and monitoring is in progress.

■Monitoring-supported devices

GOT internal devices, GT SoftGOT3000 internal devices, and virtual controller devices can be monitored.
The availability of reading and writing in the device monitor depends on the device type.
For the devices that can be monitored by the GOT offline monitor, refer to the following.

☞ Page 3096 Device range for monitoring

■Specifications of the free registration list

A created free registration list is retained after exiting the GOT offline monitor.

Up to 32 free registration lists can be created.

Up to 32 characters are available for a free registration list name.

The following characters cannot be used in a free registration list name.

\ / : ; * ? " < > | .

Up to 6 free registration windows can be open simultaneously.

Up to 256 devices are registrable in one free registration list.

■Precautions

- An increase in the number of monitored devices causes monitoring performance degradation in the GOT offline monitor.

■Restrictions

- Label/tag communication is not supported.
- Communication using the label of GT Designer3 (3000) is not supported.
- Communication is not supported when the CPU number and the module number are indirectly specified.

Starting and ending the device monitor

■Starting the device monitor

Perform either of the following operations during monitoring with the GOT offline monitor to start the device monitor.

- Select [Tool] → [Start or Stop Device Monitor] from the GOT offline monitor menu.
- Select [Tool] → [Start or Stop Device Monitor] from the right-click menu of the GOT offline monitor.

■Ending the device monitor

Perform one of the following operations to exit the device monitor.

- Select [File] → [Exit] from the device monitor menu.
- Click the [×] button on the title bar of the device monitor.
- Press Alt + F4 on the device monitor.
- Select [Tool] → [Start or Stop Device Monitor] from the GOT offline monitor menu.
- Select [Tool] → [Start or Stop Device Monitor] from the right-click menu of the GOT offline monitor.
- Exiting the GOT offline monitor

Checking and changing the device value in the free registration list

By registering a device in the free registration list and starting monitoring, you can check the current value of the device on the screen.

1. Create a free registration list.

☞ Page 398 Creating a free registration list

2. If [Monitoring] is not displayed in the title bar of the [Device Monitor] window, perform one of the following operations.

- Select [Online] → [Start] from the device monitor menu.
- Click the [Start the communication] button on the toolbar of the device monitor.

Device monitoring begins and the device value is displayed in the [Current Value] field.

When you change the value in the [Current Value] field, the new value is immediately stored in the device.

Creating a free registration list

You can create a free registration list by either registering a device or importing an already-exported file containing existing free registration lists.

The creation method is the same as that for the free registration list used in the simulator.

For details, refer to the following.

☞ Page 398 Creating a free registration list

[Device Monitor] window

The settings in the [Device Monitor] window of the GOT offline monitor are the same as those in the [Device Monitor] window of the simulator.

For details, refer to the following.

☞ Page 401 [Device Monitor] window

96.7.2 Opening resource data files

Open resource data files saved on the personal computer (such as alarm log files, recipe files, data log files, and operation log files, with extensions .csv, .txt, .bmp, and .jpg).

1. Perform one of the following operations to display the [Refer To Resource Data] dialog.

- Select [Tool] → [Resource Data] from the menu.
- Select [Tool] → [Resource Data] from the right-click menu.
- Press Ctrl + R.

2. Select the file to be referenced in the [Refer To Resource Data] dialog, and click the [Open] button.

The selected resource data is displayed.

96.7.3 Checking the GOT operation logs and alarm history (Resource File Viewer)

To reproduce the situation at the site, Resource File Viewer is available as a tool to check which alarms were displayed at the time of the error and what operations were performed on the GOT.

Supported resource files are those shown below, recorded by the GOT operating in conjunction with GX Works.

- User alarms (G3A, CSV, TXT)
- System alarms (G3A, CSV, TXT)
- Operation logs (G3O, CSV, TXT) (including GT SoftGOT3000 application logs)

When these resource files are read into Resource File Viewer, the GOT operation history and alarm history are displayed in a list.

By using the following functions available in Resource File Viewer, you can quickly find the intended alarm or operation log history.

Function	Details
Search	By specifying the file type, date and time, or a keyword, you can search the alarm and operation log histories for matching records.
Time synchronization with the GX Works3 offline monitor	The seek bar time of the GX Works3 offline monitor can be synchronized with the times of GOT events (such as operation and alarm histories). As a result, you can correlate the operation history and ladder program transitions when an alarm occurs. In conjunction with operations in the GX Works3 offline monitor, relevant errors and logs from the resource file can be precisely displayed.

Point

If the operation log file has the extension .G3O, all detailed logs are displayed.

To display the log as a regular log, convert the operation log file to a CSV file or a Unicode text file containing the regular logs in advance.

96.8 How to use a Resource File Viewer module

GT37 SoftGOT3000

This section explains how to use Resource File Viewer (linked startup) started from the GOT offline monitor.

☞ Page 3117 Setting the resource files to be monitored in each module
☞ Page 3119 Starting monitoring with a Resource File Viewer module
☞ Page 3119 Refreshing the Resource File Viewer display
☞ Page 3119 Exiting Resource File Viewer
☞ Page 3120 Searching for histories in the resource files
☞ Page 3120 Monitoring the histories at the same time as the GX Works3 offline monitor
☞ Page 3120 Changing the items to be displayed in the history display area
☞ Page 3121 Switching the display language for Resource File Viewer
☞ Page 3121 Switching the display language of the resource file history
☞ Page 3122 Screen layout of a Resource File Viewer module

Up to 8 Resource File Viewer modules can be started.
The storage location and file type for each Resource File Viewer module can be specified in advance in the [Resource File Viewer Operation] window. This allows you to select which module to start based on your purpose.
Obtain resource files from the GOT in advance and store them in a folder.

96.8.1 Setting the resource files to be monitored in each module

In the [Resource File Viewer Operation] window, set the storage location and file type of the resource files to be read to each Resource File Viewer module.

1. Perform one of the following operations in the GOT offline monitor.

- Select [Resource File Viewer] → [Resource File Viewer Operation].
- Click the [Resource File Viewer Setting] button in [Action] in the settings dialog.

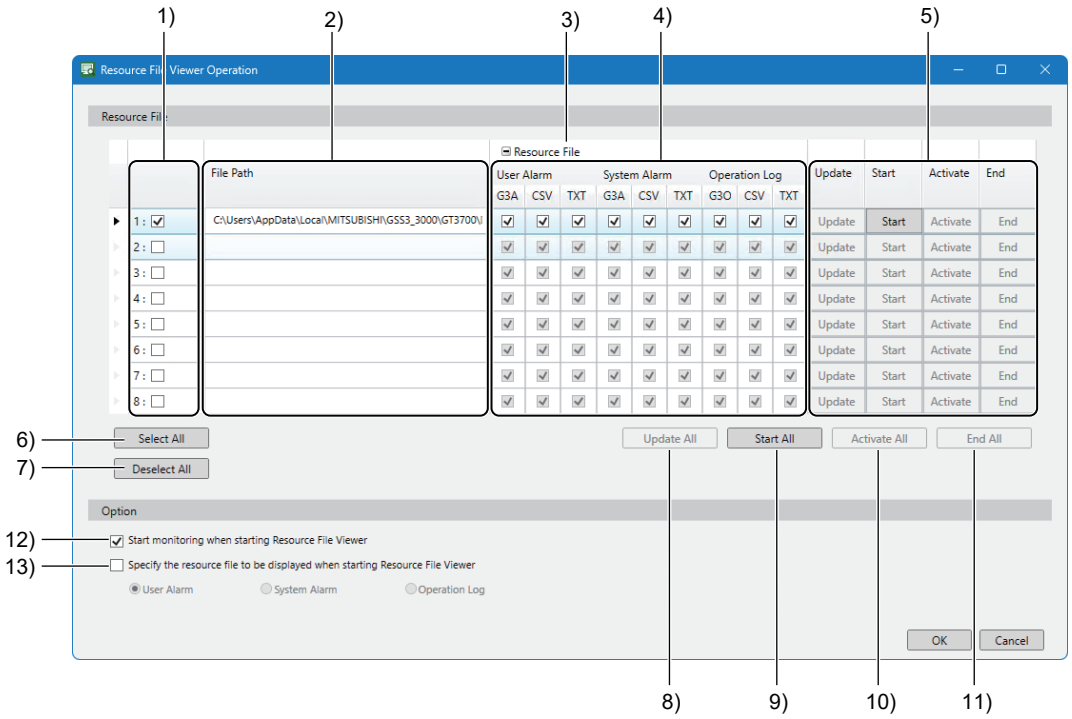
[Resource File Viewer Operation] window appears.

2. Set the storage location, file type, and extension of the resource files to be read in the field for each module.

For details on each setting item, refer to the following.

3. Click the [OK] button.

[Resource File Viewer Operation] window



Item			Description
1)	No.		Select this item to enable the setting. The selected Resource File Viewer module can be started.
2)	[File path]		Specify the folder that stores the resource file to be displayed in Resource File Viewer. The resource file must be created with the project data used in the GOT offline monitor.
3)	[Resource File]		Switch between displaying and hiding the resource file specification area.
4)	Resource file specification area		Select the extensions of the resource files to be displayed in Resource File Viewer.
5)	Operation area	—	Select operations for each Resource File Viewer module number.
		[Update] button	Refreshes the display of the running Resource File Viewer module. Use this button after changing the file path or extension, or after updating the file.
		[Start] button	Starts Resource File Viewer.
		[Activate] button	Activates Resource File Viewer.
		[End] button	Ends Resource File Viewer.
6)	[Select All] button		Selects all Resource File Viewer module numbers.
7)	[Deselect All] button		Deselects all Resource File Viewer module numbers.
8)	[Update All] button		Refresh all the displays of the running Resource File Viewer modules.
9)	[Start All] button		Starts all target Resource File Viewer modules.
10)	[Activate All] button		Activates all currently running Resource File Viewer modules.
11)	[End All] button		Ends all currently running Resource File Viewer modules.
12)	[Start monitoring when starting Resource File Viewer]		Starts monitoring at a start of a Resource File Viewer module.
13)	[Specify the resource file to be displayed when starting Resource File Viewer]		Specify the type of the resource files to be displayed at a start of a Resource File Viewer module.

96.8.2 Starting monitoring with a Resource File Viewer module

1. Use one of the following methods to start a Resource File Viewer module.

- Select [Resource File Viewer] → [Start All] from the GOT offline monitor menu.
- Select [Resource File Viewer] → [Start Resource File Viewer n] from the GOT offline monitor menu (n is a number from 1 to 8).
- Click the [Start] or [Start All] button in the [Resource File Viewer Operation] window.

The resource file set in the [Resource File Viewer Operation] window is read.

2. Select [Online] → [Monitor Start] in the [Resource File Viewer] window.

Connection with the GX Works3 offline monitor is established and monitoring starts.

96.8.3 Refreshing the Resource File Viewer display

While Resource File Viewer is running, if you change the storage location or extension of the file to be read, or if you update, add, or delete the file, the display is refreshed.

When changing the resource file storage location or extension

1. Open the [Resource File Viewer Operation] window and change [File path] or the extension setting as needed.
2. Click the [Update] button to update the resource files displayed in Resource File Viewer.

When a resource file has been changed, added, or deleted

1. Perform either of the following operations.

- Click the [Update] button in the [Navigation] window of Resource File Viewer.
- Click the [Update] button in the [Resource File Viewer Operation] window.

The resource files displayed in Resource File Viewer are updated.

96.8.4 Exiting Resource File Viewer

Disconnect the GX Works3 offline monitor to stop monitoring.
Exit the GOT offline monitor or Resource File Viewer.

Exiting the GOT offline monitor

Exit Resource File Viewer by either of the following methods.

- Select [Resource File Viewer] → [End All] from the GOT offline monitor menu.
- Select [Resource File Viewer] → [End Resource File Viewer n] from the GOT offline monitor menu (n is a number from 1 to 8).
- Click the [End] button in the [Resource File Viewer Operation] window.
- Exit the GOT offline monitor.

Exiting Resource File Viewer

Exit Resource File Viewer by either of the following methods.

- Select [Project] → [Exit Application] from the menu.
- Click the [×] button.

96.8.5 Searching for histories in the resource files

You can search for histories in the resource files by specifying criteria such as resource file type, keywords, and date/time.
The list of matching histories can be exported and saved.

1. Perform either of the following operations to display the [Search] dialog.

- Ctrl + F
- Select [Search] → [Search] from the menu.

☞ Page 3125 [Search] dialog

2. Set the search criteria for each item and click the [Search] button to display the matching histories in the search results list.

When monitoring is inactive, double-click a history in the search results list to select the corresponding history in the history display area.
Click the [Export] button to export the contents of the search results list to a file.

96.8.6 Monitoring the histories at the same time as the GX Works3 offline monitor

The seek bar time of the GX Works3 offline monitor can be synchronized with the times of GOT events (such as operation and alarm histories).
As a result, you can correlate the operation history and ladder program transitions when an alarm occurs.
This function does not work while monitoring is inactive.

Reading the clock time of the GX Works3 offline monitor

Reading the seek bar time of the GX Works3 offline monitor into Resource File Viewer enables you to monitor log and alarm histories collected at the same time as the seek bar.
Click the [Adjust date and time of GX Works3 Offline Monitor to those of Resource File Viewer.] button to select the history at the same time as the GX Works3 offline monitor in the history display area.

☞ Page 3122 Screen layout of a Resource File Viewer module

Writing the clock time of a Resource File Viewer module

Write the time of the history selected in Resource File Viewer to the GX Works3 offline monitor.
As a result, you can monitor events that occur at the same time as the GX Works3 offline monitor.

1. Select a history in the history display area and perform either of the following operations.

- Click the [Adjust date and time of GX Works3 Offline Monitor to those of Resource File Viewer.] button in Resource File Viewer.
- Double-click the history selected in the history display area.

This is available when [Read/write GX Works3 Offline Monitor time on a selected date and time] in the [Action Setup] dialog is selected.

☞ Page 3122 Screen layout of a Resource File Viewer module

The event occurred at the same time as the history selected in Resource File Viewer is selected in the GX Works3 offline monitor.

96.8.7 Changing the items to be displayed in the history display area

1. Select [View] → [Display Items] from the menu to display the [Display Item Setting] dialog.
2. Set the items to be displayed and their order in the history display area.

For details on the operation buttons, refer to the following.

☞ Page 3126 [Display Item Setting] dialog (Resource File Viewer)

96.8.8 Switching the display language for Resource File Viewer

The following shows how to switch the display language for Resource File Viewer menu or other items.

1. Select [View] → [Switch Display Language] from the menu to display the [Switch Display Language] dialog.
2. Select the language to switch to in [Display Language], then click the [OK] button to immediately change the display language.

96.8.9 Switching the display language of the resource file history

If the resource file is a binary file, the display language of the history can be switched.

How to switch the display language depends on the resource file type.

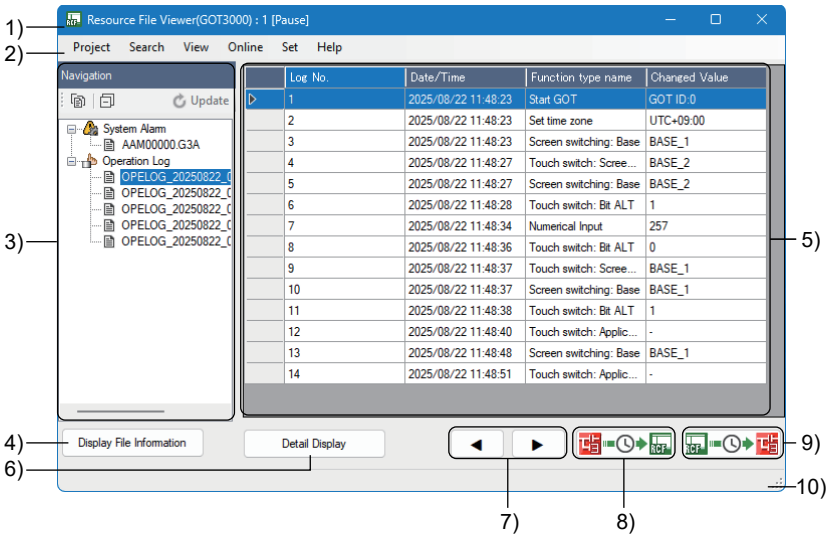
Switch the display language before starting Resource File Viewer.

Type	Description
User alarm	The data is displayed in the display language set in [Language Switching] in the GOT offline monitor. ☞ Page 3113 Switching the display language
System alarm Operation log	The data is displayed in the system language set on the GOT while the GOT offline monitor is running. ☞ Page 546 Setting for switching the language displayed on the GOT ([Language Switching])

96.8.10 Screen layout of a Resource File Viewer module

This section explains the screen displayed when Resource File Viewer is started from the GOT offline monitor (linked startup). For the screen layout of Resource File Viewer when starting it directly from the RCFView.exe (independent startup), refer to the following.

☞ Page 2007 Viewing the operation log file (Resource File Viewer)



Item		Description
1)	Title bar	Displays the Resource File Viewer module number and monitoring status. The icons to minimize, maximize, and close the screen are also displayed.
2)	Menu bar	Displays the operation menus for Resource File Viewer.☞ Page 3123 Menu bar
3)	[Navigation]	Displays the resource files with the extensions selected in [Resource File] in the [Resource File Viewer Operation] window. The [Unfold All] and [Fold All] buttons open and close the tree. • [!] Appears when a resource file has been updated, added, deleted, or renamed. • [Update] button Updates the resource files.
4)	[Display File Information] button	Displays the [Display File Information] dialog. ☞ Page 3123 [Display File Information] dialog
5)	History display area	Displays the details (operation and alarm histories) of the resource file selected in [Navigation]. Set the display items in the [Display Item Setting] dialog. ☞ Page 3123 [Display File Information] dialog
6)	[Detail Display] button	Displays the [Detail Display] dialog. You can check the details of the selected operation and alarm histories. ☞ Page 3123 [Detail Display] dialog
7)	Arrow buttons	Switch the resource files displayed in the history display area.
8)	Click the [Adjust date and time of GX Works3 Offline Monitor to those of Resource File Viewer.] Button	Selects the logs occurred at the same time as specified time in the GX Works3 offline monitor.
9)	[Adjust date and time of GX Works3 Offline Monitor to those of Resource File Viewer.] Button	Selects the events in the GX Works3 offline monitor that occurred at the same time as the specified time in Resource File Viewer.
10)	Status bar	Displays the time read from the GX Works3 offline monitor.

Menu bar

Menu		Description	Shortcut key
[Project]	[Exit Application]	Exits Resource File Viewer.	Alt + F4
[Search]		Search for the resource files read to Resource File Viewer. ☞ Page 3125 [Search] dialog	Ctrl + F
[Display]	[Navigation]	Displays or hides [Navigation].	—
	[Display Items]	Set the items to be displayed in the history display area. ☞ Page 3126 [Display Item Setting] dialog (Resource File Viewer)	—
	[Switch Display Language]	Switch the display language of Resource File Viewer.	—
[Online]	[Start Monitoring]	Establish connection between the GX Works3 offline monitor and the GOT offline monitor to start monitoring.	F3
	[Stop Monitoring]	Disconnects the GX Works3 offline monitor to stop monitoring.	Alt + F3
[Set]	[Resource File Viewer Operation]	[Resource File Viewer Operation] window appears. ☞ Page 3118 [Resource File Viewer Operation] window	—
	[Action]	Configure the settings related to the history display area. ☞ Page 3126 [Action Setup] dialog	—
[Help]	[GT Designer3 Help]	Displays GT Designer3 Help.	F1

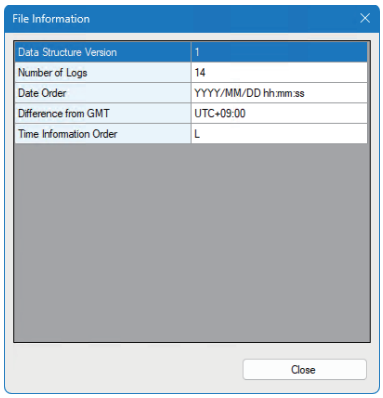
[Display File Information] dialog

Displays the information of the resource file selected in [Navigation].

The displayed items depend on the resource file type.

Ex.

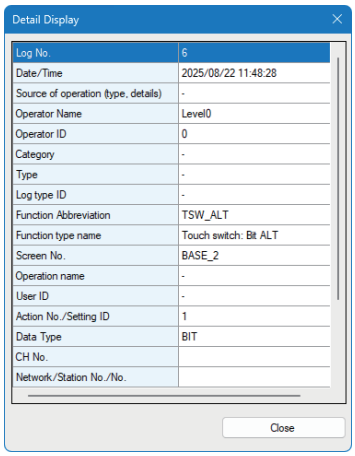
For operation logs



[Detail Display] dialog

Displays the details of the history selected in the history display area.

The displayed items depend on the resource file type.



■User alarm

Item	Description
Upper Comment No.	The No. of the upper level comment
Middle Comment No.	The No. of the middle level comment
Comment No.	The No. of the basic comment
Comment	The comment of the basic alarm
Alarm Status	The status of the alarm
Occurred	The date and time on which the alarm occurred
Restored	The date and time on which the alarm was corrected
Checked	The date and time on which the alarm was confirmed
Level	The level set for the alarm
Group	The group set for the alarm
Frequency of Occurrences	The number of alarms that occurred
Cumulative Down Time	Cumulative down time
Down Time	Down time
Occurrence word log	Occurrence word log

■System alarm

Item	Description
Error No.	The No. of the error
Comment	System alarm message
Alarm Status	The status of the alarm
Occurred	The date and time on which the alarm occurred
Restored	The date and time on which the alarm was corrected
Checked	The date and time on which the alarm was confirmed
CH No.	Channel No.
Network/Station No./No.	Network No., station No., and module No.
Device	The name of the device
Screen Type	The type of the screen • BASE: Base screen • OVL1 to OVL5: Overlap windows 1 to 5 • SPI1 to SPI2: Superimpose windows 1 to 2 • DLG: Dialog window • PNL: Operation panel • KEY: Key window
Definition Screen No	The No. of the definition screen • B: Base screen • W: Window screen
Object ID	Object ID
Function Name	Function Name
Drive Name	The name of the drive

■Operation log

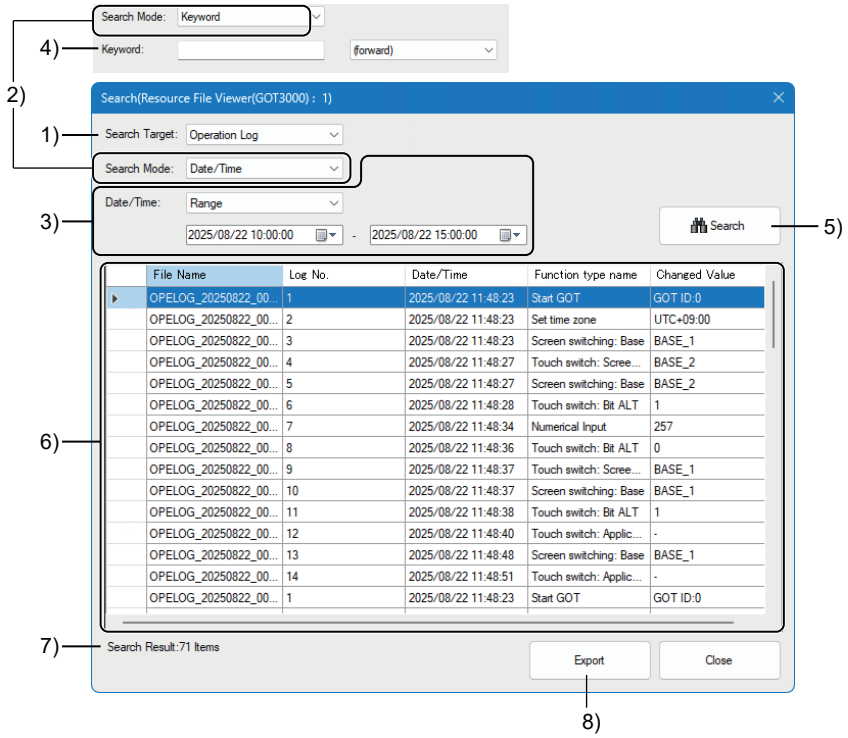
The output items depend on the operations to be recorded.

For the output items and information for each operation, refer to the following.

☞ Page 1921 Collection item

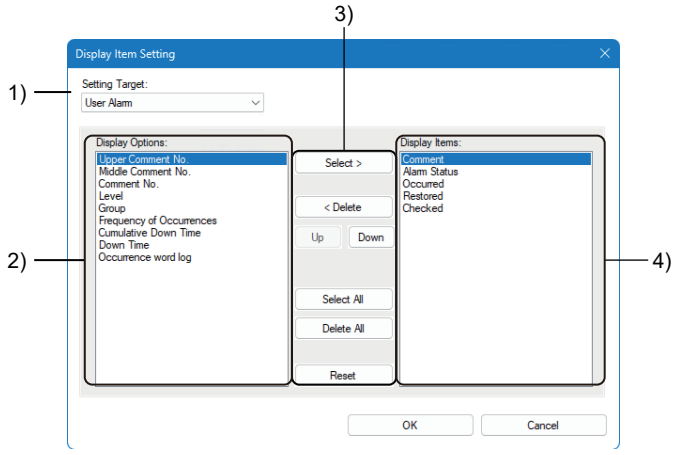
[Search] dialog

Searches the logs in the resource files displayed in [Navigation].



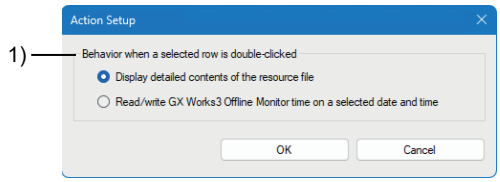
Item		Description	
1)	[Search Target]	Select the file type of the resource data to be searched for.	
2)	[Search Mode]	Select the method of searching.	
3)	[Date/Time]	Set this field when [Search Mode] is set to [Date/Time]. The settings depend on the resource file type.	
		User alarm and system alarm log files	Select the date and time targeted for a search. Based on the selection above, select the search period.
		Operation log file	Based on the recorded dates and time of the operation logs, select the search period.
4)	[Keyword]	Enter here when [Search Mode] is set to [Keyword]. Specify the keyword for a search in the resource files. Up to 1024 characters can be entered. The characters are case-sensitive. After a search with [Keyword] left blank, the search result will be 0.	
5)	[Search] button	Start searching. Search results are displayed in the search result list.	
6)	Search result list	Displays the search results. When monitoring is inactive, double-click a history in the search results list to select the corresponding history in the history display area.	
7)	[Search Result]	The number of the resource files are displayed in the search result list.	
8)	[Export] button	Saves the search result list as a CSV file or a Unicode text file. Set [File name] and [Save as type] in the displayed dialog and click the [Save] button to export the search result list.	

[Display Item Setting] dialog (Resource File Viewer)



Item			Description
1)	[Setting Target]		Select the file type of the resource data set as the display items.
2)	[Display Options]		Options of the items displayed in the search result list Select an item and click the [Select] button to move the item to [Display Items].
3)	Operation buttons	[Select] button	Moves the item selected in [Display Options] to [Display Items].
		[Delete] button	Moves the item selected in [Display Items] to [Display Options].
		[Up] button [Down] button	Move the item selected in [Display Items] upward or downward.
		[Select All] button	Moves all the items in [Display Options] to [Display Items].
		[Delete All] button	Moves all the items in [Display Items] to [Display Options].
		[Reset] button	Restores the items in [Display Items] to the default ones.
4)	[Display Items]		Items to be displayed in the search result list If any item is selected and the [Delete] button is clicked, the selected item is moved to [Display Options]. The top-to-bottom order in [Display Items] corresponds to the left-to-right order in the search results list. If any item is selected and the [Up] button or the [Down] button is clicked, the position of the selected item is moved upward or downward.

[Action Setup] dialog



Item		Description
1)	[Behavior when a selected row is double-clicked]	Select the behavior when the history selected in the history display area is double-clicked. • [Display detailed contents of the resource file] Open the [Detail Display] dialog to display the log details. • [Read/write GX Works3 Offline Monitor time on a selected date and time] Write the time of the row selected in Resource File Viewer to the GX Works3 offline monitor. As a result, you can monitor events that occur at the same time.

PART 31 Device range and settings

97 Device range and settings of Mitsubishi Electric equipment

98 Device range and settings of each controller

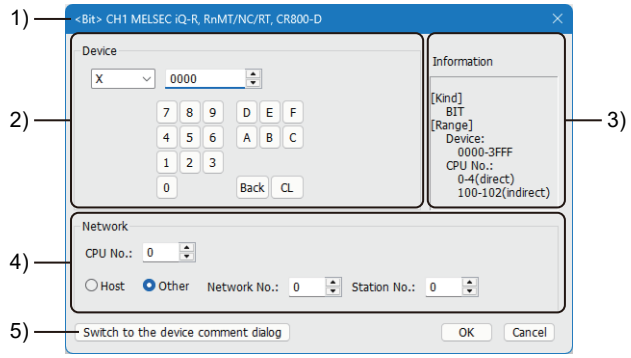
97 Device range and settings of Mitsubishi Electric equipment

This chapter describes the range of devices settable in GT Designer3.
The settable range varies with the selection for [Controller Type] in the [Controller Setting] window.
Configure the device setting according to the specifications of the controller to be used.
Device specifications differ depending on the controller model even among the controllers of the same series.
If a nonexistent device or a device number out of the range is set for an object, other objects for which correct devices are set may not be monitored.

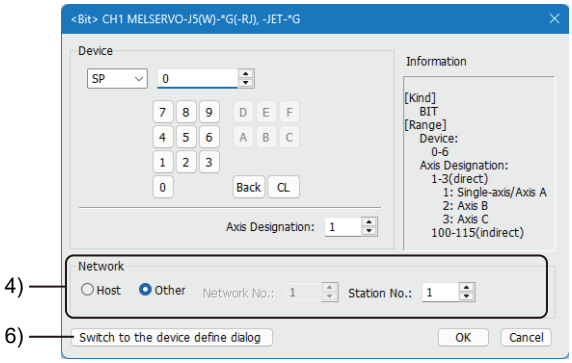
☞ Page 3129 Device setting dialog (Mitsubishi Electric equipment)
☞ Page 3137 [MELSEC MX Controller]
☞ Page 3165 [MELSEC iQ-R, RnMT/NC/RT, CR800-D]
☞ Page 3253 [MELSEC iQ-L]
☞ Page 3265 [MELSEC iQ-F]
☞ Page 3279 [MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700]
☞ Page 3297 [MELSEC-L]
☞ Page 3312 [MELSEC-A]
☞ Page 3316 [MELSEC-FX]
☞ Page 3324 [MELIPC]
☞ Page 3325 [MELSERVO-J3-*A]
☞ Page 3338 [MELSERVO-J3-*T]
☞ Page 3353 [MELSERVO-J4-*A, -JE-*A]
☞ Page 3374 [MELSERVO-J4-*A-RJ]
☞ Page 3399 [MELSERVO-JE-*C]
☞ Page 3418 [MELSERVO-J5(W)-*G(-RJ), -JET-*G]
☞ Page 3457 [FREQROL 700/800, Sensorless Servo]
☞ Page 3465 [FREQROL 800/E700NE(Batch monitor)]

97.1 Device setting dialog (Mitsubishi Electric equipment)

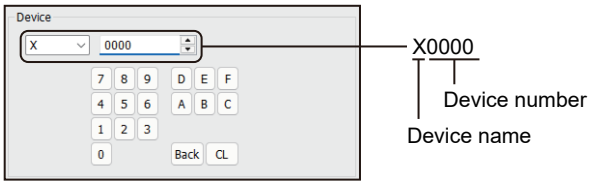
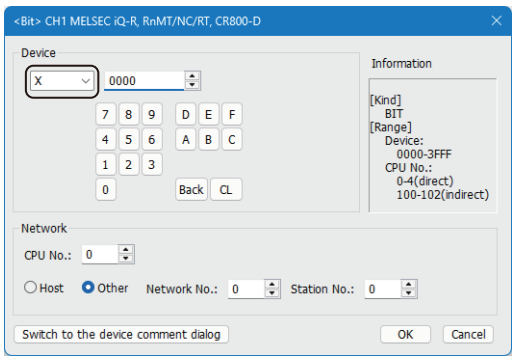
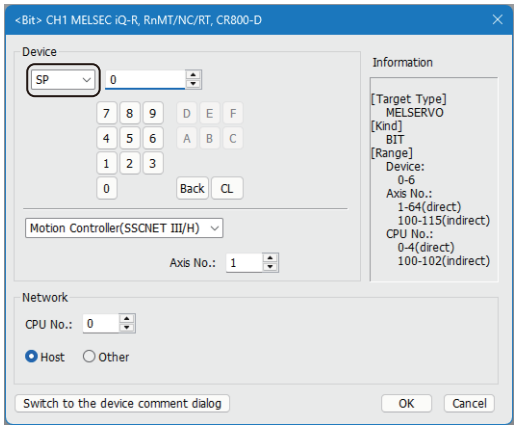
Set a device to be monitored.



[MELSEC iQ-R, RnMT/NC/RT, CR800-D]



[MELSERVO-J5(W)-*G(-RJ), -JET-*G]

Item		Description
1)	Title	Data type and channel number of the device to be set
2)	[Device]	Set the device name and device number. If a bit number needs to be specified, the setting item is displayed. Example) Setting of X0000  The setting items vary with the selected device name.  When [X] is selected for the device name  When [SP] is selected for the device name

Item		Description
3)	[Information]	Displays the setting range of each setting item according to the selected device.
4)	[Network]	Set the station number of the controller to be monitored. The setting items depend on the controller setting. ☞ Page 3131 Network setting for connection to the Mitsubishi Electric PLC ☞ Page 3133 Network setting for connection to the Mitsubishi Electric servo amplifier ☞ Page 3135 Network setting for connection to the Mitsubishi Electric inverter
5)	[Switch to the device comment dialog] button	You can open the device comment setting dialog to check the device comments imported to GT Designer3. For details, refer to the following. ☞ Page 961 Device comment setting dialog
6)	[Switch to the device define dialog] button	You can open the device definition setting dialog to check the definitions of the virtual servo amplifier or inverter devices. For details, refer to the following. ☞ Page 962 Device definition setting dialog

For the formats of devices, refer to the following.

For details, refer to the following.

☞ Page 849 Formats of devices, labels, and tags

For the specifications of each device, refer to the following.

☞ Page 3137 [MELSEC MX Controller]

☞ Page 3165 [MELSEC iQ-R, RnMT/NC/RT, CR800-D]

☞ Page 3253 [MELSEC iQ-L]

☞ Page 3265 [MELSEC iQ-F]

☞ Page 3279 [MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700]

☞ Page 3297 [MELSEC-L]

☞ Page 3312 [MELSEC-A]

☞ Page 3316 [MELSEC-FX]

☞ Page 3324 [MELIPC]

☞ Page 3325 [MELSERVO-J3-*A]

☞ Page 3338 [MELSERVO-J3-*T]

☞ Page 3353 [MELSERVO-J4-*A, -JE-*A]

☞ Page 3374 [MELSERVO-J4-*A-RJ]

☞ Page 3399 [MELSERVO-JE-*C]

☞ Page 3418 [MELSERVO-J5(W)-*G(-RJ), -JET-*G]

☞ Page 3457 [FREQROL 700/800, Sensorless Servo]

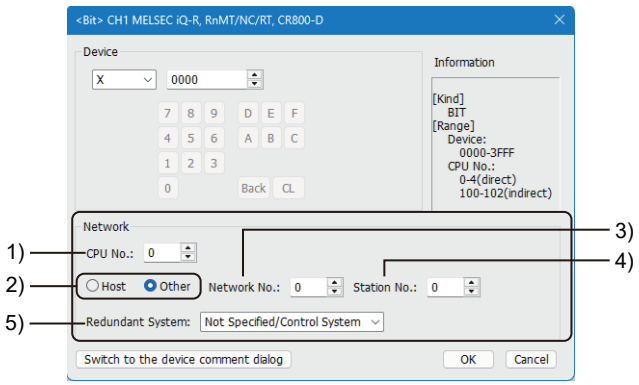
☞ Page 3465 [FREQROL 800/E700NE(Batch monitor)]

97.1.1 Network setting for connection to the Mitsubishi Electric PLC

Configure the following settings for connecting to a Mitsubishi Electric PLC.

Ex.

Device setting dialog for [MELSEC iQ-R, RnMT/NC/RT, CR800-D]



Item		Description
1)	[CPU No.]	Set the CPU number of the controller. ☞ Page 3132 Setting the CPU number
2)	Station type specification	Select the station type (host or other) for the controller to be monitored. • [Host]: The controller to be monitored is the host station. • [Other]: The controller to be monitored is not the host station. When monitoring link relay (B) and link register (W) assigned in link parameter and network parameter, select [Host]. If [Other] is selected, the cyclic transmission will be changed to the transient transmission irrespective of the network type, resulting in delay of the object display. Set RX, RY, RWw, RWr, LB, or LW as [Host] when monitoring a cyclic device.
3)	[Network No.]	This item appears when [Other] is selected for the station type. Set the network number.
4)	[Station No.]	This item appears when [Other] is selected for the station type. Specify a station number.
5)	[Redundant System]	This item can be set only when [Use the function of MELSEC Redundant] is selected in [MELSEC Redundant] of the [Controller Setting] window. The following shows selectable items. • [Not Specified/Control System] • [Standby System] Example) Display terminology of the control system 1-1/1-S W0.b0 [-S] is displayed for a device of the standby system. For details, refer to the following. ☞ Page 744 Configuring the setting of the MELSEC redundant function

Setting the CPU number

The setting range depends on the system configuration of the monitoring target.

Item	Description
When monitoring a single CPU system	Set the CPU number to [0].
When monitoring a multiple CPU system	Set the CPU number to any of [1] to [4].
When monitoring an inverter	Set the CPU number to [0].

To specify a CPU number with the value of a GOT data register (GD), refer to the following.

☞ Page 3132 Indirect specification of a CPU number

Indirect specification of a CPU number

To set a GOT data register (GD) to specify a CPU number, set [CPU No. switching GD device first No. (3 points)] in the [Controller Setting] window.

For details, refer to the following.

☞ Page 729 [Controller Setting]

When using GT SoftGOT3000, [CPU No. switching GD device first No. (3 points)] can also be set in GT SoftGOT3000.

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The following shows the correspondence between CPU numbers and GOT data registers (GD).

Ex.

When 500 is set to [CPU No. switching GD device first No. (3 points)]

Three consecutive devices, starting from GD500, are set to specify CPU numbers.

CPU No.	GOT data registers (GD)	Setting range
100	GD500	[1] to [4] (Setting an invalid value causes a communication timeout error.)
101	GD501	
102	GD502	

Upon the GOT startup, 0 is stored in the specified GD devices until values are set.

If you set the GD devices on the screen that appears upon the GOT startup, a communication timeout error occurs.

To avoid such situation, set the GD devices so that their values are retained at a power failure.

For details, refer to the following.

☞ Page 601 Configuring the settings for retaining GOT internal device data at power failure ([Internal Device Retention])

Precautions

■When the multi-channel connection is used

When specifying GD devices for multiple channels, set different GD devices to [CPU No. switching GD device first No. (3 points)].

GD10 to GD25 are used to specify the monitoring targets, such as the station number of an inverter.

When setting GD devices for a different channel, set different GD devices to [CPU No. switching GD device first No. (3 points)].

■When the indirect specification function is used

Do not change the value of the specified device while a touch switch with the bit momentary is being pressed.

Doing so may cause the touch switch to exhibit unintended behavior.

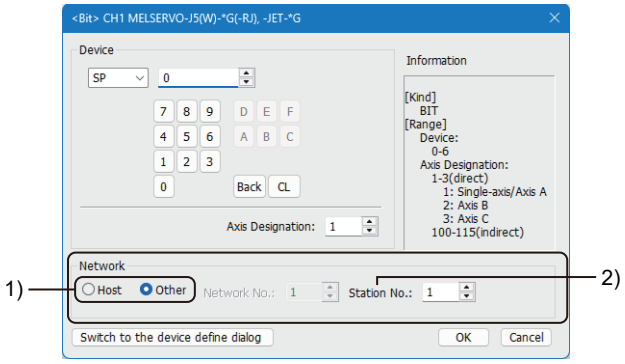
97.1.2 Network setting for connection to the Mitsubishi Electric servo amplifier

☞ Page 3133 Network setting for Ethernet connection
☞ Page 3134 Network setting for non-network connection type (serial connection)

Network setting for Ethernet connection

Ex.

Device setting dialog for [MELSERVO-J5(W)-*G(-RJ), -JET-*G]

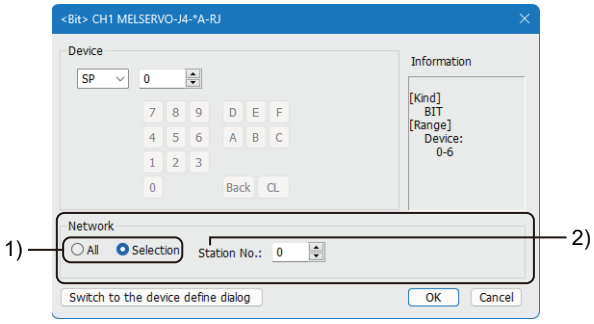


Item		Description
1)	Station type specification	Select the station type (host or other) for the controller to be monitored. • [Host]: The controller to be monitored is the host station. • [Other]: The controller to be monitored is not the host station.
2)	[Station No.]	This item appears when [Other] is selected for the station type. Specify a station number.

Network setting for non-network connection type (serial connection)

Ex.

Device setting dialog for [MELSERVO-J4-*A-RJ]



Item		Description	
1)	Monitor target specification	Set the monitoring target of the set device.	
		[All]	Select this item when writing data to all servo amplifiers connected. During a monitoring, the servo amplifier of the station No. 0 is monitored. When inputting data by the numerical input, the data is written to all servo amplifiers connected during inputting and the servo amplifier of the station No. 0 is monitored during other than inputting (displaying). When [All] is selected for a device, network No. 0 and station No. FF are displayed in the device list window and the printed report.
		[Selection]	Specify the station number of a servo amplifier to be monitored.
2)	[Station No.]	This item appears when [Selection] is selected for the monitor target specification. The setting range is [0] to [31] (direct) or [100] to [115] (indirect). For indirect specification of a station number, refer to the following. ☞ Page 3134 Indirect specification of a station number (for connection to a servo amplifier)	

■Indirect specification of a station number (for connection to a servo amplifier)

When you specify any of 100 to 115 for the station number, the value of the corresponding GOT data register (GD10 to GD25) is used as the station number.

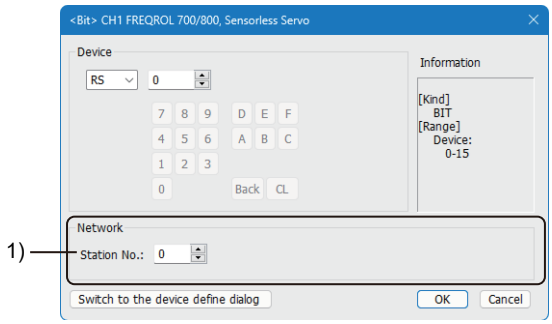
The following shows the correspondence between station number setting values and GOT data registers (GD).

Station No.	GOT data registers (GD)	Setting range
100	GD10	[0] to [31] Setting a value outside the range causes a timeout error.
101	GD11	
:	:	
114	GD24	
115	GD25	

97.1.3 Network setting for connection to the Mitsubishi Electric inverter

☞ Page 3135 Network setting for [FREQROL 700/800, Sensorless Servo]
☞ Page 3136 Network setting for [FREQROL 800/E700NE(Batch monitor)]

Network setting for [FREQROL 700/800, Sensorless Servo]



Item		Description
1)	[Station No.]	Set the station number of the inverter to be monitored. The setting range is [0] to [31] (direct) or [100] to [115] (indirect). For indirect specification of a station number, refer to the following. ☞ Page 3135 Indirect specification of a station number (for connecting an inverter)

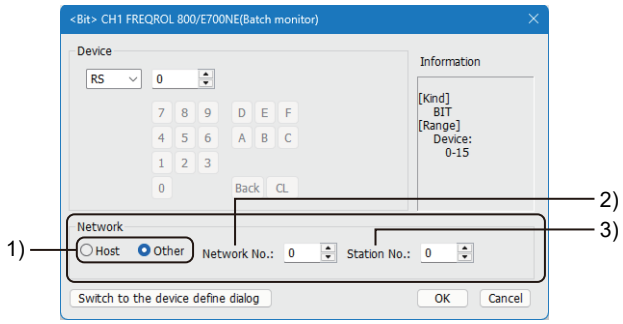
■Indirect specification of a station number (for connecting an inverter)

When you specify any of 100 to 115 for the station number, the value of the corresponding GOT data register (GD10 to GD25) is used as the station number.

The following shows the correspondence between station number setting values and GOT data registers (GD).

Station No.	GOT data registers (GD)	Setting range
100	GD10	[0] to [31] Setting a value outside the above range causes a device range error.
101	GD11	
:	:	
114	GD24	
115	GD25	

Network setting for [FREQROL 800/E700NE(Batch monitor)]



Item		Description
1)	Station type specification	Select the station type (host or other) for the controller to be monitored. • [Host]: The controller to be monitored is the host station. • [Other]: The controller to be monitored is not the host station.
2)	[Network No.]	This item appears when [Other] is selected for the station type. Set the network number. The setting range is [1] to [239].
3)	[Station No.]	This item appears when [Other] is selected for the station type. Set the station number of the inverter to be monitored. The setting range is [1] to [120]. Valid station numbers vary depending on the connection type. For indirect specification of a station number for non-network connection type, refer to the following. ☞ Page 3135 Indirect specification of a station number (for connecting an inverter)

97.2 [MELSEC MX Controller]

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Item	Reference
Specifications of bit devices	☞ Page 3138 Monitoring-supported bit devices ([MELSEC MX Controller])
	☞ Page 3140 Setting virtual bit devices for servo amplifiers ([MELSEC MX Controller])
	☞ Page 3144 Availability of writing/reading data to/from bit devices ([MELSEC MX Controller])
Specifications of word devices	☞ Page 3146 Monitoring-supported word devices ([MELSEC MX Controller])
	☞ Page 3149 Setting virtual word devices for servo amplifiers ([MELSEC MX Controller])
	☞ Page 3155 Availability of writing/reading data to/from word devices ([MELSEC MX Controller])
Specifications of double-word devices	☞ Page 3157 Monitoring-supported double-word devices ([MELSEC MX Controller])
	☞ Page 3158 Setting virtual double-word devices for servo amplifiers ([MELSEC MX Controller])
	☞ Page 3160 Availability of writing/reading data to/from double-word devices ([MELSEC MX Controller])
Specifications of virtual servo amplifier devices	☞ Page 3161 Virtual servo amplifier devices ([MELSEC MX Controller])
	☞ Page 3163 Precautions for virtual servo amplifier devices ([MELSEC MX Controller])
Specifications of virtual inverter devices	☞ Page 3164 Virtual inverter devices ([MELSEC MX Controller])

97.2.1 Monitoring-supported bit devices ([MELSEC MX Controller])

The following table shows monitoring-supported bit devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3144 Availability of writing/reading data to/from bit devices ([MELSEC MX Controller])

○: Available

×: Not available

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
X	Input relay	Hexadecimal	0000 to 3FFF	○	○
Y	Output relay	Hexadecimal	0000 to 3FFF	○	○
B	Link relay	Hexadecimal	0000000 to 9FF9FFF	○	○
M	Internal relay	Decimal	0 to 167747583	○	○
L	Latch relay	Decimal	0 to 32767	○	○
S*4	Step relay	Decimal	0 to 16383	×	×
F	Annunciator	Decimal	0 to 131071	○	○
TC	Timer coil	Decimal	0 to 9319295	○	○ Not usable as word data
TT	Timer contact	Decimal	0 to 9319295	○	○ Not usable as word data
CC	Counter coil	Decimal	0 to 9319295	○	○ Not usable as word data
CT	Counter contact	Decimal	0 to 9319295	○	○ Not usable as word data
SC	Retentive timer coil	Decimal	0 to 9319295	○	○ Not usable as word data
SS	Retentive timer contact	Decimal	0 to 9319295	○	○ Not usable as word data
SB	Link special relay	Hexadecimal	0000000 to 9FF9FFF	○	○
SM	Special relay	Decimal	0 to 9999	○	○
RX	Remote input	Hexadecimal	0000 to 3FFF	○	○
RY	Remote output	Hexadecimal	0000 to 3FFF	○	○
LB	Link relay	Hexadecimal	0000 to 7FFF	○	○
LTC	Long timer coil	Decimal	0 to 2621055	○	○ Not usable as word data
LTT	Long timer contact	Decimal	0 to 2621055	○	○ Not usable as word data
LCC	Long counter coil	Decimal	0 to 4933727	○	○ Not usable as word data
LCT	Long counter contact	Decimal	0 to 4933727	○	○ Not usable as word data
LSC	Long retentive timer coil	Decimal	0 to 2621055	○	○ Not usable as word data
LSS	Long retentive timer contact	Decimal	0 to 2621055	○	○ Not usable as word data

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
SAX	Safety input relay	Hexadecimal	0000 to 2FFF	×	×
SAY	Safety output relay	Hexadecimal	0000 to 2FFF	×	×
SAB	Safety link relay	Hexadecimal	00000 to 9BFFF	×	×
SAM	Safety internal relay	Decimal	0 to 638975	×	×
SATC	Safety timer coil	Decimal	0 to 35487	×	×
SATT	Safety timer contact	Decimal	0 to 35487	×	×
SACC	Safety counter coil	Decimal	0 to 35487	×	×
SACT	Safety counter contact	Decimal	0 to 35487	×	×
SASC	Safety retentive timer coil	Decimal	0 to 35487	×	×
SASS	Safety retentive timer contact	Decimal	0 to 35487	×	×
SASM	Safety special relay	Decimal	0 to 4095	×	×
BL	SFC block	Decimal	0 to 319	×	×
BLS	Step relay (block)	Decimal	BL(SFC Block No.)-S(Device) Notation example: BL1-S3 • SFC Block No. (decimal): 0 to 319 • Device (decimal): 0 to 511	×	×
SP*2	Servo amplifier request	Decimal	☞ Page 3140 Setting virtual bit devices for servo amplifiers ([MELSEC MX Controller])	×	×
OM*2	Operation mode selection	Decimal	☞ Page 3140 Setting virtual bit devices for servo amplifiers ([MELSEC MX Controller])	×	×
TMB*2	Instruction demand (for test operation)	Decimal	☞ Page 3140 Setting virtual bit devices for servo amplifiers ([MELSEC MX Controller])	×	×
OTI*2	One-touch tuning instruction	Decimal	☞ Page 3140 Setting virtual bit devices for servo amplifiers ([MELSEC MX Controller])	×	×
GFDI*2	Gear failure diagnosis instruction	Decimal	☞ Page 3140 Setting virtual bit devices for servo amplifiers ([MELSEC MX Controller])	×	×
ECCDI*2	Encoder communication circuit diagnosis instruction	Decimal	☞ Page 3140 Setting virtual bit devices for servo amplifiers ([MELSEC MX Controller])	×	×
JnX	Link input (link direct)	Hexadecimal	J(Network No.n)-X(Device) Notation example: J1-X0000 • Network No.n (decimal): 1 to 239 • Device (hexadecimal): 0000 to 3FFF	○	○
JnY	Link output (link direct)	Hexadecimal	J(Network No.n)-Y(Device) Notation example: J1-Y0000 • Network No.n (decimal): 1 to 239 • Device (hexadecimal): 0000 to 3FFF	○	○
JnB	Link relay (link direct)	Hexadecimal	J(Network No.n)-B(Device) Notation example: J1-B0000 • Network No.n (decimal): 1 to 239 • Device (hexadecimal): 0000 to 1FFFF	○	○
JnSB	Link special relay (link direct)	Hexadecimal	J(Network No.n)-SB(Device) Notation example: J1-SB000 • Network No.n (decimal): 1 to 239 • Device (hexadecimal): 000 to FFF	○	○
IOST*3	I/O terminal monitor	Decimal	0 to 127	×	×
CMD*3	Operation command	Decimal	0 to 63	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
☞ Page 2868 Monitoring a controller through the GOT (server/client function)

*2 Virtual servo amplifier device
For details, refer to the following.
☞ Page 3161 Virtual servo amplifier devices ([MELSEC MX Controller])

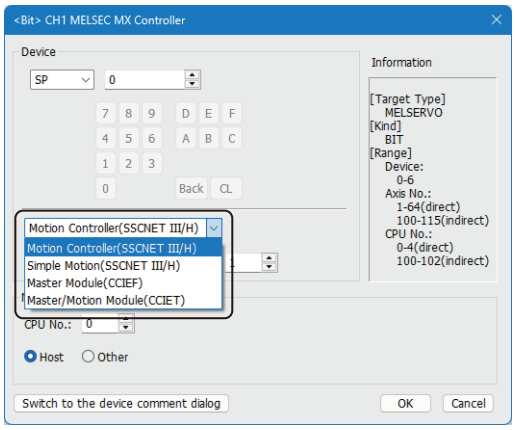
*3 Virtual inverter device
For details, refer to the following.
☞ Page 3164 Virtual inverter devices ([MELSEC MX Controller])

*4 If a bit-specified word device is used in the random read processing, GT Simulator3 uses the value of the bit device in block No. 0 only. The bit device status depends on the SFC program status (active or inactive). When the SFC program is inactive, the bit device is off (stores 0).
If a step relay (S) is used in the random read processing, specify the relevant step relay (block) (BLS).

97.2.2 Setting virtual bit devices for servo amplifiers ([MELSEC MX Controller])

For virtual servo amplifier devices, the notation differs according to the connection type between the GOT and the servo amplifier.

Select one of the following according to the control type in the device setting dialog.



Item	Description
[Motion Controller(SSCNET III/H)]	Select this item to connect the GOT through a Motion controller. The following item is displayed. • [Axis No.]: Set the axis number to be monitored.
[Simple Motion(SSCNET III/H)]	Select this item to connect the GOT through a Simple Motion module (RD77MS). The following items are displayed. • [Unit No.]: Set the first 2 digits of the 3-digit number that represents the start I/O number of the Simple Motion module. • [Axis No.]: Set the axis number to be monitored.
[Master Module(CCIEF)]	Select this item to connect the GOT through the master station on the CC-Link IE Field Network or a Simple Motion module (RD77GF).
[Master/Motion Module(CCIET)]	Select this item to connect the GOT through the master station on the CC-Link IE TSN and a Motion module (RD78G(H)). After the selection, set a device that enables axis designation to display the following item. • [Axis Designation]: Set the axis to be monitored.

The following shows the notation and setting range of virtual devices.

Device name	Device notation and setting range		Notation example
SP	[Motion Controller(SSCNET III/H)]	A(Axis No.)-SP(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 6	A64-SP0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-SP(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 6	UFF-A64-SP0
	[Master Module(CCIEF)]	SP(Device) • Device (decimal): 0 to 6	SP0
	[Master/Motion Module(CCIET)]	AA(Axis designation)-SP(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 6	AA3-SP0

Device name	Device notation and setting range		Notation example
OM	[Motion Controller(SSCNET III/H)]	A(Axis No.)-OM(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 2, 4 to 5	A64-OM0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-OM(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 2, 4 to 5	UFF-A64-OM0
	[Master Module(CCIEF)]	OM(Device) • Device (decimal): 0 to 2, 4 to 5	OM0
	[Master/Motion Module(CCIET)]	AA(Axis designation)-OM(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 2, 4 to 5	AA3-OM0
TMB	[Motion Controller(SSCNET III/H)]	A(Axis No.)-TMB(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 6	A64-TMB1
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-TMB(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 6	UFF-A64-TMB1
	[Master Module(CCIEF)]	TMB(Device) • Device (decimal): 1 to 6	TMB1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-TMB(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 6	AA3-TMB1
OTI	[Motion Controller(SSCNET III/H)]	A(Axis No.)-OTI(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5	A64-OTI0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-OTI(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5	UFF-A64-OTI0
	[Master Module(CCIEF)]	OTI(Device) • Device (decimal): 0 to 5	OTI0
	[Master/Motion Module(CCIET)]	AA(Axis designation)-OTI(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5	AA3-OTI0
GFDI	[Motion Controller(SSCNET III/H)]	A(Axis No.)-GFDI(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1	A64-GFDI1
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-GFDI(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1	UFF-A64-GFDI1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-GFDI(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1	AA3-GFDI0
ECCDI	[Motion Controller(SSCNET III/H)]	A(Axis No.)-ECCDI(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1	A64-ECCDI1
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-ECCDI(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1	UFF-A64-ECCDI1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-ECCDI(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1	AA3-ECCDI0

For indirect specification of a module number, axis number, or axis designation, refer to the following.

☞ Page 3142 Indirect specification of a module number ([MELSEC MX Controller])

☞ Page 3143 Indirect specification of an axis number or axis designation ([MELSEC MX Controller])

Indirect specification of a module number ([MELSEC MX Controller])

To set a GOT data register (GD) to specify a module number, set [Module No. switching GD device first No. (16 points)] in the [Controller Setting] window.

For details, refer to the following.

☞ Page 729 [Controller Setting]

In GT SoftGOT3000, set [Module No. switching GD device first No. (16 points)] in the [Communication Setup] dialog.

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The following shows the correspondence between module numbers and GOT data registers (GD).

Ex.

When 550 is set to [Module No. switching GD device first No. (16 points)]

Sixteen consecutive devices, starting from GD550, are set to specify module numbers.

Module No.	GOT data registers (GD)	Setting range
100	GD550	[000] to [0FF] Setting a value outside the above range causes a device range error.
101	GD551	
:	:	
10E	GD564	
10F	GD565	

Upon the GOT startup, 0 is stored in the specified GD devices until values are set.

If you set the GD devices on the screen that appears upon the GOT startup, module No. 0 is monitored unintentionally, or a device range error occurs.

To avoid such situation, set the GD devices so that their values are retained at a power failure.

For details, refer to the following.

☞ Page 601 Configuring the settings for retaining GOT internal device data at power failure ([Internal Device Retention])

Precautions

■When the multi-channel connection is used

When setting GD devices for multiple channels, set different GD devices to [Module No. switching GD device first No. (16 points)].

GD10 to GD25 are used to specify the monitoring targets, such as the station number of an inverter.

When setting GD devices for a different channel, set different GD devices to [Module No. switching GD device first No. (16 points)].

■When the indirect specification function is used

Do not change the value of the specified device while a touch switch with the bit momentary is being pressed.

Doing so may cause the touch switch to exhibit unintended behavior.

Indirect specification of an axis number or axis designation ([MELSEC MX Controller])

To use GOT data registers (GD) to specify an axis number or axis designation, set [Servo axis switching GD device first No. (16 points)] in the [Controller Setting] window.

For details, refer to the following.

☞ Page 729 [Controller Setting]

In GT SoftGOT3000, set [Servo axis switching GD device first No. (16 points)] in the [Communication Setup] dialog.

📖GT SoftGOT3000 User's Manual

The following shows the relationship between the axis number or axis designation and the GOT data register (GD).

Ex.

When 10 is set to [Servo axis switching GD device first No. (16 points)]

Sixteen consecutive devices, starting from GD10, are set to specify an axis number.

Axis No. or axis designation	GOT data registers (GD)	Setting range
100	GD10	• Axis number [1] to [64] • Axis designation [1]: Single-axis/Axis A [2]: Axis B [3]: Axis C Setting a value outside the above range causes a device range error.
101	GD11	
:	:	
114	GD24	
115	GD25	

Upon the GOT startup, 0 is stored in the specified GD devices until values are set.

If you set the GD devices on the screen that appears upon the GOT startup, a device range error occurs.

To avoid such situation, set the GD devices so that their values are retained at a power failure.

For details, refer to the following.

☞ Page 601 Configuring the settings for retaining GOT internal device data at power failure ([Internal Device Retention])

Precautions

■When the multi-channel connection is used

When specifying GD devices for multiple channels, set different GD devices to [Servo axis switching GD device first No. (16 points)].

GD10 to GD25 are used to specify the monitoring targets, such as the station number of an inverter.

When setting GD devices for a different channel, set different GD devices to [Servo axis switching GD device first No. (16 points)].

■When the indirect specification function is used

Do not change the value of the specified device while a touch switch with the bit momentary is being pressed.

Doing so may cause the touch switch to exhibit unintended behavior.

97.2.3 Availability of writing/reading data to/from bit devices ([MELSEC MX Controller])

The following shows the availability of writing/reading data to/from bit devices by device type.

When the device type is other than the bit type, set the device No. in multiples of 16.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type				
	Bit	Byte (8 bits)	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)
X	R/W	-/-	R/W	R/W	-/-
Y	R/W	-/-	R/W	R/W	-/-
B	R/W	-/-	R/W	R/W	-/-
M	R/W	-/-	R/W	R/W	-/-
L	R/W	-/-	R/W	R/W	-/-
S	R/-	-/-	R/-	R/-	-/-
F	R/W	-/-	R/W	R/W	-/-
TC	R/W	-/-	-/-	-/-	-/-
TT	R/W	-/-	-/-	-/-	-/-
CC	R/W	-/-	-/-	-/-	-/-
CT	R/W	-/-	-/-	-/-	-/-
SC	R/W	-/-	-/-	-/-	-/-
SS	R/W	-/-	-/-	-/-	-/-
SB	R/W	-/-	R/W	R/W	-/-
SM	R/W	-/-	R/W	R/W	-/-
RX	R/W	-/-	R/W	R/W	-/-
RY	R/W	-/-	R/W	R/W	-/-
LB	R/W	-/-	R/W	R/W	-/-
LTC	R/W	-/-	-/-	-/-	-/-
LTT	R/W	-/-	-/-	-/-	-/-
LCC	R/W	-/-	-/-	-/-	-/-
LCT	R/W	-/-	-/-	-/-	-/-
LSC	R/W	-/-	-/-	-/-	-/-
LSS	R/W	-/-	-/-	-/-	-/-
SAX	R/-	-/-	R/-	R/-	-/-
SAY	R/-	-/-	R/-	R/-	-/-
SAB	R/-	-/-	R/-	R/-	-/-
SAM	R/-	-/-	R/-	R/-	-/-
SATC	R/-	-/-	-/-	-/-	-/-
SATT	R/-	-/-	-/-	-/-	-/-
SACC	R/-	-/-	-/-	-/-	-/-
SACT	R/-	-/-	-/-	-/-	-/-
SASC	R/-	-/-	-/-	-/-	-/-
SASS	R/-	-/-	-/-	-/-	-/-
SASM	R/-	-/-	R/-	R/-	-/-
BL	R/W	-/-	-/-	-/-	-/-
BLS	R/W	-/-	-/-	-/-	-/-
SP	-/W	-/-	-/-	-/-	-/-
OM	-/W	-/-	-/-	-/-	-/-
TMB	-/W	-/-	-/-	-/-	-/-
OTI	-/W	-/-	-/-	-/-	-/-

Device name	Device type				
	Bit	Byte (8 bits)	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)
GFDI	-/W	-/-	-/-	-/-	-/-
ECCDI	-/W	-/-	-/-	-/-	-/-
JnX	R/W	-/-	R/W	R/W	-/-
JnY	R/W	-/-	R/W	R/W	-/-
JnB	R/W	-/-	R/W	R/W	-/-
JnSB	R/W	-/-	R/W	R/W	-/-
IOST	R/-	-/-	-/-	-/-	-/-
CMD	-/W	-/-	-/-	-/-	-/-

97.2.4 Monitoring-supported word devices ([MELSEC MX Controller])

The following table shows monitoring-supported word devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3155 Availability of writing/reading data to/from word devices ([MELSEC MX Controller])

○: Available

×: Not available

Device name		Device No. representation	Setting range	EG device specifications[*1]	
				Assignment to EG devices	Access using a client
TN	Timer current value	Decimal	0 to 9319295	○	○
CN	Counter current value	Decimal	0 to 9319295	○	○
SN	Retentive timer current value	Decimal	0 to 9319295	○	○
D	Data register	Decimal	0 to 10484223	○	○
SD	Special register	Decimal	0 to 9999	○	○
W	Link register	Hexadecimal	000000 to 9FF9FF	○	○
SW	Link special register	Hexadecimal	000000 to 9FF9FF	○	○
R	File register	Decimal	0 to 32767	○	○
ER	Extension file register(Block)	Decimal	ER (R block)-(Device) Notation example: ER255-100 • R block (decimal): 1 to 318 • Device (decimal): 0 to 32767	○	○
ZR	Extension file register	Decimal	0 to 10452991	○	○
Z	Index register	Decimal	0 to 23	○	○ Not usable as bit data
G	Buffer memory (Intelligent function module)	Decimal	U(Unit No.)-G(Device) Notation example: UFF-G100 • Module No. (hexadecimal): 00 to FF • Device (decimal): 0 to 268435455 For the module No., set the first 2 digits of the 3-digit number that represents the start I/O number of the buffer memory for the intelligent function module.	○	○
Ww	Remote register	Hexadecimal	0000 to 1FFF	○	○
Wr	Remote register	Hexadecimal	0000 to 1FFF	○	○
LW	Link register	Hexadecimal	00000 to 1FFFF	○	○
#	Motion device	Decimal	0 to 108287	○	○
U3E0	Multiple CPU high speed transmission memory	Decimal	0 to 12287	○	○
U3E1	Multiple CPU high speed transmission memory	Decimal	0 to 12287	○	○
U3E2	Multiple CPU high speed transmission memory	Decimal	0 to 12287	○	○
U3E3	Multiple CPU high speed transmission memory	Decimal	0 to 12287	○	○
SATN	Safety timer (current value)	Decimal	0 to 35487	×	×
SACN	Safety counter (current value)	Decimal	0 to 35487	×	×
SASN	Safety retentive timer (current value)	Decimal	0 to 35487	×	×
SAD	Safety data register	Decimal	0 to 39935	×	×
SASD	Safety special register	Decimal	0 to 4095	×	×
SAW	Safety link register	Hexadecimal	0000 to 9BFF	×	×
PA[*2]	Basic parameter	Decimal	☞ Page 3149 Setting virtual word devices for servo amplifiers ([MELSEC MX Controller])	×	×
PB[*2]	Gain filter parameter	Decimal	☞ Page 3149 Setting virtual word devices for servo amplifiers ([MELSEC MX Controller])	×	×

Device name		Device No. representation	Setting range	EG device specifications[*1]	
				Assignment to EG devices	Access using a client
PC[*2]	Extension setting parameter	Decimal	☞ Page 3149 Setting virtual word devices for servo amplifiers ([MELSEC MX Controller])	×	×
PD[*2]	I/O setting parameter	Decimal	☞ Page 3149 Setting virtual word devices for servo amplifiers ([MELSEC MX Controller])	×	×
PO[*2]	Option unit parameter	Decimal	☞ Page 3149 Setting virtual word devices for servo amplifiers ([MELSEC MX Controller])	×	×
PS[*2]	Special parameter	Decimal	☞ Page 3149 Setting virtual word devices for servo amplifiers ([MELSEC MX Controller])	×	×
PU[*2]	Multi encoder parameter	Decimal	☞ Page 3149 Setting virtual word devices for servo amplifiers ([MELSEC MX Controller])	×	×
PT[*2]	Positioning control parameter	Decimal	☞ Page 3149 Setting virtual word devices for servo amplifiers ([MELSEC MX Controller])	×	×
PL[*2*3]	Motor extension parameter	Decimal	☞ Page 3149 Setting virtual word devices for servo amplifiers ([MELSEC MX Controller])	×	×
	Linear servo motor/DD motor setting parameter			×	×
PN[*2]	Network setting parameter	Decimal	☞ Page 3149 Setting virtual word devices for servo amplifiers ([MELSEC MX Controller])	×	×
PVS[*2*4]	Positioning extension parameter	Decimal	☞ Page 3149 Setting virtual word devices for servo amplifiers ([MELSEC MX Controller])	×	×
ST[*2]	Status display	Decimal	☞ Page 3149 Setting virtual word devices for servo amplifiers ([MELSEC MX Controller])	×	×
PE[*2]	Extension setting No.2 parameter	Decimal	☞ Page 3149 Setting virtual word devices for servo amplifiers ([MELSEC MX Controller])	×	×
PF[*2]	Extension setting No.3 parameter	Decimal	☞ Page 3149 Setting virtual word devices for servo amplifiers ([MELSEC MX Controller])	×	×
NPA[*2]	Network basic parameter	Decimal	☞ Page 3149 Setting virtual word devices for servo amplifiers ([MELSEC MX Controller])	×	×
PW[*2]	Extension setting No.4 parameter	Decimal	☞ Page 3149 Setting virtual word devices for servo amplifiers ([MELSEC MX Controller])	×	×
ALM[*2]	Alarm (current alarm J4A extend)	Decimal	☞ Page 3149 Setting virtual word devices for servo amplifiers ([MELSEC MX Controller])	×	×
	Alarm (alarm history J4A extend)	Decimal	☞ Page 3149 Setting virtual word devices for servo amplifiers ([MELSEC MX Controller])	×	×
	Alarm (alarm history J5G extend)	Decimal	☞ Page 3149 Setting virtual word devices for servo amplifiers ([MELSEC MX Controller])	×	×
POS[*2]	Point table (position)	Decimal	☞ Page 3149 Setting virtual word devices for servo amplifiers ([MELSEC MX Controller])	×	×
SPD[*2]	Point table (speed)	Decimal	☞ Page 3149 Setting virtual word devices for servo amplifiers ([MELSEC MX Controller])	×	×
ACT[*2]	Point table (acceleration time constant)	Decimal	☞ Page 3149 Setting virtual word devices for servo amplifiers ([MELSEC MX Controller])	×	×
DCT[*2]	Point table (deceleration time constant)	Decimal	☞ Page 3149 Setting virtual word devices for servo amplifiers ([MELSEC MX Controller])	×	×
DWL[*2]	Point table (dwell)	Decimal	☞ Page 3149 Setting virtual word devices for servo amplifiers ([MELSEC MX Controller])	×	×
AUX[*2]	Point table (auxiliary function)	Decimal	☞ Page 3149 Setting virtual word devices for servo amplifiers ([MELSEC MX Controller])	×	×
MCD[*2]	Point table (M code)	Decimal	☞ Page 3149 Setting virtual word devices for servo amplifiers ([MELSEC MX Controller])	×	×
MD[*2]	Machine diagnosis data	Decimal	☞ Page 3149 Setting virtual word devices for servo amplifiers ([MELSEC MX Controller])	×	×
GFDS[*2]	Gear failure diagnosis data	Decimal	☞ Page 3149 Setting virtual word devices for servo amplifiers ([MELSEC MX Controller])	×	×
ECCDS[*2]	Encoder communication circuit diagnosis data	Decimal	☞ Page 3149 Setting virtual word devices for servo amplifiers ([MELSEC MX Controller])	×	×
OTS[*2]	One-touch tuning data	Decimal	☞ Page 3149 Setting virtual word devices for servo amplifiers ([MELSEC MX Controller])	×	×

Device name		Device No. representation	Setting range	EG device specifications[*1]	
				Assignment to EG devices	Access using a client
DI[*2]	External input signal	Decimal	☞ Page 3149 Setting virtual word devices for servo amplifiers ([MELSEC MX Controller])	×	×
DO[*2]	External output signal	Decimal	☞ Page 3149 Setting virtual word devices for servo amplifiers ([MELSEC MX Controller])	×	×
JnW	Link register (link direct)	Hexadecimal	J(Network No.n)-W(Device) Notation example: J1-W00000 • Network No.n (decimal): 1 to 239 • Device (hexadecimal): 00000 to 83FFF	○	○
JnSW	Link special register (link direct)	Hexadecimal	J(Network No.n)-SW(Device) Notation example: J1-SW000 • Network No.n (decimal): 1 to 239 • Device (hexadecimal): 000 to FFF	○	○
U3E0G	CPU buffer memory access device	Decimal	U3E0-G(Device) Notation example: U3E0-G100 • Device (decimal): 0 to 268435455	○	○
RD	Refresh data register	Decimal	0 to 4194303	○	○

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
☞ Page 2868 Monitoring a controller through the GOT (server/client function)

*2 Virtual servo amplifier device
For details, refer to the following.
☞ Page 3161 Virtual servo amplifier devices ([MELSEC MX Controller])

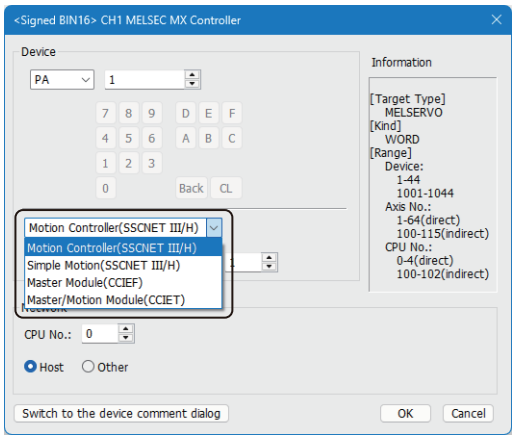
*3 The device name depends on the servo amplifier.
MR-J5-G(-RJ) or MR-J5W□-G: Motor extension setting parameter
Other than MR-J5-G(-RJ) or MR-J5W□-G: Linear servo motor/DD motor setting parameter

*4 PVS is a virtual device corresponding to the servo parameter (PV) of MR-J5-G(-RJ), MR-J5W□-G, and MR-JET-G.
Use the virtual device (PVS) to read/write data from/to the servo parameter (PV).

97.2.5 Setting virtual word devices for servo amplifiers ([MELSEC MX Controller])

For virtual servo amplifier devices, the notation differs according to the connection type between the GOT and the servo amplifier.

Select one of the following according to the control type in the device setting dialog.



Item	Description
[Motion Controller(SSCNET III/H)]	Select this item to connect the GOT through a Motion controller. The following item is displayed. • [Axis No.]: Set the axis number to be monitored.
[Simple Motion(SSCNET III/H)]	Select this item to connect the GOT through a Simple Motion module (RD77MS). The following items are displayed. • [Unit No.]: Set the first 2 digits of the 3-digit number that represents the start I/O number of the Simple Motion module. • [Axis No.]: Set the axis number to be monitored.
[Master Module(CCIEF)]	Select this item to connect the GOT through the master station on the CC-Link IE Field Network or a Simple Motion module (RD77GF).
[Master/Motion Module(CCIET)]	Select this item to connect the GOT through the master station on the CC-Link IE TSN and a Motion module (RD78G(H)). After the selection, set a device that enables axis designation to display the following item. • [Axis Designation]: Set the axis to be monitored.

The following shows the notation and setting range of virtual devices.

Device name	Device notation and setting range		Notation example
PA	[Motion Controller(SSCNET III/H)]	A(Axis No.)-PA(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 44, 1001 to 1044	A64-PA1
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PA(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 44, 1001 to 1044	UFF-A64-PA1
	[Master Module(CCIEF)]	PA (Device) • Device (decimal): 1 to 44, 1001 to 1044	PA1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-PA(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 44, 1001 to 1044	AA3-PA1

Device name	Device notation and setting range		Notation example
PB	[Motion Controller(SSCNET III/H)]	A(Axis No.)-PB(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 92, 1001 to 1092	A64-PB1
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PB(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 92, 1001 to 1092	UFF-A64-PB1
	[Master Module(CCIEF)]	PB(Device) • Device (decimal): 1 to 92, 1001 to 1092	PB1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-PB(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 92, 1001 to 1092	AA3-PB1
PC	[Motion Controller(SSCNET III/H)]	A(Axis No.)-PC(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 90, 1001 to 1090	A64-PC1
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PC(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 90, 1001 to 1090	UFF-A64-PC1
	[Master Module(CCIEF)]	PC(Device) • Device (decimal): 1 to 90, 1001 to 1090	PC1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-PC(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 90, 1001 to 1090	AA3-PC1
PD	[Motion Controller(SSCNET III/H)]	A(Axis No.)-PD(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 72, 1001 to 1072	A64-PD1
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PD(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 72, 1001 to 1072	UFF-A64-PD1
	[Master Module(CCIEF)]	PD(Device) • Device (decimal): 1 to 72, 1001 to 1072	PD1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-PD(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 72, 1001 to 1072	AA3-PD1
PO	[Motion Controller(SSCNET III/H)]	A(Axis No.)-PO(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 2, 1001 to 1002	A64-PO1
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PO(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 2, 1001 to 1002	UFF-A64-PO1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-PO(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 2, 1001 to 1002	AA3-PO1
PS	[Motion Controller(SSCNET III/H)]	A(Axis No.)-PS(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 99, 1001 to 1099	A64-PS1
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PS(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 99, 1001 to 1099	UFF-A64-PS1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-PS(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 99, 1001 to 1099	AA3-PS1

Device name	Device notation and setting range		Notation example
PU	[Motion Controller(SSCNET III/H)]	A(Axis No.)-PU(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 44, 1001 to 1044	A64-PU1
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PU(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 44, 1001 to 1044	UFF-A64-PU1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-PU(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 44, 1001 to 1044	AA3-PU1
PT	[Master Module(CCIEF)]	PT(Device) • Device (decimal): 1 to 90, 1001 to 1090	PT1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-PT(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 90, 1001 to 1090	AA3-PT1
PL	[Motion Controller(SSCNET III/H)]	A(Axis No.)-PL(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 72, 1001 to 1072	A64-PL1
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PL(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 72, 1001 to 1072	UFF-A64-PL1
	[Master Module(CCIEF)]	PL(Device) • Device (decimal): 1 to 72, 1001 to 1072	PL1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-PL(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 72, 1001 to 1072	AA3-PL1
PN	[Master Module(CCIEF)]	PN(Device) • Device (decimal): 1 to 32, 1001 to 1032	PN1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-PN(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 32, 1001 to 1032	AA3-PN1
PVS	[Master/Motion Module(CCIET)]	AA(Axis designation)-PVS(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 32, 1001 to 1032	AA3-PVS1
ST	[Motion Controller(SSCNET III/H)]	A(Axis No.)-ST(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 48	A64-ST0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-ST(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 48	UFF-A64-ST0
	[Master Module(CCIEF)]	ST(Device) • Device (decimal): 0 to 48	ST0
	[Master/Motion Module(CCIET)]	AA(Axis designation)-ST(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 48	AA3-ST0
PE	[Motion Controller(SSCNET III/H)]	A(Axis No.)-PE(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 88, 1001 to 1088	A64-PE1
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PE(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 88, 1001 to 1088	UFF-A64-PE1
	[Master Module(CCIEF)]	PE(Device) • Device (decimal): 1 to 88, 1001 to 1088	PE1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-PE(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 88, 1001 to 1088	AA3-PE1

Device name	Device notation and setting range		Notation example
PF	[Motion Controller(SSCNET III/H)]	A(Axis No.)-PF(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 99, 1001 to 1099	A64-PF1
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PF(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 99, 1001 to 1099	UFF-A64-PF1
	[Master Module(CCIEF)]	PF(Device) • Device (decimal): 1 to 99, 1001 to 1099	PF1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-PF(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 99, 1001 to 1099	AA3-PF1
NPA	[Master/Motion Module(CCIET)]	NPA(Device) • Device (decimal): 1 to 12, 2001 to 2032	NPA1
PW	[Motion Controller(SSCNET III/H)]	A(Axis No.)-PW(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 40,1001 to 1040	A3-PW1
ALM	[Motion Controller(SSCNET III/H)]	A(Axis No.)-ALM(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 2, 11 to 59, 200 to 215, 220 to 235, 240 to 255, 260 to 275, 280 to 295, 300 to 315	A64-ALM0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-ALM(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 2, 11 to 59, 200 to 215, 220 to 235, 240 to 255, 260 to 275, 280 to 295, 300 to 315	UFF-A64-ALM0
	[Master Module(CCIEF)]	ALM(Device) • Device (decimal): 0 to 2, 11 to 59, 200 to 215, 220 to 235, 240 to 255, 260 to 275, 280 to 295, 300 to 315	ALM0
	[Master/Motion Module(CCIET)]	AA(Axis designation)-ALM(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 2, 11 to 59, 200 to 215, 220 to 235, 240 to 255, 260 to 275, 280 to 295, 300 to 315	AA3-ALM0
POS	[Master Module(CCIEF)]	POS(Device) • Device (decimal): 1 to 255, 1001 to 1255	POS1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-POS(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 255, 1001 to 1255	AA3-POS1
SPD	[Master Module(CCIEF)]	SPD(Device) • Device (decimal): 1 to 255, 1001 to 1255	SPD1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-SPD(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 255, 1001 to 1255	AA3-SPD1
ACT	[Master Module(CCIEF)]	ACT(Device) • Device (decimal): 1 to 255, 1001 to 1255	ACT1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-ACT(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 255, 1001 to 1255	AA3-ACT1
DCT	[Master Module(CCIEF)]	DCT(Device) • Device (decimal): 1 to 255, 1001 to 1255	DCT1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-DCT(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 255, 1001 to 1255	AA3-DCT1
DWL	[Master Module(CCIEF)]	DWL(Device) • Device (decimal): 1 to 255, 1001 to 1255	DWL1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-DWL(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 255, 1001 to 1255	AA3-DWL1
AUX	[Master Module(CCIEF)]	AUX(Device) • Device (decimal): 1 to 255, 1001 to 1255	AUX1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-AUX(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 255, 1001 to 1255	AA3-AUX1

Device name	Device notation and setting range		Notation example
MCD	[Master/Motion Module(CCIET)]	AA(Axis designation)-MCD(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 255, 1001 to 1255	AA3-MCD1
MD	[Motion Controller(SSCNET III/H)]	A(Axis No.)-MD(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 21	A64-MD0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-MD(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 21	UFF-A64-MD0
	[Master Module(CCIEF)]	MD(Device) • Device (decimal): 0 to 21	MD0
	[Master/Motion Module(CCIET)]	AA(Axis designation)-MD(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 21	AA3-MD0
GFDS	[Motion Controller(SSCNET III/H)]	A(Axis No.)-GFDS(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5	A64-GFDS0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-GFDS(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5	UFF-A64-GFDS0
	[Master/Motion Module(CCIET)]	AA(Axis designation)-GFDS(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5	AA3-GFDS0
ECCDS	[Motion Controller(SSCNET III/H)]	A(Axis No.)-ECCDS(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5	A64-ECCDS0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-ECCDS(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5	UFF-A64-ECCDS0
	[Master/Motion Module(CCIET)]	AA(Axis designation)-ECCDS(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5	AA3-ECCDS0
OTS	[Motion Controller(SSCNET III/H)]	A(Axis No.)-OTS(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5, 3000	A64-OTS0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-OTS(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5, 3000	UFF-A64-OTS0
	[Master Module(CCIEF)]	OTS(Device) • Device (decimal): 0 to 5, 3000	OTS0
	[Master/Motion Module(CCIET)]	AA(Axis designation)-OTS(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5, 3000	AA3-OTS0
DI	[Motion Controller(SSCNET III/H)]	A(Axis No.)-DI(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 6	A64-DI0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-DI(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 6	UFF-A64-DI0
	[Master Module(CCIEF)]	DI(Device) • Device (decimal): 0 to 6	DI0
	[Master/Motion Module(CCIET)]	AA(Axis designation)-DI(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 6	AA3-DI0

Device name	Device notation and setting range		Notation example
DO	[Motion Controller(SSCNET III/H)]	A(Axis No.)-DO(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 4	A64-DO0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-DO(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 4	UFF-A64-DO0
	[Master Module(CCIEF)]	DO(Device) • Device (decimal): 0 to 4	DO0
	[Master/Motion Module(CCIET)]	AA(Axis designation)-DO(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 4	AA3-DO0

For indirect specification of a module number, axis number, or axis designation, refer to the following.

☞ Page 3142 Indirect specification of a module number ([MELSEC MX Controller])

☞ Page 3143 Indirect specification of an axis number or axis designation ([MELSEC MX Controller])

97.2.6 Availability of writing/reading data to/from word devices ([MELSEC MX Controller])

The following shows the availability of writing/reading data to/from word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data
TN	R/W	R/W	-/-	-/-
CN	R/W	R/W	-/-	-/-
SN	R/W	R/W	-/-	-/-
D	R/W	R/W	R/W	R/W
SD	R/W	R/W	R/W	R/W
W	R/W	R/W	R/W	R/W
SW	R/W	R/W	-/-	R/W
R	R/W	R/W	R/W	R/W
ER	R/W	R/W	R/W	R/W
ZR	R/W	R/W	R/W	R/W
Z	R/W	R/W	-/-	-/-
G	R/W	R/W	R/W	R/W
Ww	R/W	R/W	R/W	R/W
Wr	R/W	R/W	R/W	R/W
LW	R/W	R/W	R/W	R/W
#	R/W	R/W	-/-	R/W
U3E0	R/W	R/W	R/W	R/W
U3E1	R/W	R/W	R/W	R/W
U3E2	R/W	R/W	R/W	R/W
U3E3	R/W	R/W	R/W	R/W
SATN	R/-	R/-	-/-	-/-
SACN	R/-	R/-	-/-	-/-
SASN	R/-	R/-	-/-	-/-
SAD	R/-	R/-	-/-	R/-
SASD	R/-	R/-	-/-	R/-
SAW	R/-	R/-	-/-	R/-
PA	R/W	R/W	-/-	-/-
PB	R/W	R/W	-/-	-/-
PC	R/W	R/W	-/-	-/-
PD	R/W	R/W	-/-	-/-
PO	R/W	R/W	-/-	-/-
PS	R/W	R/W	-/-	-/-
PU	R/W	R/W	-/-	-/-
PT	R/W	R/W	-/-	-/-
PL	R/W	R/W	-/-	-/-
PN	R/W	R/W	-/-	-/-
PVS	R/W	R/W	-/-	-/-
ST	R/-	R/-	-/-	-/-
PE	R/W	R/W	-/-	-/-
PF	R/W	R/W	-/-	-/-
NPA	R/W	R/W	-/-	-/-
PW	R/W	R/W	-/-	-/-
ALM	R/-	R/-	-/-	-/-

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data
POS	R/W	R/W	-/-	-/-
SPD	R/W	R/W	-/-	-/-
ACT	R/W	R/W	-/-	-/-
DCT	R/W	R/W	-/-	-/-
DWL	R/W	R/W	-/-	-/-
AUX	R/W	R/W	-/-	-/-
MCD	R/W	R/W	-/-	-/-
MD	R/-	R/-	-/-	-/-
GFDS	R/-	R/-	-/-	-/-
ECCDS	R/-	R/-	-/-	-/-
OTS	R/W*1	R/W*1	-/-	-/-
DI	R/-	R/W	-/-	-/-
DO	R/-	R/-	-/-	-/-
JnW	R/W	R/W	R/W	R/W
JnSW	R/W	R/W	-/-	R/W
U3E0G	R/W	R/W	R/W	R/W
RD	R/W	R/W	R/W	R/W

*1 Only reading is available for OTS0 to OTS5.

97.2.7 Monitoring-supported double-word devices ([MELSEC MX Controller])

The following table shows monitoring-supported double-word devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3160 Availability of writing/reading data to/from double-word devices ([MELSEC MX Controller])

○: Available

×: Not available

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
LTN	Long timer current value	Decimal	0 to 2621055	×	×
LCN	Long counter current value	Decimal	0 to 4933727	×	×
LSN	Long retentive timer current value	Decimal	0 to 2621055	×	×
ZZ	Index register (32 bits)	Decimal	0 to 22	×	×
LZ	Index register (32 bits)	Decimal	0 to 11	×	×
ALD*2	Life diagnosis	Decimal	☞ Page 3158 Setting virtual double-word devices for servo amplifiers ([MELSEC MX Controller])	×	×
TMI*2	Input signal for test operation (for test operation)	Decimal	☞ Page 3158 Setting virtual double-word devices for servo amplifiers ([MELSEC MX Controller])	×	×
TMO*2	Forced output of signal pin (for test operation)	Decimal	☞ Page 3158 Setting virtual double-word devices for servo amplifiers ([MELSEC MX Controller])	×	×
TMD*2	Set data (for test operation)	Decimal	☞ Page 3158 Setting virtual double-word devices for servo amplifiers ([MELSEC MX Controller])	×	×
AL*3	Faults history	Decimal	0 to 899	×	×
LPr*3*4	Parameter (32-bit)	Decimal	0 to 1500	×	×
OP*3	Operation parameter	Decimal	0 to 5	×	×
PV*3	Current value monitor	Decimal	1 to 143	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
☞ Page 2868 Monitoring a controller through the GOT (server/client function)

*2 Virtual servo amplifier device
For details, refer to the following.
☞ Page 3161 Virtual servo amplifier devices ([MELSEC MX Controller])

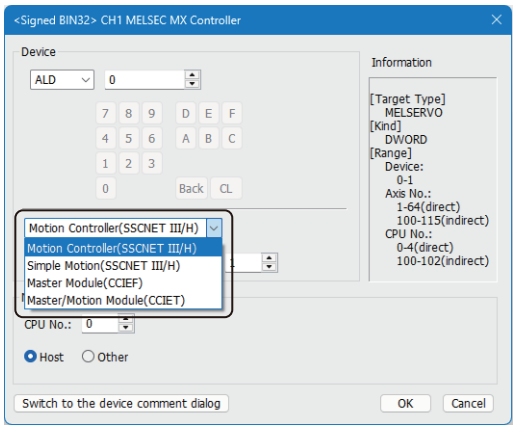
*3 Virtual inverter device
For details, refer to the following.
☞ Page 3164 Virtual inverter devices ([MELSEC MX Controller])

*4 If you specify LPr900 to LPr935, the following item is displayed in the device setting dialog.
[Setting items (for calibration parameters)]: [Bias/gain value], [Analog input value]
Enclose the device number in parentheses when selecting [Analog input value].
Example 1) Notation when [Bias/gain value] is selected: LPr900
Example 2) Notation when [Analog input value] is selected: LPr(900)
When LPr900 or LPr901 (Calibration parameter) is specified, selecting [Bias/gain value] or [Analog input value] does not affect the monitoring target.

97.2.8 Setting virtual double-word devices for servo amplifiers ([MELSEC MX Controller])

For virtual servo amplifier devices, the notation differs according to the connection type between the GOT and the servo amplifier.

Select one of the following according to the control type in the device setting dialog.



Item	Description
[Motion Controller(SSCNET III/H)]	Select this item to connect the GOT through a Motion controller. The following item is displayed. • [Axis No.]: Set the axis number to be monitored.
[Simple Motion(SSCNET III/H)]	Select this item to connect the GOT through a Simple Motion module (RD77MS). The following items are displayed. • [Unit No.]: Set the first 2 digits of the 3-digit number that represents the start I/O number of the Simple Motion module. • [Axis No.]: Set the axis number to be monitored.
[Master Module(CCIEF)]	Select this item to connect the GOT through the master station on the CC-Link IE Field Network or a Simple Motion module (RD77GF).
[Master/Motion Module(CCIET)]	Select this item to connect the GOT through the master station on the CC-Link IE TSN and a Motion module (RD78G(H)). After the selection, set a device that enables axis designation to display the following item. • [Axis Designation]: Set the axis to be monitored.

The following shows the notation and setting range of virtual devices.

Device name	Device notation and setting range		Notation example
ALD	[Motion Controller(SSCNET III/H)]	A(Axis No.)-ALD(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1	A64-ALD0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-ALD(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1	UFF-A64-ALD0
	[Master Module(CCIEF)]	ALD(Device) • Device (decimal): 0 to 1	ALD0
	[Master/Motion Module(CCIET)]	AA(Axis designation)-ALD(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1	AA3-ALD0

Device name	Device notation and setting range		Notation example
TMI	[Motion Controller(SSCNET III/H)]	A(Axis No.)-TMI(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 2	A64-TMI0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-TMI(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 2	UFF-A64-TMI0
	[Master Module(CCIEF)]	TMI(Device) • Device (decimal): 0 to 2	TMI0
	[Master/Motion Module(CCIET)]	AA(Axis designation)-TMI(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 2	AA3-TMI0
TMO	[Motion Controller(SSCNET III/H)]	A(Axis No.)-TMO(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0	A64-TMO0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-TMO(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0	UFF-A64-TMO0
	[Master Module(CCIEF)]	TMO(Device) • Device (decimal): 0	TMO0
	[Master/Motion Module(CCIET)]	AA(Axis designation)-TMO(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0	AA3-TMO0
TMD	[Motion Controller(SSCNET III/H)]	A(Axis No.)-TMD(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1, 3	A64-TMD0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-TMD(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1, 3	UFF-A64-TMD0
	[Master Module(CCIEF)]	TMD(Device) • Device (decimal): 0 to 1, 3	TMD0
	[Master/Motion Module(CCIET)]	AA(Axis designation)-TMD(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1, 3	AA3-TMD0

For indirect specification of a module number, axis number, or axis designation, refer to the following.

☞ Page 3142 Indirect specification of a module number ([MELSEC MX Controller])

☞ Page 3143 Indirect specification of an axis number or axis designation ([MELSEC MX Controller])

97.2.9 Availability of writing/reading data to/from double-word devices ([MELSEC MX Controller])

The following shows the availability of writing/reading data to/from double-word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of double-word data
LTN	-/-	R/W	-/-	-/-
LCN	-/-	R/W	-/-	-/-
LSN	-/-	R/W	-/-	-/-
ZZ	-/-	R/W	-/-	-/-
LZ	-/-	R/W	-/-	-/-
ALD	-/-	R/-	-/-	-/-
TMI	-/-	-/W	-/-	-/-
TMO	-/-	-/W	-/-	-/-
TMD	-/-	-/W	-/-	-/-
AL	-/-	R/-	-/-	-/-
LPr	-/-	R/W	-/-	-/-
OP	-/-	R/W	-/-	-/-
PV	-/-	R/-	-/-	-/-

97.2.10 Virtual servo amplifier devices ([MELSEC MX Controller])

The following shows the correspondence between the virtual devices used in the GOT and the servo amplifier data.

Virtual device name	Reference
SP	☞ Page 3192 Servo amplifier request (MELSEC iQ-R, RnMT/NC/RT, CR800-D])
OM	☞ Page 3192 Operation mode selection ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
TMB	☞ Page 3193 Instruction demand (for test operation) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
OTI	☞ Page 3193 One-touch tuning instruction ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
GFDI	☞ Page 3194 Gear failure diagnosis instruction ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
ECCDI	☞ Page 3194 Encoder communication circuit diagnosis instruction ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PA	☞ Page 3194 Basic parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PB	☞ Page 3196 Gain filter parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PC	☞ Page 3199 Extension setting parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PD	☞ Page 3202 I/O setting parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PO	☞ Page 3203 Option unit parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PS	☞ Page 3204 Special parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PU	☞ Page 3204 Multi encoder parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PT	☞ Page 3204 Positioning control parameter, pressure control parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PL	☞ Page 3208 Motor extension parameter, linear servo motor/DD motor setting parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PN	☞ Page 3209 Network setting parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PVS	☞ Page 3210 Positioning extension parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
ST	☞ Page 3212 Status display ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PE	☞ Page 3214 Extension setting No.2 parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PF	☞ Page 3216 Extension setting No.3 parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
NPA	☞ Page 3219 Network basic parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PW	☞ Page 3220 Extension setting No.4 parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
ALM	☞ Page 3222 Alarm [MELSEC iQ-R, RnMT/NC/RT, CR800-D])
	☞ Page 3229 Specifications of ALM260 to ALM275, ALM280 to ALM295, and ALM300 to ALM315 ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
POS	☞ Page 3229 Point table (position) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
SPD	☞ Page 3230 Point table (speed) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
ACT	☞ Page 3230 Point table (acceleration time constant) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
DCT	☞ Page 3230 Point table (deceleration time constant) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
DWL	☞ Page 3231 Point table (dwell) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
AUX	☞ Page 3231 Point table (auxiliary function) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
MCD	☞ Page 3231 Point table (M code) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
MD	☞ Page 3232 Machine diagnosis data ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
GFDS	☞ Page 3233 Gear failure diagnosis data ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
ECCDS	☞ Page 3233 Encoder communication circuit diagnosis data ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
OTS	☞ Page 3234 One-touch tuning data ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
DI	☞ Page 3235 External input signal in MR-J5-G(-RJ) and MR-J5W□-G ([MELSEC iQ-R, RnMT/NC/RT, CR800-D]) ☞ Page 3235 External input signal in MR-J5D□-G ([MELSEC iQ-R, RnMT/NC/RT, CR800-D]) ☞ Page 3236 External input signal in MR-J5(W)-□B(-RJ) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D]) ☞ Page 3236 External input signal in MR-JET-G ([MELSEC iQ-R, RnMT/NC/RT, CR800-D]) ☞ Page 3237 External input signal in MR-JE-B and MR-JE-BF ([MELSEC iQ-R, RnMT/NC/RT, CR800-D]) ☞ Page 3237 External input signal in MR-J4-GF(-RJ) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D]) ☞ Page 3237 External input signal in MR-J4(W)-□B-RJ ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
DO	☞ Page 3238 External output signal in MR-J5-G(-RJ) and MR-J5W□-G ([MELSEC iQ-R, RnMT/NC/RT, CR800-D]) ☞ Page 3238 External output signal in MR-J5D□-G ([MELSEC iQ-R, RnMT/NC/RT, CR800-D]) ☞ Page 3238 External output signal in MR-J5(W)-□B(-RJ) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D]) ☞ Page 3239 External output signal in MR-JET-G ([MELSEC iQ-R, RnMT/NC/RT, CR800-D]) ☞ Page 3239 External output signal in MR-JE-B and MR-JE-BF ([MELSEC iQ-R, RnMT/NC/RT, CR800-D]) ☞ Page 3239 External output signal in MR-J4-GF(-RJ) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D]) ☞ Page 3239 External output signal in MR-J4(W)-□B-RJ ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

Virtual device name	Reference
ALD	☞ Page 3239 Life Diagnosis ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
TMI	☞ Page 3240 Input signal for test operation (for test operation) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
TMO	☞ Page 3240 Forced output of signal pin (for test operation) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
TMD	☞ Page 3240 Set data (for test operation) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

97.2.11 Precautions for virtual servo amplifier devices ([MELSEC MX Controller])

For the precautions for virtual servo amplifier devices, refer to the following.

☞ Page 3241 Precautions for virtual servo amplifier devices ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

97.2.12 Virtual inverter devices ([MELSEC MX Controller])

The following shows the correspondence between the virtual devices used in the GOT and the inverter data.

Virtual device name	Reference
IOST	☞ Page 3243 I/O terminal monitor ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
CMD	☞ Page 3245 Operation command ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
	☞ Page 3246 Operation when turning on/off one of the CMD3 to CMD12 devices ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
	☞ Page 3246 Operation when turning on/off one of the CMD48 to CMD52 devices (MELSEC iQ-R, RnMT/NC/RT, CR800-D])
AL	☞ Page 3247 Alarm history ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
LPr	☞ Page 3249 Parameter (32-bit) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
OP	☞ Page 3249 Operation parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PV	☞ Page 3250 Current value monitor ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

97.3 [MELSEC iQ-R, RnMT/NC/RT, CR800-D]

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Item	Reference
Specifications of bit devices	☞ Page 3166 Monitoring-supported bit devices ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
	☞ Page 3169 Setting virtual bit devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
	☞ Page 3173 Availability of writing/reading data to/from bit devices ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
Specifications of word devices	☞ Page 3175 Monitoring-supported word devices ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
	☞ Page 3179 Setting virtual word devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
	☞ Page 3185 Availability of writing/reading data to/from word devices ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
Specifications of double-word devices	☞ Page 3187 Monitoring-supported double-word devices ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
	☞ Page 3188 Setting virtual double-word devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
	☞ Page 3190 Availability of writing/reading data to/from double-word devices ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
Specifications of virtual servo amplifier devices	☞ Page 3191 Virtual servo amplifier devices ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
	☞ Page 3241 Precautions for virtual servo amplifier devices ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
Specifications of virtual inverter devices	☞ Page 3243 Virtual inverter devices ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

97.3.1 Monitoring-supported bit devices ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

The following table shows monitoring-supported bit devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3173 Availability of writing/reading data to/from bit devices ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

○: Available

×: Not available

Device name		Device No. representation	Setting range	EG device specifications[*1]	
				Assignment to EG devices	Access using a client
X	Input relay	Hexadecimal	0000 to 3FFF	○	○
Y	Output relay	Hexadecimal	0000 to 3FFF	○	○
B[*4]	Link relay	Hexadecimal	0000000 to 9A61FFF	○	○
M[*4]	Internal relay	Decimal	0 to 161882111	○	○
L	Latch relay	Decimal	0 to 32767	○	○
S[*5]	Step relay	Decimal	0 to 16383	×	×
F	Annunciator	Decimal	0 to 131071	○	○
TC[*4]	Timer coil	Decimal	0 to 8993439	○	○ Not usable as word data
TT[*4]	Timer contact	Decimal	0 to 8993439	○	○ Not usable as word data
CC[*4]	Counter coil	Decimal	0 to 8993439	○	○ Not usable as word data
CT[*4]	Counter contact	Decimal	0 to 8993439	○	○ Not usable as word data
SC[*4]	Retentive timer coil	Decimal	0 to 8993439	○	○ Not usable as word data
SS[*4]	Retentive timer contact	Decimal	0 to 8993439	○	○ Not usable as word data
SB[*4]	Link special relay	Hexadecimal	0000000 to 9A61FFF	○	○
SM	Special relay	Decimal	0 to 4095	○	○
RX	Remote input	Hexadecimal	0000 to 3FFF	○	○
RY	Remote output	Hexadecimal	0000 to 3FFF	○	○
LB	Link relay	Hexadecimal	0000 to 7FFF	○	○
LTC[*4]	Long timer coil	Decimal	0 to 2529407	○	○ Not usable as word data
LTT[*4]	Long timer contact	Decimal	0 to 2529407	○	○ Not usable as word data
LCC[*4]	Long counter coil	Decimal	0 to 4761215	○	○ Not usable as word data
LCT[*4]	Long counter contact	Decimal	0 to 4761215	○	○ Not usable as word data
LSC[*4]	Long retentive timer coil	Decimal	0 to 2529407	○	○ Not usable as word data
LSS[*4]	Long retentive timer contact	Decimal	0 to 2529407	○	○ Not usable as word data

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
SAX	Safety input relay	Hexadecimal	0000 to 2FFF	×	×
SAY	Safety output relay	Hexadecimal	0000 to 2FFF	×	×
SAB	Safety link relay	Hexadecimal	00000 to 9BFFF	×	×
SAM	Safety internal relay	Decimal	0 to 638975	×	×
SATC	Safety timer coil	Decimal	0 to 35487	×	×
SATT	Safety timer contact	Decimal	0 to 35487	×	×
SACC	Safety counter coil	Decimal	0 to 35487	×	×
SACT	Safety counter contact	Decimal	0 to 35487	×	×
SASC	Safety retentive timer coil	Decimal	0 to 35487	×	×
SASS	Safety retentive timer contact	Decimal	0 to 35487	×	×
SASM	Safety special relay	Decimal	0 to 4095	×	×
BL	SFC block	Decimal	0 to 319	×	×
BLS	Step relay (block)	Decimal	BL(SFC Block No.)-S(Device) Notation example: BL1-S3 • SFC Block No. (decimal): 0 to 319 • Device (decimal): 0 to 511	×	×
SP*2	Servo amplifier request	Decimal	☞ Page 3169 Setting virtual bit devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
OM*2	Operation mode selection	Decimal	☞ Page 3169 Setting virtual bit devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
TMB*2	Instruction demand (for test operation)	Decimal	☞ Page 3169 Setting virtual bit devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
OTI*2	One-touch tuning instruction	Decimal	☞ Page 3169 Setting virtual bit devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
GFDI*2	Gear failure diagnosis instruction	Decimal	☞ Page 3169 Setting virtual bit devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
ECCDI*2	Encoder communication circuit diagnosis instruction	Decimal	☞ Page 3169 Setting virtual bit devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
JnX	Link input (link direct)	Hexadecimal	J(Network No.n)-X(Device) Notation example: J1-X0000 • Network No.n (decimal): 1 to 239 • Device (hexadecimal): 0000 to 3FFF	○	○
JnY	Link output (link direct)	Hexadecimal	J(Network No.n)-Y(Device) Notation example: J1-Y0000 • Network No.n (decimal): 1 to 239 • Device (hexadecimal): 0000 to 3FFF	○	○
JnB	Link relay (link direct)	Hexadecimal	J(Network No.n)-B(Device) Notation example: J1-B0000 • Network No.n (decimal): 1 to 239 • Device (hexadecimal): 0000 to 1FFFF	○	○
JnSB	Link special relay (link direct)	Hexadecimal	J(Network No.n)-SB(Device) Notation example: J1-SB000 • Network No.n (decimal): 1 to 239 • Device (hexadecimal): 000 to FFF	○	○
IOST*3	I/O terminal monitor	Decimal	0 to 127	×	×
CMD*3	Operation command	Decimal	0 to 63	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
☞ Page 2868 Monitoring a controller through the GOT (server/client function)

*2 Virtual servo amplifier device
For details, refer to the following.
☞ Page 3191 Virtual servo amplifier devices ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

*3 Virtual inverter device
For details, refer to the following.

☞ Page 3243 Virtual inverter devices ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

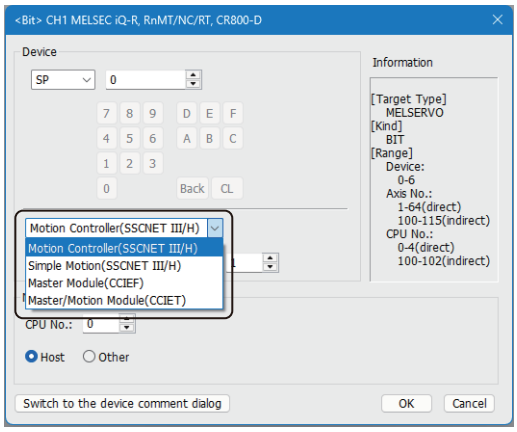
*4 For the maximum number of devices when an extended SRAM cassette is installed, refer to the following.
MELSEC iQ-R CPU Module User's Manual (Application)

*5 If a bit-specified word device is used in the random read processing, GT Simulator3 uses the value of the bit device in block No. 0 only. The bit device status depends on the SFC program status (active or inactive). When the SFC program is inactive, the bit device is off (stores 0).
If a step relay (S) is used in the random read processing, specify the relevant step relay (block) (BLS).

97.3.2 Setting virtual bit devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

For virtual servo amplifier devices, the notation differs according to the connection type between the GOT and the servo amplifier.

Select one of the following according to the control type in the device setting dialog.



Item	Description
[Motion Controller(SSCNET III/H)]	Select this item to connect the GOT through a Motion controller. The following item is displayed. • [Axis No.]: Set the axis number to be monitored.
[Simple Motion(SSCNET III/H)]	Select this item to connect the GOT through a Simple Motion module (RD77MS). The following items are displayed. • [Unit No.]: Set the first 2 digits of the 3-digit number that represents the start I/O number of the Simple Motion module. • [Axis No.]: Set the axis number to be monitored.
[Master Module(CCIEF)]	Select this item to connect the GOT through the master station on the CC-Link IE Field Network or a Simple Motion module (RD77GF).
[Master/Motion Module(CCIET)]	Select this item to connect the GOT through the master station on the CC-Link IE TSN and a Motion module (RD78G(H)). After the selection, set a device that enables axis designation to display the following item. • [Axis Designation]: Set the axis to be monitored.

The following shows the notation and setting range of virtual devices.

Device name	Device notation and setting range		Notation example
SP	[Motion Controller(SSCNET III/H)]	A(Axis No.)-SP(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 6	A64-SP0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-SP(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 6	UFF-A64-SP0
	[Master Module(CCIEF)]	SP(Device) • Device (decimal): 0 to 6	SP0
	[Master/Motion Module(CCIET)]	AA(Axis designation)-SP(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 6	AA3-SP0

Device name	Device notation and setting range		Notation example
OM	[Motion Controller(SSCNET III/H)]	A(Axis No.)-OM(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 2, 4 to 5	A64-OM0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-OM(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 2, 4 to 5	UFF-A64-OM0
	[Master Module(CCIEF)]	OM(Device) • Device (decimal): 0 to 2, 4 to 5	OM0
	[Master/Motion Module(CCIET)]	AA(Axis designation)-OM(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 2, 4 to 5	AA3-OM0
TMB	[Motion Controller(SSCNET III/H)]	A(Axis No.)-TMB(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 6	A64-TMB1
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-TMB(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 6	UFF-A64-TMB1
	[Master Module(CCIEF)]	TMB(Device) • Device (decimal): 1 to 6	TMB1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-TMB(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 6	AA3-TMB1
OTI	[Motion Controller(SSCNET III/H)]	A(Axis No.)-OTI(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5	A64-OTI0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-OTI(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5	UFF-A64-OTI0
	[Master Module(CCIEF)]	OTI(Device) • Device (decimal): 0 to 5	OTI0
	[Master/Motion Module(CCIET)]	AA(Axis designation)-OTI(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5	AA3-OTI0
GFDI	[Motion Controller(SSCNET III/H)]	A(Axis No.)-GFDI(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1	A64-GFDI1
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-GFDI(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1	UFF-A64-GFDI1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-GFDI(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1	AA3-GFDI0
ECCDI	[Motion Controller(SSCNET III/H)]	A(Axis No.)-ECCDI(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1	A64-ECCDI1
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-ECCDI(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1	UFF-A64-ECCDI1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-ECCDI(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1	AA3-ECCDI0

For indirect specification of a module number, axis number, or axis designation, refer to the following.

☞ Page 3171 Indirect specification of a module number ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

☞ Page 3172 Indirect specification of an axis number or axis designation ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

Indirect specification of a module number ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

To set a GOT data register (GD) to specify a module number, set [Module No. switching GD device first No. (16 points)] in the [Controller Setting] window.

For details, refer to the following.

☞ Page 729 [Controller Setting]

In GT SoftGOT3000, set [Module No. switching GD device first No. (16 points)] in the [Communication Setup] dialog.

📖GT SoftGOT3000 User's Manual

The following shows the correspondence between module numbers and GOT data registers (GD).

Ex.

When 550 is set to [Module No. switching GD device first No. (16 points)]

Sixteen consecutive devices, starting from GD550, are set to specify module numbers.

Module No.	GOT data registers (GD)	Setting range
100	GD550	[000] to [0FF] ([001] to [010] when [MELSEC iQ-F] is selected for [Controller Type] in the [Controller Setting] window) Setting a value outside the above range causes a device range error.
101	GD551	
:	:	
10E	GD564	
10F	GD565	

Upon the GOT startup, 0 is stored in the specified GD devices until values are set.

If you set the GD devices on the screen that appears upon the GOT startup, module No. 0 is monitored unintentionally, or a device range error occurs.

To avoid such situation, set the GD devices so that their values are retained at a power failure.

For details, refer to the following.

☞ Page 601 Configuring the settings for retaining GOT internal device data at power failure ([Internal Device Retention])

Precautions

■When the multi-channel connection is used

When setting GD devices for multiple channels, set different GD devices to [Module No. switching GD device first No. (16 points)].

GD10 to GD25 are used to specify the monitoring targets, such as the station number of an inverter.

When setting GD devices for a different channel, set different GD devices to [Module No. switching GD device first No. (16 points)].

■When the indirect specification function is used

Do not change the value of the specified device while a touch switch with the bit momentary is being pressed.

Doing so may cause the touch switch to exhibit unintended behavior.

Indirect specification of an axis number or axis designation ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

To use GOT data registers (GD) to specify an axis number or axis designation, set [Servo axis switching GD device first No. (16 points)] in the [Controller Setting] window.

For details, refer to the following.

☞ Page 729 [Controller Setting]

In GT SoftGOT3000, set [Servo axis switching GD device first No. (16 points)] in the [Communication Setup] dialog.

📖GT SoftGOT3000 User's Manual

The following shows the relationship between the axis number or axis designation and the GOT data register (GD).

Ex.

When 10 is set to [Servo axis switching GD device first No. (16 points)]

Sixteen consecutive devices, starting from GD10, are set to specify an axis number.

Axis No. or axis designation	GOT data registers (GD)	Setting range
100	GD10	• Axis number [1] to [64] • Axis designation [1]: Single-axis/Axis A [2]: Axis B [3]: Axis C Setting a value outside the above range causes a device range error.
101	GD11	
:	:	
114	GD24	
115	GD25	

Upon the GOT startup, 0 is stored in the specified GD devices until values are set.

If you set the GD devices on the screen that appears upon the GOT startup, a device range error occurs.

To avoid such situation, set the GD devices so that their values are retained at a power failure.

For details, refer to the following.

☞ Page 601 Configuring the settings for retaining GOT internal device data at power failure ([Internal Device Retention])

Precautions

■When the multi-channel connection is used

When specifying GD devices for multiple channels, set different GD devices to [Servo axis switching GD device first No. (16 points)].

GD10 to GD25 are used to specify the monitoring targets, such as the station number of an inverter.

When setting GD devices for a different channel, set different GD devices to [Servo axis switching GD device first No. (16 points)].

■When the indirect specification function is used

Do not change the value of the specified device while a touch switch with the bit momentary is being pressed.

Doing so may cause the touch switch to exhibit unintended behavior.

97.3.3 Availability of writing/reading data to/from bit devices ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

The following shows the availability of writing/reading data to/from bit devices by device type.

When the device type is other than the bit type, set the device No. in multiples of 16.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type				
	Bit	Byte (8 bits)	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)
X	R/W	-/-	R/W	R/W	-/-
Y	R/W	-/-	R/W	R/W	-/-
B	R/W	-/-	R/W	R/W	-/-
M	R/W	-/-	R/W	R/W	-/-
L	R/W	-/-	R/W	R/W	-/-
S	R/-	-/-	R/-	R/-	-/-
F	R/W	-/-	R/W	R/W	-/-
TC	R/W	-/-	-/-	-/-	-/-
TT	R/W	-/-	-/-	-/-	-/-
CC	R/W	-/-	-/-	-/-	-/-
CT	R/W	-/-	-/-	-/-	-/-
SC	R/W	-/-	-/-	-/-	-/-
SS	R/W	-/-	-/-	-/-	-/-
SB	R/W	-/-	R/W	R/W	-/-
SM	R/W	-/-	R/W	R/W	-/-
RX	R/W	-/-	R/W	R/W	-/-
RY	R/W	-/-	R/W	R/W	-/-
LB	R/W	-/-	R/W	R/W	-/-
LTC	R/W	-/-	-/-	-/-	-/-
LTT	R/W	-/-	-/-	-/-	-/-
LCC	R/W	-/-	-/-	-/-	-/-
LCT	R/W	-/-	-/-	-/-	-/-
LSC	R/W	-/-	-/-	-/-	-/-
LSS	R/W	-/-	-/-	-/-	-/-
SAX	R/-	-/-	R/-	R/-	-/-
SAY	R/-	-/-	R/-	R/-	-/-
SAB	R/-	-/-	R/-	R/-	-/-
SAM	R/-	-/-	R/-	R/-	-/-
SATC	R/-	-/-	-/-	-/-	-/-
SATT	R/-	-/-	-/-	-/-	-/-
SACC	R/-	-/-	-/-	-/-	-/-
SACT	R/-	-/-	-/-	-/-	-/-
SASC	R/-	-/-	-/-	-/-	-/-
SASS	R/-	-/-	-/-	-/-	-/-
SASM	R/-	-/-	R/-	R/-	-/-
BL	R/W	-/-	-/-	-/-	-/-
BLS	R/W	-/-	-/-	-/-	-/-
SP	-/W	-/-	-/-	-/-	-/-
OM	-/W	-/-	-/-	-/-	-/-
TMB	-/W	-/-	-/-	-/-	-/-
OTI	-/W	-/-	-/-	-/-	-/-

Device name	Device type				
	Bit	Byte (8 bits)	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)
GFDI	-/W	-/-	-/-	-/-	-/-
ECCDI	-/W	-/-	-/-	-/-	-/-
JnX	R/W	-/-	R/W	R/W	-/-
JnY	R/W	-/-	R/W	R/W	-/-
JnB	R/W	-/-	R/W	R/W	-/-
JnSB	R/W	-/-	R/W	R/W	-/-
IOST	R/-	-/-	-/-	-/-	-/-
CMD	-/W	-/-	-/-	-/-	-/-

97.3.4 Monitoring-supported word devices ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

The following table shows monitoring-supported word devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3185 Availability of writing/reading data to/from word devices ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

○: Available

×: Not available

Device name		Device No. representation	Setting range	EG device specifications[*1]	
				Assignment to EG devices	Access using a client
TN[*3]	Timer current value	Decimal	0 to 8993439	○	○
CN[*3]	Counter current value	Decimal	0 to 8993439	○	○
SN[*3]	Retentive timer current value	Decimal	0 to 8993439	○	○
D[*3]	Data register	Decimal	0 to 10117631	○	○
SD	Special register	Decimal	0 to 4095	○	○
W[*3]	Link register	Hexadecimal	000000 to 9A61FF	○	○
SW[*3]	Link special register	Hexadecimal	000000 to 9A61FF	○	○
R	File register	Decimal	0 to 32767	○	○
ER	Extension file register(Block)	Decimal	ER (R block)-(Device) Notation example: ER255-100 • R block (decimal): 1 to 255 • Device (decimal): 0 to 32767	○	○
ZR[*3]	Extension file register	Decimal	0 to 10027007	○	○
Z	Index register	Decimal	0 to 23	○	○ Not usable as bit data
G	Buffer memory (Intelligent function module)	Decimal	U(Unit No.)-G(Device) Notation example: UFF-G100 • Module No. (hexadecimal): 00 to FF • Device (decimal): 0 to 268435455 For the module No., set the first 2 digits of the 3-digit number that represents the start I/O number of the buffer memory for the intelligent function module.	○	○
Ww	Remote register	Hexadecimal	0000 to 1FFF	○	○
Wr	Remote register	Hexadecimal	0000 to 1FFF	○	○
LW	Link register	Hexadecimal	00000 to 1FFFF	○	○
#	Motion device	Decimal	0 to 108287	○	○
U3E0[*4]	Multiple CPU high speed transmission memory	Decimal	0 to 12287	○	○
U3E1[*4]	Multiple CPU high speed transmission memory	Decimal	0 to 12287	○	○
U3E2[*4]	Multiple CPU high speed transmission memory	Decimal	0 to 12287	○	○
U3E3[*4]	Multiple CPU high speed transmission memory	Decimal	0 to 12287	○	○
SATN	Safety timer (current value)	Decimal	0 to 35487	×	×
SACN	Safety counter (current value)	Decimal	0 to 35487	×	×
SASN	Safety retentive timer (current value)	Decimal	0 to 35487	×	×
SAD	Safety data register	Decimal	0 to 39935	×	×
SASD	Safety special register	Decimal	0 to 4095	×	×
SAW	Safety link register	Hexadecimal	0000 to 9BFF	×	×

Device name		Device No. representation	Setting range	EG device specifications[*1]	
				Assignment to EG devices	Access using a client
PA[*2]	Basic parameter	Decimal	☞ Page 3179 Setting virtual word devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
PB[*2]	Gain filter parameter	Decimal	☞ Page 3179 Setting virtual word devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
PC[*2]	Extension setting parameter	Decimal	☞ Page 3179 Setting virtual word devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
PD[*2]	I/O setting parameter	Decimal	☞ Page 3179 Setting virtual word devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
PO[*2]	Option unit parameter	Decimal	☞ Page 3179 Setting virtual word devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
PS[*2]	Special parameter	Decimal	☞ Page 3179 Setting virtual word devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
PU[*2]	Multi encoder parameter	Decimal	☞ Page 3179 Setting virtual word devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
PT[*2]	Positioning control parameter	Decimal	☞ Page 3179 Setting virtual word devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
PL[*2*5]	Motor extension parameter	Decimal	☞ Page 3179 Setting virtual word devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
	Linear servo motor/DD motor setting parameter			×	×
PN[*2]	Network setting parameter	Decimal	☞ Page 3179 Setting virtual word devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
PVS[*2*6]	Positioning extension parameter	Decimal	☞ Page 3179 Setting virtual word devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
ST[*2]	Status display	Decimal	☞ Page 3179 Setting virtual word devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
PE[*2]	Extension setting No.2 parameter	Decimal	☞ Page 3179 Setting virtual word devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
PF[*2]	Extension setting No.3 parameter	Decimal	☞ Page 3179 Setting virtual word devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
NPA[*2]	Network basic parameter	Decimal	☞ Page 3179 Setting virtual word devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
PW[*2]	Extension setting No.4 parameter	Decimal	☞ Page 3179 Setting virtual word devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
ALM[*2]	Alarm (current alarm J4A extend)	Decimal	☞ Page 3179 Setting virtual word devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
	Alarm (alarm history J4A extend)	Decimal	☞ Page 3179 Setting virtual word devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
	Alarm (alarm history J5G extend)	Decimal	☞ Page 3179 Setting virtual word devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
POS[*2]	Point table (position)	Decimal	☞ Page 3179 Setting virtual word devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×

Device name		Device No. representation	Setting range	EG device specifications[*1]	
				Assignment to EG devices	Access using a client
SPD[*2]	Point table (speed)	Decimal	☞ Page 3179 Setting virtual word devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
ACT[*2]	Point table (acceleration time constant)	Decimal	☞ Page 3179 Setting virtual word devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
DCT[*2]	Point table (deceleration time constant)	Decimal	☞ Page 3179 Setting virtual word devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
DWL[*2]	Point table (dwell)	Decimal	☞ Page 3179 Setting virtual word devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
AUX[*2]	Point table (auxiliary function)	Decimal	☞ Page 3179 Setting virtual word devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
MCD[*2]	Point table (M code)	Decimal	☞ Page 3179 Setting virtual word devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
MD[*2]	Machine diagnosis data	Decimal	☞ Page 3179 Setting virtual word devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
GFDS[*2]	Gear failure diagnosis data	Decimal	☞ Page 3179 Setting virtual word devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
ECCDS[*2]	Encoder communication circuit diagnosis data	Decimal	☞ Page 3179 Setting virtual word devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
OTS[*2]	One-touch tuning data	Decimal	☞ Page 3179 Setting virtual word devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
DI[*2]	External input signal	Decimal	☞ Page 3179 Setting virtual word devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
DO[*2]	External output signal	Decimal	☞ Page 3179 Setting virtual word devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
JnW	Link register (link direct)	Hexadecimal	J(Network No.n)-W(Device) Notation example: J1-W00000 • Network No.n (decimal): 1 to 239 • Device (hexadecimal): 00000 to 83FFF	○	○
JnSW	Link special register (link direct)	Hexadecimal	J(Network No.n)-SW(Device) Notation example: J1-SW000 • Network No.n (decimal): 1 to 239 • Device (hexadecimal): 000 to FFF	○	○
U3E0G	CPU buffer memory access device	Decimal	U3E0-G(Device) Notation example: U3E0-G100 • Device (decimal): 0 to 268435455	○	○
U3E1G	CPU buffer memory access device	Decimal	U3E1-G(Device) Notation example: U3E1-G100 • Device (decimal): 0 to 268435455	○	○
U3E2G	CPU buffer memory access device	Decimal	U3E2-G(Device) Notation example: U3E2-G100 • Device (decimal): 0 to 268435455	○	○
U3E3G	CPU buffer memory access device	Decimal	U3E3-G(Device) Notation example: U3E3-G100 • Device (decimal): 0 to 268435455	○	○
RD	Refresh data register	Decimal	0 to 1048575	○	○

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
☞ Page 2868 Monitoring a controller through the GOT (server/client function)

*2 Virtual servo amplifier device
For details, refer to the following.

☞ Page 3191 Virtual servo amplifier devices ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

*3 For the maximum number of devices when an extended SRAM cassette is installed, refer to the following.
MELSEC iQ-R CPU Module User's Manual (Application)

*4 For monitoring the multiple CPU high speed transmission memory, the CPU buffer memory access device (HG) for RCPU is monitored.
The CPU buffer memory access device (G) is not monitored.

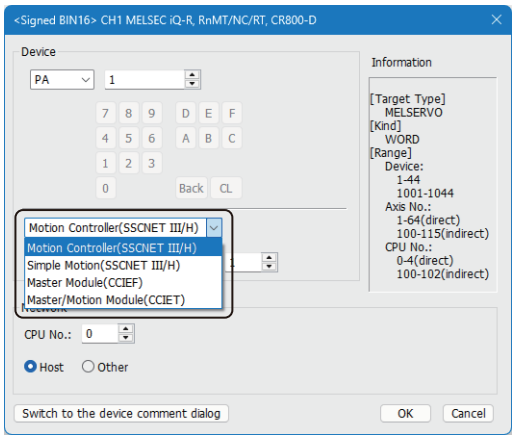
*5 The device name depends on the servo amplifier.
MR-J5-G(-RJ) or MR-J5W□-G: Motor extension setting parameter
Other than MR-J5-G(-RJ) or MR-J5W□-G: Linear servo motor/DD motor setting parameter

*6 PVS is a virtual device corresponding to the servo parameter (PV) of MR-J5-G(-RJ), MR-J5W□-G, and MR-JET-G.
Use the virtual device (PVS) to read/write data from/to the servo parameter (PV).

97.3.5 Setting virtual word devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

For virtual servo amplifier devices, the notation differs according to the connection type between the GOT and the servo amplifier.

Select one of the following according to the control type in the device setting dialog.



Item	Description
[Motion Controller(SSCNET III/H)]	Select this item to connect the GOT through a Motion controller. The following item is displayed. • [Axis No.]: Set the axis number to be monitored.
[Simple Motion(SSCNET III/H)]	Select this item to connect the GOT through a Simple Motion module (RD77MS). The following items are displayed. • [Unit No.]: Set the first 2 digits of the 3-digit number that represents the start I/O number of the Simple Motion module. • [Axis No.]: Set the axis number to be monitored.
[Master Module(CCIEF)]	Select this item to connect the GOT through the master station on the CC-Link IE Field Network or a Simple Motion module (RD77GF).
[Master/Motion Module(CCIET)]	Select this item to connect the GOT through the master station on the CC-Link IE TSN and a Motion module (RD78G(H)). After the selection, set a device that enables axis designation to display the following item. • [Axis Designation]: Set the axis to be monitored.

The following shows the notation and setting range of virtual devices.

Device name	Device notation and setting range		Notation example
PA	[Motion Controller(SSCNET III/H)]	A(Axis No.)-PA(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 44, 1001 to 1044	A64-PA1
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PA(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 44, 1001 to 1044	UFF-A64-PA1
	[Master Module(CCIEF)]	PA (Device) • Device (decimal): 1 to 44, 1001 to 1044	PA1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-PA(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 44, 1001 to 1044	AA3-PA1

Device name	Device notation and setting range		Notation example
PB	[Motion Controller(SSCNET III/H)]	A(Axis No.)-PB(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 92, 1001 to 1092	A64-PB1
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PB(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 92, 1001 to 1092	UFF-A64-PB1
	[Master Module(CCIEF)]	PB(Device) • Device (decimal): 1 to 92, 1001 to 1092	PB1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-PB(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 92, 1001 to 1092	AA3-PB1
PC	[Motion Controller(SSCNET III/H)]	A(Axis No.)-PC(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 90, 1001 to 1090	A64-PC1
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PC(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 90, 1001 to 1090	UFF-A64-PC1
	[Master Module(CCIEF)]	PC(Device) • Device (decimal): 1 to 90, 1001 to 1090	PC1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-PC(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 90, 1001 to 1090	AA3-PC1
PD	[Motion Controller(SSCNET III/H)]	A(Axis No.)-PD(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 72, 1001 to 1072	A64-PD1
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PD(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 72, 1001 to 1072	UFF-A64-PD1
	[Master Module(CCIEF)]	PD(Device) • Device (decimal): 1 to 72, 1001 to 1072	PD1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-PD(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 72, 1001 to 1072	AA3-PD1
PO	[Motion Controller(SSCNET III/H)]	A(Axis No.)-PO(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 2, 1001 to 1002	A64-PO1
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PO(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 2, 1001 to 1002	UFF-A64-PO1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-PO(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 2, 1001 to 1002	AA3-PO1
PS	[Motion Controller(SSCNET III/H)]	A(Axis No.)-PS(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 99, 1001 to 1099	A64-PS1
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PS(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 99, 1001 to 1099	UFF-A64-PS1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-PS(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 99, 1001 to 1099	AA3-PS1

Device name	Device notation and setting range		Notation example
PU	[Motion Controller(SSCNET III/H)]	A(Axis No.)-PU(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 44, 1001 to 1044	A64-PU1
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PU(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 44, 1001 to 1044	UFF-A64-PU1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-PU(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 44, 1001 to 1044	AA3-PU1
PT	[Motion Controller(SSCNET III/H)]	A(Axis No.)-PT(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 90, 1001 to 1090	A64-PT1
	[Master Module(CCIEF)]	PT(Device) • Device (decimal): 1 to 90, 1001 to 1090	PT1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-PT(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 90, 1001 to 1090	AA3-PT1
PL	[Motion Controller(SSCNET III/H)]	A(Axis No.)-PL(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 72, 1001 to 1072	A64-PL1
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PL(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 72, 1001 to 1072	UFF-A64-PL1
	[Master Module(CCIEF)]	PL(Device) • Device (decimal): 1 to 72, 1001 to 1072	PL1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-PL(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 72, 1001 to 1072	AA3-PL1
PN	[Master Module(CCIEF)]	PN(Device) • Device (decimal): 1 to 32, 1001 to 1032	PN1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-PN(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 32, 1001 to 1032	AA3-PN1
PVS	[Master/Motion Module(CCIET)]	AA(Axis designation)-PVS(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 32, 1001 to 1032	AA3-PVS1
ST	[Motion Controller(SSCNET III/H)]	A(Axis No.)-ST(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 48	A64-ST0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-ST(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 48	UFF-A64-ST0
	[Master Module(CCIEF)]	ST(Device) • Device (decimal): 0 to 48	ST0
	[Master/Motion Module(CCIET)]	AA(Axis designation)-ST(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 48	AA3-ST0
PE	[Motion Controller(SSCNET III/H)]	A(Axis No.)-PE(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 88, 1001 to 1088	A64-PE1
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PE(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 88, 1001 to 1088	UFF-A64-PE1
	[Master Module(CCIEF)]	PE(Device) • Device (decimal): 1 to 88, 1001 to 1088	PE1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-PE(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 88, 1001 to 1088	AA3-PE1

Device name	Device notation and setting range		Notation example
PF	[Motion Controller(SSCNET III/H)]	A(Axis No.)-PF(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 99, 1001 to 1099	A64-PF1
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PF(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 99, 1001 to 1099	UFF-A64-PF1
	[Master Module(CCIEF)]	PF(Device) • Device (decimal): 1 to 99, 1001 to 1099	PF1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-PF(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 99, 1001 to 1099	AA3-PF1
NPA	[Master/Motion Module(CCIET)]	NPA(Device) • Device (decimal): 1 to 12, 2001 to 2032	NPA1
PW	[Motion Controller(SSCNET III/H)]	A(Axis No.)-PW(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 40,1001 to 1040	A3-PW1
ALM	[Motion Controller(SSCNET III/H)]	A(Axis No.)-ALM(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 2, 11 to 59, 200 to 215, 220 to 235, 240 to 255, 260 to 275, 280 to 295, 300 to 315	A64-ALM0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-ALM(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 2, 11 to 59, 200 to 215, 220 to 235, 240 to 255, 260 to 275, 280 to 295, 300 to 315	UFF-A64-ALM0
	[Master Module(CCIEF)]	ALM(Device) • Device (decimal): 0 to 2, 11 to 59, 200 to 215, 220 to 235, 240 to 255, 260 to 275, 280 to 295, 300 to 315	ALM0
	[Master/Motion Module(CCIET)]	AA(Axis designation)-ALM(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 2, 11 to 59, 200 to 215, 220 to 235, 240 to 255, 260 to 275, 280 to 295, 300 to 315	AA3-ALM0
POS	[Master Module(CCIEF)]	POS(Device) • Device (decimal): 1 to 255, 1001 to 1255	POS1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-POS(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 255, 1001 to 1255	AA3-POS1
SPD	[Master Module(CCIEF)]	SPD(Device) • Device (decimal): 1 to 255, 1001 to 1255	SPD1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-SPD(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 255, 1001 to 1255	AA3-SPD1
ACT	[Master Module(CCIEF)]	ACT(Device) • Device (decimal): 1 to 255, 1001 to 1255	ACT1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-ACT(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 255, 1001 to 1255	AA3-ACT1
DCT	[Master Module(CCIEF)]	DCT(Device) • Device (decimal): 1 to 255, 1001 to 1255	DCT1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-DCT(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 255, 1001 to 1255	AA3-DCT1
DWL	[Master Module(CCIEF)]	DWL(Device) • Device (decimal): 1 to 255, 1001 to 1255	DWL1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-DWL(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 255, 1001 to 1255	AA3-DWL1
AUX	[Master Module(CCIEF)]	AUX(Device) • Device (decimal): 1 to 255, 1001 to 1255	AUX1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-AUX(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 255, 1001 to 1255	AA3-AUX1

Device name	Device notation and setting range		Notation example
MCD	[Master/Motion Module(CCIET)]	AA(Axis designation)-MCD(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 255, 1001 to 1255	AA3-MCD1
MD	[Motion Controller(SSCNET III/H)]	A(Axis No.)-MD(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 21	A64-MD0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-MD(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 21	UFF-A64-MD0
	[Master Module(CCIEF)]	MD(Device) • Device (decimal): 0 to 21	MD0
	[Master/Motion Module(CCIET)]	AA(Axis designation)-MD(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 21	AA3-MD0
GFDS	[Motion Controller(SSCNET III/H)]	A(Axis No.)-GFDS(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5	A64-GFDS0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-GFDS(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5	UFF-A64-GFDS0
	[Master/Motion Module(CCIET)]	AA(Axis designation)-GFDS(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5	AA3-GFDS0
ECCDS	[Motion Controller(SSCNET III/H)]	A(Axis No.)-ECCDS(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5	A64-ECCDS0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-ECCDS(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5	UFF-A64-ECCDS0
	[Master/Motion Module(CCIET)]	AA(Axis designation)-ECCDS(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5	AA3-ECCDS0
OTS	[Motion Controller(SSCNET III/H)]	A(Axis No.)-OTS(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5, 3000	A64-OTS0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-OTS(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5, 3000	UFF-A64-OTS0
	[Master Module(CCIEF)]	OTS(Device) • Device (decimal): 0 to 5, 3000	OTS0
	[Master/Motion Module(CCIET)]	AA(Axis designation)-OTS(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5, 3000	AA3-OTS0
DI	[Motion Controller(SSCNET III/H)]	A(Axis No.)-DI(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 6	A64-DI0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-DI(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 6	UFF-A64-DI0
	[Master Module(CCIEF)]	DI(Device) • Device (decimal): 0 to 6	DI0
	[Master/Motion Module(CCIET)]	AA(Axis designation)-DI(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 6	AA3-DI0

Device name	Device notation and setting range		Notation example
DO	[Motion Controller(SSCNET III/H)]	A(Axis No.)-DO(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 4	A64-DO0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-DO(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 4	UFF-A64-DO0
	[Master Module(CCIEF)]	DO(Device) • Device (decimal): 0 to 4	DO0
	[Master/Motion Module(CCIET)]	AA(Axis designation)-DO(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 4	AA3-DO0

For indirect specification of a module number, axis number, or axis designation, refer to the following.

☞ Page 3171 Indirect specification of a module number ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

☞ Page 3172 Indirect specification of an axis number or axis designation ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

97.3.6 Availability of writing/reading data to/from word devices ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

The following shows the availability of writing/reading data to/from word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data
TN	R/W	R/W	-/-	-/-
CN	R/W	R/W	-/-	-/-
SN	R/W	R/W	-/-	-/-
D	R/W	R/W	R/W	R/W
SD	R/W	R/W	R/W	R/W
W	R/W	R/W	R/W	R/W
SW	R/W	R/W	-/-	R/W
R	R/W	R/W	R/W	R/W
ER	R/W	R/W	R/W	R/W
ZR	R/W	R/W	R/W	R/W
Z	R/W	R/W	-/-	-/-
G	R/W	R/W	R/W	R/W
Ww	R/W	R/W	R/W	R/W
Wr	R/W	R/W	R/W	R/W
LW	R/W	R/W	R/W	R/W
#	R/W	R/W	-/-	R/W
U3E0	R/W	R/W	R/W	R/W
U3E1	R/W	R/W	R/W	R/W
U3E2	R/W	R/W	R/W	R/W
U3E3	R/W	R/W	R/W	R/W
SATN	R/-	R/-	-/-	-/-
SACN	R/-	R/-	-/-	-/-
SASN	R/-	R/-	-/-	-/-
SAD	R/-	R/-	-/-	R/-
SASD	R/-	R/-	-/-	R/-
SAW	R/-	R/-	-/-	R/-
PA	R/W	R/W	-/-	-/-
PB	R/W	R/W	-/-	-/-
PC	R/W	R/W	-/-	-/-
PD	R/W	R/W	-/-	-/-
PO	R/W	R/W	-/-	-/-
PS	R/W	R/W	-/-	-/-
PU	R/W	R/W	-/-	-/-
PT	R/W	R/W	-/-	-/-
PL	R/W	R/W	-/-	-/-
PN	R/W	R/W	-/-	-/-
PVS	R/W	R/W	-/-	-/-
ST	R/-	R/-	-/-	-/-
PE	R/W	R/W	-/-	-/-
PF	R/W	R/W	-/-	-/-
NPA	R/W[*1]	R/W[*1]	-/-	-/-
PW	R/W	R/W	-/-	-/-
ALM	R/-	R/-	-/-	-/-

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data
POS	R/W	R/W	-/-	-/-
SPD	R/W	R/W	-/-	-/-
ACT	R/W	R/W	-/-	-/-
DCT	R/W	R/W	-/-	-/-
DWL	R/W	R/W	-/-	-/-
AUX	R/W	R/W	-/-	-/-
MCD	R/W	R/W	-/-	-/-
MD	R/-	R/-	-/-	-/-
GFDS	R/-	R/-	-/-	-/-
ECCDS	R/-	R/-	-/-	-/-
OTS	R/W*2	R/W*2	-/-	-/-
DI	R/-	R/W	-/-	-/-
DO	R/-	R/-	-/-	-/-
JnW	R/W	R/W	R/W	R/W
JnSW	R/W	R/W	-/-	R/W
U3E0G	R/W	R/W	R/W	R/W
U3E1G	R/W	R/W	R/W	R/W
U3E2G	R/W	R/W	R/W	R/W
U3E3G	R/W	R/W	R/W	R/W
RD	R/W	R/W	R/W	R/W

*1 Only reading is available for NPA1 and NPA2001 to NPA2032.

*2 Only reading is available for OTS0 to OTS5.

97.3.7 Monitoring-supported double-word devices ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

The following table shows monitoring-supported double-word devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3190 Availability of writing/reading data to/from double-word devices ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

○: Available

×: Not available

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
LTN*4	Long timer current value	Decimal	0 to 2529407	×	×
LCN*4	Long counter current value	Decimal	0 to 4761215	×	×
LSN*4	Long retentive timer current value	Decimal	0 to 2529407	×	×
ZZ	Index register (32 bits)	Decimal	0 to 22	×	×
LZ	Index register (32 bits)	Decimal	0 to 11	×	×
ALD*2	Life diagnosis	Decimal	☞ Page 3188 Setting virtual double-word devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
TMI*2	Input signal for test operation (for test operation)	Decimal	☞ Page 3188 Setting virtual double-word devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
TMO*2	Forced output of signal pin (for test operation)	Decimal	☞ Page 3188 Setting virtual double-word devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
TMD*2	Set data (for test operation)	Decimal	☞ Page 3188 Setting virtual double-word devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
AL*3	Faults history	Decimal	0 to 899	×	×
LPr*3*5	Parameter (32-bit)	Decimal	0 to 1500	×	×
OP*3	Operation parameter	Decimal	0 to 5	×	×
PV*3	Current value monitor	Decimal	1 to 143	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
☞ Page 2868 Monitoring a controller through the GOT (server/client function)

*2 Virtual servo amplifier device
For details, refer to the following.
☞ Page 3191 Virtual servo amplifier devices ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

*3 Virtual inverter device
For details, refer to the following.
☞ Page 3243 Virtual inverter devices ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

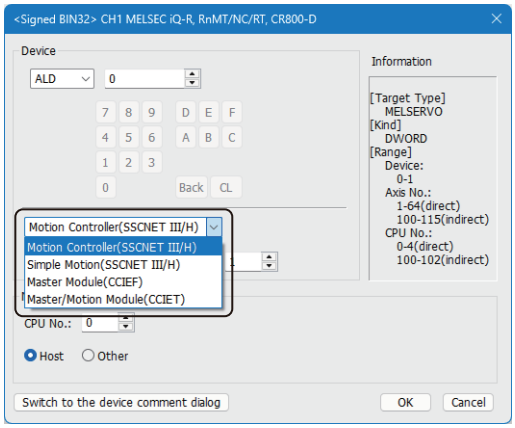
*4 For the maximum number of devices when an extended SRAM cassette is installed, refer to the following.
MELSEC iQ-R CPU Module User's Manual (Application)

*5 If you specify LPr900 to LPr935, the following item is displayed in the device setting dialog.
[Setting items (for calibration parameters)]: [Bias/gain value], [Analog input value]
Enclose the device number in parentheses when selecting [Analog input value].
Example 1) Notation when [Bias/gain value] is selected: LPr900
Example 2) Notation when [Analog input value] is selected: LPr(900)
When LPr900 or LPr901 (Calibration parameter) is specified, selecting [Bias/gain value] or [Analog input value] does not affect the monitoring target.

97.3.8 Setting virtual double-word devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

For virtual servo amplifier devices, the notation differs according to the connection type between the GOT and the servo amplifier.

Select one of the following according to the control type in the device setting dialog.



Item	Description
[Motion Controller(SSCNET III/H)]	Select this item to connect the GOT through a Motion controller. The following item is displayed. • [Axis No.]: Set the axis number to be monitored.
[Simple Motion(SSCNET III/H)]	Select this item to connect the GOT through a Simple Motion module (RD77MS). The following items are displayed. • [Unit No.]: Set the first 2 digits of the 3-digit number that represents the start I/O number of the Simple Motion module. • [Axis No.]: Set the axis number to be monitored.
[Master Module(CCIEF)]	Select this item to connect the GOT through the master station on the CC-Link IE Field Network or a Simple Motion module (RD77GF).
[Master/Motion Module(CCIET)]	Select this item to connect the GOT through the master station on the CC-Link IE TSN and a Motion module (RD78G(H)). After the selection, set a device that enables axis designation to display the following item. • [Axis Designation]: Set the axis to be monitored.

The following shows the notation and setting range of virtual devices.

Device name	Device notation and setting range		Notation example
ALD	[Motion Controller(SSCNET III/H)]	A(Axis No.)-ALD(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1	A64-ALD0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-ALD(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1	UFF-A64-ALD0
	[Master Module(CCIEF)]	ALD(Device) • Device (decimal): 0 to 1	ALD0
	[Master/Motion Module(CCIET)]	AA(Axis designation)-ALD(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1	AA3-ALD0

Device name	Device notation and setting range		Notation example
TMI	[Motion Controller(SSCNET III/H)]	A(Axis No.)-TMI(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 2	A64-TMI0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-TMI(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 2	UFF-A64-TMI0
	[Master Module(CCIEF)]	TMI(Device) • Device (decimal): 0 to 2	TMI0
	[Master/Motion Module(CCIET)]	AA(Axis designation)-TMI(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 2	AA3-TMI0
TMO	[Motion Controller(SSCNET III/H)]	A(Axis No.)-TMO(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0	A64-TMO0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-TMO(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0	UFF-A64-TMO0
	[Master Module(CCIEF)]	TMO(Device) • Device (decimal): 0	TMO0
	[Master/Motion Module(CCIET)]	AA(Axis designation)-TMO(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0	AA3-TMO0
TMD	[Motion Controller(SSCNET III/H)]	A(Axis No.)-TMD(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1, 3	A64-TMD0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-TMD(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1, 3	UFF-A64-TMD0
	[Master Module(CCIEF)]	TMD(Device) • Device (decimal): 0 to 1, 3	TMD0
	[Master/Motion Module(CCIET)]	AA(Axis designation)-TMD(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1, 3	AA3-TMD0

For indirect specification of a module number, axis number, or axis designation, refer to the following.

☞ Page 3171 Indirect specification of a module number ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

☞ Page 3172 Indirect specification of an axis number or axis designation ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

97.3.9 Availability of writing/reading data to/from double-word devices ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

The following shows the availability of writing/reading data to/from double-word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of double-word data
LTN	-/-	R/W	-/-	-/-
LCN	-/-	R/W	-/-	-/-
LSN	-/-	R/W	-/-	-/-
ZZ	-/-	R/W	-/-	-/-
LZ	-/-	R/W	-/-	-/-
ALD	-/-	R/-	-/-	-/-
TMI	-/-	-/W	-/-	-/-
TMO	-/-	-/W	-/-	-/-
TMD	-/-	-/W	-/-	-/-
AL	-/-	R/-	-/-	-/-
LPr	-/-	R/W	-/-	-/-
OP	-/-	R/W	-/-	-/-
PV	-/-	R/-	-/-	-/-

97.3.10 Virtual servo amplifier devices ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

The following shows the correspondence between the virtual devices used in the GOT and the servo amplifier data.

Virtual device name	Reference
SP	☞ Page 3192 Servo amplifier request (MELSEC iQ-R, RnMT/NC/RT, CR800-D])
OM	☞ Page 3192 Operation mode selection ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
TMB	☞ Page 3193 Instruction demand (for test operation) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
OTI	☞ Page 3193 One-touch tuning instruction ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
GFDI	☞ Page 3194 Gear failure diagnosis instruction ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
ECCDI	☞ Page 3194 Encoder communication circuit diagnosis instruction ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PA	☞ Page 3194 Basic parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PB	☞ Page 3196 Gain filter parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PC	☞ Page 3199 Extension setting parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PD	☞ Page 3202 I/O setting parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PO	☞ Page 3203 Option unit parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PS	☞ Page 3204 Special parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PU	☞ Page 3204 Multi encoder parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PT	☞ Page 3204 Positioning control parameter, pressure control parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PL	☞ Page 3208 Motor extension parameter, linear servo motor/DD motor setting parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PN	☞ Page 3209 Network setting parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PVS	☞ Page 3210 Positioning extension parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
ST	☞ Page 3212 Status display ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PE	☞ Page 3214 Extension setting No.2 parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PF	☞ Page 3216 Extension setting No.3 parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
NPA	☞ Page 3219 Network basic parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PW	☞ Page 3220 Extension setting No.4 parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
ALM	☞ Page 3222 Alarm [MELSEC iQ-R, RnMT/NC/RT, CR800-D])
	☞ Page 3229 Specifications of ALM260 to ALM275, ALM280 to ALM295, and ALM300 to ALM315 ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
POS	☞ Page 3229 Point table (position) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
SPD	☞ Page 3230 Point table (speed) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
ACT	☞ Page 3230 Point table (acceleration time constant) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
DCT	☞ Page 3230 Point table (deceleration time constant) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
DWL	☞ Page 3231 Point table (dwell) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
AUX	☞ Page 3231 Point table (auxiliary function) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
MCD	☞ Page 3231 Point table (M code) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
MD	☞ Page 3232 Machine diagnosis data ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
GFDS	☞ Page 3233 Gear failure diagnosis data ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
ECCDS	☞ Page 3233 Encoder communication circuit diagnosis data ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
OTS	☞ Page 3234 One-touch tuning data ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
DI	☞ Page 3235 External input signal in MR-J5-G(-RJ) and MR-J5W□-G ([MELSEC iQ-R, RnMT/NC/RT, CR800-D]) ☞ Page 3235 External input signal in MR-J5D□-G ([MELSEC iQ-R, RnMT/NC/RT, CR800-D]) ☞ Page 3236 External input signal in MR-J5(W)-□B(-RJ) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D]) ☞ Page 3236 External input signal in MR-JET-G ([MELSEC iQ-R, RnMT/NC/RT, CR800-D]) ☞ Page 3237 External input signal in MR-JE-B and MR-JE-BF ([MELSEC iQ-R, RnMT/NC/RT, CR800-D]) ☞ Page 3237 External input signal in MR-J4-GF(-RJ) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D]) ☞ Page 3237 External input signal in MR-J4(W)-□B-RJ ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
DO	☞ Page 3238 External output signal in MR-J5-G(-RJ) and MR-J5W□-G ([MELSEC iQ-R, RnMT/NC/RT, CR800-D]) ☞ Page 3238 External output signal in MR-J5D□-G ([MELSEC iQ-R, RnMT/NC/RT, CR800-D]) ☞ Page 3238 External output signal in MR-J5(W)-□B(-RJ) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D]) ☞ Page 3239 External output signal in MR-JET-G ([MELSEC iQ-R, RnMT/NC/RT, CR800-D]) ☞ Page 3239 External output signal in MR-JE-B and MR-JE-BF ([MELSEC iQ-R, RnMT/NC/RT, CR800-D]) ☞ Page 3239 External output signal in MR-J4-GF(-RJ) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D]) ☞ Page 3239 External output signal in MR-J4(W)-□B-RJ ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

Virtual device name	Reference
ALD	☞ Page 3239 Life Diagnosis ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
TMI	☞ Page 3240 Input signal for test operation (for test operation) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
TMO	☞ Page 3240 Forced output of signal pin (for test operation) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
TMD	☞ Page 3240 Set data (for test operation) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

The lists of virtual devices shown in this section explain some servo amplifier models using the following abbreviations.

Series	Abbreviation	Model
MELSERVO-J4 series	J4(W)-□B(-RJ)	MR-J4(W)-□B(-RJ)
	J4-GF(-RJ)	MR-J4-GF(-RJ)
	J4-□B-LL	MR-J4-□B-LL
MELSERVO-JE series	JE-□B	MR-JE-□B
	JE-□BF	MR-JE-□BF
MELSERVO-J5 series	J5-G(-RJ)	MR-J5-G(-RJ)
	J5W□-G	MR-J5W□-G
	J5D□-G	MR-J5D□-G
	J5-□B(-RJ)	MR-J5-□B(-RJ)
	J5-□B-LL	MR-J5-□B-LL

Servo amplifier request (MELSEC iQ-R, RnMT/NC/RT, CR800-D])

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
SP0	Status display data clear	—	○	○	○	○	○	○	○	○	○	○
SP1	Current alarm clear	—	○	○	○	○	○	○	○	○	○	○
SP2	Alarm history clear	—	○	○	○	○	○	○	○	○	○	○
SP3	External input signal prohibited	—	○	○	○	○	○	○	○	○	○	○
SP4	External output signal prohibited	—	○	○	○	○	○	○	○	○	○	○
SP5	External input signal resumed	—	○	○	○	○	○	○	○	○	○	○
SP6	External output signal resumed	—	○	○	○	○	○	○	○	○	○	○

When using the servo amplifier request, note the following.

Precautions	Description
When setting a device for a bit switch	Do not select [Alternate] for [Switch Action] of the bit switch.

Operation mode selection ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
OM0	Normal mode (not test operation mode)	—	○	○	○	○	○	—	—	—	—	—
	Cancel test operation mode		—	—	—	—	—	○	○	○	○	○
OM1	JOG operation	—	○	○	○	○	○	○	○	○	○	○
OM2	Positioning operation	—	○	○	○	○	○	○	○	○	○	○
OM3	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
OM4	Output signal (DO) forced output	—	○	○	○	○	○	○	○	○	○	○
OM5	Single-step feed operation	—	—	○	—	—	—	○	○	○	○	○

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
OM6	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—

When using the operation mode selection, note the following.

Precautions	Description
When setting a device for a bit switch	Do not select [Alternate] for [Switch Action] of the bit switch.

Instruction demand (for test operation) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
TMB1	Temporary stop command	—	○	○	○	○	○	—	—	—	—	—
	Pause		—	—	—	—	—	○	○	○	○	○
TMB2	Test operation (positioning operation) start command	—	○	○	○	○	○	○	○	○	○	○
TMB3	Forward rotation direction	—	○	○	○	○	○	○	○	○	○	○
TMB4	Reverse rotation direction	—	○	○	○	○	○	○	○	○	○	○
TMB5	Restart for remaining distance	—	○	○	○	○	○	○	○	○	○	○
TMB6	Remaining distance clear	—	○	○	○	○	○	○	○	○	○	○

When using the instruction demand (for test operation), note the following.

Precautions	Description
When setting a device for a bit switch	Do not select [Alternate] for [Switch Action] of the bit switch.

One-touch tuning instruction ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
OTI0	One-touch tuning start command (Basic mode)	—	○	○	○	○	○	○	○	○	○	○
OTI1	One-touch tuning start command (High mode)	—	○	○	○	○	○	○	○	○	○	○
OTI2	One-touch tuning start command (Low mode)	—	○	○	○	○	○	○	○	○	○	○
OTI3	One-touch tuning stop command	—	○	○	○	○	○	○	○	○	○	○
OTI4	Return to initial value	—	○	○	○	○	○	○	○	○	○	○
OTI5	Return to value before adjustment	—	○	○	○	○	○	○	○	○	○	○

When using the one-touch tuning instruction, note the following.

Precautions	Description
When setting a device for a bit switch	Do not select [Alternate] for [Switch Action] of the bit switch.

Gear failure diagnosis instruction ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
GFDI0	Backlash estimation start command	—	—	—	—	—	—	○	○	○	○	—
GFDI1	Backlash estimation stop command	—	—	—	—	—	—	○	○	○	○	—

When using the gear failure diagnosis instruction, note the following.

Precautions	Description
When setting a device for a bit switch	Do not select [Alternate] for [Switch Action] of the bit switch.

Encoder communication circuit diagnosis instruction ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
ECCDI0	CN2 encoder communication circuit diagnosis start command	—	—	—	—	—	—	○	○	○	○	○
ECCDI1	CN2L encoder communication circuit diagnosis start command	—	—	—	—	—	—	○	○	○	○	○

When using the encoder communication circuit diagnosis instruction, note the following.

Precautions	Description
When setting a device for a bit switch	Do not select [Alternate] for [Switch Action] of the bit switch.

Basic parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

Use an appropriate device according to the write destination of the servo amplifier.

- PA1 to PA44: Writing data to the RAM of a servo amplifier
- PA1001 to PA1044: Writing data to the FlashROM or EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
PA1, PA1001	Operation mode	**STY	○	○	—	—	—	○	○	○	○	—
PA2, PA1002	Regenerative brake option	**REG	○	○	○	○	○	○	○	○	○	○
PA3, PA1003	Absolute position detection system	*ABS	○	○	○	○	○	○	○	○	○	○
PA4, PA1004	Function selection A-1	*AOP1	○	○	○	○	○	○	○	○	○	○

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
PA5, PA1005	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PA6, PA1006	Electronic gear numerator	*CMX	—	○	—	—	—	○	○	○	○	○
PA7, PA1007	Electronic gear denominator	*CDV	—	○	—	—	—	○	○	○	○	○
PA8, PA1008	Auto tuning mode	ATU	○	○	○	○	○	○	○	○	○	○
PA9, PA1009	Auto tuning response	RSP	○	○	○	○	○	○	○	○	○	○
PA10, PA1010	In-position range	INP	○	○	○	○	○	○	○	○	○	○
PA11, PA1011	Forward rotation torque limit/ positive direction thrust limit	TLP	—	○	—	—	—	○	○	—	—	—
	Forward rotation torque limit		—	—	—	—	—	—	—	—	—	○
PA12, PA1012	Reverse rotation torque limit/ negative direction thrust limit	TLN	—	○	—	—	—	○	○	—	—	—
	Reverse rotation torque limit		—	—	—	—	—	—	—	—	—	○
PA13, PA1013	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PA14, PA1014	Rotation direction selection/travel direction selection	*POL	○	○	○	○	○	○	○	○	○	—
	Moving direction selection		—	—	—	—	—	—	—	—	—	○
PA15, PA1015	Encoder output pulse	*ENR	○	○	—	—	—	○	○	○	○	—
PA16, PA1016	Encoder output pulse 2	*ENR2	○	○	—	—	—	○	○	○	○	—
PA17, PA1017	Servo motor series setting	**MSR	○	○	—	—	—	○	○	○	○	—
PA18, PA1018	Servo motor type setting	**MTY	○	○	—	—	—	○	○	○	○	—
PA19, PA1019	Parameter block	*BLK	○	○	○	○	○	○	○	—	—	○
PA20, PA1020	Tough drive setting	*TDS	○	○	○	○	○	○	○	○	○	○
PA21, PA1021	Function selection A-3	*AOP3	○	○	○	○	○	○	○	○	○	○
PA22, PA1022	Position control composition selection	**PCS	○	○	—	—	—	○	○	○	○	○
PA23, PA1023	Drive recorder arbitrary alarm trigger setting	DRAT	○	○	○	○	○	○	○	○	○	○
PA24, PA1024	Function selection A-4	AOP4	○	○	○	○	○	○	○	○	○	○
PA25, PA1025	One-touch tuning - Overshoot permissible level	OTHOV	○	○	○	○	○	○	○	○	○	○
PA26, PA1026	Function selection A-5	*AOP5	○	○	○	○	○	○	○	○	○	○
PA27, PA1027	Hot-line forced stop function	*HTL	—	—	—	○	○	—	—	—	—	—
PA28, PA1028	Function selection A-6	**AOP6	—	—	—	—	—	○	○	○	○	○
PA29 to PA33, PA1029 to PA1033	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PA34, PA1034	Quick tuning permissible travel distance	QDIS	—	—	—	—	—	○	○	○	○	○

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
PA35 to PA44, PA1035 to PA1044	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—

Gain filter parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

Use an appropriate device according to the write destination of the servo amplifier.

- PB1 to PB92: Writing data to the RAM of a servo amplifier
- PB1001 to PB1092: Writing data to the FlashROM or EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
PB1, PB1001	Adaptive tuning mode (Adaptive filter II)	FILT	○	○	○	○	○	○	○	○	○	○
PB2, PB1002	Vib. supp. ctrl tuning mode (Adv. vib. supp. ctrl II)	VRFT	○	○	○	○	○	○	○	○	○	○
PB3, PB1003	Torque feedback loop gain	TFBGN	○	—	—	○	○	○	○	○	○	—
PB4, PB1004	Feed forward gain	FFC	○	○	○	○	○	○	○	○	○	○
PB5, PB1005	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PB6, PB1006	Load inertia moment ratio/Load mass ratio	GD2	○	○	○	○	○	○	○	○	○	○
PB7, PB1007	Model loop gain	PG1	○	○	○	○	○	○	○	○	○	○
PB8, PB1008	Position loop gain	PG2	○	○	○	○	○	○	○	○	○	○
PB9, PB1009	Speed loop gain	VG2	○	○	○	○	○	○	○	○	○	○
PB10, PB1010	Speed integral compensation	VIC	○	○	○	○	○	○	○	○	○	○
PB11, PB1011	Speed differential compensation	VDC	○	○	○	○	○	○	○	○	○	○
PB12, PB1012	Overshoot amount compensation	OVA	○	○	○	○	○	○	○	○	○	○
PB13, PB1013	Machine resonance suppression filter 1	NH1	○	○	○	○	○	○	○	○	○	○
PB14, PB1014	Notch shape selection 1	NHQ1	○	○	○	○	○	○	○	○	○	○
PB15, PB1015	Machine resonance suppression filter 2	NH2	○	○	○	○	○	○	○	○	○	○
PB16, PB1016	Notch shape selection 2	NHQ2	○	○	○	○	○	○	○	○	○	○
PB17, PB1017	Shaft resonance suppression filter	NHF	○	○	○	○	○	○	○	○	○	○
PB18, PB1018	Low-pass filter setting	LPF	○	○	○	○	○	○	○	○	○	○
PB19, PB1019	Vibration suppression control 1 - Vibration frequency	VRF11	○	○	○	○	○	○	○	○	○	○

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
PB20, PB1020	Vibration suppression control 1 - Resonance freq.	VRF12	○	○	○	○	○	○	○	○	○	○
PB21, PB1021	Vib. supp. ctrl. 1 - Vibration frequency damping	VRF13	○	○	○	○	○	○	○	○	○	○
PB22, PB1022	Vib. supp. ctrl. 1 - Resonance frequency damping	VRF14	○	○	○	○	○	○	○	○	○	○
PB23, PB1023	Low-pass filter selection	VFBF	○	○	○	○	○	○	○	○	○	○
PB24, PB1024	Slight vibration suppression control	*MVS	○	○	○	○	○	○	○	○	○	○
PB25, PB1025	Function selection B-1	*BOP1	○	○	○	○	○	○	○	○	○	○
PB26, PB1026	Gain changing function	*CDP	○	○	○	○	○	○	○	○	○	○
PB27, PB1027	Gain changing condition	CDL	○	○	○	○	○	○	○	○	○	○
PB28, PB1028	Gain changing time constant	CDT	○	○	○	○	○	○	○	○	○	○
PB29, PB1029	Gain changing - Load in. mom. rat./Load mass rat.	GD2B	○	○	○	○	○	○	○	○	○	○
PB30, PB1030	Gain changing position loop gain	PG2B	○	○	○	○	○	○	○	○	○	○
PB31, PB1031	Gain changing speed loop gain	VG2B	○	○	○	○	○	○	○	○	○	○
PB32, PB1032	Gain changing speed integral compensation	VICB	○	○	○	○	○	○	○	○	○	○
PB33, PB1033	Vib. supp. ctrl. 1 - Vib. frq. after gain changing	VRF11B	○	○	○	○	○	○	○	○	○	○
PB34, PB1034	Vib. supp. ctrl. 1 - Res. frq. after gain changing	VRF12B	○	○	○	○	○	○	○	○	○	○
PB35, PB1035	Vib. supp. ctrl. 1 - Vib. frq. damping after gain chng	VRF13B	○	○	○	○	○	○	○	○	○	○
PB36, PB1036	Vib. supp. ctrl. 1 - Res. frq. damping after gain chng	VRF14B	○	○	○	○	○	○	○	○	○	○
PB37 to PB44, PB1037 to PB1044	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PB45, PB1045	Command notch filter	CNHF	○	○	○	○	○	○	○	○	○	○
PB46, PB1046	Machine resonance suppression filter 3	NH3	○	○	○	○	○	○	○	○	○	○
PB47, PB1047	Notch shape selection 3	NHQ3	○	○	○	○	○	○	○	○	○	○
PB48, PB1048	Machine resonance suppression filter 4	NH4	○	○	○	○	○	○	○	○	○	○
PB49, PB1049	Notch shape selection 4	NHQ4	○	○	○	○	○	○	○	○	○	○
PB50, PB1050	Machine resonance suppression filter 5	NH5	○	○	○	○	○	○	○	○	○	○
PB51, PB1051	Notch shape selection 5	NHQ5	○	○	○	○	○	○	○	○	○	○
PB52, PB1052	Vibration suppression control 2 - Vibration frequency	VRF21	○	○	○	○	○	○	○	○	○	○
PB53, PB1053	Vibration suppression control 2 - Resonance freq.	VRF22	○	○	○	○	○	○	○	○	○	○
PB54, PB1054	Vib. supp. ctrl. 2 - Vibration frequency damping	VRF23	○	○	○	○	○	○	○	○	○	○

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
PB55, PB1055	Vib. supp. ctrl. 2 - Resonance frequency damping	VRF24	○	○	○	○	○	○	○	○	○	○
PB56, PB1056	Vib. supp. ctrl. 2 - Vib. frq. after gain changing	VRF21B	○	○	○	○	○	○	○	○	○	○
PB57, PB1057	Vib. supp. ctrl. 2 - Res. frq. after gain changing	VRF22B	○	○	○	○	○	○	○	○	○	○
PB58, PB1058	Vib. supp. ctrl. 2 - Vib. frq. damping after gain chng	VRF23B	○	○	○	○	○	○	○	○	○	○
PB59, PB1059	Vib. supp. ctrl. 2 - Res. frq. damping after gain chng	VRF24B	○	○	○	○	○	○	○	○	○	○
PB60, PB1060	Gain changing model loop gain	PG1B	○	○	○	○	○	○	○	○	○	○
PB61 to PB64, PB1061 to PB1064	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PB65, PB1065	Gain changing 2 condition	CDL2	—	—	—	—	—	○	○	○	○	○
PB66, PB1066	Gain changing 2 time constant	CDT2	—	—	—	—	—	○	○	○	○	○
PB67, PB1067	Gain changing 2 - Load in. mom. rat./Load mass rat.	GD2C	—	—	—	—	—	○	○	○	○	○
PB68, PB1068	Gain changing 2 position loop gain	PG2C	—	—	—	—	—	○	○	○	○	○
PB69, PB1069	Gain changing 2 speed loop gain	VG2C	—	—	—	—	—	○	○	○	○	○
PB70, PB1070	Gain changing 2 speed integral compensation	VICC	—	—	—	—	—	○	○	○	○	○
PB71, PB1071	Vib. supp. ctrl. 1 - Vib. frq. after gain changing 2	VRF11C	—	—	—	—	—	○	○	○	○	○
PB72, PB1072	Vib. supp. ctrl. 1 - Res. frq. after gain changing 2	VRF12C	—	—	—	—	—	○	○	○	○	○
PB73, PB1073	Vib. supp. ctrl. 1 - Vib. frq. damping aft. gain chng2	VRF13C	—	—	—	—	—	○	○	○	○	○
PB74, PB1074	Vib. supp. ctrl. 1 - Res. frq. damping aft. gain chng2	VRF14C	—	—	—	—	—	○	○	○	○	○
PB75, PB1075	Vib. supp. ctrl. 2 - Vib. frq. after gain changing 2	VRF21C	—	—	—	—	—	○	○	○	○	○
PB76, PB1076	Vib. supp. ctrl. 2 - Res. frq. after gain changing 2	VRF22C	—	—	—	—	—	○	○	○	○	○
PB77, PB1077	Vib. supp. ctrl. 2 - Vib. frq. damping aft. gain chng2	VRF23C	—	—	—	—	—	○	○	○	○	○
PB78, PB1078	Vib. supp. ctrl. 2 - Res. frq. damping aft. gain chng2	VRF24C	—	—	—	—	—	○	○	○	○	○
PB79, PB1079	Gain changing 2 model loop gain	PG1C	—	—	—	—	—	○	○	○	○	○
PB80, PB1080	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PB81, PB1081	Command filter	*CFIL	—	—	—	—	—	○	○	○	○	○
PB82, PB1082	Position command smoothing filter time constant	PFT	—	—	—	—	—	○	○	○	○	○
PB83 to PB92, PB1083 to PB1092	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—

Extension setting parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

Use an appropriate device according to the write destination of the servo amplifier.

- PC1 to PC90: Writing data to the RAM of a servo amplifier
- PC1001 to PC1090: Writing data to the FlashROM or EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
PC1, PC1001	Error excessive alarm level	ERZ	○	○	○	○	○	○	○	○	○	○
PC2, PC1002	Electromagnetic brake sequence output	MBR	○	○	○	○	○	○	○	○	○	○
PC3, PC1003	Encoder output pulse selection	*ENRS	○	○	—	—	—	○	○	○	○	—
PC4, PC1004	Function selection C-1	**COP1	○	○	○	○	○	○	○	○	○	○
PC5, PC1005	Function selection C-2	**COP2	○	○	○	○	○	○	○	○	○	○
PC6, PC1006	Function selection C-3	*COP3	○	○	○	○	○	○	○	○	○	○
PC7, PC1007	Zero speed	ZSP	○	○	○	○	○	○	○	○	○	○
PC8, PC1008	Overspeed alarm detection level	OSL	○	○	○	○	○	○	○	○	○	○
PC9, PC1009	Analog monitor 1 output	MOD1	○	○	○	—	—	○	○	○	○	—
PC10, PC1010	Analog monitor 2 output	MOD2	○	○	○	—	—	○	○	○	○	—
PC11, PC1011	Analog monitor 1 offset	MO1	○	○	○	—	—	○	○	○	○	—
PC12, PC1012	Analog monitor 2 offset	MO2	○	○	○	—	—	○	○	○	○	—
PC13, PC1013	Analog monitor - Feedback position output standard data - Low	MOSDL	○	—	—	—	—	—	—	—	—	—
PC14, PC1014	Analog monitor - Feedback position output standard data - High	MOSDH	○	—	—	—	—	—	—	—	—	—
PC15, PC1015	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PC16, PC1016	Function selection C-3A	*COP3A	—	—	—	—	—	○	○	—	—	—
PC17, PC1017	Function selection C-4	**COP4	○	○	○	○	○	○	○	○	○	—
PC18, PC1018	Function selection C-5	*COP5	○	○	○	○	○	○	—	○	○	—
PC19, PC1019	Function selection C-6	*COP6	—	○	—	—	—	○	○	○	○	○
PC20, PC1020	Function selection C-7	*COP7	○	○	○	○	○	○	○	○	○	○
PC21, PC1021	Alarm history clear	*BPS	○	○	○	○	○	○	○	○	○	○

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
PC22 to PC23, PC1022 to PC1023	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PC24, PC1024	Forced stop deceleration time constant	RSBR	○	○	○	○	○	○	○	○	○	○
PC25, PC1025	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PC26, PC1026	Function selection C-8	**COP8	○	○	—	—	—	○	○	○	○	—
PC27, PC1027	Function selection C-9	**COP9	○	○	—	—	—	○	○	○	○	○
PC28, PC1028	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PC29, PC1029	Function selection C-B	*COPB	○	○	—	○	○	○	○	○	○	○
PC30, PC1030	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PC31, PC1031	Vertical ax.freefall prevention compensation amount	RSUP1	○	○	○	○	○	○	○	○	○	○
PC32 to PC36, PC1032 to PC1036	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PC37, PC1037	Function selection C-D	**COPD	—	—	—	—	—	—	—	—	—	—
PC38, PC1038	Error excessive warning level	ERW	○	○	○	○	○	○	○	○	○	○
PC39, PC1039	Collision detection level 1	TLW1	—	—	—	—	—	—	—	—	—	—
PC40, PC1040	Collision detection level 2	TLW2	—	—	—	—	—	—	—	—	—	—
PC41, PC1041	Function selection C-J	*COPJ	—	—	—	—	—	—	○	—	—	—
PC42 to PC44, PC1042 to PC1044	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PC45, PC1045	Drive unit function selection 1	*DUOP1	—	—	—	—	—	—	—	—	—	—
PC46, PC1046	Drive unit function selection 2	*DUOP2	—	—	—	—	—	—	○	—	—	—
PC47 to PC64, PC1047 to PC1064	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PC65, PC1065	Zero speed 2 level	ZSP2L	—	—	—	—	—	○	○	—	—	—
PC66, PC1066	Zero speed 2 filter time	ZSP2F	—	—	—	—	—	○	○	—	—	—
PC67, PC1067	Following error output level	FEWL	—	○	—	—	—	—	—	—	—	—
		FEW	—	—	—	—	—	○	○	—	—	○
PC68, PC1068	Following error output level	FEWH	—	○	—	—	—	○	—	—	—	—
PC69, PC1069	Following error output filter time	FEWF	—	○	—	—	—	○	○	—	—	○
PC70, PC1070	In-position 2 output range	INP2R	—	—	—	—	—	○	○	—	—	—

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
PC71, PC1071	In-position 2 output filter time	INP2F	—	—	—	—	—	○	○	—	—	—
PC72, PC1072	Speed reached 2 output range	SA2R	—	—	—	—	—	○	○	—	—	—
PC73, PC1073	Speed reached 2 output filter time	SA2F	—	—	—	—	—	○	○	—	—	—
PC74 to PC75, PC1074 to PC1075	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PC76, PC1076	Function selection C-E	*COPE	—	○	—	—	—	○	○	—	—	○
PC77, PC1077	Internal torque limit 2	TL2	—	—	—	—	—	—	—	—	—	—
PC78, PC1078	Function selection C-F	*COPF	—	—	—	—	—	○	○	—	—	○
PC79, PC1079	Function selection C-G	*COPG	—	—	—	—	—	○	○	—	—	○
PC80, PC1080	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PC81, PC1081	Function selection C-H	**COPH	—	—	—	—	—	○	—	—	—	—
PC82 to PC90, PC1082 to PC1090	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—

I/O setting parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

Use an appropriate device according to the write destination of the servo amplifier.

- PD1 to PD72: Writing data to the RAM of a servo amplifier
- PD1001 to PD1072: Writing data to the FlashROM or EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
PD1, PD1001	Input signal automatic on selection 1	*DIA1	—	○	—	—	—	○	○	—	—	○
PD2, PD1002	Input signal automatic on selection 2	*DIA2	○	—	○	—	○	—	—	○	○	—
PD3, PD1003	Input device selection 1	*DI1	—	○	—	—	○	○	○	—	—	○
PD4, PD1004	Input device selection 2	*DI2	—	○	—	—	○	○	○	—	—	○
PD5, PD1005	Input device selection 3	*DI3	—	○	—	—	○	○	○	—	—	○
PD6, PD1006	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PD7, PD1007	Output device selection 1	*DO1	○	○	○	○	○	○	○	○	○	○
PD8, PD1008	Output device selection 2	*DO2	○	○	○	—	○	○	○	○	○	○
PD9, PD1009	Output device selection 3	*DO3	○	○	—	—	○	○	○	○	○	○
PD10, PD1010	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PD11, PD1011	Input filter setting	*DIF	○	○	—	○	○	○	○	○	○	○
PD12, PD1012	Function selection D-1	*DOP1	○	○	—	○	○	○	○	○	○	○
PD13, PD1013	Function selection D-2	*DOP2	○	○	—	○	○	○	○	○	○	○
PD14, PD1014	Function selection D-3	*DOP3	○	○	○	○	○	○	○	○	○	○
PD15, PD1015	Driver communication setting	*IDCS	○	—	—	—	—	—	—	○	○	—
PD16, PD1016	Driver communication setting - Master - Transmit data selection 1	*MD1	○	—	—	—	—	—	—	○	○	—
PD17, PD1017	Driver communication setting - Master - Transmit data selection 2	*MD2	○	—	—	—	—	—	—	○	○	—
PD18 and PD19, PD1018 and PD1019	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PD20, PD1020	Driver communication setting - Slave - Master axis No. selection 1	*SLA1	○	—	—	—	—	—	—	○	○	—
PD21 to PD29, PD1021 to PD1029	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
PD30, PD1030	Master-slave operation - Torque command coefficient on slave	TLC	○	—	—	—	—	—	—	—	—	—
		TLS	—	—	—	—	—	—	—	○	○	—
PD31, PD1031	Master-slave operation - Speed limit coefficient on slave	VLC	○	—	—	—	—	—	—	○	○	—
PD32, PD1032	Master-slave operation - Speed limit adjusted value on slave	VLL	○	—	—	—	—	—	—	○	○	—
PD33 to PD36, PD1033 to PD1036	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PD37, PD1037	Touch probe function selection	*TPOP	—	○	—	—	—	○	—	—	—	—
PD38, PD1038	Input device selection 4	*DI4	—	—	—	—	—	○	○	—	—	—
PD39, PD1039	Input device selection 5	*DI5	—	—	—	—	—	○	○	—	—	—
PD40, PD1040	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PD41, PD1041	Function selection D-4	*DOP4	—	○	—	—	—	○	○	—	—	○
PD42 to PD50, PD1042 to PD1050	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PD51, PD1051	Input device selection 3-2	*DI3W2	—	—	—	—	—	○	○	—	—	—
PD52 to PD59, PD1052 to PD1059	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PD60, PD1060	DI pin polarity selection	*DIP	—	—	—	—	—	○	○	—	—	○
PD61 to PD72, PD1061 to PD1072	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—

Option unit parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

Use an appropriate device according to the write destination of the servo amplifier.

- PO1 to PO2: Writing data to the RAM of a servo amplifier
- PO1001 to PO1002: Writing data to the FlashROM or EEPROM of a servo amplifier

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
PO1 to PO2, PO1001 to PO1002	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—

Special parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

Use an appropriate device according to the write destination of the servo amplifier.

- PS1 to PS99: Writing data to the RAM of a servo amplifier
- PS1001 to PS1099: Writing data to the FlashROM or EEPROM of a servo amplifier

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
PS1 to PS99, PS1001 to PS1099	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—

Multi encoder parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

Use an appropriate device according to the write destination of the servo amplifier.

- PU1 to PU44: Writing data to the RAM of a servo amplifier
- PU1001 to PU1044: Writing data to the FlashROM or EEPROM of a servo amplifier

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
PU1 to PU44, PU1001 to PU1044	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—

Positioning control parameter, pressure control parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

Use an appropriate device according to the write destination of the servo amplifier.

- PT1 to PT90: Writing data to the RAM of a servo amplifier
- PT1001 to PT1090: Writing data to the FlashROM or EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
PT1, PT1001	Command mode selection	**CTY	—	○	—	—	—	○	○	—	—	○
	Pressure control gain	APA	—	—	○	—	—	—	—	—	—	—
PT2, PT1002	Function selection T-1	*TOP1	—	—	—	—	—	—	○	—	—	—
	Pressure integral compensation	AIA	—	—	○	—	—	—	—	—	—	—
PT3, PT1003	Feeding function selection	*FTY	—	○	—	—	—	○	—	—	—	—
	Pressure incomplete integral coefficient	ADA	—	—	○	—	—	—	—	—	—	—
PT4, PT1004	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
PT5, PT1005	Home position return speed	ZRF	—	○	—	—	—	○	○	—	—	○
PT6, PT1006	Creep speed	CRF	—	○	—	—	—	○	○	—	—	○
PT7, PT1007	Home position shift distance	ZST	—	○	—	—	—	○	○	—	—	○
PT8, PT1008	Home position return position data	ZPS	—	—	—	—	—	○	○	—	—	○
PT9, PT1009	Moving distance after proximity dog	DCT	—	○	—	—	—	○	○	—	—	○
PT10, PT1010	Stopper type home position return stopper time	ZTM	—	○	—	—	—	○	○	—	—	○
PT11, PT1011	Stopper type home position return torque limit value	ZTT	—	○	—	—	—	○	○	—	—	○
PT12, PT1012	Rough match output range	CRP	—	○	—	—	—	○	○	—	—	—
	Function selection T-1	*TOP1	—	—	○	—	—	—	—	—	—	—
PT13, PT1013	Function selection T-2	*TOP2	—	—	○	—	—	—	—	—	—	—
PT14, PT1014	Function selection T-3	*TOP3	—	—	○	—	—	—	—	—	—	—
PT15, PT1015	Software limit +	LMPL	—	○	—	—	—	—	—	—	—	—
	Software position limit+	LMP	—	—	—	—	—	○	○	—	—	○
PT16, PT1016	Software limit +	LMPH	—	○	—	—	—	—	—	—	—	—
PT17, PT1017	Software limit -	LMNL	—	○	—	—	—	—	—	—	—	—
	Software position limit-	LMN	—	—	—	—	—	○	○	—	—	○
PT18, PT1018	Software limit -	LMNH	—	○	—	—	—	—	—	—	—	—
PT19, PT1019	Position range output address +	*LPPL	—	○	—	—	—	—	—	—	—	—
	Position range output 1 address+	*LPP1	—	—	—	—	—	○	○	—	—	—
PT20, PT1020	Position range output address +	*LPPH	—	○	—	—	—	—	—	—	—	—
PT21, PT1021	Position range output address -	*LNPL	—	○	—	—	—	—	—	—	—	—
	Position range output 1 address-	*LNP1	—	—	—	—	—	○	○	—	—	—
	Pressure control feedback offset	AFBO	—	—	○	—	—	—	—	—	—	—
PT22, PT1022	Position range output address -	*LNPH	—	○	—	—	—	—	—	—	—	—
	Pressure control feedback unit constant	AFBD	—	—	○	—	—	—	—	—	—	—
PT23, PT1023	Analog monitor input 1 offset	AO1	—	—	○	—	—	—	—	—	—	—
PT24, PT1024	Analog monitor input 1 unit constant	AD1	—	—	○	—	—	—	—	—	—	—
PT25, PT1025	Analog monitor input 2 offset	AO2	—	—	○	—	—	—	—	—	—	—
PT26, PT1026	Analog monitor input 2 unit constant	AD2	—	—	○	—	—	—	—	—	—	—
PT27, PT1027	Analog monitor input filter setting	ADF	—	—	○	—	—	—	—	—	—	—
PT28, PT1028	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PT29, PT1029	Function selection T-3	*TOP3	—	○	—	—	—	○	○	—	—	○
PT30 to PT33, PT1030 to PT1033	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
PT34, PT1034	Point table default	*PDEF	—	○	—	—	—	○	—	—	—	—
	Positioning operation data default	*PDEF	—	—	—	—	—	—	○	—	—	—
PT35 to PT37, PT1035 to PT1037	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PT38, PT1038	Function selection T-7	*TOP7	—	—	—	—	—	—	○	—	—	—
PT39 to PT40, PT1039 to PT1040	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PT41, PT1041	Home position return inhibit selection	ORP	—	○	—	—	—	○	—	—	—	—
	Function selection T-8	TOP8	—	—	—	—	—	—	○	—	—	○
PT42 to PT44, PT1042 to PT1044	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PT45, PT1045	Home position return method	HMM	—	○	—	—	—	○	○	—	—	○
PT46 to PT48, PT1046 to PT1048	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PT49, PT1049	Acceleration time constant	STA	—	○	—	—	—	○	○	—	—	—
PT50, PT1050	Deceleration time constant	STB	—	○	—	—	—	○	○	—	—	—
PT51, PT1051	S-pattern acceleration/ deceleration time constant	STC	—	○	—	—	—	○	○	—	—	—
PT52, PT1052	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PT53, PT1053	Torque slope	TQS	—	—	—	—	—	○	○	—	—	—
PT54, PT1054	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PT55, PT1055	Function selection T-8	*TOP8	—	○	—	—	—	○	—	—	—	—
	Function selection T-10	*TOP10	—	—	—	—	—	—	○	—	—	○
PT56, PT1056	Home position return acceleration time constant	HMA	—	○	—	—	—	○	○	—	—	○
PT57, PT1057	Home position return deceleration time constant	HMB	—	○	—	—	—	○	○	—	—	○
PT58 to PT61, PT1058 to PT1061	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PT62, PT1062	Remote register-based position/ speed specifying method selection	*DSS	—	○	—	—	—	○	—	—	—	—
PT63 to PT64, PT1063 to PT1064	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PT65, PT1065	Jog speed command	PVC	—	○	—	—	—	○	—	—	—	—
	Profile speed command		—	—	—	—	—	—	○	—	—	—
PT66, PT1066	Maximum profile speed	MPVC	—	—	—	—	—	○	○	—	—	—

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
PT67, PT1067	Speed limit	VLMT	—	○	—	—	—	○	○	—	—	○
PT68, PT1068	Function selection T-11	TOP11	—	—	—	—	—	—	○	—	—	○
PT69, PT1069	Home position shift distance (extension parameter)	ZSTH	—	○	—	—	—	○	—	—	—	—
PT70, PT1070	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PT71, PT1071	Travel distance after proximity dog (extension parameter)	DCTH	—	○	—	—	—	○	—	—	—	—
PT72 to PT90, PT1072 to PT1090	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—

Motor extension parameter, linear servo motor/DD motor setting parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

Use an appropriate device according to the write destination of the servo amplifier.

- PL1 to PL72: Writing data to the RAM of a servo amplifier
- PL1001 to PL1072: Writing data to the FlashROM or EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
PL1, PL1001	Linear servo motor/DD motor function selection 1	**LIT1	○	○	—	—	—	○	—	—	—	—
	Function selection L-1		—	—	—	—	—	—	○	○	—	—
PL2, PL1002	Linear encoder resolution - Numerator	**LIM	○	○	—	—	—	○	○	○	—	—
PL3, PL1003	Linear encoder resolution setting Denominator	**LID	○	○	—	—	—	○	○	○	—	—
PL4, PL1004	Linear servo motor/DD motor function selection 2	*LIT2	○	○	—	—	—	○	—	—	—	—
	Function selection L-2		—	—	—	—	—	—	○	○	—	—
PL5, PL1005	Position deviation error detection level	LB1	○	○	—	—	—	○	○	○	—	—
PL6, PL1006	Speed deviation error detection level	LB2	○	○	—	—	—	○	○	○	—	—
PL7, PL1007	Torque/thrust deviation error detection level	LB3	○	○	—	—	—	—	—	○	—	—
	Torque deviation error detection level		—	—	—	—	—	○	○	—	—	—
PL8, PL1008	Linear servo motor/DD motor function selection 3	*LIT3	○	○	—	—	—	○	—	—	—	—
	Function selection L-3		—	—	—	—	—	—	○	○	—	—
PL9, PL1009	Magnetic pole detection voltage level	LPWM	○	○	—	—	—	○	○	○	—	—
PL10 to PL16, PL1010 to PL1016	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PL17, PL1017	Magnetic pole detection - Minute position detection method - Function selection	LTSTS	○	○	—	—	—	○	○	○	—	—
PL18, PL1018	Magnetic pole detection - Minute position detection method - Identification signal amplitude	IDLV	○	○	—	—	—	○	○	○	—	—
PL19 to PL72, PL1019 to PL1072	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—

Network setting parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

Use an appropriate device according to the write destination of the servo amplifier.

- PN1 to PN32: Writing data to the RAM of a servo amplifier
- PN1001 to PN1032: Writing data to the FlashROM or EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
PN1, PN1001	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PN2, PN1002	Communication error detection time	CERT	—	○	—	—	—	○	○	—	—	○
PN3, PN1003	Communication mode setting for CC-Link IE communication	**NEMD	—	○	—	—	—	○	—	—	—	—
PN4, PN1004	CC-Link IE communication network number	**NENO	—	○	—	—	—	○	—	—	—	—
PN5, PN1005	Communication error detection frequency setting	CERI	—	○	—	—	—	○	○	—	—	○
PN6, PN1006	Function selection N-1	NOP1	—	○	—	—	—	○	—	—	—	—
PN7 to PN12, PN1007 to PN1012	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PN13, PN1013	Network protocol setup	NPS	—	—	—	—	—	—	○	—	—	—
PN14 to PN19, PN1014 to PN1019	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PN20, PN1020	Automatic parameter backup update interval	**PABI	—	—	—	—	—	—	○	—	—	○
PN21, PN1021	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PN22, PN1022	Function selection N-5	NOP5	—	—	—	—	—	—	○	—	—	—
PN23 to PN32, PN1023 to PN1032	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—

Positioning extension parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

Use an appropriate device according to the write destination of the servo amplifier.

- PVS1 to PVS32: Writing data to the RAM of a servo amplifier
- PVS1001 to PVS1032: Writing data to the FlashROM or EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
PVS1, PVS1001	Profile speed command extension setting	PVC2	—	—	—	—	—	○	○	—	—	—
PVS2, PVS1002	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PVS3, PVS1003	Maximum profile speed extension setting	MPVCE	—	—	—	—	—	○	○	—	—	—
PVS4, PVS1004	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PVS5, PVS1005	Profile acceleration	PACC	—	—	—	—	—	○	○	—	—	—
PVS6, PVS1006	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PVS7, PVS1007	Profile deceleration	PDEC	—	—	—	—	—	○	○	—	—	—
PVS8, PVS1008	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PVS9, PVS1009	Forced stop deceleration	RSBDEC	—	—	—	—	—	○	○	—	—	○
PVS10, PVS1010	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PVS11, PVS1011	Home position return speed extension setting	ZRFE	—	—	—	—	—	○	○	—	—	○
PVS12, PVS1012	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PVS13, PVS1013	Creep speed extension setting	CRFE	—	—	—	—	—	○	○	—	—	○
PVS14, PVS1014	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PVS15, PVS1015	Home position return acceleration	HMACC	—	—	—	—	—	○	○	—	—	○
PVS16, PVS1016	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PVS17, PVS1017	Home position return deceleration	HMDEC	—	—	—	—	—	○	○	—	—	○
PVS18, PVS1018	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PVS19, PVS1019	Speed reached 2 output range extension setting	SA2RE	—	—	—	—	—	○	○	—	—	—
PVS20, PVS1020	Zero speed 2 level extension setting	ZSP2LE	—	—	—	—	—	○	○	—	—	—
PVS21, PVS1021	Speed limit extension setting	VLMTE	—	—	—	—	—	○	○	—	—	○
PVS22, PVS1022	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PVS23, PVS1023	Speed unit conversion electronic gear numerator	*VCMX	—	—	—	—	—	○	○	—	—	○

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
PVS24, PVS1024	Speed unit conversion electronic gear denominator	*VCDV	—	—	—	—	—	○	○	—	—	○
PVS25, PVS1025	Acceleration unit conversion electronic gear nmrtr.	*ACMX	—	—	—	—	—	○	○	—	—	○
PVS26, PVS1026	Acceleration unit conversion electronic gear dnmntr.	*ACDV	—	—	—	—	—	○	○	—	—	○
PVS27 to PVS28, PVS1027 to PVS1028	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PVS29, PVS1029	Acceleration limit	ACCLMT	—	—	—	—	—	—	○	—	—	—
PVS30, PVS1030	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PVS31, PVS1031	Deceleration limit	DECLMT	—	—	—	—	—	—	○	—	—	—
PVS32, PVS1032	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—

Status display ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
ST0	Cumulative feedback pulses	—	○	○	○	○	—	○	○	○	○	○
ST1	Servo motor speed	—	○	○	○	○	—	○	○	○	○	○
ST2	Droop pulses	—	○	○	○	○	—	○	○	○	○	○
ST3	Cumulative command pulses	—	○	○	○	○	—	○	○	○	○	○
ST4	Command pulse frequency	—	○	○	○	○	—	○	○	○	○	○
ST5 to ST6	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
ST7	Regenerative load ratio	—	○	○	○	○	—	○	○	○	○	○
ST8	Effective load ratio	—	○	○	○	○	—	○	○	○	○	○
ST9	Peak load ratio	—	○	○	○	○	—	○	○	○	○	○
ST10	Instantaneous torque	—	○	○	○	○	—	—	—	—	○	—
	Torque/Instantaneous torque		—	—	—	—	—	○	○	○	—	○
ST11	Position within one-revolution	—	○	○	○	○	—	○	○	○	○	○
ST12	ABS counter	—	○	○	○	○	—	○	○	○	○	○
ST13	Load to motor inertia ratio	—	○	○	○	○	—	○	○	○	○	○
ST14	Bus voltage	—	○	○	○	○	—	○	○	○	○	○
ST15	Load-side cumulative feedback pulses	—	○	○	—	○	—	○	○	○	○	—
ST16	Load-side encoder droop pulses	—	—	○	—	—	—	○	○	○	○	—
ST17	Load-side encoder information 1	—	○	○	—	○	—	○	○	○	○	—
ST18	Load-side encoder information 2	—	○	○	—	○	—	○	○	○	○	—
ST19	Analog monitor output voltage 1	—	○	○	—	○	—	—	—	—	—	—
ST20	Analog monitor output voltage 2	—	○	○	—	○	—	—	—	—	—	—
ST21	AB phase output pulse F/B integrated value	—	○	○	—	○	—	—	—	—	—	—
ST22	Temperature of servo motor thermistor	—	○	○	—	○	—	○	○	○	○	○
ST23	Servo motor-side cumulative feedback pulses (before gear)	—	○	○	—	○	—	—	—	—	—	—
	Cumulative feedback pulses (Motor unit)	—	—	—	—	—	—	○	○	○	○	○
ST24	Electrical angle	—	○	○	—	○	—	○	○	○	○	—
ST25 to ST29	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
ST30	Motor/load side position difference	—	—	○	—	—	—	○	○	○	○	—
ST31	Motor/load side speed difference	—	—	○	—	—	—	○	○	○	○	—
ST32	Encoder inside temperature	—	○	○	○	○	—	○	○	○	○	○
ST33	Settling time	—	○	○	○	○	—	○	○	○	○	○
ST34	Oscillation detection frequency	—	○	○	○	○	—	○	○	○	○	○
ST35	Number of tough drive operations	—	○	○	○	○	—	○	○	○	○	○
ST36 to ST39	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
ST40	Unit power consumption	—	○	○	○	○	—	○	○	○	○	○
ST41	Unit total power consumption	—	○	○	○	○	—	○	○	○	○	○
ST42	Position actual value	—	—	○	—	—	—	—	—	—	—	—
ST43	Command position	—	—	○	—	—	—	—	—	—	—	—
ST44	Command remaining distance	—	—	○	—	—	—	—	—	—	—	—
ST45	Point table No.	—	—	○	—	—	—	—	—	—	—	—

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
ST46 to ST48	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—

Extension setting No.2 parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

Use an appropriate device according to the write destination of the servo amplifier.

- PE1 to PE88: Writing data to the RAM of a servo amplifier
- PE1001 to PE1088: Writing data to the FlashROM or EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
PE1, PE1001	Fully closed loop function selection 1	**FCT1	○	○	—	—	—	○	○	○	○	—
PE2, PE1002	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PE3, PE1003	Fully closed loop function selection 2	*FCT2	○	○	—	—	—	○	○	○	○	—
PE4, PE1004	Fully closed loop ctrl. - F/B pls. elec. gear 1 nmrtr.	**FBN	○	○	—	—	—	○	○	○	○	—
PE5, PE1005	Fully closed loop ctrl. - F/B pls. elec. gear 1 dnmntr.	**FBD	○	○	—	—	—	○	○	○	○	—
PE6, PE1006	Fully closed loop ctrl. - Spd. dev. err. detection level	BC1	○	○	—	—	—	○	○	○	○	—
PE7, PE1007	Fully closed loop ctrl. - Pos. dev. err. detection level	BC2	○	○	—	—	—	○	○	○	○	—
PE8, PE1008	Fully closed dual feedback filter	DUF	○	○	—	—	—	○	○	○	○	—
PE9, PE1009	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PE10, PE1010	Fully closed loop function selection 3	FCT3	○	○	—	—	—	○	○	○	○	—
PE11 to PE33, PE1011 to PE1033	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PE34, PE1034	Fully closed loop control - Feedback pulse electronic gear 2 - Numerator	**FBN2	○	○	—	—	—	○	—	—	—	—
PE35, PE1035	Fully closed loop control - Feedback pulse electronic gear 2 - Denominator	**FBD2	○	○	—	—	—	○	—	—	—	—
PE36 to PE40, PE1036 to PE1040	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PE41, PE1041	Function selection E-3	EOP3	○	○	○	○	○	○	○	○	○	○
PE42 to PE43, PE1042 to PE1043	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PE44, PE1044	Lost motion positive side compensation value sel.	LMCP	○	○	○	○	○	○	○	○	○	○
PE45, PE1045	Lost motion negative side compensation value sel.	LMCN	○	○	○	○	○	○	○	○	○	○
PE46, PE1046	Lost motion filter setting	LMFLT	○	○	○	○	○	○	○	○	○	○
PE47, PE1047	Torque offset	TOF	○	○	○	○	○	○	○	○	○	○

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
PE48, PE1048	Lost motion compensation function selection	*LMOP	○	○	○	○	○	○	○	○	○	○
PE49, PE1049	Lost motion compensation timing	LMCD	○	○	○	○	○	○	○	○	○	○
PE50, PE1050	Lost motion compensation dead zone	LMCT	○	○	○	○	○	○	○	○	○	○
PE51, PE1051	Load-side encoder resolution setting	**EDV2	—	—	—	—	—	—	○	○	○	—
PE52, PE1052	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PE53, PE1053	Maximum torque limit 1	TLMX1	—	—	—	—	—	○	○	○	—	○
PE54 to PE64, PE1054 to PE1064	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PE65, PE1065	Collision detection friction torque	TRUB	—	—	—	—	—	—	—	○	—	—
PE66, PE1066	Collision detection viscosity friction torque	VFTQ	—	—	—	—	—	—	—	○	—	—
PE67, PE1067	Collision detection restoration torque	CLTQ	—	—	—	—	—	—	—	○	—	—
PE68, PE1068	Tandem control function selection	**TANC	—	—	—	—	—	—	—	○	—	—
PE69, PE1069	Tandem control function setting	*TCOP	—	—	—	—	—	—	—	○	—	—
PE70, PE1070	Interaxial torque deviation permissible level	TTRQ	—	—	—	—	—	—	—	○	—	—
PE71, PE1071	Interaxial speed deviation permissible level	TPOSI	—	—	—	—	—	—	—	○	—	—
PE72 to PE88, PE1072 to PE1088	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—

Extension setting No.3 parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

Use an appropriate device according to the write destination of the servo amplifier.

- PF1 to PF99: Writing data to the RAM of a servo amplifier
- PF1001 to PF1099: Writing data to the FlashROM or EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
PF1, PF1001	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PF2, PF1002	Function selection F-2	*FOP2	○	—	—	—	—	○	○	○	○	○
PF3 to PF5, PF1003 to PF1005	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PF6, PF1006	Function selection F-5	*FOP5	○	○	○	○	○	○	○	○	○	○
PF7 to PF11, PF1007 to PF1011	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PF12, PF1012	Electronic dynamic brake operating time	DBT	○	○	○	○	○	○	○	○	○	○
PF13 to PF17, PF1013 to PF1017	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PF18, PF1018	STO diagnostic error detection time	**STOD	—	○	—	—	○	○	○	○	○	—
PF19, PF1019	Friction failure prediction compen. coefficient 1	TSL	—	○	—	—	—	○	○	○	○	—
PF20, PF1020	Friction failure prediction compen. coefficient 2	TIC	—	○	—	—	—	○	○	○	○	—
PF21, PF1021	Drive recorder switching time setting	DRT	○	○	○	○	○	○	○	○	○	○
PF22, PF1022	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PF23, PF1023	Vibration tough drive - Oscillation detection level	OSCL1	○	○	○	○	○	○	○	○	○	○
PF24, PF1024	Vibration tough drive function selection	*OSCL2	○	○	○	○	○	○	○	○	○	—
	Function selection F-9	*FOP9	—	—	—	—	—	—	—	—	—	○
PF25, PF1025	SEMI-F47 function - Instantaneous power failure detection time	CVAT	○	○	○	○	○	—	—	—	—	—
	SEMI-F47 Inst pwr.fail.det.t. (Inst pwr.fail.tuf.drv.)		—	—	—	—	—	○	○	○	○	○
PF26 to PF28, PF1026 to PF1028	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PF29, PF1029	Function selection F-10	*FOP10	—	—	—	—	—	—	○	○	—	—
PF30, PF1030	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
PF31, PF1031	Machine diagnosis func. - Friction judgment speed(	FRIC	○	○	○	○	○	○	○	○	○	○
PF32, PF1032	Oscillation detection alarm time	*VIBT	—	—	—	—	—	○	○	○	—	○
PF33, PF1033	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PF34, PF1034	Machine diagnosis function selection	*MFP	—	○	—	—	—	○	○	○	○	○
PF35 to PF39, PF1035 to PF1039	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PF40, PF1040	Machine failure prediction parameter	MFPP	—	○	—	—	—	○	○	○	○	—
PF41, PF1041	Trouble prediction motor total move distance	FPMT	—	○	—	—	—	—	—	—	—	—
	Failure prediction - Servo motor total move distance		—	—	—	—	—	○	○	○	○	—
PF42, PF1042	Friction failure prediction average characteristic	PAV	—	○	—	—	—	○	○	○	○	—
PF43, PF1043	Friction failure prediction standard deviation	PSD	—	○	—	—	—	○	○	○	○	—
PF44, PF1044	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PF45, PF1045	Vibration failure prediction average characteristic	VAV	—	○	—	—	—	○	○	○	○	—
PF46, PF1046	Vibration failure prediction standard deviation	VSC	—	○	—	—	—	—	—	—	—	—
		VSD	—	—	—	—	—	○	○	○	○	—
PF47, PF1047	Servo motor total move distance offset	TMO	—	—	—	—	—	○	○	○	○	—
PF48 to PF65, PF1048 to PF1065	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PF66, PF1066	Gear ratio setting for backlash estimation	BLG	—	—	—	—	—	○	○	○	○	—
PF67, PF1067	Backlash nominal value	BLN	—	—	—	—	—	○	○	○	○	—
PF68, PF1068	Backlash threshold magnification	BLTT	—	—	—	—	—	○	○	○	○	—
PF69, PF1069	Static friction failure prediction avg. characteristic	SPAV2	—	—	—	—	—	○	○	○	○	—
PF70, PF1070	Static friction failure prediction standard deviation	SPSD2	—	—	—	—	—	○	○	○	○	—
PF71, PF1071	Belt failure prediction function selection	BFP	—	—	—	—	—	○	○	○	○	—
PF72, PF1072	Belt tension at installation	SBT	—	—	—	—	—	○	○	○	○	—
PF73, PF1073	Belt tension at extension	ABT	—	—	—	—	—	○	○	○	○	—
PF74, PF1074	Static friction at installation	SSF	—	—	—	—	—	○	○	○	○	—
PF75, PF1075	Static friction at extension	ASF	—	—	—	—	—	○	○	○	○	—
PF76, PF1076	Belt tension error threshold	BTS	—	—	—	—	—	○	○	○	○	—

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
PF77 to PF78, PF1077 to PF1078	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PF79, PF1079	Event history setting	EVS	—	—	—	—	—	—	—	○	○	—
PF80, PF1080	Drive recorder Operation condition selection	DRMC	—	—	—	—	—	○	○	○	○	○
PF81, PF1081	Drive recorder Sampling operation selection	DRMS	—	—	—	—	—	○	○	○	○	○
PF82, PF1082	Drive recorder Trigger operation selection	DRTM	—	—	—	—	—	○	○	○	○	○
PF83, PF1083	Drive recorder Trigger operation axis common sel.	**DRTAX	—	—	—	—	—	○	○	○	○	—
PF84, PF1084	Drive recorder Trigger channel selection	DRTC	—	—	—	—	—	○	○	○	○	○
PF85, PF1085	Drive recorder Trigger level setting 1	DRTL1	—	—	—	—	—	○	○	○	○	○
PF86, PF1086	Drive recorder Trigger level setting 2	DRTL2	—	—	—	—	—	○	○	○	○	○
PF87, PF1087	Drive recorder Analog channel setting 1	DRAC1	—	—	—	—	—	○	○	○	○	○
PF88, PF1088	Drive recorder Analog channel setting 2	DRAC2	—	—	—	—	—	○	○	○	○	○
PF89, PF1089	Drive recorder Analog channel setting 3	DRAC3	—	—	—	—	—	○	○	○	○	○
PF90, PF1090	Drive recorder Analog channel setting 4	DRAC4	—	—	—	—	—	○	○	○	○	○
PF91, PF1091	Drive recorder Digital channel setting 1	DRDC1	—	—	—	—	—	○	○	○	○	○
PF92, PF1092	Drive recorder Digital channel setting 2	DRDC2	—	—	—	—	—	○	○	○	○	○
PF93, PF1093	Drive recorder Digital channel setting 3	DRDC3	—	—	—	—	—	○	○	○	○	○
PF94, PF1094	Drive recorder Digital channel setting 4	DRDC4	—	—	—	—	—	○	○	○	○	○
PF95, PF1095	Drive recorder History clear	**DRCLR	—	—	—	—	—	○	○	○	○	○
PF96 to PF99, PF1096 to PF1099	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—

Network basic parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

Set [Data Type] and [Format] as shown below for the objects for which this device is set.

- [Data Type]: [Unsigned BIN32]
- [Format]: [Hexadecimal]

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
NPA1	IP address setting	—	—	—	—	—	—	○	○	—	—	○
NPA2	IP address	—	—	—	—	—	—	○	○	—	—	○
NPA3	Use prohibited	—	—	—	—	—	—	—	—	—	—	—
NPA4	Subnet mask	—	—	—	—	—	—	○	○	—	—	○
NPA5	Use prohibited	—	—	—	—	—	—	—	—	—	—	—
NPA6	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
NPA7	Use prohibited	—	—	—	—	—	—	—	—	—	—	—
NPA8	Host name	—	—	—	—	—	—	○	○	—	—	○
NPA9 to NPA11	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
NPA12	Communication speed	—	—	—	—	—	—	—	○	—	—	—
NPA2001 to NPA2032	Host name expansion area	—	—	—	—	—	—	○	○	—	—	○

Extension setting No.4 parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

Use an appropriate device according to the write destination of the servo amplifier.

- PW1 to PW99: Writing data to the RAM of a servo amplifier
- PW1001 to PW1099: Writing data to the FlashROM or EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
PW1, PW1001	Pressure control gain	APA	—	—	—	—	—	—	—	—	○	—
PW2, PW1002	Pressure integral compensation	AIA	—	—	—	—	—	—	—	—	○	—
PW3, PW1003	Pressure incomplete integral coefficient	ADA	—	—	—	—	—	—	—	—	○	—
PW4 to PW11, PW1004 to PW1011	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PW12, PW1012	Function selection W-1	*WOP1	—	—	—	—	—	—	—	—	○	—
PW13, PW1013	Function selection W-2	*WOP2	—	—	—	—	—	—	—	—	○	—
PW14 to PW19, PW1014 to PW1019	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PW20, PW1020	Pressure control feedback selection	**LDS	—	—	—	—	—	—	—	—	○	—
PW21, PW1021	Pressure control feedback offset	AFBO	—	—	—	—	—	—	—	—	○	—
PW22, PW1022	Pressure control feedback unit constant	AFBD	—	—	—	—	—	—	—	—	○	—
PW23, PW1023	Analog monitor input 1 offset	AO1	—	—	—	—	—	—	—	—	○	—
PW24, PW1024	Analog monitor input 1 unit constant	AD1	—	—	—	—	—	—	—	—	○	—
PW25, PW1025	Analog monitor input 2 offset	AO2	—	—	—	—	—	—	—	—	○	—
PW26, PW1026	Analog monitor input 2 unit constant	AD2	—	—	—	—	—	—	—	—	○	—
PW27, PW1027	Analog monitor input filter setting	ADF	—	—	—	—	—	—	—	—	○	—
PW28 to PW32, PW1028 to PW1032	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PW33, PW1033	Pressure control moving average filter setting	*MAF	—	—	—	—	—	—	—	—	○	—
PW34, PW1034	Function selection W-5	*WOP5	—	—	—	—	—	—	—	—	○	—
PW35, PW1035	Pressure model control gain	AMPA	—	—	—	—	—	—	—	—	○	—
PW36, PW1036	Pressure model control coefficient	AMCEF	—	—	—	—	—	—	—	—	○	—

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
PW37 to PW40, PW1037 to PW1040	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—

Alarm [MELSEC iQ-R, RnMT/NC/RT, CR800-D])

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
ALM0	Current alarm number	—	○	○	○	○	○	○	○	○	○	○
ALM1	Detailed data of current alarms	—	○	○	○	○	○	○	○	○	○	○
ALM2[*1]	Currently occurring alarm number and detail number	—	—	—	—	—	—	○	○	○	○	○
ALM11	Servo status(alarm) Cumulative feedback pulses	—	○	○	○	○	○	○	○	○	○	○
ALM12	Servo status(alarm) Servo motor speed	—	○	○	○	○	○	○	○	○	○	○
ALM13	Servo status(alarm) Droop pulses	—	○	○	○	○	○	○	○	○	○	○
ALM14	Servo status(alarm) Cumulative command pulses	—	○	○	○	○	○	○	○	○	○	○
ALM15	Servo status(alarm) Command pulse frequency	—	○	○	○	○	○	○	○	○	○	○
ALM16 to ALM17	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
ALM18	Servo status(alarm) Regenerative load ratio	—	○	○	○	○	○	○	○	○	○	○
ALM19	Servo status(alarm) Effective load ratio	—	○	○	○	○	○	○	○	○	○	○
ALM20	Servo status(alarm) Peak load ratio	—	○	○	○	○	○	○	○	○	○	○
ALM21	Servo status(alarm) Instantaneous torque	—	○	○	○	○	○	—	—	—	—	—
	Servo status(alarm) Torque/ Instantaneous torque		—	—	—	—	—	○	○	○	○	○
ALM22	Servo status(alarm) Position within one-revolution	—	○	○	○	○	○	○	○	○	○	○
ALM23	Servo status(alarm) ABS counter	—	○	○	○	○	○	○	○	○	○	○
ALM24	Servo status(alarm) Load to motor inertia ratio	—	○	○	○	○	○	○	○	○	○	○
ALM25	Servo status(alarm) Bus voltage	—	○	○	○	○	○	○	○	○	○	○
ALM26	Servo status(alarm) Load-side cumulative feedback pulses	—	○	○	○	○	○	○	○	○	○	—
ALM27	Servo status(alarm) Load-side droop pulses	—	—	○	—	—	—	○	○	○	○	—
ALM28	Servo status(alarm) Load-side encoder information 1	—	○	○	○	○	○	○	○	○	○	—
ALM29	Servo status(alarm) Load-side encoder information 2	—	○	○	○	○	○	○	○	○	○	—
ALM30	Servo status(alarm) Analog monitor output voltage 1	—	○	○	○	○	○	—	—	—	—	—
ALM31	Servo status(alarm) Analog monitor output voltage 2	—	○	○	○	○	○	—	—	—	—	—
ALM32	Servo status(alarm) AB phase output pulse F/B integrated value	—	○	○	○	○	○	—	—	—	—	—
ALM33	Servo status(alarm) Temperature of servo motor thermistor	—	○	○	○	○	○	○	○	○	○	○

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
ALM34	Servo status(alarm) Servo motor-side cumulative feedback pulses (before gear)	—	○	○	○	○	○	—	—	—	—	—
	Servo status(alarm) Cumulative feedback pulses (Motor unit)		—	—	—	—	—	○	○	○	○	○
ALM35	Servo status(alarm) Electrical angle	—	○	○	○	○	○	○	○	○	○	—
ALM36 to ALM40	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
ALM41	Servo status(alarm) Motor/load side position difference	—	—	○	—	—	—	○	○	○	○	—
ALM42	Servo status(alarm) Motor/load side speed difference	—	—	○	—	—	—	○	○	○	○	—
ALM43	Servo status(alarm) Encoder inside temperature	—	○	—	○	○	○	—	—	—	—	—
	Servo status(alarm) Encoder inside temperature	—	—	○	—	—	—	○	○	○	○	○
ALM44	Servo status(alarm) Settling time	—	○	—	○	○	○	—	—	—	—	—
	Servo status(alarm) Settling time	—	—	○	—	—	—	○	○	○	○	○
ALM45	Servo status(alarm) Oscillation detection frequency	—	○	—	○	○	○	—	—	—	—	—
	Servo status(alarm) Oscillation detection frequency	—	—	○	—	—	—	○	○	○	○	○
ALM46	Servo status(alarm) Number of tough drive operations	—	○	—	○	○	○	—	—	—	—	—
	Servo status(alarm) Number of tough drive operations	—	—	○	—	—	—	○	○	○	○	○
ALM47 to ALM50	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
ALM51	Servo status(alarm) Unit power consumption	—	○	○	○	○	○	○	○	○	○	○
ALM52	Servo status(alarm) Unit total power consumption	—	○	○	○	○	○	○	○	○	○	○
ALM53	Servo status(alarm) Position actual value	—	—	○	—	—	—	—	—	—	—	—
ALM54	Servo status(alarm) Command position	—	—	○	—	—	—	—	—	—	—	—
ALM55	Servo status(alarm) Command remaining distance	—	—	○	—	—	—	—	—	—	—	—
ALM56	Servo status(alarm) Point table No.	—	—	○	—	—	—	—	—	—	—	—
ALM57 to AL59	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
ALM200	Alarm number from Alarm History most recent alarm	—	○	○	○	○	○	○	○	○	○	○
ALM201	Alarm number from Alarm History 1st alarm in past	—	○	○	○	○	○	○	○	○	○	○
ALM202	Alarm number from Alarm History 2nd alarm in past	—	○	○	○	○	○	○	○	○	○	○
ALM203	Alarm number from Alarm History 3rd alarm in past	—	○	○	○	○	○	○	○	○	○	○
ALM204	Alarm number from Alarm History 4th alarm in past	—	○	○	○	○	○	○	○	○	○	○
ALM205	Alarm number from Alarm History 5th alarm in past	—	○	○	○	○	○	○	○	○	○	○
ALM206	Alarm number from Alarm History 6th alarm in past	—	○	○	○	○	○	○	○	○	○	○

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
ALM207	Alarm number from Alarm History 7th alarm in past	—	○	○	○	○	○	○	○	○	○	○
ALM208	Alarm number from Alarm History 8th alarm in past	—	○	○	○	○	○	○	○	○	○	○
ALM209	Alarm number from Alarm History 9th alarm in past	—	○	○	○	○	○	○	○	○	○	○
ALM210	Alarm number from Alarm History 10th alarm in past	—	○	○	○	○	○	○	○	○	○	○
ALM211	Alarm number from Alarm History 11th alarm in past	—	○	○	○	○	○	○	○	○	○	○
ALM212	Alarm number from Alarm History 12th alarm in past	—	○	○	○	○	○	○	○	○	○	○
ALM213	Alarm number from Alarm History 13th alarm in past	—	○	○	○	○	○	○	○	○	○	○
ALM214	Alarm number from Alarm History 14th alarm in past	—	○	○	○	○	○	○	○	○	○	○
ALM215	Alarm number from Alarm History 15th alarm in past	—	○	○	○	○	○	○	○	○	○	○
ALM220	Alarm occurrence time in alarm history most recent alarm	—	○	○	○	○	○	—	—	—	—	—
	Alarm occurrence time (cumulative power-on time) in alarm history: most recent alarm	—	—	—	—	—	—	○	○	○	○	○
ALM221	Alarm occurrence time in alarm history 1st alarm in past	—	○	○	○	○	○	—	—	—	—	—
	Alarm occurrence time (cumulative power-on time) in alarm history: 1st alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM222	Alarm occurrence time in alarm history 2nd alarm in past	—	○	○	○	○	○	—	—	—	—	—
	Alarm occurrence time (cumulative power-on time) in alarm history: 2nd alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM223	Alarm occurrence time in alarm history 3rd alarm in past	—	○	○	○	○	○	—	—	—	—	—
	Alarm occurrence time (cumulative power-on time) in alarm history: 3rd alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM224	Alarm occurrence time in alarm history 4th alarm in past	—	○	○	○	○	○	—	—	—	—	—
	Alarm occurrence time (cumulative power-on time) in alarm history: 4th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM225	Alarm occurrence time in alarm history 5th alarm in past	—	○	○	○	○	○	—	—	—	—	—
	Alarm occurrence time (cumulative power-on time) in alarm history: 5th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM226	Alarm occurrence time in alarm history 6th alarm in past	—	○	○	○	○	○	—	—	—	—	—
	Alarm occurrence time (cumulative power-on time) in alarm history: 6th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM227	Alarm occurrence time in alarm history 7th alarm in past	—	○	○	○	○	○	—	—	—	—	—
	Alarm occurrence time (cumulative power-on time) in alarm history: 7th alarm in past	—	—	—	—	—	—	○	○	○	○	○

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
ALM228	Alarm occurrence time in alarm history 8th alarm in past	—	○	○	○	○	○	—	—	—	—	—
	Alarm occurrence time (cumulative power-on time) in alarm history: 8th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM229	Alarm occurrence time in alarm history 9th alarm in past	—	○	○	○	○	○	—	—	—	—	—
	Alarm occurrence time (cumulative power-on time) in alarm history: 9th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM230	Alarm occurrence time in alarm history 10th alarm in past	—	○	○	○	○	○	—	—	—	—	—
	Alarm occurrence time (cumulative power-on time) in alarm history: 10th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM231	Alarm occurrence time in alarm history 11th alarm in past	—	○	○	○	○	○	—	—	—	—	—
	Alarm occurrence time (cumulative power-on time) in alarm history: 11th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM232	Alarm occurrence time in alarm history 12th alarm in past	—	○	○	○	○	○	—	—	—	—	—
	Alarm occurrence time (cumulative power-on time) in alarm history: 12th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM233	Alarm occurrence time in alarm history 13th alarm in past	—	○	○	○	○	○	—	—	—	—	—
	Alarm occurrence time (cumulative power-on time) in alarm history: 13th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM234	Alarm occurrence time in alarm history 14th alarm in past	—	○	○	○	○	○	—	—	—	—	—
	Alarm occurrence time (cumulative power-on time) in alarm history: 14th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM235	Alarm occurrence time in alarm history 15th alarm in past	—	○	○	○	○	○	—	—	—	—	—
	Alarm occurrence time (cumulative power-on time) in alarm history: 15th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM240	Detailed alarm from Alarm History most recent alarm	—	○	○	○	○	○	—	—	—	—	—
	Alarm detail number in alarm history: most recent alarm	—	—	—	—	—	—	○	○	○	○	○
ALM241	Detailed alarm from Alarm History 1st alarm in past	—	○	○	○	○	○	—	—	—	—	—
	Alarm detail number in alarm history: 1st alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM242	Detailed alarm from Alarm History 2nd alarm in past	—	○	○	○	○	○	—	—	—	—	—
	Alarm detail number in alarm history: 2nd alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM243	Detailed alarm from Alarm History 3rd alarm in past	—	○	○	○	○	○	—	—	—	—	—
	Alarm detail number in alarm history: 3rd alarm in past	—	—	—	—	—	—	○	○	○	○	○

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
ALM244	Detailed alarm from Alarm History 4th alarm in past	—	○	○	○	○	○	—	—	—	—	—
	Alarm detail number in alarm history: 4th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM245	Detailed alarm from Alarm History 5th alarm in past	—	○	○	○	○	○	—	—	—	—	—
	Alarm detail number in alarm history: 5th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM246	Detailed alarm from Alarm History 6th alarm in past	—	○	○	○	○	○	—	—	—	—	—
	Alarm detail number in alarm history: 6th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM247	Detailed alarm from Alarm History 7th alarm in past	—	○	○	○	○	○	—	—	—	—	—
	Alarm detail number in alarm history: 7th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM248	Detailed alarm from Alarm History 8th alarm in past	—	○	○	○	○	○	—	—	—	—	—
	Alarm detail number in alarm history: 8th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM249	Detailed alarm from Alarm History 9th alarm in past	—	○	○	○	○	○	—	—	—	—	—
	Alarm detail number in alarm history: 9th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM250	Detailed alarm from Alarm History 10th alarm in past	—	○	○	○	○	○	—	—	—	—	—
	Alarm detail number in alarm history: 10th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM251	Detailed alarm from Alarm History 11th alarm in past	—	○	○	○	○	○	—	—	—	—	—
	Alarm detail number in alarm history: 11th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM252	Detailed alarm from Alarm History 12th alarm in past	—	○	○	○	○	○	—	—	—	—	—
	Alarm detail number in alarm history: 12th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM253	Detailed alarm from Alarm History 13th alarm in past	—	○	○	○	○	○	—	—	—	—	—
	Alarm detail number in alarm history: 13th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM254	Detailed alarm from Alarm History 14th alarm in past	—	○	○	○	○	○	—	—	—	—	—
	Alarm detail number in alarm history: 14th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM255	Detailed alarm from Alarm History 15th alarm in past	—	○	○	○	○	○	—	—	—	—	—
	Alarm detail number in alarm history: 15th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM260	Alarm occurrence time (year, month) in alarm history: most recent alarm	—	—	—	—	—	—	○	○	○	○	○
ALM261	Alarm occurrence time (year, month) in alarm history: 1st alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM262	Alarm occurrence time (year, month) in alarm history: 2nd alarm in past	—	—	—	—	—	—	○	○	○	○	○

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
ALM263	Alarm occurrence time (year, month) in alarm history: 3rd alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM264	Alarm occurrence time (year, month) in alarm history: 4th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM265	Alarm occurrence time (year, month) in alarm history: 5th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM266	Alarm occurrence time (year, month) in alarm history: 6th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM267	Alarm occurrence time (year, month) in alarm history: 7th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM268	Alarm occurrence time (year, month) in alarm history: 8th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM269	Alarm occurrence time (year, month) in alarm history: 9th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM270	Alarm occurrence time (year, month) in alarm history: 10th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM271	Alarm occurrence time (year, month) in alarm history: 11th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM272	Alarm occurrence time (year, month) in alarm history: 12th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM273	Alarm occurrence time (year, month) in alarm history: 13th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM274	Alarm occurrence time (year, month) in alarm history: 14th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM275	Alarm occurrence time (year, month) in alarm history: 15th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM280	Alarm occurrence time (date, hour) in alarm history: most recent alarm	—	—	—	—	—	—	○	○	○	○	○
ALM281	Alarm occurrence time (date, hour) in alarm history: 1st alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM282	Alarm occurrence time (date, hour) in alarm history: 2nd alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM283	Alarm occurrence time (date, hour) in alarm history: 3rd alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM284	Alarm occurrence time (date, hour) in alarm history: 4th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM285	Alarm occurrence time (date, hour) in alarm history: 5th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM286	Alarm occurrence time (date, hour) in alarm history: 6th alarm in past	—	—	—	—	—	—	○	○	○	○	○

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
ALM287	Alarm occurrence time (date, hour) in alarm history: 7th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM288	Alarm occurrence time (date, hour) in alarm history: 8th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM289	Alarm occurrence time (date, hour) in alarm history: 9th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM290	Alarm occurrence time (date, hour) in alarm history: 10th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM291	Alarm occurrence time (date, hour) in alarm history: 11th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM292	Alarm occurrence time (date, hour) in alarm history: 12th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM293	Alarm occurrence time (date, hour) in alarm history: 13th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM294	Alarm occurrence time (date, hour) in alarm history: 14th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM295	Alarm occurrence time (date, hour) in alarm history: 15th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM300	Alarm occurrence time (minute, second) in alarm history: most recent alarm	—	—	—	—	—	—	○	○	○	○	○
ALM301	Alarm occurrence time (minute, second) in alarm history: 1st alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM302	Alarm occurrence time (minute, second) in alarm history: 2nd alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM303	Alarm occurrence time (minute, second) in alarm history: 3rd alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM304	Alarm occurrence time (minute, second) in alarm history: 4th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM305	Alarm occurrence time (minute, second) in alarm history: 5th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM306	Alarm occurrence time (minute, second) in alarm history: 6th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM307	Alarm occurrence time (minute, second) in alarm history: 7th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM308	Alarm occurrence time (minute, second) in alarm history: 8th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM309	Alarm occurrence time (minute, second) in alarm history: 9th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM310	Alarm occurrence time (minute, second) in alarm history: 10th alarm in past	—	—	—	—	—	—	○	○	○	○	○

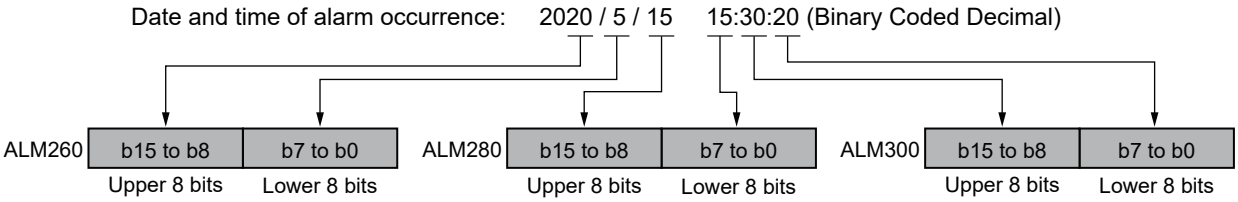
Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
ALM311	Alarm occurrence time (minute, second) in alarm history: 11th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM312	Alarm occurrence time (minute, second) in alarm history: 12th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM313	Alarm occurrence time (minute, second) in alarm history: 13th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM314	Alarm occurrence time (minute, second) in alarm history: 14th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM315	Alarm occurrence time (minute, second) in alarm history: 15th alarm in past	—	—	—	—	—	—	○	○	○	○	○

*1 Set [Data Type] and [Format] as shown below for the objects for which this device is set.
[Data Type]: [Unsigned BIN32]
[Format]: [Hexadecimal]

Specifications of ALM260 to ALM275, ALM280 to ALM295, and ALM300 to ALM315 ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

The date and time of alarm occurrence are stored in BCD code in the upper eight bits and lower eight bits of each device.
The time zone setting of the controller is applied to the date and time to be acquired.

Ex.
When the date and time of the most recent alarm occurrence is 15:30:20 May 15, 2020



In either of the following cases, 0 is stored.

- When the date and time of alarm occurrence are those of 1999 or earlier
- When the controller is MR-J5(W)-B(-RJ) or MR-J5-B-LL

Point table (position) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

Use an appropriate device according to the write destination of the servo amplifier.

- POS1 to POS255: Writing data to the RAM of a servo amplifier
- POS1001 to POS1255: Writing data to the FlashROM or EEPROM of a servo amplifier

○: Available
—: Not available

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
POS1 to POS255, POS1001 to POS1255	Point table/position data No. 1 to No. 255	—	—	○	—	—	—	○	○	—	—	○

Point table (speed) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

Use an appropriate device according to the write destination of the servo amplifier.

- SPD1 to SPD255: Writing data to the RAM of a servo amplifier
- SPD1001 to SPD1255: Writing data to the FlashROM or EEPROM of a servo amplifier

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
SPD1 to SPD255, SPD1001 to SPD1255	Point table/speed data No. 1 to No. 255	—	—	○	—	—	—	○	○	—	—	○

Point table (acceleration time constant) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

Use an appropriate device according to the write destination of the servo amplifier.

- ACT1 to ACT255: Writing data to the RAM of a servo amplifier
- ACT1001 to ACT1255: Writing data to the FlashROM or EEPROM of a servo amplifier

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
ACT1 to ACT255, ACT1001 to ACT1255	Point table/acceleration time constant No. 1 to No. 255	—	—	○	—	—	—	○	○	—	—	○

Point table (deceleration time constant) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

Use an appropriate device according to the write destination of the servo amplifier.

- DCT1 to DCT255: Writing data to the RAM of a servo amplifier
- DCT1001 to DCT1255: Writing data to the FlashROM or EEPROM of a servo amplifier

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
DCT1 to DCT255, DCT1001 to DCT1255	Point table/deceleration time constant No. 1 to No. 255	—	—	○	—	—	—	○	○	—	—	○

Point table (dwell) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

Use an appropriate device according to the write destination of the servo amplifier.

- DWL1 to DWL255: Writing data to the RAM of a servo amplifier
- DWL1001 to DWL1255: Writing data to the FlashROM or EEPROM of a servo amplifier

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
DWL1 to DWL255, DWL1001 to DWL1255	Point table/dwell No. 1 to No. 255	—	—	○	—	—	—	○	○	—	—	○

Point table (auxiliary function) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

Use an appropriate device according to the write destination of the servo amplifier.

- AUX1 to AUX255: Writing data to the RAM of a servo amplifier
- AUX1001 to AUX1255: Writing data to the FlashROM or EEPROM of a servo amplifier

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
AUX1 to AUX255, AUX1001 to AUX1255	Point table/auxiliary function No. 1 to No. 255	—	—	○	—	—	—	○	○	—	—	○

Point table (M code) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

Use an appropriate device according to the write destination of the servo amplifier.

- MCD1 to MCD255: Writing data to the RAM of a servo amplifier
- MCD1001 to MCD1255: Writing data to the FlashROM or EEPROM of a servo amplifier

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
MCD1 to MCD255, MCD1001 to MCD1255	Point table/M code No. 1 to No. 255	—	—	—	—	—	—	○	○	—	—	○

Machine diagnosis data ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
MD0	Machine diagnosis data, station number	—	○	○	○	○	○	○	○	○	○	○
MD1	Machine diagnosis data shift judgment (test mode)	—	○	○	○	○	○	○	○	○	○	○
MD2[*1]	Machine diagnosis data status	—	○	○	○	○	○	○	○	○	○	○
MD3[*2]	Machine diagnosis data coulomb friction torque in positive direction	—	○	○	○	○	○	○	○	○	○	○
MD4[*2]	Machine diagnosis data friction torque at rated speed in positive direction	—	○	○	○	○	○	○	○	○	○	○
MD5[*2]	Machine diagnosis data coulomb friction torque in negative direction	—	○	○	○	○	○	○	○	○	○	○
MD6[*2]	Machine diagnosis data friction torque at rated speed in negative direction	—	○	○	○	○	○	○	○	○	○	○
MD7[*2]	Machine diagnosis data oscillation frequency (motor is stopped)	—	○	○	○	○	○	○	○	○	○	○
MD8[*2]	Machine diagnosis data vibration level (motor is stopped)	—	○	○	○	○	○	○	○	○	○	○
MD9[*2]	Machine diagnosis data oscillation frequency (motor is operating)	—	○	○	○	○	○	○	○	○	○	○
MD10[*2]	Machine diagnosis data vibration level (motor is operating)	—	○	○	○	○	○	○	○	○	○	○
MD11	Machine diagnosis data, rated speed at forward or reverse rotation torque	—	—	○	—	—	—	○	○	○	○	○
MD12	Machine diagnosis data friction based fault prediction prepare status	—	—	○	—	—	—	—	—	—	—	—
	Machine diagnosis data: friction failure prediction - threshold creation progress		—	—	—	—	—	○	○	○	○	○[*3]
MD13	Machine diagnosis data vibration based fault prediction prepare status	—	—	○	—	—	—	—	—	—	—	—
	Machine diagnosis data: vibration failure prediction - threshold creation progress		—	—	—	—	—	○	○	○	○	○[*3]
MD14	Machine diagnosis data motor total move distance	—	—	○	—	—	—	○	○	○	○	○[*3]
MD15	Machine diagnosis data, friction failure prediction, upper threshold at forward rotation torque, lower threshold at reverse rotation torque	—	—	○	—	—	—	○	○	○	○	○[*3]
MD16	Machine diagnosis data, friction failure prediction, lower threshold at forward rotation torque, upper threshold at reverse rotation torque	—	—	○	—	—	—	○	○	○	○	○[*3]

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
MD17	Machine diagnosis data vibration level threshold	—	—	○	—	—	—	—	—	—	—	—
	Machine diagnosis data: vibration failure prediction - threshold acquisition		—	—	—	—	—	○	○	○	○	○*3
MD18	Machine diagnosis data trouble prediction status	—	—	○	—	—	—	○	○	○	○	○*3
MD19	Machine diagnosis data: Belt tension estimation value	—	—	—	—	—	—	○	○	○	○	○*3
MD20	Machine diagnosis data: static friction used in failure prediction	—	—	—	—	—	—	○	○	○	○	○*3
MD21	Machine diagnosis data: Belt tension threshold estimation	—	—	—	—	—	—	○	○	○	○	○*3

*1 While the servo amplifier is estimating the corresponding machine status in the machine diagnosis, do not write data to the parameters of the servo amplifier from another GOT.
Doing so may cause the servo amplifier to malfunction.

*2 When MD2 indicates that the servo amplifier does not complete the machine diagnosis (is estimating or warning of the machine status), do not monitor MD3 to MD6 (friction states) and MD7 to MD10 (vibration/oscillation states).
To start monitoring those devices upon the estimation completion, set [Trigger] in the applicable object settings.

*3 The commands assigned to MD12 to MD21 are not supported by MR-JET-G.
When the commands are used, the read values will be indefinite.

Gear failure diagnosis data ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
GFDS0	Backlash estimation (threshold)	—	—	—	—	—	—	○	○	○	○	—
GFDS1	Backlash estimation (estimation value)	—	—	—	—	—	—	○	○	○	○	—
GFDS2	Backlash estimation (estimation progress)	—	—	—	—	—	—	○	○	○	○	—
GFDS3	Backlash estimation (status)	—	—	—	—	—	—	○	○	○	○	—
GFDS4	Backlash error number	—	—	—	—	—	—	○	○	○	○	—
GFDS5	Backlash estimation move distance	—	—	—	—	—	—	○	○	○	○	—

Encoder communication circuit diagnosis data ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
ECCDS0	CN2 encoder communication circuit diagnosis possibility	—	—	—	—	—	—	○	○	○	○	○
ECCDS1	CN2L encoder communication circuit diagnosis possibility	—	—	—	—	—	—	○	○	○	○	○
ECCDS2	CN2 encoder communication circuit diagnosis status	—	—	—	—	—	—	○	○	○	○	○

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
ECCDS3	CN2L encoder communication circuit diagnosis status	—	—	—	—	—	—	○	○	○	○	○
ECCDS4	CN2 encoder communication circuit diagnosis result	—	—	—	—	—	—	○	○	○	○	○
ECCDS5	CN2L encoder communication circuit diagnosis result	—	—	—	—	—	—	○	○	○	○	○

One-touch tuning data ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
OTS0	One-touch tuning status confirmation	—	○	○	○	○	○	○	○	○	○	○
OTS1	Error code list	—	○	○	○	○	○	○	○	○	○	○
OTS2	Setting time	—	○	○	○	○	○	○	○	○	○	○
OTS3	Overshoot amount	—	○	○	○	○	○	○	○	○	○	○
OTS4	One-touch tuning command mode	—	—	—	—	—	—	○	○	○	○	○
OTS5	Load inertia moment ratio	—	—	—	—	—	—	○	○	○	○	○
OTS3000*1	Read/write permissible move distance	—	—	—	—	—	—	○	○	○	○	○

*1 Writing is not available when a negative value is set for the device value.

External input signal in MR-J5-G(-RJ) and MR-J5W□-G ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

Virtual device name	Name	Symbol	Data to be read from the servo amplifier
DI0	Input device statuses	—	The input device statuses corresponding to the setting values 0000 to 001F of the following are read. Pr. PF91_Drive recorder - Digital channel setting 1 (DRDC1)
DI1	Input device statuses	—	The input device statuses corresponding to the setting values 0020 to 003F of the following are read. Pr. PF91_Drive recorder - Digital channel setting 1 (DRDC1)
DI2	Input device statuses	—	The input device statuses corresponding to the setting values 0040 to 005F of the following are read. Pr. PF91_Drive recorder - Digital channel setting 1 (DRDC1)
DI3	External input pin statuses	—	The statuses of the listed input devices are assigned to the bits in order from bit 0 and read. For details on the input devices, refer to the following. MR-J5 User's Manual (Hardware)
DI4	Statuses of input devices switched on through communication	—	The statuses of the input devices switched on through communication (input device statuses corresponding to the setting values 0000 to 001F of the following) are read. Pr. PF91_Drive recorder - Digital channel setting 1 (DRDC1)
DI5	Statuses of input devices switched on through communication	—	The statuses of input devices switched on through communication (input device statuses corresponding to the setting values 0020 to 003F of the following) are read. Pr. PF91_Drive recorder - Digital channel setting 1 (DRDC1)
DI6	Statuses of input devices switched on through communication	—	The statuses of the input devices switched on through communication (input device statuses corresponding to the setting values 0040 to 005F of the following) are read. Pr. PF91_Drive recorder - Digital channel setting 1 (DRDC1)

External input signal in MR-J5D□-G ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

Virtual device name	Name	Symbol	Data to be read from the servo amplifier
DI0	Input device statuses	—	The input device statuses corresponding to the setting values 0000 to 001F of the following are read. Pr. PF91_Drive recorder - Digital channel setting 1 (DRDC1)
DI1	Input device statuses	—	The input device statuses corresponding to the setting values 0020 to 003F of the following are read. Pr. PF91_Drive recorder - Digital channel setting 1 (DRDC1)
DI2	Input device statuses	—	The input device statuses corresponding to the setting values 0040 to 005F of the following are read. Pr. PF91_Drive recorder - Digital channel setting 1 (DRDC1)
DI3	External input pin statuses	—	The statuses of the listed input devices are assigned to the bits in order from bit 0 and read. For details on the input devices, refer to the following. MR-J5 User's Manual (Hardware)
DI4	Statuses of input devices switched on through communication	—	The statuses of the input devices switched on through communication (input device statuses corresponding to the setting values 0000 to 001F of the following) are read. Pr. PF91_Drive recorder - Digital channel setting 1 (DRDC1)
DI5	Statuses of input devices switched on through communication	—	The statuses of input devices switched on through communication (input device statuses corresponding to the setting values 0020 to 003F of the following) are read. Pr. PF91_Drive recorder - Digital channel setting 1 (DRDC1)
DI6	Statuses of input devices switched on through communication	—	The statuses of the input devices switched on through communication (input device statuses corresponding to the setting values 0040 to 005F of the following) are read. Pr. PF91_Drive recorder - Digital channel setting 1 (DRDC1)

External input signal in MR-J5(W)-□B(-RJ) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

Virtual device name	Name	Symbol	Data to be read from the servo amplifier
DI0	Input device statuses	—	The input device statuses corresponding to the setting values 0000 to 001F of the following are read. Pr. PF91_Drive recorder - Digital channel setting 1 (DRDC1)
DI1	Input device statuses	—	The input device statuses corresponding to the setting values 0020 to 003F of the following are read. Pr. PF91_Drive recorder - Digital channel setting 1 (DRDC1)
DI2	Input device statuses	—	The input device statuses corresponding to the setting values 0040 to 005F of the following are read. Pr. PF91_Drive recorder - Digital channel setting 1 (DRDC1)
DI3	External input pin statuses	—	The statuses of the listed input devices are assigned to the bits in order from bit 0 and read. For details on the input devices, refer to the following. MR-J5 User's Manual (Hardware)
DI4	Statuses of input devices switched on through communication	—	The statuses of the input devices switched on through communication (input device statuses corresponding to the setting values 0000 to 001F of the following) are read. Pr. PF91_Drive recorder - Digital channel setting 1 (DRDC1)
DI5	Statuses of input devices switched on through communication	—	The statuses of input devices switched on through communication (input device statuses corresponding to the setting values 0020 to 003F of the following) are read. Pr. PF91_Drive recorder - Digital channel setting 1 (DRDC1)
DI6	Statuses of input devices switched on through communication	—	The statuses of the input devices switched on through communication (input device statuses corresponding to the setting values 0040 to 005F of the following) are read. Pr. PF91_Drive recorder - Digital channel setting 1 (DRDC1)

External input signal in MR-JET-G ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

Virtual device name	Name	Symbol
DI0	Input device statuses	—
DI1	Input device statuses	—
DI2	Input device statuses	—
DI3	External input pin statuses	—
DI4	Statuses of input devices switched on through communication	—
DI5	Statuses of input devices switched on through communication	—
DI6	Statuses of input devices switched on through communication	—

External input signal in MR-JE-B and MR-JE-BF ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

Virtual device name	Name	Symbol	Data to be read from the servo amplifier
DI0	Input device statuses	—	System information
DI1	Input device statuses	—	System information
DI2	Input device statuses	—	System information
DI3	External input pin statuses	—	The statuses of the listed input devices are assigned to the bits in order from bit 0 and read. For details on the input devices, refer to the following. 📖MR-JE-_B Servo Amplifier Instruction Manual
DI4	Statuses of input devices switched on through communication	—	System information
DI5	Statuses of input devices switched on through communication	—	System information
DI6	Statuses of input devices switched on through communication	—	System information

External input signal in MR-J4-GF(-RJ) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

Virtual device name	Name	Symbol	Data to be read from the servo amplifier
DI0	Input device statuses	—	System information
DI1	Input device statuses	—	System information
DI2	Input device statuses	—	System information
DI3	External input pin statuses	—	The statuses of the listed input devices are assigned to the bits in order from bit 0 and read. For details on the input devices, refer to the following. 📖MR-J4-_GF_(-RJ) Servo Amplifier Instruction Manual (Motion Mode)
DI4	Statuses of input devices switched on through communication	—	System information
DI5	Statuses of input devices switched on through communication	—	System information
DI6	Statuses of input devices switched on through communication	—	System information

External input signal in MR-J4(W)-□B-RJ ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

Virtual device name	Name	Symbol	Data to be read from the servo amplifier
DI0	Input device statuses	—	System information
DI1	Input device statuses	—	System information
DI3	External input pin statuses	—	The statuses of the listed input devices are assigned to the bits in order from bit 0 and read. For details on the input devices, refer to the following. 📖MR-J4-_B_(-RJ) Servo Amplifier Instruction Manual
DI4	Statuses of input devices switched on through communication	—	System information
DI5	Statuses of input devices switched on through communication	—	System information

External output signal in MR-J5-G(-RJ) and MR-J5W□-G ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

Virtual device name	Name	Symbol	Data to be read from the servo amplifier
DO0	Output device statuses	—	The output device statuses corresponding to the setting values 8000 to 801F of the following are read. Pr. PF91_Drive recorder - Digital channel setting 1 (DRDC1)
DO1	Output device statuses	—	The output device statuses corresponding to the setting values 8020 to 803F of the following are read. Pr. PF91_Drive recorder - Digital channel setting 1 (DRDC1)
DO2	Output device statuses	—	The output device statuses corresponding to the setting values 8040 to 805F of the following are read. Pr. PF91_Drive recorder - Digital channel setting 1 (DRDC1)
DO4	External output pin statuses	—	The statuses of the listed output devices are assigned to the bits in order from bit 0 and read. For details on the output devices, refer to the following. MR-J5 User's Manual (Hardware)

External output signal in MR-J5D□-G ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

Virtual device name	Name	Symbol	Data to be read from the servo amplifier
DO0	Output device statuses	—	The output device statuses corresponding to the setting values 8000 to 801F of the following are read. Pr. PF91_Drive recorder - Digital channel setting 1 (DRDC1)
DO1	Output device statuses	—	The output device statuses corresponding to the setting values 8020 to 803F of the following are read. Pr. PF91_Drive recorder - Digital channel setting 1 (DRDC1)
DO2	Output device statuses	—	The output device statuses corresponding to the setting values 8040 to 805F of the following are read. Pr. PF91_Drive recorder - Digital channel setting 1 (DRDC1)
DO4	External output pin statuses	—	The statuses of the listed output devices are assigned to the bits in order from bit 0 and read. For details on the output devices, refer to the following. MR-J5 User's Manual (Hardware)

External output signal in MR-J5(W)-□B(-RJ) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

Virtual device name	Name	Symbol	Data to be read from the servo amplifier
DO0	Output device statuses	—	The output device statuses corresponding to the setting values 8000 to 801F of the following are read. Pr. PF91_Drive recorder - Digital channel setting 1 (DRDC1)
DO1	Output device statuses	—	The output device statuses corresponding to the setting values 8020 to 803F of the following are read. Pr. PF91_Drive recorder - Digital channel setting 1 (DRDC1)
DO2	Output device statuses	—	The output device statuses corresponding to the setting values 8040 to 805F of the following are read. Pr. PF91_Drive recorder - Digital channel setting 1 (DRDC1)
DO4	External output pin statuses	—	The statuses of the listed output devices are assigned to the bits in order from bit 0 and read. For details on the output devices, refer to the following. MR-J5 User's Manual (Hardware)

External output signal in MR-JET-G ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

Virtual device name	Name	Symbol
DO0	Output device statuses	—
DO1	Output device statuses	—
DO2	Output device statuses	—
DO4	External output pin statuses	—

External output signal in MR-JE-B and MR-JE-BF ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

Virtual device name	Name	Symbol	Data to be read from the servo amplifier
DO0	Output device statuses	—	System information
DO1	Output device statuses	—	System information
DO2	Output device statuses	—	System information
DO4	External output pin statuses	—	The statuses of the listed output devices are assigned to the bits in order from bit 0 and read. For details on the output devices, refer to the following. MR-JE-_B Servo Amplifier Instruction Manual

External output signal in MR-J4-GF(-RJ) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

Virtual device name	Name	Symbol	Data to be read from the servo amplifier
DO0	Output device statuses	—	System information
DO1	Output device statuses	—	System information
DO2	Output device statuses	—	System information
DO4	External output pin statuses	—	The statuses of the listed output devices are assigned to the bits in order from bit 0 and read. For details on the output devices, refer to the following. MR-J4-_GF_(-RJ) Servo Amplifier Instruction Manual (Motion Mode)

External output signal in MR-J4(W)-□B-RJ ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

Virtual device name	Name	Symbol	Data to be read from the servo amplifier
DO0	Output device statuses	—	System information
DO1	Output device statuses	—	System information
DO4	External output pin statuses	—	The statuses of the listed output devices are assigned to the bits in order from bit 0 and read. For details on the output devices, refer to the following. MR-J4-_B_(-RJ) Servo Amplifier Instruction Manual

Life Diagnosis ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
ALD0	Cumulative power-on time	—	○	○	○	○	○	○	○	○	○	○
ALD1	Number of inrush current switching times	—	○	○	○	○	○	○	○	○	○	○

Input signal for test operation (for test operation) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
TMI0	Input signal for test operation 1	—	○	○	○	○	○	○	○	○	○	○
TMI1	Input signal for test operation 2	—	○	○	○	○	○	○	○	○	○	○
TMI2	Input signal for test operation 3	—	—	—	—	—	—	—	—	—	—	—

When using the input signal for test operation (for test operation), note the following.

Precautions	Description
Writing a value to a virtual device using an object	Numerical input cannot be used. Use a word switch for writing.

Forced output of signal pin (for test operation) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
TMO0	Forced output of signal pin	—	○	○	○	○	○	○	○	○	○	○

When using the forced output of signal pin (for test operation), note the following.

Precautions	Description
Writing a value to a virtual device using an object	Numerical input cannot be used. Use a word switch for writing.

Set data (for test operation) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
TMD0	Writes the speed (test mode)	—	○	○	○	○	○	—	—	—	—	—
	Motor speed		—	—	—	—	—	○	○	○	○	○
TMD1	Writes the acceleration/deceleration time constant (test mode)	—	○	○	○	○	○	—	—	—	—	—
	Write acceleration/deceleration time constant		—	—	—	—	—	○	○	○	○	○
TMD3	Writes the moving distance (test mode)	—	○	○	○	○	○	—	—	—	—	—
	Move distance		—	—	—	—	—	○	○	○	○	○

When using the set data (for test operation), note the following.

Precautions	Description
Writing a value to a virtual device using an object	Numerical input cannot be used. Use a word switch for writing.

97.3.11 Precautions for virtual servo amplifier devices ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

When handling real numbers for virtual servo amplifier devices

For the servo amplifier, if a real number is written to a virtual device, only the integer portion of the number is stored into the device.

Ex.

When 12.34 is entered with the numerical input on the GOT, the value is written as 1234 to the device of the servo amplifier.

If the data type of the virtual servo amplifier device is set to [Real], the value after the writing may differ from the one before the writing.

Additionally, the monitoring process may take a longer time.

Therefore, select one of the following items as the data type of the virtual device.

- Signed 16-bit binary data
- Unsigned 16-bit binary data
- Signed 32-bit binary data
- Unsigned 32-bit binary data

When you use the value of the virtual servo amplifier device, remember that only the integer portion of the value is stored in the device.

To display a real number on the numerical display or numerical input object, set [Format] to [Real] and select [Adjust Decimal Point Range] in the object setting.

Data type and format settings for using virtual servo amplifier devices

To specify virtual servo amplifier devices in the object setting or other settings, the data type and format must be set according to the notation of the values handled by the virtual devices.

For notation of the virtual device values, refer to the following.

Instruction manual for the servo amplifier used

MR Configurator2 Help

When real numbers are stored in virtual devices, set the data type as shown below instead of setting [Real].

The following shows a setting example for using virtual servo amplifier devices for an object.

Ex.

When using a numerical display

Notation of the virtual device values	Setting
Decimal number (positive values only)	• [Data Type]: [Unsigned BIN16] ([Unsigned BIN32] for 65536 or more) • [Format]: [Unsigned Decimal]
Decimal number (positive and negative values)	• [Data Type]: [Signed BIN16] ([Signed BIN32] for -32769 or less, and 32768 or more) • [Format]: [Signed Decimal]
Hexadecimal number	• [Data Type]: [Unsigned BIN16] ([Unsigned BIN32] for 0x10000 or more) • [Format]: [Hexadecimal]
Decimal point notation (positive values only)	• [Data Type]: [Unsigned BIN16] ([Unsigned BIN32] as necessary) • [Format]: [Real] • [Digits (Integral)]: Set the number of digits in the integral portion. • [Digits (Fractional)]: Set the number of digits in the fractional portion. • [Adjust Decimal Point Range]: Selected
Decimal point notation (positive and negative values)	• [Data Type]: [Signed BIN16] ([Signed BIN32] as necessary) • [Format]: [Real] • [Digits (Integral)]: Set the number of digits in the integral portion. • [Digits (Fractional)]: Set the number of digits in the fractional portion. • [Adjust Decimal Point Range]: Selected
When the notation varies by digit	• [Data Type]: [Unsigned BIN16] ([Unsigned BIN32] for 0x10000 or more) • [Format]: [Hexadecimal] • On the [Operation/Script] tab, select [Data Operation] for [Operation Type], and set [Bit Mask] or [Bit Shift].

Specifying consecutive virtual servo amplifier devices

The GOT does not support writing/reading data to/from consecutive virtual servo amplifier devices.

97.3.12 Virtual inverter devices ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

The following shows the correspondence between the virtual devices used in the GOT and the inverter data.

Virtual device name	Reference
IOST	☞ Page 3243 I/O terminal monitor ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
CMD	☞ Page 3245 Operation command ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
	☞ Page 3246 Operation when turning on/off one of the CMD3 to CMD12 devices ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
	☞ Page 3246 Operation when turning on/off one of the CMD48 to CMD52 devices (MELSEC iQ-R, RnMT/NC/RT, CR800-D])
AL	☞ Page 3247 Alarm history ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
LPr	☞ Page 3249 Parameter (32-bit) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
OP	☞ Page 3249 Operation parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PV	☞ Page 3250 Current value monitor ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

The lists of virtual devices shown in this section explain the FR-A800 Plus series and FR-E800 series models using the following abbreviations.

Series	Abbreviation	Model
FR-A800 Plus series	CRN	FR-A8□0-CRN FR-A8□2-CRN FR-A8□0-E-CRN FR-A8□2-E-CRN
	R2R	FR-A8□0-R2R FR-A8□2-R2R FR-A8□0-E-R2R FR-A8□2-E-R2R
	AWH	FR-A8□0-AWH FR-A8□0-E-AWH
	LC	FR-A8□0-LC FR-A8□0-E-LC
FR-E800 series	E800	FR-E8□0
	E	FR-E8□0-E
FR-D800 series	D800	FR-D8□0
	E	FR-D8□0-E

I/O terminal monitor ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

○: Available

—: Not available

Virtual device name	Name	FR-A800 series FR-A800 Plus series FR-F800 series	FR-E800 series		FR-D800 series		FR-E700 series
			E800	E	D800	E	FR-E7□0-NE
IOST1	Input terminal STF	○*1	○*1	○*1	○*1	○*1	○*1
IOST2	Input terminal STR	○*1	○*1	○*1	○*1	○*1	○*1
IOST3	Input terminal RL	○*1	○*1	—	○*1	○*1	○*1
IOST4	Input terminal RM	○*1	○*1	—	○*1	○*1	○*1
IOST5	Input terminal RH	○*1	○*1	—	○*1	○*1	○*1
IOST6	Input terminal RT	○*1	—	—	—	—	—
IOST7	Input terminal AU	○*1	—	—	—	—	—
IOST8	Input terminal JOG	○*1	—	—	—	—	—
IOST9	Input terminal CS	○*1	—	—	—	—	—
IOST10	Input terminal MRS	○*1	○*1	—	—	—	○*1
IOST11	Input terminal STOP	○*1	—	—	—	—	—
IOST12	Input terminal RES	○*1	○*1	—	—	—	○*1
IOST32	Output terminal RUN	○*1	○*1	—	○*1	○*1	○*1
IOST33	Output terminal SU	○*1	—	—	—	—	—

Virtual device name	Name	FR-A800 series FR-A800 Plus series FR-F800 series	FR-E800 series		FR-D800 series		FR-E700 series
			E800	E	D800	E	FR-E7□0-NE
IOST34	Output terminal IPF	○*1	—	—	—	—	—
IOST35	Output terminal OL	○*1	—	—	—	—	—
IOST36	Output terminal FU	○*1	○*1	—	○*1	—	○*1
IOST37	Output terminal ABC1	○*1	○*1	○*1	○*1	○*1	○*1
IOST38	Output terminal ABC2	○*1	—	—	—	—	—
IOST39	Output terminal SO	○	—	—	—	—	—
IOST48	NET Y1 output	—	○*1*2	○*1*2	○*1	○*1	—
IOST49	NET Y2 output	—	○*1*2	○*1*2	○*1	○*1	—
IOST50	NET Y3 output	—	○*1*2	○*1*2	○*1	○*1	—
IOST51	NET Y4 output	—	○*1*2	○*1*2	○*1	○*1	—
IOST64	Option input terminal X0	○	○	○	—	—	—
IOST65	Option input terminal X1	○	○	○	—	—	—
IOST66	Option input terminal X2	○	○	○	—	—	—
IOST67	Option input terminal X3	○	○	○	—	—	—
IOST68	Option input terminal X4	○	○	○	—	—	—
IOST69	Option input terminal X5	○	○	○	—	—	—
IOST70	Option input terminal X6	○	○	○	—	—	—
IOST71	Option input terminal X7	○	○	○	—	—	—
IOST72	Option input terminal X8	○	○	○	—	—	—
IOST73	Option input terminal X9	○	○	○	—	—	—
IOST74	Option input terminal X10	○	○	○	—	—	—
IOST75	Option input terminal X11	○	○	○	—	—	—
IOST76	Option input terminal X12	○	○	○	—	—	—
IOST77	Option input terminal X13	○	○	○	—	—	—
IOST78	Option input terminal X14	○	○	○	—	—	—
IOST79	Option input terminal X15	○	○	○	—	—	—
IOST80	Option input terminal DY	○	○	○	—	—	—
IOST96	Option output terminal Y0/DO0	○*1	○*1	○*1	—	—	—
IOST97	Option output terminal Y1/DO1	○*1	○*1	○*1	—	—	—
IOST98	Option output terminal Y2/DO2	○*1	○*1	○*1	—	—	—
IOST99	Option output terminal Y3/DO3	○*1	○*1	○*1	—	—	—
IOST100	Option output terminal Y4/DO4	○*1	○*1	○*1	—	—	—
IOST101	Option output terminal Y5/DO5	○*1	○*1	○*1	—	—	—
IOST102	Option output terminal Y6/DO6	○*1	○*1	○*1	—	—	—
IOST103	Option output terminal RA1	○*1	○*1	○*1	—	—	—
IOST104	Option output terminal RA2	○*1	○*1	○*1	—	—	—
IOST105	Option output terminal RA3	○*1	○*1	○*1	—	—	—

*1 The monitor data can be changed by the settings of Pr.180 to Pr.189 (input terminal function selection) or Pr.190 to Pr.196 or Pr.313 to Pr.322 (output terminal function selection).
For the relationship between the parameters and terminals, refer to the following.
Manual of the inverter used

*2 Use an inverter having SERIAL (serial number) "□□211○○○○○○" or later.
SERIAL (serial number) is provided on the rating plate of the inverter.

Operation command ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

○: Available

—: Not available

Virtual device name	Name	FR-A800 series FR-A800 Plus series FR-F800 series	FR-E800 series	FR-F800 series	FR-E700 series FR-E7□0-NE
CMD0	Stop command	○	○	○	○
CMD1	Forward rotation command	○	○	○	○
CMD2	Reverse rotation command	○	○	○	○
CMD3*1	RL terminal	○*2	○*2	○*2	○*2
CMD4*1	RM terminal	○*2	○*2	○*2	○*2
CMD5*1	RH terminal	○*2	○*2	○*2	○*2
CMD6*1	RT terminal	○*2	—	—	○
CMD7*1	AU terminal	○*2	—	—	○
CMD8*1	JOG terminal	○*2*3	—	—	—
CMD9*1	CS terminal	○*2*3	—	—	—
CMD10*1	MRS terminal	○*2	○*2	—	○*2
CMD11*1	STOP terminal	○*2*3	—	—	—
CMD12*1	RES terminal	○*2*3	○*2*3	—	○*2
CMD16	Alarm history clear	○	○	○	○
CMD24	Inverter reset	○	○	○	○
CMD32	Parameter clear	○	○	○	○
CMD33	Parameter clear (communication parameters are not cleared)	○	○	○	○
CMD34	All parameter clear	○	○	○	○
CMD35	All parameter clear (communication parameters are not cleared)	○	○	○	○
CMD48	NET X1 input	—	○*2*3*4	○*2*3	—
CMD49	NET X2 input	—	○*2*3*4	○*2*3	—
CMD50	NET X3 input	—	○*2*3*4	○*2*3	—
CMD51	NET X4 input	—	○*2*3*4	○*2*3	—
CMD52	NET X5 input	—	○*2*3*4	○*2*3	—

*1 When the GOT is connected to the PU connector and the operation mode is set to the PU operation mode, the device cannot be used.

*2 The monitor data can be changed by the settings of Pr.178 to Pr.189 (input terminal function selection).
For the relationship between the parameters and terminals, refer to the following.
📖Manual of the inverter used

*3 The device is invalid for the initial state of the inverter in which a function that cannot be controlled by the GOT is set or no function is set.
Change the relevant setting in Pr.178 to Pr.189 (input terminal function selection).

*4 Use an inverter having SERIAL (serial number) "□□211○○○○○○" or later.
SERIAL (serial number) is provided on the rating plate of the inverter.

When using the operation command, note the following.

Precautions	Description
When setting a device for a bit switch	Do not select [Alternate] for [Switch Action] of the bit switch.
Operation when a CMD device is turned on	☞ Page 3246 Operation when turning on/off one of the CMD3 to CMD12 devices ([MELSEC iQ-R, RnMT/NC/RT, CR800-D]) ☞ Page 3246 Operation when turning on/off one of the CMD48 to CMD52 devices (MELSEC iQ-R, RnMT/NC/RT, CR800-D])

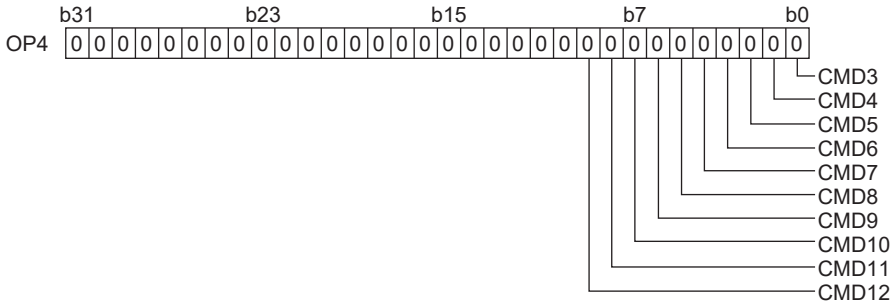
Operation when turning on/off one of the CMD3 to CMD12 devices ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

The CMD3 to CMD12 devices cannot be controlled simultaneously.

When you turn on/off one of the CMD3 to CMD12 devices, the rest of these devices are turned off.

Use OP4 to control multiple devices from CMD3 to CMD12 simultaneously.

The following shows the relationship between CMD3 to CMD12 and OP4.



Ex.

Turning on the CMD3 (RL terminal) and CMD12 (RES terminal) devices

For a hexadecimal value, write 0201.

For a decimal value, write 513.

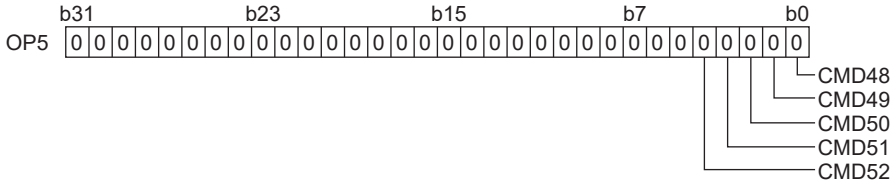
Operation when turning on/off one of the CMD48 to CMD52 devices (MELSEC iQ-R, RnMT/NC/RT, CR800-D])

The CMD48 to CMD52 devices cannot be controlled simultaneously.

When you turn on/off one of the CMD48 to CMD52 devices, the rest of these devices are turned off.

Use OP5 to control multiple devices from CMD48 to CMD52 simultaneously.

The following shows the relationship between CMD48 to CMD52 and OP5.



Ex.

Turning on the CMD48 (NET X1 input) and CMD52 (NET X5 input) devices

For a hexadecimal value, write 0011.

For a decimal value, write 17.

Alarm history ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

○: Available

—: Not available

Virtual device name	Name	FR-A800 series FR-A800 Plus series FR-F800 series	FR-E800 series	FR-D800 series	FR-E700 series FR-E7□0-NE
AL0	Current fault	○	○	○	○
AL1	Current warning 1	—	○	○	—
AL2	Current warning 2	—	○	○	—
AL100	Faults history 1 (symbol)	○	○	○	○
AL101	Faults history 1 (output frequency)	○	○	○	○
AL102	Faults history 1 (output current)	○	○	○	○
AL103	Faults history 1 (output voltage)	○	○	○	○
AL104	Faults history 1 (energization time)	○	○	○	○
AL105	Faults history 1 (year)	○	○	○	—
AL106	Faults history 1 (month)	○	○	○	—
AL107	Faults history 1 (day)	○	○	○	—
AL108	Faults history 1 (hour)	○	○	○	—
AL109	Faults history 1 (minute)	○	○	○	—
AL200	Faults history 2 (symbol)	○	○	○	○
AL201	Faults history 2 (output frequency)	○	○	○	○
AL202	Faults history 2 (output current)	○	○	○	○
AL203	Faults history 2 (output voltage)	○	○	○	○
AL204	Faults history 2 (energization time)	○	○	○	○
AL205	Faults history 2 (year)	○	○	○	—
AL206	Faults history 2 (month)	○	○	○	—
AL207	Faults history 2 (day)	○	○	○	—
AL208	Faults history 2 (hour)	○	○	○	—
AL209	Faults history 2 (minute)	○	○	○	—
AL300	Faults history 3 (symbol)	○	○	○	○
AL301	Faults history 3 (output frequency)	○	○	○	○
AL302	Faults history 3 (output current)	○	○	○	○
AL303	Faults history 3 (output voltage)	○	○	○	○
AL304	Faults history 3 (energization time)	○	○	○	○
AL305	Faults history 3 (year)	○	○	○	—
AL306	Faults history 3 (month)	○	○	○	—
AL307	Faults history 3 (day)	○	○	○	—
AL308	Faults history 3 (hour)	○	○	○	—
AL309	Faults history 3 (minute)	○	○	○	—
AL400	Faults history 4 (symbol)	○	○	○	○
AL401	Faults history 4 (output frequency)	○	○	○	○
AL402	Faults history 4 (output current)	○	○	○	○
AL403	Faults history 4 (output voltage)	○	○	○	○
AL404	Faults history 4 (energization time)	○	○	○	○
AL405	Faults history 4 (year)	○	○	○	—
AL406	Faults history 4 (month)	○	○	○	—
AL407	Faults history 4 (day)	○	○	○	—
AL408	Faults history 4 (hour)	○	○	○	—
AL409	Faults history 4 (minute)	○	○	○	—
AL500	Faults history 5 (symbol)	○	○	○	○
AL501	Faults history 5 (output frequency)	○	○	○	○
AL502	Faults history 5 (output current)	○	○	○	○
AL503	Faults history 5 (output voltage)	○	○	○	○

Virtual device name	Name	FR-A800 series FR-A800 Plus series FR-F800 series	FR-E800 series	FR-D800 series	FR-E700 series FR-E7□0-NE
AL504	Faults history 5 (energization time)	○	○	○	○
AL505	Faults history 5 (year)	○	○	○	—
AL506	Faults history 5 (month)	○	○	○	—
AL507	Faults history 5 (day)	○	○	○	—
AL508	Faults history 5 (hour)	○	○	○	—
AL509	Faults history 5 (minute)	○	○	○	—
AL600	Faults history 6 (symbol)	○	○	○	○
AL601	Faults history 6 (output frequency)	○	○	○	○
AL602	Faults history 6 (output current)	○	○	○	○
AL603	Faults history 6 (output voltage)	○	○	○	○
AL604	Faults history 6 (energization time)	○	○	○	○
AL605	Faults history 6 (year)	○	○	○	—
AL606	Faults history 6 (month)	○	○	○	—
AL607	Faults history 6 (day)	○	○	○	—
AL608	Faults history 6 (hour)	○	○	○	—
AL609	Faults history 6 (minute)	○	○	○	—
AL700	Faults history 7 (symbol)	○	○	○	○
AL701	Faults history 7 (output frequency)	○	○	○	○
AL702	Faults history 7 (output current)	○	○	○	○
AL703	Faults history 7 (output voltage)	○	○	○	○
AL704	Faults history 7 (energization time)	○	○	○	○
AL705	Faults history 7 (year)	○	○	○	—
AL706	Faults history 7 (month)	○	○	○	—
AL707	Faults history 7 (day)	○	○	○	—
AL708	Faults history 7 (hour)	○	○	○	—
AL709	Faults history 7 (minute)	○	○	○	—
AL800	Faults history 8 (symbol)	○	○	○	○
AL801	Faults history 8 (output frequency)	○	○	○	○
AL802	Faults history 8 (output current)	○	○	○	○
AL803	Faults history 8 (output voltage)	○	○	○	○
AL804	Faults history 8 (energization time)	○	○	○	○
AL805	Faults history 8 (year)	○	○	○	—
AL806	Faults history 8 (month)	○	○	○	—
AL807	Faults history 8 (day)	○	○	○	—
AL808	Faults history 8 (hour)	○	○	○	—
AL809	Faults history 8 (minute)	○	○	○	—

Parameter (32-bit) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

The virtual device numbers (LPr) used in the GOT correspond to the inverter parameter numbers.

For the inverter parameters, refer to the following.

Manual of the inverter used

When using a parameter (32-bit), note the following.

Precautions	Description
When setting 8888 or 9999 to a 32-bit parameter (LPr) of an inverter	Values 8888 and 9999 are used for particular purposes. From the GOT, if you set these numbers to a parameter that can accept a value with a fractional part, it is recommended to set the data type to [Real].

Operation parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

○: Available

—: Not available

Virtual device name		Name	FR-A800 series FR-A800 Plus series FR-F800 series	FR-E800 series	FR-D800 series	FR-E700 series FR-E7□0-NE
OP0		Operation frequency(RAM)	○	○	○	○
OP1		Operation frequency (EEPROM)	○	○	○	○
OP2		Operation mode	○	○	○	○
OP3		Operating status	○	○	○	○
OP4[*1*2*3]	—	Input terminal command	○	○	○	○
	b0	CMD3: RL terminal				
	b1	CMD4: RM terminal				
	b2	CMD5: RH terminal				
	b3	CMD6: RT terminal				
	b4	CMD7: AU terminal				
	b5	CMD8: JOG terminal				
	b6	CMD9: CS terminal				
	b7	CMD10: MRS terminal				
	b8	CMD11: STOP terminal				
	b9	CMD12: RES terminal				
OP5[*2]	—	Input terminal command (extend)	—	○[*4]	○[*2*3]	—
	b0	CMD48: NET X1 input				
	b1	CMD49: NET X2 input				
	b2	CMD50: NET X3 input				
	b3	CMD51: NET X4 input				
	b4	CMD52: NET X5 input				

*1 When the GOT is connected to the PU connector and the operation mode is set to the PU operation mode, the device cannot be used.

*2 The monitor data can be changed by the settings of Pr.178 to Pr.189 (input terminal function selection).
For the relationship between the parameters and terminals, refer to the following.
Manual of the inverter used

*3 The device is invalid for the initial state of the inverter in which a function that cannot be controlled by the GOT is set or no function is set.
Change the relevant setting in Pr.178 to Pr.189 (input terminal function selection).

*4 Use an inverter having SERIAL (serial number) "□□211○○○○○○" or later.
SERIAL (serial number) is provided on the rating plate of the inverter.

Current value monitor ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

○: Available

—: Not available

Virtual device name	Name	FR-A800 series	FR-A800 Plus series				FR-F800 series	FR-E800 series	FR-D800 series	FR-E700 series
			CRN	R2R	AWH	LC				FR-E7□0-NE
PV1	Output frequency/speed	—	—	—	○	—	—	—	—	○
	Output frequency	○	○	○	—	○	○	○	○	—
PV2	Output current	○	○	○	○	○	○	○	○	○
PV3	Output voltage	○	○	○	○	○	○	○	○	○
PV5	Frequency setting value/speed setting	—	—	—	○	—	—	—	—	○
	Frequency setting value	○	○	○	—	○	○	○	○	—
PV6	Speed/machine speed	○	○	○	—	○	○	○	○	—
	Operation speed	—	—	—	○	—	—	—	—	—
PV7	Motor torque	○	○	○	○	○	○	○	○	○
PV8	Converter output voltage	○	○	○	○	○	○	○	○	○
PV9	Regenerative brake duty	○	○	○	○	○	—	○	○	○
PV10	Electronic thermal O/L relay load factor	○	○	○	○	○	○	○	○	○
PV11	Output current peak value	○	○	○	○	○	○	○	○	○
PV12	Converter output voltage peak value	○	○	○	○	○	○	○	○	○
PV13	Input power	○	○	○	○	○	○	—	○	—
PV14	Output power	○	○	○	○	○	○	○	○	○
PV17	Load meter	○	○	○	○	○	○	○	○	—
PV18	Motor excitation current	○	○	○	○	○	○	○	○	—
PV19	Position pulse	○	○	—	—	○	—	—	—	—
	Analog output signal for dancer tension control	—	—	○	○	—	—	—	—	—
PV20	Cumulative energization time	○	○	○	○	○	○	○	○	○
PV22	Orientation status	○	○	—	—	○	—	—	—	—
	Winding diameter	—	—	○	○	—	—	—	—	—
PV23	Actual operation time	○	○	○	○	○	○	○	○	○
PV24	Motor load factor	○	○	○	○	○	○	○	○	○
PV25	Cumulative power	○	○	○	○	○	○	○	○	○
PV26	Line speed command	—	—	○	○	—	—	—	—	—
PV27	Actual line speed	—	—	○	○	—	—	—	—	—
PV28	Dancer compensation speed	—	—	○	○	—	—	—	—	—
PV29	Winding length (upper + lower)	—	—	—	○	—	—	—	—	—
PV30	Analog output signal 2 for dancer tension control	—	—	○	○	—	—	—	—	—
PV31	Line speed pulse monitor	—	—	○	○	—	—	—	—	—
PV32	Torque command	○	○	○	○	○	—	○	○	—
PV33	Torque current command	○	○	○	○	○	—	○	○	—
PV34	Motor output	○	○	○	○	○	○	—	—	—
PV35	Feedback pulse	○	○	○	○	○	—	—	—	—
PV36	Torque (positive polarity for driving torque/negative polarity for regenerative braking torque)	○	○	○	○	○	—	—	—	—
PV37	Heat sink temperature	—	—	—	—	—	—	—	○	—
PV38	Trace status	—	—	—	○	—	—	—	—	—
PV39	SSCNET III(/H) communication status	○	○	—	—	○	—	—	—	—
PV40	PLC function user monitor 1	○	○	○	○	○	○	○	—	—

Virtual device name	Name	FR-A800 series	FR-A800 Plus series				FR-F800 series	FR-E800 series	FR-D800 series	FR-E700 series
			CRN	R2R	AWH	LC				FR-E7□0-NE
PV41	PLC function user monitor 2	○	○	○	○	○	○	○	—	—
PV42	PLC function user monitor 3	○	○	○	○	○	○	○	—	—
PV43	Station number (RS-485 terminals)	—	—	—	○	—	—	—	—	—
PV44	Station number (PU)	—	—	—	○	—	—	—	—	—
PV45	Station number (CC-Link)	—	—	—	○	—	—	—	—	—
PV46	Motor temperature	○	○	○	○	○	—	—	—	—
PV50	Energy saving effect	○	○	○	○	○	○	○	—	—
	Power saving effect / Energy saving effect	—	—	—	—	—	—	—	○	—
PV51	Cumulative energy saving	○	○	○	○	○	○	○	—	—
	Cumulative saved energy / Cumulative energy saving	—	—	—	—	—	—	—	○	—
PV52	PID set point	○	○	○	○	○	○	○	○	○
PV53	PID measured value	○	○	○	○	○	○	○	○	○
PV54	PID deviation	○	○	○	○	○	○	○	○	○
PV61	Motor thermal load factor	○	○	○	○	○	○	○	○	○
PV62	Inverter thermal load factor	○	○	○	○	○	○	○	○	○
PV63	Cumulative power 2	—	—	—	—	—	—	—	—	○
	Winding length (upper)	—	—	—	○	—	—	—	—	—
PV64	PTC thermistor resistance	○	○	○	○	○	○	—	○	—
PV67	PID measured value 2	○	○	○	○	○	○	○	○	—
PV68	Emergency drive status	—	—	—	—	—	—	—	○	—
PV69	PID input pressure value	—	—	—	—	—	○	—	—	—
PV71	Cumulative pulse	○	○	○	○	○	—	—	—	—
PV72	Cumulative pulse overflow times	○	○	○	○	○	—	—	—	—
PV73	Cumulative pulse (control terminal option)	○	○	○	○	○	—	—	—	—
PV74	Cumulative pulse overflow times (control terminal option)	○	○	○	○	○	—	—	—	—
PV75	Multi-revolution counter	○	○	—	—	○	—	—	—	—
PV77	32-bit cumulative energy (lower 16 bits)	—	—	—	○	—	—	—	—	—
PV78	32-bit cumulative energy (upper 16 bits)	—	—	—	○	—	—	—	—	—
PV79	32-bit cumulative energy (lower 16 bits)	—	—	—	○	—	—	—	—	—
PV80	32-bit cumulative energy (upper 16 bits)	—	—	—	○	—	—	—	—	—
PV81	BACnet reception status	—	—	—	—	—	○	—	—	—
	Tension command after taper compensation	—	—	○	○	—	—	—	—	—
PV82	BACnet token pass counter	—	—	—	—	—	○	—	—	—
	Winding diameter compensation torque command	—	—	○	○	—	—	—	—	—
PV83	BACnet valid APDU counter	—	—	—	—	—	○	—	—	—
	Inertia compensation	—	—	○	○	—	—	—	—	—
PV84	BACnet communication error counter	—	—	—	—	—	○	—	—	—
	Mechanical loss compensation	—	—	○	○	—	—	—	—	—
PV85	BACnet terminal FM/CA output level	—	—	—	—	—	○	—	—	—
	Terminal 1 input voltage	—	—	○	○	—	—	—	—	—

Virtual device name	Name	FR-A800 series	FR-A800 Plus series				FR-F800 series	FR-E800 series	FR-D800 series	FR-E700 series
			CRN	R2R	AWH	LC				FR-E7□0-NE
PV86	BACnet terminal AM output level	—	—	—	—	—	○	—	—	—
	Terminal 1 input after calibration (%)	—	—	○	○	—	—	—	—	—
PV87	Remote output value 1	○	○	○	○	○	○	—	—	—
PV88	Remote output value 2	○	○	○	○	○	○	—	—	—
PV89	Remote output value 3	○	○	○	○	○	○	—	—	—
PV90	Remote output value 4	○	○	○	○	○	○	—	—	—
PV91	PID manipulated variable	○	○	○	○	○	○	○	○	—
PV92	Second PID set point	○	○	—	—	○	○	—	—	—
	PID torque control actual tension	—	—	○	—	—	—	—	—	—
PV93	Second PID measured value	○	○	—	—	○	○	—	—	—
	PID torque control manipulated tension	—	—	○	—	—	—	—	—	—
PV94	Second PID deviation	○	○	—	—	○	○	—	—	—
PV95	Second PID measured value 2	○	○	—	—	○	○	—	—	—
PV96	Second PID manipulated variable	○	○	—	—	○	○	—	—	—
PV97	Dancer main set speed (For FR-E800 and FR-D800, dancer main speed setting)	○	○	—	—	○	—	○	○	—
	Winding diameter compensation speed	—	—	○	○	—	—	—	—	—
PV98	Control circuit temperature	○	○	○	○	○	○	—	○	—

97.4 [MELSEC iQ-L]

GT37 SoftGOT3000

Item	Reference
Specifications of bit devices	☞ Page 3254 Monitoring-supported bit devices ([MELSEC iQ- L])
	☞ Page 3256 Setting virtual bit devices for servo amplifiers ([MELSEC iQ- L])
	☞ Page 3257 Availability of writing/reading data to/from bit devices ([MELSEC iQ- L])
Specifications of word devices	☞ Page 3258 Monitoring-supported word devices ([MELSEC iQ- L])
	☞ Page 3259 Setting virtual word devices for servo amplifiers ([MELSEC iQ- L])
	☞ Page 3261 Availability of writing/reading data to/from word devices ([MELSEC iQ- L])
Specifications of double-word devices	☞ Page 3262 Monitoring-supported double-word devices ([MELSEC iQ- L])
	☞ Page 3263 Setting virtual double-word devices for servo amplifiers ([MELSEC iQ- L])
	☞ Page 3264 Availability of writing/reading data to/from double-word devices ([MELSEC iQ- L])
Specifications of virtual servo amplifier devices	☞ Page 3264 Virtual servo amplifier devices ([MELSEC iQ- L])
	☞ Page 3264 Precautions for virtual servo amplifier devices ([MELSEC iQ- L])

97.4.1 Monitoring-supported bit devices ([MELSEC iQ-L])

The following table shows monitoring-supported bit devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3257 Availability of writing/reading data to/from bit devices ([MELSEC iQ- L])

○: Available

×: Not available

Device name		Device No. representation	Setting range	EG device specifications[*1]	
				Assignment to EG devices	Access using a client
X	Input relay	Hexadecimal	0000 to 2FFF	○	○
Y	Output relay	Hexadecimal	0000 to 2FFF	○	○
B	Link relay	Hexadecimal	000000 to D69FFF	○	○
M	Internal relay	Decimal	0 to 14065663	○	○
L	Latch relay	Decimal	0 to 32767	○	○
S[*3]	Step relay	Decimal	0 to 16383	×	×
F	Annunciator	Decimal	0 to 32767	○	○
TC	Timer coil	Decimal	0 to 781407	○	○ Not usable as word data
TT	Timer contact	Decimal	0 to 781407	○	○ Not usable as word data
CC	Counter coil	Decimal	0 to 781407	○	○ Not usable as word data
CT	Counter contact	Decimal	0 to 781407	○	○ Not usable as word data
SC	Retentive timer coil	Decimal	0 to 781407	○	○ Not usable as word data
SS	Retentive timer contact	Decimal	0 to 781407	○	○ Not usable as word data
SB	Link special relay	Hexadecimal	000000 to D69FFF	○	○
SM	Special relay	Decimal	0 to 4095	○	○
LTC	Long timer coil	Decimal	0 to 219775	○	○ Not usable as word data
LTT	Long timer contact	Decimal	0 to 219775	○	○ Not usable as word data
LCC	Long counter coil	Decimal	0 to 413695	○	○ Not usable as word data
LCT	Long counter contact	Decimal	0 to 413695	○	○ Not usable as word data
LSC	Long retentive timer coil	Decimal	0 to 219775	○	○ Not usable as word data
LSS	Long retentive timer contact	Decimal	0 to 219775	○	○ Not usable as word data

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
BL	SFC block	Decimal	0 to 319	×	×
BLS	Step relay (block)	Decimal	BL(SFC Block No.)-S(Device) Notation example: BL1-S3 • SFC Block No. (decimal): 0 to 319 • Device (decimal): 0 to 511	×	×
SP*2	Servo amplifier request	Decimal	☞ Page 3256 Setting virtual bit devices for servo amplifiers ([MELSEC iQ- L])	×	×
OM*2	Operation mode selection	Decimal	☞ Page 3256 Setting virtual bit devices for servo amplifiers ([MELSEC iQ- L])	×	×
TMB*2	Instruction demand (for test operation)	Decimal	☞ Page 3256 Setting virtual bit devices for servo amplifiers ([MELSEC iQ- L])	×	×
OTI*2	One-touch tuning instruction	Decimal	☞ Page 3256 Setting virtual bit devices for servo amplifiers ([MELSEC iQ- L])	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
☞ Page 2868 Monitoring a controller through the GOT (server/client function)

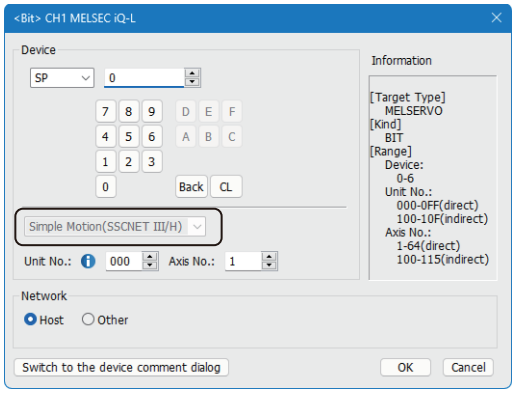
*2 Virtual servo amplifier device
For details, refer to the following.
☞ Page 3264 Virtual servo amplifier devices ([MELSEC iQ- L])

*3 If a bit-specified word device is used in the random read processing, GT Simulator3 uses the value of the bit device in block No. 0 only. The bit device status depends on the SFC program status (active or inactive). When the SFC program is inactive, the bit device is off (stores 0).
If a step relay (S) is used in the random read processing, specify the relevant step relay (block) (BLS).

97.4.2 Setting virtual bit devices for servo amplifiers ([MELSEC iQ- L])

For virtual servo amplifier devices, the notation differs according to the connection type between the GOT and the servo amplifier.

When [MELSEC iQ-L] is selected, the connection type is fixed as shown in the following table.



Item	Description
[Simple Motion(SSCNET III/H)]	Connection through a Simple Motion module • [Unit No.]: Set the first 2 digits of the 3-digit number that represents the start I/O number of the Simple Motion module. • [Axis No.]: Set the axis number to be monitored.

The following shows the notation and setting range of virtual devices.

Device name	Device notation and setting range		Notation example
SP	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-SP(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 6	UFF-A64-SP0
OM	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-OM(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 2, 4 to 5	UFF-A64-OM0
TMB	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-TMB(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 6	UFF-A64-TMB1
OTI	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-OTI(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5	UFF-A64-OTI0

For indirect specification of a module or axis number, refer to the following.

☞ Page 3171 Indirect specification of a module number ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

☞ Page 3172 Indirect specification of an axis number or axis designation ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

97.4.3 Availability of writing/reading data to/from bit devices ([MELSEC iQ- L])

The following shows the availability of writing/reading data to/from bit devices by device type.

When the device type is other than the bit type, set the device No. in multiples of 16.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type				
	Bit	Byte (8 bits)	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)
X	R/W	-/-	R/W	R/W	-/-
Y	R/W	-/-	R/W	R/W	-/-
B	R/W	-/-	R/W	R/W	-/-
M	R/W	-/-	R/W	R/W	-/-
L	R/W	-/-	R/W	R/W	-/-
S	R/-	-/-	R/-	R/-	-/-
F	R/W	-/-	R/W	R/W	-/-
TC	R/W	-/-	-/-	-/-	-/-
TT	R/W	-/-	-/-	-/-	-/-
CC	R/W	-/-	-/-	-/-	-/-
CT	R/W	-/-	-/-	-/-	-/-
SC	R/W	-/-	-/-	-/-	-/-
SS	R/W	-/-	-/-	-/-	-/-
SB	R/W	-/-	R/W	R/W	-/-
SM	R/W	-/-	R/W	R/W	-/-
LTC	R/W	-/-	-/-	-/-	-/-
LTT	R/W	-/-	-/-	-/-	-/-
LCC	R/W	-/-	-/-	-/-	-/-
LCT	R/W	-/-	-/-	-/-	-/-
LSC	R/W	-/-	-/-	-/-	-/-
LSS	R/W	-/-	-/-	-/-	-/-
BL	R/W	-/-	-/-	-/-	-/-
BLS	R/W	-/-	-/-	-/-	-/-
SP	-/W	-/-	-/-	-/-	-/-
OM	-/W	-/-	-/-	-/-	-/-
TMB	-/W	-/-	-/-	-/-	-/-
OTI	-/W	-/-	-/-	-/-	-/-

97.4.4 Monitoring-supported word devices ([MELSEC iQ-L])

The following table shows monitoring-supported word devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3261 Availability of writing/reading data to/from word devices ([MELSEC iQ- L])

○: Available

×: Not available

Device name		Device No. representation	Setting range	EG device specifications[*1]	
				Assignment to EG devices	Access using a client
TN	Timer current value	Decimal	0 to 781407	○	○
CN	Counter current value	Decimal	0 to 781407	○	○
SN	Retentive timer current value	Decimal	0 to 781407	○	○
D	Data register	Decimal	0 to 879103	○	○
SD	Special register	Decimal	0 to 4095	○	○
W	Link register	Hexadecimal	00000 to D69FF	○	○
SW	Link special register	Hexadecimal	00000 to D69FF	○	○
R	File register	Decimal	0 to 32767	○	○
ER	Extension file register(Block)	Decimal	ER (R block)-(Device) Notation example: ER255-100 • R block (decimal): 0 to 255 • Device (decimal): 0 to 32767	○	○
ZR	Extension file register	Decimal	0 to 819199	○	○
Z	Index register	Decimal	0 to 23	○	○ Not usable as bit data
G	Buffer memory (Intelligent function module)	Decimal	U(Unit No.)-G(Device) Notation example: UFF-G100 • Module No. (hexadecimal): 00 to FF • Device (decimal): 0 to 65535 For the module No., set the first 2 digits of the 3-digit number that represents the start I/O number of the buffer memory for the intelligent function module.	○	○
PA[*2]	Basic parameter	Decimal	☞ Page 3259 Setting virtual word devices for servo amplifiers ([MELSEC iQ- L])	×	×
PB[*2]	Gain filter parameter	Decimal	☞ Page 3259 Setting virtual word devices for servo amplifiers ([MELSEC iQ- L])	×	×
PC[*2]	Extension setting parameter	Decimal	☞ Page 3259 Setting virtual word devices for servo amplifiers ([MELSEC iQ- L])	×	×
PD[*2]	I/O setting parameter	Decimal	☞ Page 3259 Setting virtual word devices for servo amplifiers ([MELSEC iQ- L])	×	×
PL[*2]	Linear servo motor/DD motor setting parameter	Decimal	☞ Page 3259 Setting virtual word devices for servo amplifiers ([MELSEC iQ- L])	×	×
ST[*2]	Status display	Decimal	☞ Page 3259 Setting virtual word devices for servo amplifiers ([MELSEC iQ- L])	×	×
PE[*2]	Extension setting No.2 parameter	Decimal	☞ Page 3259 Setting virtual word devices for servo amplifiers ([MELSEC iQ- L])	×	×
PF[*2]	Extension setting No.3 parameter	Decimal	☞ Page 3259 Setting virtual word devices for servo amplifiers ([MELSEC iQ- L])	×	×
ALM[*2]	Alarm (current alarm J4A extend)	Decimal	☞ Page 3259 Setting virtual word devices for servo amplifiers ([MELSEC iQ- L])	×	×
ALM[*2]	Alarm (alarm history J4A extend)	Decimal	☞ Page 3259 Setting virtual word devices for servo amplifiers ([MELSEC iQ- L])	×	×
MD[*2]	Machine diagnosis data	Decimal	☞ Page 3259 Setting virtual word devices for servo amplifiers ([MELSEC iQ- L])	×	×

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
OTS*2	One-touch tuning data	Decimal	☞ Page 3259 Setting virtual word devices for servo amplifiers ([MELSEC iQ- L])	×	×
DI*2	External input signal	Decimal	☞ Page 3259 Setting virtual word devices for servo amplifiers ([MELSEC iQ- L])	×	×
DO*2	External output signal	Decimal	☞ Page 3259 Setting virtual word devices for servo amplifiers ([MELSEC iQ- L])	×	×
U3E0G	CPU buffer memory access device	Decimal	U3E0-G(Device) Notation example: U3E0-G100 • Device (decimal): 0 to 65535	○	○
RD	Refresh data register	Decimal	0 to 1048575	○	○

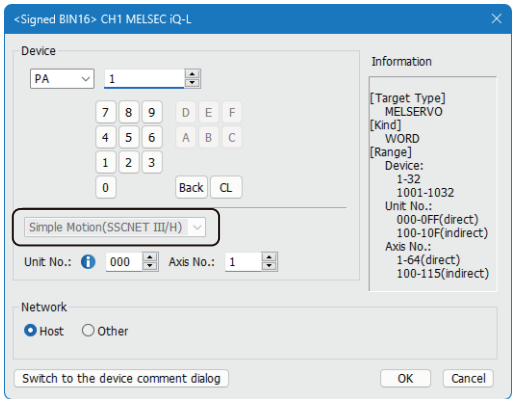
*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
☞ Page 2868 Monitoring a controller through the GOT (server/client function)

*2 Virtual servo amplifier device
For details, refer to the following.
☞ Page 3264 Virtual servo amplifier devices ([MELSEC iQ- L])

97.4.5 Setting virtual word devices for servo amplifiers ([MELSEC iQ- L])

For virtual servo amplifier devices, the notation differs according to the connection type between the GOT and the servo amplifier.

When [MELSEC iQ-L] is selected, the connection type is fixed as shown in the following table.



Item	Description
[Simple Motion(SSCNET III/H)]	Connection through a Simple Motion module • [Unit No.]: Set the first 2 digits of the 3-digit number that represents the start I/O number of the Simple Motion module. • [Axis No.]: Set the axis number to be monitored.

The following shows the notation and setting range of virtual devices.

Device name	Device notation and setting range		Notation example
PA	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PA(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 32, 1001 to 1032	UFF-A64-PA1
PB	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PB(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 64, 1001 to 1064	UFF-A64-PB1
PC	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PC(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 80, 1001 to 1080	UFF-A64-PC1

Device name	Device notation and setting range		Notation example
PD	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PD(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 48, 1001 to 1048	UFF-A64-PD1
PL	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PL(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 48, 1001 to 1048	UFF-A64-PL1
ST	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-ST(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 48	UFF-A64-ST0
PE	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PE(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 64, 1001 to 1064	UFF-A64-PE1
PF	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PF(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 64, 1001 to 1064	UFF-A64-PF1
ALM	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-ALM(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1, 11 to 59, 200 to 215, 220 to 235, 240 to 255	UFF-A64-ALM0
MD	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-MD(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 18	UFF-A64-MD0
OTS	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-OTS(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 3	UFF-A64-OTS0
DI	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-DI(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 6	UFF-A64-DI0
DO	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-DO(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 4	UFF-A64-DO0

For indirect specification of a module or axis number, refer to the following.

☞ Page 3171 Indirect specification of a module number ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

☞ Page 3172 Indirect specification of an axis number or axis designation ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

97.4.6 Availability of writing/reading data to/from word devices ([MELSEC iQ- L])

The following shows the availability of writing/reading data to/from word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data
TN	R/W	R/W	-/-	-/-
CN	R/W	R/W	-/-	-/-
SN	R/W	R/W	-/-	-/-
D	R/W	R/W	R/W	R/W
SD	R/W	R/W	R/W	R/W
W	R/W	R/W	R/W	R/W
SW	R/W	R/W	-/-	R/W
R	R/W	R/W	R/W	R/W
ER	R/W	R/W	R/W	R/W
ZR	R/W	R/W	R/W	R/W
Z	R/W	R/W	-/-	-/-
G	R/W	R/W	R/W	R/W
PA	R/W	R/W	-/-	-/-
PB	R/W	R/W	-/-	-/-
PC	R/W	R/W	-/-	-/-
PD	R/W	R/W	-/-	-/-
PL	R/W	R/W	-/-	-/-
ST	R/-	R/-	-/-	-/-
PE	R/W	R/W	-/-	-/-
PF	R/W	R/W	-/-	-/-
ALM	R/-	R/-	-/-	-/-
MD	R/-	R/-	-/-	-/-
OTS	R/-	R/-	-/-	-/-
DI	R/-	R/W	-/-	-/-
DO	R/-	R/-	-/-	-/-
U3E0G	R/W	R/W	R/W	R/W
RD	R/W	R/W	R/W	R/W

97.4.7 Monitoring-supported double-word devices ([MELSEC iQ- L])

The following table shows monitoring-supported double-word devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3264 Availability of writing/reading data to/from double-word devices ([MELSEC iQ- L])

○: Available

×: Not available

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
LTN	Long timer current value	Decimal	0 to 219775	×	×
LCN	Long counter current value	Decimal	0 to 413695	×	×
LSN	Long retentive timer current value	Decimal	0 to 219775	×	×
ZZ	Index register (32 bits)	Decimal	0 to 22	×	×
LZ	Index register (32 bits)	Decimal	0 to 11	×	×
ALD*2	Life diagnosis	Decimal	☞ Page 3263 Setting virtual double-word devices for servo amplifiers ([MELSEC iQ- L])	×	×
TMI*2	Input signal for test operation (for test operation)	Decimal	☞ Page 3263 Setting virtual double-word devices for servo amplifiers ([MELSEC iQ- L])	×	×
TMO*2	Forced output of signal pin (for test operation)	Decimal	☞ Page 3263 Setting virtual double-word devices for servo amplifiers ([MELSEC iQ- L])	×	×
TMD*2	Set data (for test operation)	Decimal	☞ Page 3263 Setting virtual double-word devices for servo amplifiers ([MELSEC iQ- L])	×	×

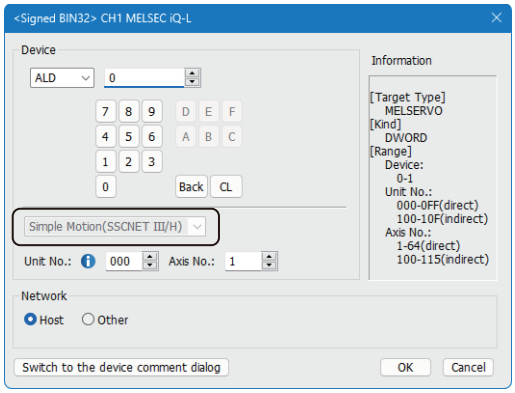
*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
☞ Page 2868 Monitoring a controller through the GOT (server/client function)

*2 Virtual servo amplifier device
For details, refer to the following.
☞ Page 3264 Virtual servo amplifier devices ([MELSEC iQ- L])

97.4.8 Setting virtual double-word devices for servo amplifiers ([MELSEC iQ- L])

For virtual servo amplifier devices, the notation differs according to the connection type between the GOT and the servo amplifier.

When [MELSEC iQ-L] is selected, the connection type is fixed as shown in the following table.



Item	Description
[Simple Motion(SSCNET III/H)]	Connection through a Simple Motion module • [Unit No.]: Set the first 2 digits of the 3-digit number that represents the start I/O number of the Simple Motion module. • [Axis No.]: Set the axis number to be monitored.

The following shows the notation and setting range of virtual devices.

Device name	Device notation and setting range		Notation example
ALD	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-ALD(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1	UFF-A64-ALD0
TMI	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-TMI(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 2	UFF-A64-TMI0
TMO	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-TMO(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0	UFF-A64-TMO0
TMD	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-TMD(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1, 3	UFF-A64-TMD0

For indirect specification of a module or axis number, refer to the following.

☞ Page 3171 Indirect specification of a module number ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

☞ Page 3172 Indirect specification of an axis number or axis designation ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

97.4.9 Availability of writing/reading data to/from double-word devices ([MELSEC iQ- L])

The following shows the availability of writing/reading data to/from double-word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of double-word data
LTN	-/-	R/W	-/-	-/-
LCN	-/-	R/W	-/-	-/-
LSN	-/-	R/W	-/-	-/-
ZZ	-/-	R/W	-/-	-/-
LZ	-/-	R/W	-/-	-/-
ALD	-/-	R/-	-/-	-/-
TMI	-/-	-/W	-/-	-/-
TMO	-/-	-/W	-/-	-/-
TMD	-/-	-/W	-/-	-/-

97.4.10 Virtual servo amplifier devices ([MELSEC iQ- L])

The following shows the correspondence between the virtual devices used in the GOT and the servo amplifier data.

Virtual device name	Reference
SP	☞ Page 3192 Servo amplifier request (MELSEC iQ-R, RnMT/NC/RT, CR800-D])
OM	☞ Page 3192 Operation mode selection ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
TMB	☞ Page 3193 Instruction demand (for test operation) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
OTI	☞ Page 3193 One-touch tuning instruction ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PA	☞ Page 3194 Basic parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PB	☞ Page 3196 Gain filter parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PC	☞ Page 3199 Extension setting parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PD	☞ Page 3202 I/O setting parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PL	☞ Page 3208 Motor extension parameter, linear servo motor/DD motor setting parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
ST	☞ Page 3212 Status display ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PE	☞ Page 3214 Extension setting No.2 parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PF	☞ Page 3216 Extension setting No.3 parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
ALM	☞ Page 3222 Alarm [MELSEC iQ-R, RnMT/NC/RT, CR800-D])
MD	☞ Page 3232 Machine diagnosis data ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
OTS	☞ Page 3234 One-touch tuning data ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
DI	☞ Page 3235 External input signal in MR-J5-G(-RJ) and MR-J5W□-G ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
DO	☞ Page 3238 External output signal in MR-J5-G(-RJ) and MR-J5W□-G ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
ALD	☞ Page 3239 Life Diagnosis ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
TMI	☞ Page 3240 Input signal for test operation (for test operation) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
TMO	☞ Page 3240 Forced output of signal pin (for test operation) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
TMD	☞ Page 3240 Set data (for test operation) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

97.4.11 Precautions for virtual servo amplifier devices ([MELSEC iQ- L])

For the precautions for virtual servo amplifier devices, refer to the following.

☞ Page 3241 Precautions for virtual servo amplifier devices ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

97.5 [MELSEC iQ-F]

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Item	Reference
Specifications of bit devices	☞ Page 3265 Monitoring-supported bit devices ([MELSEC iQ-F])
	☞ Page 3267 Setting virtual bit devices for servo amplifiers ([MELSEC iQ-F])
	☞ Page 3268 Availability of writing/reading data to/from bit devices ([MELSEC iQ-F])
Specifications of word devices	☞ Page 3269 Monitoring-supported word devices ([MELSEC iQ-F])
	☞ Page 3271 Setting virtual word devices for servo amplifiers ([MELSEC iQ-F])
	☞ Page 3274 Availability of writing/reading data to/from word devices ([MELSEC iQ-F])
Specifications of double-word devices	☞ Page 3275 Monitoring-supported double-word devices ([MELSEC iQ-F])
	☞ Page 3276 Setting virtual double-word devices for servo amplifiers ([MELSEC iQ-F])
	☞ Page 3277 Availability of writing/reading data to/from double-word devices ([MELSEC iQ-F])
Specifications of virtual servo amplifier devices	☞ Page 3278 Virtual servo amplifier devices ([MELSEC iQ-F])
	☞ Page 3278 Precautions for virtual servo amplifier devices ([MELSEC iQ-F])

97.5.1 Monitoring-supported bit devices ([MELSEC iQ-F])

The following table shows monitoring-supported bit devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3268 Availability of writing/reading data to/from bit devices ([MELSEC iQ-F])

○: Available

×: Not available

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
X	Input relay	Octal	0000 to 1777	○	○
Y	Output relay	Octal	0000 to 1777	○	○
B	Link relay	Hexadecimal	0000 to 7FFF	○	○
M	Internal relay	Decimal	0 to 32767	○	○
L	Latch relay	Decimal	0 to 32767	○	○
S	Step relay	Decimal	0 to 4095	○	○
F	Annunciator	Decimal	0 to 32767	○	○
TC	Timer coil	Decimal	0 to 1023	○	○ Not usable as word data
TT	Timer contact	Decimal	0 to 1023	○	○ Not usable as word data
CC	Counter coil	Decimal	0 to 1023	○	○ Not usable as word data
CT	Counter contact	Decimal	0 to 1023	○	○ Not usable as word data
SC	Retentive timer coil	Decimal	0 to 1023	○	○ Not usable as word data
SS	Retentive timer contact	Decimal	0 to 1023	○	○ Not usable as word data
SB	Link special relay	Hexadecimal	0000 to 7FFF	○	○

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
SM	Special relay	Decimal	0 to 9999	○	○
RX*4	Remote input	Hexadecimal	0000 to 3FFF	○	○
RY*4	Remote output	Hexadecimal	0000 to 3FFF	○	○
LCC	Long counter coil	Decimal	0 to 1023	○	○ Not usable as word data
LCT	Long counter contact	Decimal	0 to 1023	○	○ Not usable as word data
BL	SFC block	Decimal	0 to 31	×	×
BLS	Step relay (block)	Decimal	0 to 511	×	×
SP*3	Servo amplifier request	Decimal	☞ Page 3267 Setting virtual bit devices for servo amplifiers ([MELSEC iQ-F])	×	×
OM*3	Operation mode selection	Decimal	☞ Page 3267 Setting virtual bit devices for servo amplifiers ([MELSEC iQ-F])	×	×
TMB*3	Instruction demand (for test operation)	Decimal	☞ Page 3267 Setting virtual bit devices for servo amplifiers ([MELSEC iQ-F])	×	×
OTI*3	One-touch tuning instruction	Decimal	☞ Page 3267 Setting virtual bit devices for servo amplifiers ([MELSEC iQ-F])	×	×
GFDI*3	Gear failure diagnosis instruction	Decimal	☞ Page 3267 Setting virtual bit devices for servo amplifiers ([MELSEC iQ-F])	×	×
ECCDI*3	Encoder communication circuit diagnosis instruction	Decimal	☞ Page 3267 Setting virtual bit devices for servo amplifiers ([MELSEC iQ-F])	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
☞ Page 2868 Monitoring a controller through the GOT (server/client function)

*2 Virtual servo amplifier device
For details, refer to the following.
☞ Page 3264 Virtual servo amplifier devices ([MELSEC iQ- L])

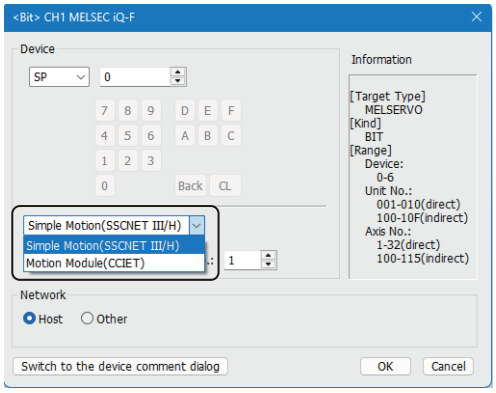
*3 Virtual servo amplifier device
For details, refer to the following.
☞ Page 3278 Virtual servo amplifier devices ([MELSEC iQ-F])

*4 The target device of the host station can be monitored only.
Monitoring the target device of any other station causes a system error.

97.5.2 Setting virtual bit devices for servo amplifiers ([MELSEC iQ-F])

For virtual servo amplifier devices, the notation differs according to the connection type between the GOT and the servo amplifier.

Select one of the following according to the control type in the device setting dialog.



Item	Description
[Simple Motion(SSCNET III/H)]	Connection through a Simple Motion module • [Unit No.]: Set the first 2 digits of the 3-digit number that represents the start I/O number of the Simple Motion module. • [Axis No.]: Set the axis number to be monitored.
[Motion Module(CCIET)]	Select this item to connect the GOT through a Motion module (FX5-nSSC-G). After the selection, set a device that enables axis designation to display the following item. • [Axis Designation]: Set the axis to be monitored.

The following shows the notation and setting range of virtual devices.

Device name	Device notation and setting range		Notation example
SP	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-SP(Device) • Unit No. (hexadecimal): 01 to 10 (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 6	U10-A32-SP0
	[Motion Module(CCIET)]	AA(Axis designation)-SP(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 6	AA3-SP0
OM	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-OM(Device) • Unit No. (hexadecimal): 01 to 10 (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 2, 4 to 5	U10-A32-OM0
	[Motion Module(CCIET)]	AA(Axis designation)-OM(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 2, 4 to 5	AA3-OM0
TMB	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-TMB(Device) • Unit No. (hexadecimal): 01 to 10 (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 6	U10-A32-TMB1
	[Motion Module(CCIET)]	AA(Axis designation)-TMB(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 6	AA3-TMB1
OTI	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-OTI(Device) • Unit No. (hexadecimal): 01 to 10 (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5	U10-A32-OTI0
	[Motion Module(CCIET)]	AA(Axis designation)-OTI(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5	AA3-OTI0
GFDI	[Motion Module(CCIET)]	AA(Axis designation)-GFDI(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1	AA3-GFDI0

Device name	Device notation and setting range		Notation example
ECCDI	[Motion Module(CCIET)]	AA(Axis designation)-ECCDI(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1	AA3-ECCDI0

For indirect specification of a module or axis number, refer to the following.

☞ Page 3171 Indirect specification of a module number ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

☞ Page 3172 Indirect specification of an axis number or axis designation ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

97.5.3 Availability of writing/reading data to/from bit devices ([MELSEC iQ-F])

The following shows the availability of writing/reading data to/from bit devices by device type.

When the device type is other than the bit type, set the device No. in multiples of 16.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type				
	Bit	Byte (8 bits)	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)
X	R/W	-/-	R/W	R/W	-/-
Y	R/W	-/-	R/W	R/W	-/-
B	R/W	-/-	R/W	R/W	-/-
M	R/W	-/-	R/W	R/W	-/-
L	R/W	-/-	R/W	R/W	-/-
S	R/W	-/-	R/W	R/W	-/-
F	R/W	-/-	R/W	R/W	-/-
TC	R/W	-/-	-/-	-/-	-/-
TT	R/W	-/-	-/-	-/-	-/-
CC	R/W	-/-	-/-	-/-	-/-
CT	R/W	-/-	-/-	-/-	-/-
SC	R/W	-/-	-/-	-/-	-/-
SS	R/W	-/-	-/-	-/-	-/-
SB	R/W	-/-	R/W	R/W	-/-
SM	R/W	-/-	R/W	R/W	-/-
RX	R/W	-/-	R/W	R/W	-/-
RY	R/W	-/-	R/W	R/W	-/-
LCC	R/W	-/-	-/-	-/-	-/-
LCT	R/W	-/-	-/-	-/-	-/-
BL	R/W	-/-	-/-	-/-	-/-
BLS	R/W	-/-	-/-	-/-	-/-
SP	-/W	-/-	-/-	-/-	-/-
OM	-/W	-/-	-/-	-/-	-/-
TMB	-/W	-/-	-/-	-/-	-/-
OTI	-/W	-/-	-/-	-/-	-/-
GFDI	-/W	-/-	-/-	-/-	-/-
ECCDI	-/W	-/-	-/-	-/-	-/-

97.5.4 Monitoring-supported word devices ([MELSEC iQ-F])

The following table shows monitoring-supported word devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3274 Availability of writing/reading data to/from word devices ([MELSEC iQ-F])

○: Available

×: Not available

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
TN	Timer current value	Decimal	0 to 1023	○	○
CN	Counter current value	Decimal	0 to 1023	○	○
SN	Retentive timer current value	Decimal	0 to 1023	○	○
D	Data register	Decimal	0 to 7999	○	○
SD	Special register	Decimal	0 to 11999	○	○
W	Link register	Hexadecimal	0000 to 7FFF	○	○
SW	Link special register	Hexadecimal	0000 to 7FFF	○	○
R*4	File register	Decimal	0 to 32767	○	○
Z	Index register	Decimal	0 to 23	○	○ Not usable as bit data
G*5	Buffer memory (Intelligent function module)	Decimal	U(Unit No.)-G(Device) Notation example: U10-G100 • Unit No. (hexadecimal): 01 to 10 • Device (decimal): 0 to 262143 For the unit No., set the module number of the intelligent function module.	○	○
Ww*3	Remote register	Hexadecimal	0000 to 1FFF	○	○
Wr*3	Remote register	Hexadecimal	0000 to 1FFF	○	○
PA*2	Basic parameter	Decimal	☞ Page 3271 Setting virtual word devices for servo amplifiers ([MELSEC iQ-F])	×	×
PB*2	Gain filter parameter	Decimal	☞ Page 3271 Setting virtual word devices for servo amplifiers ([MELSEC iQ-F])	×	×
PC*2	Extension setting parameter	Decimal	☞ Page 3271 Setting virtual word devices for servo amplifiers ([MELSEC iQ-F])	×	×
PD*2	I/O setting parameter	Decimal	☞ Page 3271 Setting virtual word devices for servo amplifiers ([MELSEC iQ-F])	×	×
PO*2	Option unit parameter	Decimal	☞ Page 3271 Setting virtual word devices for servo amplifiers ([MELSEC iQ-F])	×	×
PS*2	Special parameter	Decimal	☞ Page 3271 Setting virtual word devices for servo amplifiers ([MELSEC iQ-F])	×	×
PU*2	Multi encoder parameter	Decimal	☞ Page 3271 Setting virtual word devices for servo amplifiers ([MELSEC iQ-F])	×	×
PT*2	Positioning control parameter	Decimal	☞ Page 3271 Setting virtual word devices for servo amplifiers ([MELSEC iQ-F])	×	×
PL*2*6	Motor extension parameter	Decimal	☞ Page 3271 Setting virtual word devices for servo amplifiers ([MELSEC iQ-F])	×	×
	Linear servo motor/DD motor setting parameter			×	×
PN*2	Network setting parameter	Decimal	☞ Page 3271 Setting virtual word devices for servo amplifiers ([MELSEC iQ-F])	×	×
PVS*2*7	Positioning extension parameter	Decimal	☞ Page 3271 Setting virtual word devices for servo amplifiers ([MELSEC iQ-F])	×	×

Device name		Device No. representation	Setting range	EG device specifications[*1]	
				Assignment to EG devices	Access using a client
ST[*2]	Status display	Decimal	☞ Page 3271 Setting virtual word devices for servo amplifiers ([MELSEC iQ-F])	×	×
PE[*2]	Extension setting No.2 parameter	Decimal	☞ Page 3271 Setting virtual word devices for servo amplifiers ([MELSEC iQ-F])	×	×
PF[*2]	Extension setting No.3 parameter	Decimal	☞ Page 3271 Setting virtual word devices for servo amplifiers ([MELSEC iQ-F])	×	×
NPA[*2]	Network basic parameter	Decimal	☞ Page 3271 Setting virtual word devices for servo amplifiers ([MELSEC iQ-F])	×	×
ALM[*2]	Alarm (current alarm J4A extend)	Decimal	☞ Page 3271 Setting virtual word devices for servo amplifiers ([MELSEC iQ-F])	×	×
ALM[*2]	Alarm (alarm history J4A extend)	Decimal	☞ Page 3271 Setting virtual word devices for servo amplifiers ([MELSEC iQ-F])	×	×
ALM[*2]	Alarm (alarm history J5A extend)	Decimal	☞ Page 3271 Setting virtual word devices for servo amplifiers ([MELSEC iQ-F])	×	×
POS[*2]	Point table (position)	Decimal	☞ Page 3271 Setting virtual word devices for servo amplifiers ([MELSEC iQ-F])	×	×
SPD[*2]	Point table (speed)	Decimal	☞ Page 3271 Setting virtual word devices for servo amplifiers ([MELSEC iQ-F])	×	×
ACT[*2]	Point table (acceleration time constant)	Decimal	☞ Page 3271 Setting virtual word devices for servo amplifiers ([MELSEC iQ-F])	×	×
DCT[*2]	Point table (deceleration time constant)	Decimal	☞ Page 3271 Setting virtual word devices for servo amplifiers ([MELSEC iQ-F])	×	×
DWL[*2]	Point table (dwell)	Decimal	☞ Page 3271 Setting virtual word devices for servo amplifiers ([MELSEC iQ-F])	×	×
AUX[*2]	Point table (auxiliary function)	Decimal	☞ Page 3271 Setting virtual word devices for servo amplifiers ([MELSEC iQ-F])	×	×
MCD[*2]	Point table (M code)	Decimal	☞ Page 3271 Setting virtual word devices for servo amplifiers ([MELSEC iQ-F])	×	×
MD[*2]	Machine diagnosis data	Decimal	☞ Page 3271 Setting virtual word devices for servo amplifiers ([MELSEC iQ-F])	×	×
GFDS[*2]	Gear failure diagnosis data	Decimal	☞ Page 3271 Setting virtual word devices for servo amplifiers ([MELSEC iQ-F])	×	×
ECCDS[*2]	Encoder communication circuit diagnosis data	Decimal	☞ Page 3271 Setting virtual word devices for servo amplifiers ([MELSEC iQ-F])	×	×
OTS[*2]	One-touch tuning data	Decimal	☞ Page 3271 Setting virtual word devices for servo amplifiers ([MELSEC iQ-F])	×	×
DI[*2]	External input signal	Decimal	☞ Page 3271 Setting virtual word devices for servo amplifiers ([MELSEC iQ-F])	×	×
DO[*2]	External output signal	Decimal	☞ Page 3271 Setting virtual word devices for servo amplifiers ([MELSEC iQ-F])	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
☞ Page 2868 Monitoring a controller through the GOT (server/client function)

*2 Virtual servo amplifier device
For details, refer to the following.
☞ Page 3278 Virtual servo amplifier devices ([MELSEC iQ-F])

*3 The target device of the host station can be monitored only.
Monitoring the target device of any other station causes a system error.

*4 Available for the file register of block No. switched with the RSET instruction.

*5 Only the intelligent function module on the station connected to GOT can be specified.
Set the buffer memory within the address range of the buffer memory existing in the intelligent function module.

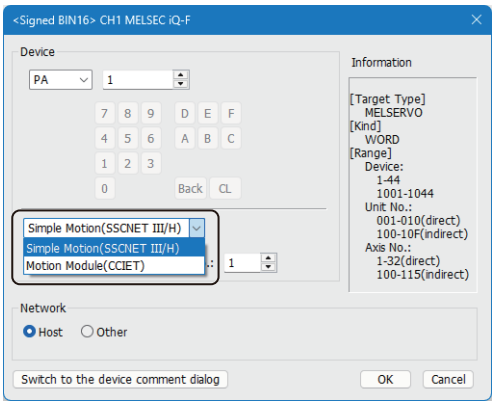
*6 The device name depends on the servo amplifier.
MR-J5-G(-RJ) or MR-J5W□-G: Motor extension setting parameter
Other than MR-J5-G(-RJ) or MR-J5W□-G: Linear servo motor/DD motor setting parameter

*7 PVS is a virtual device corresponding to the servo parameter (PV) of MR-J5-G(-RJ), MR-J5W□-G, and MR-JET-G.
Use the virtual device (PVS) to read/write data from/to the servo parameter (PV).

97.5.5 Setting virtual word devices for servo amplifiers ([MELSEC iQ-F])

For virtual servo amplifier devices, the notation differs according to the connection type between the GOT and the servo amplifier.

Select one of the following according to the control type in the device setting dialog.



Item	Description
[Simple Motion(SSCNET III/H)]	Connection through a Simple Motion module • [Unit No.]: Set the first 2 digits of the 3-digit number that represents the start I/O number of the Simple Motion module. • [Axis No.]: Set the axis number to be monitored.
[Motion Module(CCIET)]	Select this item to connect the GOT through a Motion module (FX5-nSSC-G). After the selection, set a device that enables axis designation to display the following item. • [Axis Designation]: Set the axis to be monitored.

The following shows the notation and setting range of virtual devices.

Device name	Device notation and setting range		Notation example
PA	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PA(Device) • Unit No. (hexadecimal): 01 to 10 (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 44, 1001 to 1044	U10-A32-PA1
	[Motion Module(CCIET)]	AA(Axis designation)-PA(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 44, 1001 to 1044	AA3-PA1
PB	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PB(Device) • Unit No. (hexadecimal): 01 to 10 (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 92, 1001 to 1092	U10-A32-PB1
	[Motion Module(CCIET)]	AA(Axis designation)-PB(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 92, 1001 to 1092	AA3-PB1
PC	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PC(Device) • Unit No. (hexadecimal): 01 to 10 (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 90, 1001 to 1090	U10-A32-PC1
	[Motion Module(CCIET)]	AA(Axis designation)-PC(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 90, 1001 to 1090	AA3-PC1
PD	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PD(Device) • Unit No. (hexadecimal): 01 to 10 (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 72, 1001 to 1072	U10-A32-PD1
	[Motion Module(CCIET)]	AA(Axis designation)-PD(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 72, 1001 to 1072	AA3-PD1
PO	[Motion Module(CCIET)]	AA(Axis designation)-PO(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 2, 1001 to 1002	AA3-PO1

Device name	Device notation and setting range		Notation example
PS	[Motion Module(CCIET)]	AA(Axis designation)-PS(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 99, 1001 to 1099	AA3-PS1
PU	[Motion Module(CCIET)]	AA(Axis designation)-PU(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 44, 1001 to 1044	AA3-PU1
PT	[Motion Module(CCIET)]	AA(Axis designation)-PT(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 90, 1001 to 1090	AA3-PT1
PL	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PL(Device) • Unit No. (hexadecimal): 01 to 10 (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 72, 1001 to 1072	U10-A32-PL1
	[Motion Module(CCIET)]	AA(Axis designation)-PL(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 72, 1001 to 1072	AA3-PL1
PN	[Motion Module(CCIET)]	AA(Axis designation)-PN(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 32, 1001 to 1032	AA3-PN1
PVS	[Motion Module(CCIET)]	AA(Axis designation)-PVS(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 32, 1001 to 1032	AA3-PVS1
ST	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-ST(Device) • Unit No. (hexadecimal): 01 to 10 (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 48	U10-A32-ST0
	[Motion Module(CCIET)]	AA(Axis designation)-ST(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 48	AA3-ST0
PE	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PE(Device) • Unit No. (hexadecimal): 01 to 10 (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 88, 1001 to 1088	U10-A32-PE1
	[Motion Module(CCIET)]	AA(Axis designation)-PE(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 88, 1001 to 1088	AA3-PE1
PF	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PF(Device) • Unit No. (hexadecimal): 01 to 10 (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 99, 1001 to 1099	U10-A32-PF1
	[Motion Module(CCIET)]	AA(Axis designation)-PF(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 99, 1001 to 1099	AA3-PF1
NPA	[Motion Module(CCIET)]	NPA(Device) • Device (decimal): 1 to 12, 2001 to 2032	NPA1
ALM	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-ALM(Device) • Unit No. (hexadecimal): 01 to 10 (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 2, 11 to 59, 200 to 215, 220 to 235, 240 to 255, 260 to 275, 280 to 295, 300 to 315	U10-A32-ALM0
	[Motion Module(CCIET)]	AA(Axis designation)-ALM(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 2, 11 to 59, 200 to 215, 220 to 235, 240 to 255, 260 to 275, 280 to 295, 300 to 315	AA3-ALM0
POS	[Motion Module(CCIET)]	AA(Axis designation)-POS(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 255, 1001 to 1255	AA3-POS1
SPD	[Motion Module(CCIET)]	AA(Axis designation)-SPD(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 255, 1001 to 1255	AA3-SPD1
ACT	[Motion Module(CCIET)]	AA(Axis designation)-ACT(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 255, 1001 to 1255	AA3-ACT1

Device name	Device notation and setting range		Notation example
DCT	[Motion Module(CCIET)]	AA(Axis designation)-DCT(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 255, 1001 to 1255	AA3-DCT1
DWL	[Motion Module(CCIET)]	AA(Axis designation)-DWL(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 255, 1001 to 1255	AA3-DWL1
AUX	[Motion Module(CCIET)]	AA(Axis designation)-AUX(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 255, 1001 to 1255	AA3-AUX1
MCD	[Motion Module(CCIET)]	AA(Axis designation)-MCD(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 255, 1001 to 1255	AA3-MCD1
MD	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-MD(Device) • Unit No. (hexadecimal): 01 to 10 (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 21	U10-A32-MD0
	[Motion Module(CCIET)]	AA(Axis designation)-MD(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 21	AA3-MD0
GFDS	[Motion Module(CCIET)]	AA(Axis designation)-GFDS(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5	AA3-GFDS0
ECCDS	[Motion Module(CCIET)]	AA(Axis designation)-ECCDS(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5	AA3-ECCDS0
OTS	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-OTS(Device) • Unit No. (hexadecimal): 01 to 10 (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5, 3000	U10-A32-OTS0
	[Motion Module(CCIET)]	AA(Axis designation)-OTS(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5, 3000	AA3-OTS0
DI	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-DI(Device) • Unit No. (hexadecimal): 01 to 10 (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 6	U10-A32-DI0
	[Motion Module(CCIET)]	AA(Axis designation)-DI(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 6	AA3-DI0
DO	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-DO(Device) • Unit No. (hexadecimal): 01 to 10 (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 4	U10-A32-DO0
	[Motion Module(CCIET)]	AA(Axis designation)-DO(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 4	AA3-DO0

For indirect specification of a module or axis number, refer to the following.

☞ Page 3171 Indirect specification of a module number ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

☞ Page 3172 Indirect specification of an axis number or axis designation ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

97.5.6 Availability of writing/reading data to/from word devices ([MELSEC iQ-F])

The following shows the availability of writing/reading data to/from word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data
TN	R/W	R/W	-/-	-/-
CN	R/W	R/W	-/-	-/-
SN	R/W	R/W	-/-	-/-
D	R/W	R/W	R/W	R/W
SD	R/W	R/W	R/W	R/W
W	R/W	R/W	R/W	R/W
SW	R/W	R/W	-/-	R/W
R	R/W	R/W	R/W	R/W
Z	R/W	R/W	-/-	-/-
G	R/W	R/W	R/W	R/W
Ww	R/W	R/W	R/W	R/W
Wr	R/W	R/W	R/W	R/W
PA	R/W	R/W	-/-	-/-
PB	R/W	R/W	-/-	-/-
PC	R/W	R/W	-/-	-/-
PD	R/W	R/W	-/-	-/-
PO	R/W	R/W	-/-	-/-
PS	R/W	R/W	-/-	-/-
PU	R/W	R/W	-/-	-/-
PT	R/W	R/W	-/-	-/-
PL	R/W	R/W	-/-	-/-
PN	R/W	R/W	-/-	-/-
PVS	R/W	R/W	-/-	-/-
ST	R/-	R/-	-/-	-/-
PE	R/W	R/W	-/-	-/-
PF	R/W	R/W	-/-	-/-
NPA	R/W	R/W	-/-	-/-
ALM	R/-	R/-	-/-	-/-
POS	R/W	R/W	-/-	-/-
SPD	R/W	R/W	-/-	-/-
ACT	R/W	R/W	-/-	-/-
DCT	R/W	R/W	-/-	-/-
DWL	R/W	R/W	-/-	-/-
AUX	R/W	R/W	-/-	-/-
MCD	R/W	R/W	-/-	-/-
MD	R/-	R/-	-/-	-/-
GFDS	R/-	R/-	-/-	-/-
ECCDS	R/-	R/-	-/-	-/-
OTS	R/-	R/-	-/-	-/-
DI	R/-	R/W	-/-	-/-
DO	R/-	R/-	-/-	-/-

97.5.7 Monitoring-supported double-word devices ([MELSEC iQ-F])

The following table shows monitoring-supported double-word devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3277 Availability of writing/reading data to/from double-word devices ([MELSEC iQ-F])

○: Available

×: Not available

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
LCN	Long counter current value	Decimal	0 to 1023	×	×
LZ	Index register (32 bits)	Decimal	0 to 11	×	×
ALD*2	Life diagnosis	Decimal	☞ Page 3276 Setting virtual double-word devices for servo amplifiers ([MELSEC iQ-F])	×	×
TMI*2	Input signal for test operation (for test operation)	Decimal	☞ Page 3276 Setting virtual double-word devices for servo amplifiers ([MELSEC iQ-F])	×	×
TMO*2	Forced output of signal pin (for test operation)	Decimal	☞ Page 3276 Setting virtual double-word devices for servo amplifiers ([MELSEC iQ-F])	×	×
TMD*2	Set data (for test operation)	Decimal	☞ Page 3276 Setting virtual double-word devices for servo amplifiers ([MELSEC iQ-F])	×	×

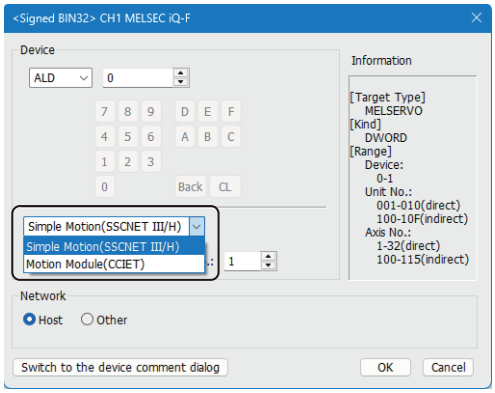
*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
☞ Page 2868 Monitoring a controller through the GOT (server/client function)

*2 Virtual servo amplifier device
For details, refer to the following.
☞ Page 3278 Virtual servo amplifier devices ([MELSEC iQ-F])

97.5.8 Setting virtual double-word devices for servo amplifiers ([MELSEC iQ-F])

For virtual servo amplifier devices, the notation differs according to the connection type between the GOT and the servo amplifier.

Select one of the following according to the control type in the device setting dialog.



Item	Description
[Simple Motion(SSCNET III/H)]	Connection through a Simple Motion module • [Unit No.]: Set the first 2 digits of the 3-digit number that represents the start I/O number of the Simple Motion module. • [Axis No.]: Set the axis number to be monitored.
[Motion Module(CCIET)]	Select this item to connect the GOT through a Motion module (FX5-nSSC-G). After the selection, set a device that enables axis designation to display the following item. • [Axis Designation]: Set the axis to be monitored.

The following shows the notation and setting range of virtual devices.

Device name	Device notation and setting range		Notation example
ALD	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-ALD(Device) • Unit No. (hexadecimal): 01 to 10 (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1	U10-A32-ALD0
	[Motion Module(CCIET)]	AA(Axis designation)-ALD(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1	AA3-ALD0
TMI	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-TMI(Device) • Unit No. (hexadecimal): 01 to 10 (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 2	U10-A32-TMI0
	[Motion Module(CCIET)]	AA(Axis designation)-TMI(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 2	AA3-TMI0
TMO	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-TMO(Device) • Unit No. (hexadecimal): 01 to 10 (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0	U10-A32-TMO0
	[Motion Module(CCIET)]	AA(Axis designation)-TMO(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0	AA3-TMO0
TMD	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-TMD(Device) • Unit No. (hexadecimal): 01 to 10 (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1, 3	U10-A32-TMD0
	[Motion Module(CCIET)]	AA(Axis designation)-TMD(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1, 3	AA3-TMD0

For indirect specification of a module or axis number, refer to the following.

☞ Page 3171 Indirect specification of a module number ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

☞ Page 3172 Indirect specification of an axis number or axis designation ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

97.5.9 Availability of writing/reading data to/from double-word devices ([MELSEC iQ-F])

The following shows the availability of writing/reading data to/from double-word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of double-word data
LCN	-/-	R/W	-/-	-/-
LZ	-/-	R/W	-/-	-/-
ALD	-/-	R/-	-/-	-/-
TMI	-/-	-/W	-/-	-/-
TMO	-/-	-/W	-/-	-/-
TMD	-/-	-/W	-/-	-/-

97.5.10 Virtual servo amplifier devices ([MELSEC iQ-F])

The following shows the correspondence between the virtual devices used in the GOT and the servo amplifier data.

Virtual device name	Reference
SP	☞ Page 3192 Servo amplifier request (MELSEC iQ-R, RnMT/NC/RT, CR800-D])
OM	☞ Page 3192 Operation mode selection ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
TMB	☞ Page 3193 Instruction demand (for test operation) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
OTI	☞ Page 3193 One-touch tuning instruction ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
GFDI	☞ Page 3194 Gear failure diagnosis instruction ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
ECCDI	☞ Page 3194 Encoder communication circuit diagnosis instruction ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PA	☞ Page 3194 Basic parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PB	☞ Page 3196 Gain filter parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PC	☞ Page 3199 Extension setting parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PD	☞ Page 3202 I/O setting parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PO	☞ Page 3203 Option unit parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PS	☞ Page 3204 Special parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PU	☞ Page 3204 Multi encoder parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PT	☞ Page 3204 Positioning control parameter, pressure control parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PL	☞ Page 3208 Motor extension parameter, linear servo motor/DD motor setting parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PN	☞ Page 3209 Network setting parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PVS	☞ Page 3210 Positioning extension parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
ST	☞ Page 3212 Status display ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PE	☞ Page 3214 Extension setting No.2 parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PF	☞ Page 3216 Extension setting No.3 parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
NPA	☞ Page 3219 Network basic parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
ALM	☞ Page 3222 Alarm [MELSEC iQ-R, RnMT/NC/RT, CR800-D])
POS	☞ Page 3229 Point table (position) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
SPD	☞ Page 3230 Point table (speed) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
ACT	☞ Page 3230 Point table (acceleration time constant) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
DCT	☞ Page 3230 Point table (deceleration time constant) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
DWL	☞ Page 3231 Point table (dwell) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
AUX	☞ Page 3231 Point table (auxiliary function) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
MCD	☞ Page 3231 Point table (M code) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
MD	☞ Page 3232 Machine diagnosis data ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
GFDS	☞ Page 3233 Gear failure diagnosis data ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
ECCDS	☞ Page 3233 Encoder communication circuit diagnosis data ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
OTS	☞ Page 3234 One-touch tuning data ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
DI	☞ Page 3235 External input signal in MR-J5-G(-RJ) and MR-J5W□-G ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
DO	☞ Page 3238 External output signal in MR-J5-G(-RJ) and MR-J5W□-G ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
ALD	☞ Page 3239 Life Diagnosis ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
TMI	☞ Page 3240 Input signal for test operation (for test operation) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
TMO	☞ Page 3240 Forced output of signal pin (for test operation) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
TMD	☞ Page 3240 Set data (for test operation) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

97.5.11 Precautions for virtual servo amplifier devices ([MELSEC iQ-F])

For the precautions for virtual servo amplifier devices, refer to the following.

☞ Page 3241 Precautions for virtual servo amplifier devices ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

97.6 [MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700]

GT37 SoftGOT3000

Item	Reference
Specifications of bit devices	☞ Page 3279 Monitoring-supported bit devices ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])
	☞ Page 3281 Setting virtual bit devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])
	☞ Page 3283 Availability of writing/reading data to/from bit devices ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])
Specifications of word devices	☞ Page 3284 Monitoring-supported word devices ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])
	☞ Page 3287 Setting virtual word devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])
	☞ Page 3291 Availability of writing/reading data to/from word devices ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])
Specifications of double-word devices	☞ Page 3292 Monitoring-supported double-word devices ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])
	☞ Page 3293 Setting virtual double-word devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])
	☞ Page 3294 Availability of writing/reading data to/from double-word devices ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])
Specifications of virtual servo amplifier devices	☞ Page 3295 Virtual servo amplifier devices ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])
	☞ Page 3296 Precautions for virtual servo amplifier devices ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])
Specifications of virtual inverter devices	☞ Page 3296 Virtual inverter devices ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])

97.6.1 Monitoring-supported bit devices ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])

The following table shows monitoring-supported bit devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3283 Availability of writing/reading data to/from bit devices ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])

○: Available

×: Not available

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
X	Input relay	Hexadecimal	0000 to 3FFF	○	○
Y	Output relay	Hexadecimal	0000 to 3FFF	○	○
B	Link relay	Hexadecimal	00000 to 9FFFF	○	○
M*4	Internal relay	Decimal	0 to 61439	○	○
L	Latch relay	Decimal	0 to 32767	○	○
S	Step relay	Decimal	0 to 32767	○	○
F	Annunciator	Decimal	0 to 32767	○	○
TC*4	Timer coil	Decimal	0 to 32767	○	○ Not usable as word data
TT*4	Timer contact	Decimal	0 to 32767	○	○ Not usable as word data
CC*4	Counter coil	Decimal	0 to 32767	○	○ Not usable as word data

Device name		Device No. representation	Setting range	EG device specifications[*1]	
				Assignment to EG devices	Access using a client
CT[*4]	Counter contact	Decimal	0 to 32767	○	○ Not usable as word data
SC[*4]	Retentive timer coil	Decimal	0 to 32767	○	○ Not usable as word data
SS[*4]	Retentive timer contact	Decimal	0 to 32767	○	○ Not usable as word data
SB	Link special relay	Hexadecimal	0000 to 7FFF	○	○
SM	Special relay	Decimal	0 to 2255	○	○
RX	Remote input	Hexadecimal	0000 to 3FFF	○	○
RY	Remote output	Hexadecimal	0000 to 3FFF	○	○
LB	Link relay	Hexadecimal	0000 to 7FFF	○	○
SP[*2]	Servo amplifier request	Decimal	☞ Page 3281 Setting virtual bit devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])	×	×
OM[*2]	Operation mode selection	Decimal	☞ Page 3281 Setting virtual bit devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])	×	×
TMB[*2]	Instruction demand (for test operation)	Decimal	☞ Page 3281 Setting virtual bit devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])	×	×
OTI[*2]	One-touch tuning instruction	Decimal	☞ Page 3281 Setting virtual bit devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])	×	×
GFDI[*2]	Gear failure diagnosis instruction	Decimal	☞ Page 3281 Setting virtual bit devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])	×	×
ECCDI[*2]	Encoder communication circuit diagnosis instruction	Decimal	☞ Page 3281 Setting virtual bit devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])	×	×
IOST[*3]	I/O terminal monitor	Decimal	0 to 127	×	×
CMD[*3]	Operation command	Decimal	0 to 63	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
☞ Page 2868 Monitoring a controller through the GOT (server/client function)

*2 Virtual servo amplifier device
For details, refer to the following.
☞ Page 3295 Virtual servo amplifier devices ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])

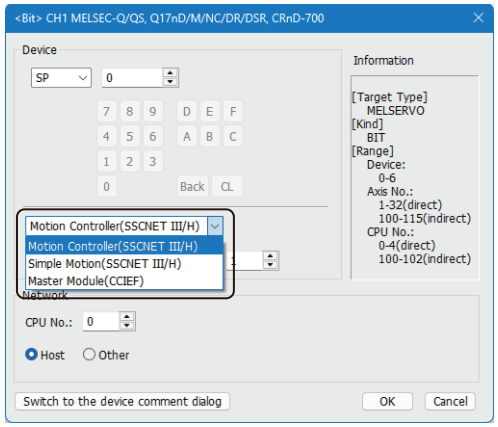
*3 Virtual inverter device
For details, refer to the following.
☞ Page 3296 Virtual inverter devices ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])

*4 Do not use the local device set in a MELSEC-Q system.
If used, the correct monitoring is disabled.

97.6.2 Setting virtual bit devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])

For virtual servo amplifier devices, the notation differs according to the connection type between the GOT and the servo amplifier.

Select one of the following according to the control type in the device setting dialog.



Item	Description
[Motion Controller(SSCNET III/H)]	Select this item to connect the GOT through a Motion controller. The following item is displayed. • [Axis No.]: Set the axis number to be monitored.
[Simple Motion(SSCNET III/H)]	Select this item to connect the GOT through a Simple Motion module (QD77MS). The following item is displayed. • [Unit No.]: Set the first 2 digits of the 3-digit number that represents the start I/O number of the Simple Motion module. • [Axis No.]: Set the axis number to be monitored.
[Master Module(CCIEF)]	Select this item to connect the GOT through the master station on the CC-Link IE Field Network or a Simple Motion module (QD77GF).

The following shows the notation and setting range of virtual devices.

Device name	Device notation and setting range		Notation example
SP	[Motion Controller(SSCNET III/H)]	A(Axis No.)-SP(Device) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 6	A32-SP0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-SP(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 6	UFF-A32-SP0
	[Master Module(CCIEF)]	SP(Device) • Device (decimal): 0 to 6	SP0
OM	[Motion Controller(SSCNET III/H)]	A(Axis No.)-OM(Device) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 2, 4 to 5	A32-OM0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-OM(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 2, 4 to 5	UFF-A32-OM0
	[Master Module(CCIEF)]	OM(Device) • Device (decimal): 0 to 2, 4 to 5	OM0

Device name	Device notation and setting range		Notation example
TMB	[Motion Controller(SSCNET III/H)]	A(Axis No.)-TMB(Device) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 6	A32-TMB1
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-TMB(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 6	UFF-A32-TMB1
	[Master Module(CCIEF)]	TMB(Device) • Device (decimal): 1 to 6	TMB1
OTI	[Motion Controller(SSCNET III/H)]	A(Axis No.)-OTI(Device) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5	A32-OTI0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-OTI(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5	UFF-A32-OTI0
	[Master Module(CCIEF)]	OTI(Device) • Device (decimal): 0 to 5	OTI0
GFDI	[Motion Controller(SSCNET III/H)]	A(Axis No.)-GFDI(Device) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1	A32-GFDI0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-GFDI(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1	UFF-A32-GFDI0
ECCDI	[Motion Controller(SSCNET III/H)]	A(Axis No.)-ECCDI(Device) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1	A32-ECCDI0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-ECCDI(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1	UFF-A32-ECCDI0

For indirect specification of a module or axis number, refer to the following.

☞ Page 3171 Indirect specification of a module number ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

☞ Page 3172 Indirect specification of an axis number or axis designation ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

97.6.3 Availability of writing/reading data to/from bit devices ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])

The following shows the availability of writing/reading data to/from bit devices by device type.

When the device type is other than the bit type, set the device No. in multiples of 16.

The GOT can only read data from the device when the QS001CPU is used.

To write data to the consecutive devices of a Q172DR(CR750-Q), use the Q172DR(CR750-Q) with firmware version R6b or later.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type				
	Bit	Byte (8 bits)	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)
X	R/W	-/-	R/W	R/W	-/-
Y	R/W	-/-	R/W	R/W	-/-
B	R/W	-/-	R/W	R/W	-/-
M	R/W	-/-	R/W	R/W	-/-
L	R/W	-/-	R/W	R/W	-/-
S	R/W	-/-	R/W	R/W	-/-
F	R/W	-/-	R/W	R/W	-/-
TC	R/W	-/-	-/-	-/-	-/-
TT	R/W	-/-	-/-	-/-	-/-
CC	R/W	-/-	-/-	-/-	-/-
CT	R/W	-/-	-/-	-/-	-/-
SC	R/W	-/-	-/-	-/-	-/-
SS	R/W	-/-	-/-	-/-	-/-
SB	R/W	-/-	R/W	R/W	-/-
SM	R/W	-/-	R/W	R/W	-/-
RX	R/W	-/-	R/W	R/W	-/-
RY	R/W	-/-	R/W	R/W	-/-
LB	R/W	-/-	R/W	R/W	-/-
SP	-/W	-/-	-/-	-/-	-/-
OM	-/W	-/-	-/-	-/-	-/-
TMB	-/W	-/-	-/-	-/-	-/-
OTI	-/W	-/-	-/-	-/-	-/-
GFDI	-/W	-/-	-/-	-/-	-/-
ECCDI	-/W	-/-	-/-	-/-	-/-
IOST	R/-	-/-	-/-	-/-	-/-
CMD	-/W	-/-	-/-	-/-	-/-

97.6.4 Monitoring-supported word devices ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])

The following table shows monitoring-supported word devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3291 Availability of writing/reading data to/from word devices ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])

○: Available

×: Not available

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
TN*6	Timer current value	Decimal	0 to 32767	○	○
CN*6	Counter current value	Decimal	0 to 32767	○	○
SN*6	Retentive timer current value	Decimal	0 to 32767	○	○
D*3*5*6	Data register	Decimal	0 to 4910079	○	○
SD	Special register	Decimal	0 to 2255	○	○
W*3*5	Link register	Hexadecimal	000000 to 4AEBFF	○	○
SW	Link special register	Hexadecimal	0000 to 7FFF	○	○
R*3*4	File register	Decimal	0 to 32767	○	○
ER*3	Extension file register(Block)	Decimal	ER (R block)-(Device) Notation example: ER255-100 • R block (decimal): 0 to 255 • Device (decimal): 0 to 32767	○	○
ZR*3*5	Extension file register	Decimal	0 to 4849663	○	○
Z	Index register	Decimal	0 to 19	○	○ Not usable as bit data
G	Buffer memory (Intelligent function module)	Decimal	U(Unit No.)-G(Device) Notation example: UFF-G100 • Module No. (hexadecimal): 00 to FF • Device (decimal): 0 to 65535 For the module No., set the first 2 digits of the 3-digit number that represents the start I/O number of the buffer memory for the intelligent function module.	○	○
Ww	Remote register	Hexadecimal	0000 to 1FFF	○	○
Wr	Remote register	Hexadecimal	0000 to 1FFF	○	○
LW	Link register	Hexadecimal	00000 to 1FFFF	○	○
#	Motion device	Decimal	0 to 12287	○	○
U3E0	Multiple CPU high speed transmission memory	Decimal	U3E0-G(Device) Notation example: U3E0-10000 • Device (decimal): 10000 to 24335	○	○
U3E1	Multiple CPU high speed transmission memory	Decimal	U3E1-G(Device) Notation example: U3E1-10000 • Device (decimal): 10000 to 24335	○	○
U3E2	Multiple CPU high speed transmission memory	Decimal	U3E2-(Device) Notation example: U3E2-10000 • Device (decimal): 10000 to 24335	○	○
U3E3	Multiple CPU high speed transmission memory	Decimal	U3E3-(Device) Notation example: U3E3-10000 • Device (decimal): 10000 to 24335	○	○
PA*2	Basic parameter	Decimal	☞ Page 3287 Setting virtual word devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])	×	×

Device name		Device No. representation	Setting range	EG device specifications[*1]	
				Assignment to EG devices	Access using a client
PB[*2]	Gain filter parameter	Decimal	☞ Page 3287 Setting virtual word devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])	×	×
PC[*2]	Extension setting parameter	Decimal	☞ Page 3287 Setting virtual word devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])	×	×
PD[*2]	I/O setting parameter	Decimal	☞ Page 3287 Setting virtual word devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])	×	×
PO[*2]	Option unit parameter	Decimal	☞ Page 3287 Setting virtual word devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])	×	×
PS[*2]	Special parameter	Decimal	☞ Page 3287 Setting virtual word devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])	×	×
PU[*2]	Multi encoder parameter	Decimal	☞ Page 3287 Setting virtual word devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])	×	×
PT[*2]	Positioning control parameter	Decimal	☞ Page 3287 Setting virtual word devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])	×	×
PL[*2]	Linear servo motor/DD motor setting parameter	Decimal	☞ Page 3287 Setting virtual word devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])	×	×
PN[*2]	Network setting parameter	Decimal	☞ Page 3287 Setting virtual word devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])	×	×
ST[*2]	Status display	Decimal	☞ Page 3287 Setting virtual word devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])	×	×
PE[*2]	Extension setting No.2 parameter	Decimal	☞ Page 3287 Setting virtual word devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])	×	×
PW[*2]	Extension setting No.4 parameter	Decimal	☞ Page 3287 Setting virtual word devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])	×	×
PF[*2]	Extension setting No.3 parameter	Decimal	☞ Page 3287 Setting virtual word devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])	×	×
ALM[*2]	Alarm (current alarm J4A extend)	Decimal	☞ Page 3287 Setting virtual word devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])	×	×
	Alarm (alarm history J4A extend)	Decimal	☞ Page 3287 Setting virtual word devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])	×	×
	Alarm (alarm history J5G extend)	Decimal	☞ Page 3287 Setting virtual word devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])	×	×
POS[*2]	Point table (position)	Decimal	☞ Page 3287 Setting virtual word devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])	×	×
SPD[*2]	Point table (speed)	Decimal	☞ Page 3287 Setting virtual word devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])	×	×
ACT[*2]	Point table (acceleration time constant)	Decimal	☞ Page 3287 Setting virtual word devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])	×	×
DCT[*2]	Point table (deceleration time constant)	Decimal	☞ Page 3287 Setting virtual word devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])	×	×

Device name		Device No. representation	Setting range	EG device specifications[*1]	
				Assignment to EG devices	Access using a client
DWL[*2]	Point table (dwell)	Decimal	☞ Page 3287 Setting virtual word devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])	×	×
AUX[*2]	Point table (auxiliary function)	Decimal	☞ Page 3287 Setting virtual word devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])	×	×
MD[*2]	Machine diagnosis data	Decimal	☞ Page 3287 Setting virtual word devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])	×	×
GFDS[*2]	Gear failure diagnosis data	Decimal	☞ Page 3287 Setting virtual word devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])	×	×
ECCDS[*2]	Encoder communication circuit diagnosis data	Decimal	☞ Page 3287 Setting virtual word devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])	×	×
OTS[*2]	One-touch tuning data	Decimal	☞ Page 3287 Setting virtual word devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])	×	×
DI[*2]	External input signal	Decimal	☞ Page 3287 Setting virtual word devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])	×	×
DO[*2]	External output signal	Decimal	☞ Page 3287 Setting virtual word devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
☞ Page 2868 Monitoring a controller through the GOT (server/client function)

*2 Virtual servo amplifier device
For details, refer to the following.
☞ Page 3295 Virtual servo amplifier devices ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])

*3 Do not set a file register by GT Designer3 when executing multiple programs with the file of the file register set at [Use the same file name as the program.] by the PLC parameter of GX Developer.
Otherwise, read or write at GOT will be erroneous.

*4 Available for the file register of block No. switched with the RSET instruction.

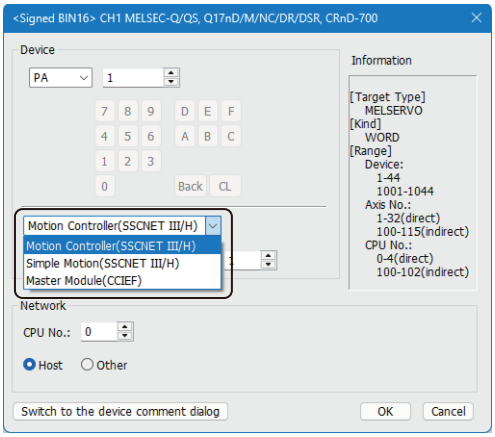
*5 Available for the file register of block number of file name switched with the QDRSET instruction.

*6 Do not use the local device set in a MELSEC-Q system.
If used, the correct monitoring is disabled.

97.6.5 Setting virtual word devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])

For virtual servo amplifier devices, the notation differs according to the connection type between the GOT and the servo amplifier.

Select one of the following according to the control type in the device setting dialog.



Item	Description
[Motion Controller(SSCNET III/H)]	Select this item to connect the GOT through a Motion controller. The following item is displayed. • [Axis No.]: Set the axis number to be monitored.
[Simple Motion(SSCNET III/H)]	Select this item to connect the GOT through a Simple Motion module (QD77MS). The following item is displayed. • [Unit No.]: Set the first 2 digits of the 3-digit number that represents the start I/O number of the Simple Motion module. • [Axis No.]: Set the axis number to be monitored.
[Master Module(CCIEF)]	Select this item to connect the GOT through the master station on the CC-Link IE Field Network or a Simple Motion module (QD77GF).

The following shows the notation and setting range of virtual devices.

Device name	Device notation and setting range		Notation example
PA	[Motion Controller(SSCNET III/H)]	A(Axis No.)-PA(Device) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 44, 1001 to 1044	A32-PA1
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PA(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 44, 1001 to 1044	UFF-A32-PA1
	[Master Module(CCIEF)]	PA (Device) • Device (decimal): 1 to 44, 1001 to 1044	PA1
PB	[Motion Controller(SSCNET III/H)]	A(Axis No.)-PB(Device) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 92, 1001 to 1092	A32-PB1
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PB(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 92, 1001 to 1092	UFF-A32-PB1
	[Master Module(CCIEF)]	PB(Device) • Device (decimal): 1 to 92, 1001 to 1092	PB1

Device name	Device notation and setting range		Notation example
PC	[Motion Controller(SSCNET III/H)]	A(Axis No.)-PC(Device) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 90, 1001 to 1090	A32-PC1
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PC(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 90, 1001 to 1090	UFF-A32-PC1
	[Master Module(CCIEF)]	PC(Device) • Device (decimal): 1 to 90, 1001 to 1090	PC1
PD	[Motion Controller(SSCNET III/H)]	A(Axis No.)-PD(Device) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 72, 1001 to 1072	A32-PD1
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PD(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 72, 1001 to 1072	UFF-A32-PD1
	[Master Module(CCIEF)]	PD(Device) • Device (decimal): 1 to 72, 1001 to 1072	PD1
PO	[Motion Controller(SSCNET III/H)]	A(Axis No.)-PO(Device) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 2, 1001 to 1002	A32-PO1
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PO(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 2, 1001 to 1002	UFF-A32-PO1
PS	[Motion Controller(SSCNET III/H)]	A(Axis No.)-PS(Device) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 99, 1001 to 1099	A32-PS1
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PS(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 99, 1001 to 1099	UFF-A32-PS1
PU	[Motion Controller(SSCNET III/H)]	A(Axis No.)-PU(Device) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 44, 1001 to 1044	A32-PU1
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PU(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 44, 1001 to 1044	UFF-A32-PU1
PT	[Motion Controller(SSCNET III/H)]	A(Axis No.)-PT(Device) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 90, 1001 to 1090	A32-PT1
	[Master Module(CCIEF)]	PT(Device) • Device (decimal): 1 to 90, 1001 to 1090	PT1
PL	[Motion Controller(SSCNET III/H)]	A(Axis No.)-PL(Device) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 72, 1001 to 1072	A32-PL1
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PL(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 72, 1001 to 1072	UFF-A32-PL1
	[Master Module(CCIEF)]	PL(Device) • Device (decimal): 1 to 72, 1001 to 1072	PL1
PN	[Master Module(CCIEF)]	PN(Device) • Device (decimal): 1 to 32, 1001 to 1032	PN1
ST	[Motion Controller(SSCNET III/H)]	A(Axis No.)-ST(Device) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 48	A32-ST0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-ST(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 48	UFF-A32-ST0
	[Master Module(CCIEF)]	ST(Device) • Device (decimal): 0 to 48	ST0

Device name	Device notation and setting range		Notation example
PE	[Motion Controller(SSCNET III/H)]	A(Axis No.)-PE(Device) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 88, 1001 to 1088	A32-PE1
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PE(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 88, 1001 to 1088	UFF-A32-PE1
	[Master Module(CCIEF)]	PE(Device) • Device (decimal): 1 to 88, 1001 to 1088	PE1
PF	[Motion Controller(SSCNET III/H)]	A(Axis No.)-PF(Device) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 99, 1001 to 1099	A32-PF1
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PF(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 99, 1001 to 1099	UFF-A32-PF1
	[Master Module(CCIEF)]	PF(Device) • Device (decimal): 1 to 99, 1001 to 1099	PF1
PW	[Motion Controller(SSCNET III/H)]	A(Axis No.)-PW(Device) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 40,1001 to 1040	A3-PW1
ALM	[Motion Controller(SSCNET III/H)]	A(Axis No.)-ALM(Device) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 2, 11 to 59, 200 to 215, 220 to 235, 240 to 255, 260 to 275, 280 to 295, 300 to 315	A32-ALM0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-ALM(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 2, 11 to 59, 200 to 215, 220 to 235, 240 to 255, 260 to 275, 280 to 295, 300 to 315	UFF-A32-ALM0
	[Master Module(CCIEF)]	ALM(Device) • Device (decimal): 0 to 2, 11 to 59, 200 to 215, 220 to 235, 240 to 255	ALM0
POS	[Master Module(CCIEF)]	POS(Device) • Device (decimal): 1 to 255, 1001 to 1255	POS1
SPD	[Master Module(CCIEF)]	SPD(Device) • Device (decimal): 1 to 255, 1001 to 1255	SPD1
ACT	[Master Module(CCIEF)]	ACT(Device) • Device (decimal): 1 to 255, 1001 to 1255	ACT1
DCT	[Master Module(CCIEF)]	DCT(Device) • Device (decimal): 1 to 255, 1001 to 1255	DCT1
DWL	[Master Module(CCIEF)]	DWL(Device) • Device (decimal): 1 to 255, 1001 to 1255	DWL1
AUX	[Master Module(CCIEF)]	AUX(Device) • Device (decimal): 1 to 255, 1001 to 1255	AUX1
MD	[Motion Controller(SSCNET III/H)]	A(Axis No.)-MD(Device) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 21	A32-MD0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-MD(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 21	UFF-A32-MD0
	[Master Module(CCIEF)]	MD(Device) • Device (decimal): 0 to 21	MD0
GFDS	[Motion Controller(SSCNET III/H)]	A(Axis No.)-GFDS(Device) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5	A32-GFDS0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-GFDS(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5	UFF-A32-GFDS0

Device name	Device notation and setting range		Notation example
ECCDS	[Motion Controller(SSCNET III/H)]	A(Axis No.)-ECCDS(Device) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5	A32-ECCDS0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-ECCDS(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5	UFF-A32-ECCDS0
OTS	[Motion Controller(SSCNET III/H)]	A(Axis No.)-OTS(Device) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5, 3000	A32-OTS0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-OTS(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5, 3000	UFF-A32-OTS0
	[Master Module(CCIEF)]	OTS(Device) • Device (decimal): 0 to 5	OTS0
DI	[Motion Controller(SSCNET III/H)]	A(Axis No.)-DI(Device) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 6	A32-DI0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-DI(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 6	UFF-A32-DI0
	[Master Module(CCIEF)]	DI(Device) • Device (decimal): 0 to 6	DI0
DO	[Motion Controller(SSCNET III/H)]	A(Axis No.)-DO(Device) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 4	A32-DO0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-DO(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 4	UFF-A32-DO0
	[Master Module(CCIEF)]	DO(Device) • Device (decimal): 0 to 4	DO0

For indirect specification of a module or axis number, refer to the following.

☞ Page 3171 Indirect specification of a module number ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

☞ Page 3172 Indirect specification of an axis number or axis designation ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

97.6.6 Availability of writing/reading data to/from word devices ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])

The following shows the availability of writing/reading data to/from word devices by device type.

The GOT can only read data from the device when the QS001CPU is used.

To write data to the consecutive devices of a Q172DR(CR750-Q), use the Q172DR(CR750-Q) with firmware version R6b or later.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data
TN	R/W	R/W	-/-	-/-
CN	R/W	R/W	-/-	-/-
SN	R/W	R/W	-/-	-/-
D	R/W	R/W	R/W	R/W
SD	R/W	R/W	R/W	R/W
W	R/W	R/W	R/W	R/W
SW	R/W	R/W	-/-	R/W
R	R/W	R/W	R/W	R/W
ER	R/W	R/W	R/W	R/W
ZR	R/W	R/W	R/W	R/W
Z	R/W	R/W	-/-	-/-
G	R/W	R/W	R/W	R/W
Ww	R/W	R/W	R/W	R/W
Wr	R/W	R/W	R/W	R/W
LW	R/W	R/W	R/W	R/W
#	R/W	R/W	-/-	R/W
U3E0	R/W	R/W	R/W	R/W
U3E1	R/W	R/W	R/W	R/W
U3E2	R/W	R/W	R/W	R/W
U3E3	R/W	R/W	R/W	R/W
PA	R/W	R/W	-/-	-/-
PB	R/W	R/W	-/-	-/-
PC	R/W	R/W	-/-	-/-
PD	R/W	R/W	-/-	-/-
PO	R/W	R/W	-/-	-/-
PS	R/W	R/W	-/-	-/-
PU	R/W	R/W	-/-	-/-
PT	R/W	R/W	-/-	-/-
PL	R/W	R/W	-/-	-/-
PN	R/W	R/W	-/-	-/-
ST	R/-	R/-	-/-	-/-
PE	R/W	R/W	-/-	-/-
PF	R/W	R/W	-/-	-/-
PW	R/W	R/W	-/-	-/-
ALM	R/-	R/-	-/-	-/-
POS	R/W	R/W	-/-	-/-
SPD	R/W	R/W	-/-	-/-
ACT	R/W	R/W	-/-	-/-

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data
DCT	R/W	R/W	-/-	-/-
DWL	R/W	R/W	-/-	-/-
AUX	R/W	R/W	-/-	-/-
MD	R/-	R/-	-/-	-/-
GFDS	R/-	R/-	-/-	-/-
ECCDS	R/-	R/-	-/-	-/-
OTS*1	R/W	R/W	-/-	-/-
DI	R/-	R/W	-/-	-/-
DO	R/-	R/-	-/-	-/-

*1 Only reading is available for OTS0 to OTS5.

97.6.7 Monitoring-supported double-word devices ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])

The following table shows monitoring-supported double-word devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3294 Availability of writing/reading data to/from double-word devices ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])

○: Available

×: Not available

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
ALD*2	Life diagnosis	Decimal	☞ Page 3293 Setting virtual double-word devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])	×	×
TMI*2	Input signal for test operation (for test operation)	Decimal	☞ Page 3293 Setting virtual double-word devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])	×	×
TMO*2	Forced output of signal pin (for test operation)	Decimal	☞ Page 3293 Setting virtual double-word devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])	×	×
TMD*2	Set data (for test operation)	Decimal	☞ Page 3293 Setting virtual double-word devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])	×	×
AL*3	Faults history	Decimal	0 to 899	×	×
LPr*3*4	Parameter (32-bit)	Decimal	0 to 1500	×	×
OP*3	Operation parameter	Decimal	0 to 5	×	×
PV*3	Current value monitor	Decimal	1 to 143	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
☞ Page 2868 Monitoring a controller through the GOT (server/client function)

*2 Virtual servo amplifier device
For details, refer to the following.
☞ Page 3295 Virtual servo amplifier devices ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])

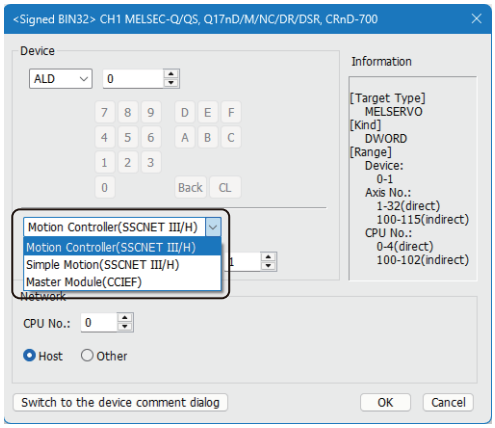
*3 Virtual inverter device
For details, refer to the following.
☞ Page 3296 Virtual inverter devices ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])

*4 If you specify LPr900 to LPr935, the following item is displayed in the device setting dialog.
[Setting items (for calibration parameters)]: [Bias/gain value], [Analog input value]
Enclose the device number in parentheses when selecting [Analog input value].
Example 1) Notation when [Bias/gain value] is selected: LPr900
Example 2) Notation when [Analog input value] is selected: LPr(900)
When LPr900 or LPr901 (Calibration parameter) is specified, selecting [Bias/gain value] or [Analog input value] does not affect the monitoring target.

97.6.8 Setting virtual double-word devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])

For virtual servo amplifier devices, the notation differs according to the connection type between the GOT and the servo amplifier.

Select one of the following according to the control type in the device setting dialog.



Item	Description
[Motion Controller(SSCNET III/H)]	Select this item to connect the GOT through a Motion controller. The following item is displayed. • [Axis No.]: Set the axis number to be monitored.
[Simple Motion(SSCNET III/H)]	Select this item to connect the GOT through a Simple Motion module (QD77MS). The following item is displayed. • [Unit No.]: Set the first 2 digits of the 3-digit number that represents the start I/O number of the Simple Motion module. • [Axis No.]: Set the axis number to be monitored.
[Master Module(CCIEF)]	Select this item to connect the GOT through the master station on the CC-Link IE Field Network or a Simple Motion module (QD77GF).

The following shows the notation and setting range of virtual devices.

Device name	Device notation and setting range		Notation example
ALD	[Motion Controller(SSCNET III/H)]	A(Axis No.)-ALD(Device) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1	A32-ALD0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-ALD(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1	UFF-A32-ALD0
	[Master Module(CCIEF)]	ALD(Device) • Device (decimal): 0 to 1	ALD0
TMI	[Motion Controller(SSCNET III/H)]	A(Axis No.)-TMI(Device) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 2	A32-TMI0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-TMI(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 2	UFF-A32-TMI0
	[Master Module(CCIEF)]	TMI(Device) • Device (decimal): 0 to 2	TMI0

Device name	Device notation and setting range		Notation example
TMO	[Motion Controller(SSCNET III/H)]	A(Axis No.)-TMO(Device) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0	A32-TMO0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-TMO(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0	UFF-A32-TMO0
	[Master Module(CCIEF)]	TMO(Device) • Device (decimal): 0	TMO0
TMD	[Motion Controller(SSCNET III/H)]	A(Axis No.)-TMD(Device) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1, 3	A32-TMD0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-TMD(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1, 3	UFF-A32-TMD0
	[Master Module(CCIEF)]	TMD(Device) • Device (decimal): 0 to 1, 3	TMD0

For indirect specification of a module or axis number, refer to the following.

☞ Page 3171 Indirect specification of a module number ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

☞ Page 3172 Indirect specification of an axis number or axis designation ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

97.6.9 Availability of writing/reading data to/from double-word devices ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])

The following shows the availability of writing/reading data to/from double-word devices by device type.

The GOT can only read data from the device when the QS001CPU is used.

To write data to the consecutive devices of a Q172DR(CR750-Q), use the Q172DR(CR750-Q) with firmware version R6b or later.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of double-word data
ALD	-/-	R/-	-/-	-/-
TMI	-/-	-/W	-/-	-/-
TMO	-/-	-/W	-/-	-/-
TMD	-/-	-/W	-/-	-/-
AL	-/-	R/-	-/-	-/-
LPr	-/-	R/W	-/-	-/-
OP	-/-	R/W	-/-	-/-
PV	-/-	R/-	-/-	-/-

97.6.10 Virtual servo amplifier devices ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])

The following shows the correspondence between the virtual devices used in the GOT and the servo amplifier data.

Virtual device name	Reference
SP	☞ Page 3192 Servo amplifier request (MELSEC iQ-R, RnMT/NC/RT, CR800-D])
OM	☞ Page 3192 Operation mode selection ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
TMB	☞ Page 3193 Instruction demand (for test operation) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
OTI	☞ Page 3193 One-touch tuning instruction ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
GFDI	☞ Page 3194 Gear failure diagnosis instruction ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
ECCDI	☞ Page 3194 Encoder communication circuit diagnosis instruction ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PA	☞ Page 3194 Basic parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PB	☞ Page 3196 Gain filter parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PC	☞ Page 3199 Extension setting parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PD	☞ Page 3202 I/O setting parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PO	☞ Page 3203 Option unit parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PS	☞ Page 3204 Special parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PU	☞ Page 3204 Multi encoder parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PT	☞ Page 3204 Positioning control parameter, pressure control parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PL	☞ Page 3208 Virtual servo amplifier devices ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PN	☞ Page 3209 Network setting parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
ST	☞ Page 3212 Status display ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PE	☞ Page 3214 Extension setting No.2 parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PF	☞ Page 3216 Extension setting No.3 parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PW	☞ Page 3220 Extension setting No.4 parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
ALM	☞ Page 3222 Alarm [MELSEC iQ-R, RnMT/NC/RT, CR800-D])
POS	☞ Page 3229 Point table (position) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
SPD	☞ Page 3230 Point table (speed) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
ACT	☞ Page 3230 Point table (acceleration time constant) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
DCT	☞ Page 3230 Point table (deceleration time constant) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
DWL	☞ Page 3231 Point table (dwell) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
AUX	☞ Page 3231 Point table (auxiliary function) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
MD	☞ Page 3232 Machine diagnosis data ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
GFDS	☞ Page 3233 Gear failure diagnosis data ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
ECCDS	☞ Page 3233 Encoder communication circuit diagnosis data ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
OTS	☞ Page 3234 One-touch tuning data ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
DI	☞ Page 3235 External input signal in MR-J5-G(-RJ) and MR-J5W□-G ([MELSEC iQ-R, RnMT/NC/RT, CR800-D]) ☞ Page 3236 External input signal in MR-J5(W)-□B(-RJ) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
DO	☞ Page 3238 External output signal in MR-J5-G(-RJ) and MR-J5W□-G ([MELSEC iQ-R, RnMT/NC/RT, CR800-D]) ☞ Page 3238 External output signal in MR-J5(W)-□B(-RJ) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
ALD	☞ Page 3239 Life Diagnosis ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
TMI	☞ Page 3240 Input signal for test operation (for test operation) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
TMO	☞ Page 3240 Forced output of signal pin (for test operation) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
TMD	☞ Page 3240 Set data (for test operation) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

97.6.11 Precautions for virtual servo amplifier devices ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])

For the precautions for virtual servo amplifier devices, refer to the following.

☞ Page 3241 Precautions for virtual servo amplifier devices ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

97.6.12 Virtual inverter devices ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])

The following shows the correspondence between the virtual devices used in the GOT and the inverter data.

Virtual device name	Reference
IOST	☞ Page 3243 I/O terminal monitor ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
CMD	☞ Page 3245 Operation command ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
AL	☞ Page 3247 Alarm history ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
LPr	☞ Page 3249 Parameter (32-bit) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
OP	☞ Page 3249 Operation parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PV	☞ Page 3250 Current value monitor ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

97.7 [MELSEC-L]

GT37 SoftGOT3000

Item	Reference
Specifications of bit devices	☞ Page 3298 Monitoring-supported bit devices ([MELSEC-L])
	☞ Page 3300 Setting virtual bit devices for servo amplifiers ([MELSEC-L])
	☞ Page 3301 Availability of writing/reading data to/from bit devices ([MELSEC-L])
Specifications of word devices	☞ Page 3302 Monitoring-supported word devices ([MELSEC-L])
	☞ Page 3304 Setting virtual word devices for servo amplifiers ([MELSEC-L])
	☞ Page 3307 Availability of writing/reading data to/from word devices ([MELSEC-L])
Specifications of double-word devices	☞ Page 3308 Monitoring-supported double-word devices ([MELSEC-L])
	☞ Page 3309 Setting virtual double-word devices for servo amplifiers ([MELSEC-L])
	☞ Page 3310 Availability of writing/reading data to/from double-word devices ([MELSEC-L])
Specifications of virtual servo amplifier devices	☞ Page 3310 Virtual servo amplifier devices ([MELSEC-L])
	☞ Page 3311 Precautions for virtual servo amplifier devices ([MELSEC-L])
Specifications of virtual inverter devices	☞ Page 3311 Virtual inverter devices ([MELSEC-L])

97.7.1 Monitoring-supported bit devices ([MELSEC-L])

The following table shows monitoring-supported bit devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3301 Availability of writing/reading data to/from bit devices ([MELSEC-L])

○: Available

×: Not available

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
X	Input relay	Hexadecimal	0000 to 3FFF	○	○
Y	Output relay	Hexadecimal	0000 to 3FFF	○	○
B	Link relay	Hexadecimal	0000 to EFFF	○	○
M*4	Internal relay	Decimal	0 to 61439	○	○
L	Latch relay	Decimal	0 to 32767	○	○
S	Step relay	Decimal	0 to 8191	○	○
F	Annunciator	Decimal	0 to 32767	○	○
TC*4	Timer coil	Decimal	0 to 32767	○	○ Not usable as word data
TT*4	Timer contact	Decimal	0 to 32767	○	○ Not usable as word data
CC*4	Counter coil	Decimal	0 to 32767	○	○ Not usable as word data
CT*4	Counter contact	Decimal	0 to 32767	○	○ Not usable as word data
SC*4	Retentive timer coil	Decimal	0 to 32767	○	○ Not usable as word data
SS*4	Retentive timer contact	Decimal	0 to 32767	○	○ Not usable as word data
SB	Link special relay	Hexadecimal	0000 to 7FFF	○	○
SM	Special relay	Decimal	0 to 2047	○s	○
RX	Remote input	Hexadecimal	0000 to 3FFF	○	○
RY	Remote output	Hexadecimal	0000 to 3FFF	○	○
SP*2	Servo amplifier request	Decimal	☞ Page 3300 Setting virtual bit devices for servo amplifiers ([MELSEC-L])	×	×
OM*2	Operation mode selection	Decimal	☞ Page 3300 Setting virtual bit devices for servo amplifiers ([MELSEC-L])	×	×
TMB*2	Instruction demand (for test operation)	Decimal	☞ Page 3300 Setting virtual bit devices for servo amplifiers ([MELSEC-L])	×	×
OTI*2	One-touch tuning instruction	Decimal	☞ Page 3300 Setting virtual bit devices for servo amplifiers ([MELSEC-L])	×	×
IOST*3	I/O terminal monitor	Decimal	0 to 127	×	×
CMD*3	Operation command	Decimal	0 to 63	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
☞ Page 2868 Monitoring a controller through the GOT (server/client function)

*2 Virtual servo amplifier device
For details, refer to the following.

☞ Page 3310 Virtual servo amplifier devices ([MELSEC-L])

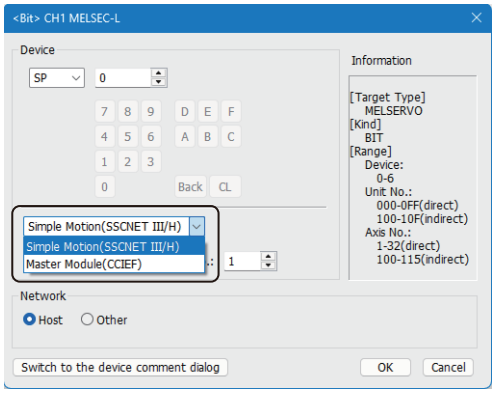
*3 Virtual inverter device
For details, refer to the following.
☞ Page 3311 Virtual inverter devices ([MELSEC-L])

*4 Do not use the local device set in a MELSEC-L system.
If used, the correct monitoring is disabled.
D32768 or later can be used for data register (D).

97.7.2 Setting virtual bit devices for servo amplifiers ([MELSEC-L])

For virtual servo amplifier devices, the notation differs according to the connection type between the GOT and the servo amplifier.

Select one of the following according to the control type in the device setting dialog.



Item	Description
[Simple Motion(SSCNET III/H)]	Select this item to connect the GOT through a Simple Motion module (LD77MS). The following item is displayed. • [Unit No.]: Set the first 2 digits of the 3-digit number that represents the start I/O number of the Simple Motion module. • [Axis No.]: Set the axis number to be monitored.
[Master Module(CCIEF)]	Select this item to connect the GOT through the master station on the CC-Link IE Field Network.

The following shows the notation and setting range of virtual devices.

Device name	Device notation and setting range		Notation example
SP	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-SP(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 6	UFF-A32-SP0
	[Master Module(CCIEF)]	SP(Device) • Device (decimal): 0 to 6	SP0
OM	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-OM(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 2, 4 to 5	UFF-A32-OM0
	[Master Module(CCIEF)]	OM(Device) • Device (decimal): 0 to 2, 4 to 5	OM0
TMB	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-TMB(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 6	UFF-A32-TMB1
	[Master Module(CCIEF)]	TMB(Device) • Device (decimal): 1 to 6	TMB1
OTI	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-OTI(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5	UFF-A32-OTI0
	[Master Module(CCIEF)]	OTI(Device) • Device (decimal): 0 to 5	OTI0

For indirect specification of a module or axis number, refer to the following.

☞ Page 3171 Indirect specification of a module number ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

☞ Page 3172 Indirect specification of an axis number or axis designation ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

97.7.3 Availability of writing/reading data to/from bit devices ([MELSEC-L])

The following shows the availability of writing/reading data to/from bit devices by device type.

When the device type is other than the bit type, set the device No. in multiples of 16.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type				
	Bit	Byte (8 bits)	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)
X	R/W	-/-	R/W	R/W	-/-
Y	R/W	-/-	R/W	R/W	-/-
B	R/W	-/-	R/W	R/W	-/-
M	R/W	-/-	R/W	R/W	-/-
L	R/W	-/-	R/W	R/W	-/-
S	R/W	-/-	R/W	R/W	-/-
F	R/W	-/-	R/W	R/W	-/-
TC	R/W	-/-	-/-	-/-	-/-
TT	R/W	-/-	-/-	-/-	-/-
CC	R/W	-/-	-/-	-/-	-/-
CT	R/W	-/-	-/-	-/-	-/-
SC	R/W	-/-	-/-	-/-	-/-
SS	R/W	-/-	-/-	-/-	-/-
SB	R/W	-/-	R/W	R/W	-/-
SM	R/W	-/-	R/W	R/W	-/-
RX	R/W	-/-	R/W	R/W	-/-
RY	R/W	-/-	R/W	R/W	-/-
SP	-/W	-/-	-/-	-/-	-/-
OM	-/W	-/-	-/-	-/-	-/-
TMB	-/W	-/-	-/-	-/-	-/-
OTI	-/W	-/-	-/-	-/-	-/-
IOST	R/-	-/-	-/-	-/-	-/-
CMD	-/W	-/-	-/-	-/-	-/-

97.7.4 Monitoring-supported word devices ([MELSEC-L])

The following table shows monitoring-supported word devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3307 Availability of writing/reading data to/from word devices ([MELSEC-L])

○: Available

×: Not available

Device name		Device No. representation	Setting range	EG device specifications[*1]	
				Assignment to EG devices	Access using a client
TN[*6]	Timer current value	Decimal	0 to 32767	○	○
CN[*6]	Counter current value	Decimal	0 to 32767	○	○
SN[*6]	Retentive timer current value	Decimal	0 to 32767	○	○
D[*6]	Data register	Decimal	0 to 421887	○	○
SD	Special register	Decimal	0 to 2047	○	○
W	Link register	Hexadecimal	00000 to 66FFF	○	○
SW	Link special register	Hexadecimal	0000 to 7FFF	○	○
R[*3*4]	File register	Decimal	0 to 32767	○	○
ZR[*3*5]	Extension file register	Decimal	0 to 393215	○	○
Z	Index register	Decimal	0 to 19	○	○ Not usable as bit data
G	Buffer memory (Intelligent function module)	Decimal	U(Unit No.)-G(Device) Notation example: UFF-G100 • Module No. (hexadecimal): 00 to FF • Device (decimal): 0 to 65535 For the module No., set the first 2 digits of the 3-digit number that represents the start I/O number of the buffer memory for the intelligent function module.	○	○
Ww	Remote register	Hexadecimal	0000 to 1FFF	○	○
Wr	Remote register	Hexadecimal	0000 to 1FFF	○	○
PA[*2]	Basic parameter	Decimal	☞ Page 3304 Setting virtual word devices for servo amplifiers ([MELSEC-L])	×	×
PB[*2]	Gain filter parameter	Decimal	☞ Page 3304 Setting virtual word devices for servo amplifiers ([MELSEC-L])	×	×
PC[*2]	Extension setting parameter	Decimal	☞ Page 3304 Setting virtual word devices for servo amplifiers ([MELSEC-L])	×	×
PD[*2]	I/O setting parameter	Decimal	☞ Page 3304 Setting virtual word devices for servo amplifiers ([MELSEC-L])	×	×
PT[*2]	Positioning control parameter	Decimal	☞ Page 3304 Setting virtual word devices for servo amplifiers ([MELSEC-L])	×	×
PL[*2]	Linear servo motor/DD motor setting parameter	Decimal	☞ Page 3304 Setting virtual word devices for servo amplifiers ([MELSEC-L])	×	×
PN[*2]	Network setting parameter	Decimal	☞ Page 3304 Setting virtual word devices for servo amplifiers ([MELSEC-L])	×	×
ST[*2]	Status display	Decimal	☞ Page 3304 Setting virtual word devices for servo amplifiers ([MELSEC-L])	×	×
PE[*2]	Extension setting No.2 parameter	Decimal	☞ Page 3304 Setting virtual word devices for servo amplifiers ([MELSEC-L])	×	×
PF[*2]	Extension setting No.3 parameter	Decimal	☞ Page 3304 Setting virtual word devices for servo amplifiers ([MELSEC-L])	×	×
ALM[*2]	Alarm (current alarm J4A extend)	Decimal	☞ Page 3304 Setting virtual word devices for servo amplifiers ([MELSEC-L])	×	×
ALM[*2]	Alarm (alarm history J4A extend)	Decimal	☞ Page 3304 Setting virtual word devices for servo amplifiers ([MELSEC-L])	×	×

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
POS*2	Point table (position)	Decimal	☞ Page 3304 Setting virtual word devices for servo amplifiers ([MELSEC-L])	×	×
SPD*2	Point table (speed)	Decimal	☞ Page 3304 Setting virtual word devices for servo amplifiers ([MELSEC-L])	×	×
ACT*2	Point table (acceleration time constant)	Decimal	☞ Page 3304 Setting virtual word devices for servo amplifiers ([MELSEC-L])	×	×
DCT*2	Point table (deceleration time constant)	Decimal	☞ Page 3304 Setting virtual word devices for servo amplifiers ([MELSEC-L])	×	×
DWL*2	Point table (dwell)	Decimal	☞ Page 3304 Setting virtual word devices for servo amplifiers ([MELSEC-L])	×	×
AUX*2	Point table (auxiliary function)	Decimal	☞ Page 3304 Setting virtual word devices for servo amplifiers ([MELSEC-L])	×	×
MD*2	Machine diagnosis data	Decimal	☞ Page 3304 Setting virtual word devices for servo amplifiers ([MELSEC-L])	×	×
OTS*2	One-touch tuning data	Decimal	☞ Page 3304 Setting virtual word devices for servo amplifiers ([MELSEC-L])	×	×
DI*2	External input signal	Decimal	☞ Page 3304 Setting virtual word devices for servo amplifiers ([MELSEC-L])	×	×
DO*2	External output signal	Decimal	☞ Page 3304 Setting virtual word devices for servo amplifiers ([MELSEC-L])	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
☞ Page 2868 Monitoring a controller through the GOT (server/client function)

*2 Virtual servo amplifier device
For details, refer to the following.
☞ Page 3310 Virtual servo amplifier devices ([MELSEC-L])

*3 Do not set a file register by GT Designer3 when executing multiple programs with the file of the file register set at [Use the same file name as the program.] by the PLC parameter of GX Developer.
Otherwise, read or write at GOT will be erroneous.

*4 Available for the file register of block No. switched with the RSET instruction.

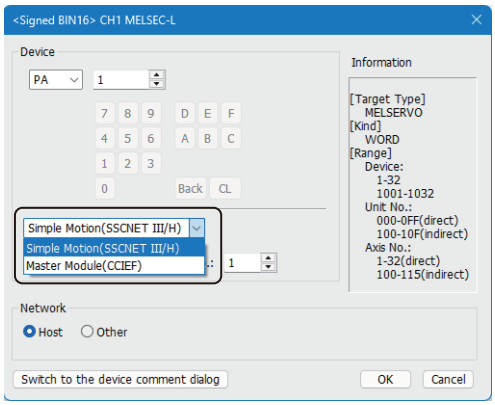
*5 Available for the file register of block number of file name switched with the QDRSET instruction.

*6 Do not use the local device set in a MELSEC-L system.
If used, the correct monitoring is disabled.
D32768 or later can be used for data register (D).

97.7.5 Setting virtual word devices for servo amplifiers ([MELSEC-L])

For virtual servo amplifier devices, the notation differs according to the connection type between the GOT and the servo amplifier.

Select one of the following according to the control type in the device setting dialog.



Item	Description
[Simple Motion(SSCNET III/H)]	Select this item to connect the GOT through a Simple Motion module (LD77MS). The following item is displayed. • [Unit No.]: Set the first 2 digits of the 3-digit number that represents the start I/O number of the Simple Motion module. • [Axis No.]: Set the axis number to be monitored.
[Master Module(CCIEF)]	Select this item to connect the GOT through the master station on the CC-Link IE Field Network.

The following shows the notation and setting range of virtual devices.

Device name	Device notation and setting range		Notation example
PA	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PA(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 32, 1001 to 1032	UFF-A32-PA1
	[Master Module(CCIEF)]	PA (Device) • Device (decimal): 1 to 32, 1001 to 1032	PA1
PB	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PB(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 64, 1001 to 1064	UFF-A32-PB1
	[Master Module(CCIEF)]	PB(Device) • Device (decimal): 1 to 64, 1001 to 1064	PB1
PC	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PC(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 80, 1001 to 1080	UFF-A32-PC1
	[Master Module(CCIEF)]	PC(Device) • Device (decimal): 1 to 80, 1001 to 1080	PC1
PD	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PD(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 48, 1001 to 1048	UFF-A32-PD1
	[Master Module(CCIEF)]	PD(Device) • Device (decimal): 1 to 48, 1001 to 1048	PD1
PT	[Master Module(CCIEF)]	PT(Device) • Device (decimal): 1 to 80, 1001 to 1080	PT1

Device name	Device notation and setting range		Notation example
PL	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PL(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 48, 1001 to 1048	UFF-A32-PL1
	[Master Module(CCIEF)]	PL(Device) • Device (decimal): 1 to 48, 1001 to 1048	PL1
PN	[Master Module(CCIEF)]	PN(Device) • Device (decimal): 1 to 32, 1001 to 1032	PN1
ST	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-ST(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 48	UFF-A32-ST0
	[Master Module(CCIEF)]	ST(Device) • Device (decimal): 0 to 48	ST0
PE	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PE(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 64, 1001 to 1064	UFF-A32-PE1
	[Master Module(CCIEF)]	PE(Device) • Device (decimal): 1 to 64, 1001 to 1064	PE1
PF	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PF(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 64, 1001 to 1064	UFF-A32-PF1
	[Master Module(CCIEF)]	PF(Device) • Device (decimal): 1 to 64, 1001 to 1064	PF1
ALM	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-ALM(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1, 11 to 59, 200 to 215, 220 to 235, 240 to 255	UFF-A32-ALM0
	[Master Module(CCIEF)]	ALM(Device) • Device (decimal): 0 to 1, 11 to 59, 200 to 215, 220 to 235, 240 to 255	ALM0
POS	[Master Module(CCIEF)]	POS(Device) • Device (decimal): 1 to 255, 1001 to 1255	POS1
SPD	[Master Module(CCIEF)]	SPD(Device) • Device (decimal): 1 to 255, 1001 to 1255	SPD1
ACT	[Master Module(CCIEF)]	ACT(Device) • Device (decimal): 1 to 255, 1001 to 1255	ACT1
DCT	[Master Module(CCIEF)]	DCT(Device) • Device (decimal): 1 to 255, 1001 to 1255	DCT1
DWL	[Master Module(CCIEF)]	DWL(Device) • Device (decimal): 1 to 255, 1001 to 1255	DWL1
AUX	[Master Module(CCIEF)]	AUX(Device) • Device (decimal): 1 to 255, 1001 to 1255	AUX1
MD	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-MD(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 18	UFF-A32-MD0
	[Master Module(CCIEF)]	MD(Device) • Device (decimal): 0 to 18	MD0
OTS	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-OTS(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 3	UFF-A32-OTS0
	[Master Module(CCIEF)]	OTS(Device) • Device (decimal): 0 to 3	OTS0

Device name	Device notation and setting range		Notation example
DI	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-DI(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 6	UFF-A32-DI0
	[Master Module(CCIEF)]	DI(Device) • Device (decimal): 0 to 6	DI0
DO	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-DO(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 4	UFF-A32-DO0
	[Master Module(CCIEF)]	DO(Device) • Device (decimal): 0 to 4	DO0

For indirect specification of a module or axis number, refer to the following.

☞ Page 3171 Indirect specification of a module number ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

☞ Page 3172 Indirect specification of an axis number or axis designation ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

97.7.6 Availability of writing/reading data to/from word devices ([MELSEC-L])

The following shows the availability of writing/reading data to/from word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data
TN	R/W	R/W	-/-	-/-
CN	R/W	R/W	-/-	-/-
SN	R/W	R/W	-/-	-/-
D	R/W	R/W	R/W	R/W
SD	R/W	R/W	R/W	R/W
W	R/W	R/W	R/W	R/W
SW	R/W	R/W	-/-	R/W
R	R/W	R/W	R/W	R/W
ZR	R/W	R/W	R/W	R/W
Z	R/W	R/W	-/-	-/-
G	R/W	R/W	R/W	R/W
Ww	R/W	R/W	R/W	R/W
Wr	R/W	R/W	R/W	R/W
PA	R/W	R/W	-/-	-/-
PB	R/W	R/W	-/-	-/-
PC	R/W	R/W	-/-	-/-
PD	R/W	R/W	-/-	-/-
PT	R/W	R/W	-/-	-/-
PL	R/W	R/W	-/-	-/-
PN	R/W	R/W	-/-	-/-
ST	R/-	R/-	-/-	-/-
PE	R/W	R/W	-/-	-/-
PF	R/W	R/W	-/-	-/-
ALM	R/-	R/-	-/-	-/-
POS	R/W	R/W	-/-	-/-
SPD	R/W	R/W	-/-	-/-
ACT	R/W	R/W	-/-	-/-
DCT	R/W	R/W	-/-	-/-
DWL	R/W	R/W	-/-	-/-
AUX	R/W	R/W	-/-	-/-
MD	R/-	R/-	-/-	-/-
OTS	R/-	R/-	-/-	-/-
DI	R/-	R/W	-/-	-/-
DO	R/-	R/-	-/-	-/-

97.7.7 Monitoring-supported double-word devices ([MELSEC-L])

The following table shows monitoring-supported double-word devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3310 Availability of writing/reading data to/from double-word devices ([MELSEC-L])

○: Available

×: Not available

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
ALD*2	Life diagnosis	Decimal	☞ Page 3309 Setting virtual double-word devices for servo amplifiers ([MELSEC-L])	×	×
TMI*2	Input signal for test operation (for test operation)	Decimal	☞ Page 3309 Setting virtual double-word devices for servo amplifiers ([MELSEC-L])	×	×
TMO*2	Forced output of signal pin (for test operation)	Decimal	☞ Page 3309 Setting virtual double-word devices for servo amplifiers ([MELSEC-L])	×	×
TMD*2	Set data (for test operation)	Decimal	☞ Page 3309 Setting virtual double-word devices for servo amplifiers ([MELSEC-L])	×	×
AL*3	Faults history	Decimal	0 to 899	×	×
LPr*3	Parameter (32-bit)	Decimal	0 to 1500	×	×
OP*3	Operation parameter	Decimal	0 to 5	×	×
PV*3	Current value monitor	Decimal	1 to 143	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
☞ Page 2868 Monitoring a controller through the GOT (server/client function)

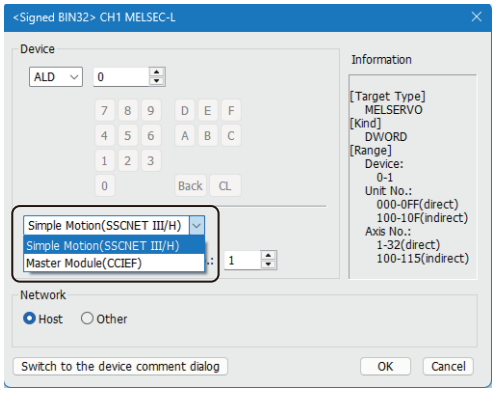
*2 Virtual servo amplifier device
For details, refer to the following.
☞ Page 3310 Virtual servo amplifier devices ([MELSEC-L])

*3 Virtual inverter device
For details, refer to the following.
☞ Page 3311 Virtual inverter devices ([MELSEC-L])

97.7.8 Setting virtual double-word devices for servo amplifiers ([MELSEC-L])

For virtual servo amplifier devices, the notation differs according to the connection type between the GOT and the servo amplifier.

Select one of the following according to the control type in the device setting dialog.



Item	Description
[Simple Motion(SSCNET III/H)]	Select this item to connect the GOT through a Simple Motion module (LD77MS). The following item is displayed. • [Unit No.]: Set the first 2 digits of the 3-digit number that represents the start I/O number of the Simple Motion module. • [Axis No.]: Set the axis number to be monitored.
[Master Module(CCIEF)]	Select this item to connect the GOT through the master station on the CC-Link IE Field Network.

The following shows the notation and setting range of virtual devices.

Device name	Device notation and setting range		Notation example
ALD	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-ALD(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1	UFF-A32-ALD0
	[Master Module(CCIEF)]	ALD(Device) • Device (decimal): 0 to 1	ALD0
TMI	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-TMI(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 2	UFF-A32-TMI0
	[Master Module(CCIEF)]	TMI(Device) • Device (decimal): 0 to 2	TMI0
TMO	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-TMO(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0	UFF-A32-TMO0
	[Master Module(CCIEF)]	TMO(Device) • Device (decimal): 0	TMO0
TMD	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-TMD(Device) • Module No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1, 3	UFF-A32-TMD0
	[Master Module(CCIEF)]	TMD(Device) • Device (decimal): 0 to 1, 3	TMD0

For indirect specification of a module or axis number, refer to the following.

☞ Page 3171 Indirect specification of a module number ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

☞ Page 3172 Indirect specification of an axis number or axis designation ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

97.7.9 Availability of writing/reading data to/from double-word devices ([MELSEC-L])

The following shows the availability of writing/reading data to/from double-word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of double-word data
ALD	-/-	R/-	-/-	-/-
TMI	-/-	-/W	-/-	-/-
TMO	-/-	-/W	-/-	-/-
TMD	-/-	-/W	-/-	-/-
AL	-/-	R/-	-/-	-/-
LPr	-/-	R/W	-/-	-/-
OP	-/-	R/W	-/-	-/-
PV	-/-	R/-	-/-	-/-

97.7.10 Virtual servo amplifier devices ([MELSEC-L])

The following shows the correspondence between the virtual devices used in the GOT and the servo amplifier data.

Virtual device name	Reference
SP	☞ Page 3192 Servo amplifier request (MELSEC iQ-R, RnMT/NC/RT, CR800-D])
OM	☞ Page 3192 Operation mode selection ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
TMB	☞ Page 3193 Instruction demand (for test operation) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
OTI	☞ Page 3193 One-touch tuning instruction ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PA	☞ Page 3194 Basic parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PB	☞ Page 3196 Gain filter parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PC	☞ Page 3199 Extension setting parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PD	☞ Page 3202 I/O setting parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PT	☞ Page 3204 Positioning control parameter, pressure control parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PL	☞ Page 3208 Motor extension parameter, linear servo motor/DD motor setting parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PN	☞ Page 3209 Network setting parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
ST	☞ Page 3212 Status display ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PE	☞ Page 3214 Extension setting No.2 parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PF	☞ Page 3216 Extension setting No.3 parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
ALM	☞ Page 3222 Alarm [MELSEC iQ-R, RnMT/NC/RT, CR800-D])
POS	☞ Page 3229 Point table (position) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
SPD	☞ Page 3230 Point table (speed) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
ACT	☞ Page 3230 Point table (acceleration time constant) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
DCT	☞ Page 3230 Point table (deceleration time constant) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
DWL	☞ Page 3231 Point table (dwell) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
AUX	☞ Page 3231 Point table (auxiliary function) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
MD	☞ Page 3232 Machine diagnosis data ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
OTS	☞ Page 3234 One-touch tuning data ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
DI	☞ Page 3235 External input signal in MR-J5-G(-RJ) and MR-J5W□-G ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
DO	☞ Page 3238 External output signal in MR-J5-G(-RJ) and MR-J5W□-G ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
ALD	☞ Page 3239 Life Diagnosis ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
TMI	☞ Page 3240 Input signal for test operation (for test operation) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
TMO	☞ Page 3240 Forced output of signal pin (for test operation) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
TMD	☞ Page 3240 Set data (for test operation) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

97.7.11 Precautions for virtual servo amplifier devices ([MELSEC-L])

For the precautions for virtual servo amplifier devices, refer to the following.

☞ Page 3241 Precautions for virtual servo amplifier devices ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

97.7.12 Virtual inverter devices ([MELSEC-L])

The following shows the correspondence between the virtual devices used in the GOT and the inverter data.

Virtual device name	Reference
IOST	☞ Page 3243 I/O terminal monitor ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
CMD	☞ Page 3245 Operation command ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
AL	☞ Page 3247 Alarm history ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
LPr	☞ Page 3249 Parameter (32-bit) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
OP	☞ Page 3249 Operation parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PV	☞ Page 3250 Current value monitor ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

97.8 [MELSEC-A]

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Item	Reference
Specifications of bit devices	☞ Page 3312 Monitoring-supported bit devices ([MELSEC-A])
	☞ Page 3313 Availability of writing/reading data to/from bit devices ([MELSEC-A])
Specifications of word devices	☞ Page 3314 Monitoring-supported word devices ([MELSEC-A])
	☞ Page 3315 Availability of writing/reading data to/from word devices ([MELSEC-A])

97.8.1 Monitoring-supported bit devices ([MELSEC-A])

The following table shows monitoring-supported bit devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3313 Availability of writing/reading data to/from bit devices ([MELSEC-A])

○: Available

×: Not available

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
X*3	Input relay	Hexadecimal	0000 to 1FFF	○	○
Y*3	Output relay	Hexadecimal	0000 to 1FFF	○	○
B*3	Link relay	Hexadecimal	0000 to 7FFF	○	○
M*3	Internal relay	Decimal	0 to 8999 9256 to 32767	○	○
M*2	Special internal relay	Decimal	9000 to 9255	○	○
L*3	Latch relay	Decimal	0 to 32767	○	○
F*3	Annunciator	Decimal	0 to 32767	○	○
TC	Timer coil	Decimal	0 to 32767	○	○ Not usable as word data
TT	Timer contact	Decimal	0 to 32767	○	○ Not usable as word data
CC	Counter coil	Decimal	0 to 32767	○	○ Not usable as word data
CT	Counter contact	Decimal	0 to 32767	○	○ Not usable as word data
SB	Link special relay	Hexadecimal	0000 to 07FF	○	○
RX*4	Remote input	Hexadecimal	000 to 7FF	○	○
RY*4	Remote output	Hexadecimal	000 to 7FF	○	○
LB*4	Link relay	Hexadecimal	0000 to 1FFF	○	○

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
☞ Page 2868 Monitoring a controller through the GOT (server/client function)

*2 If the special internal relay (M) is converted to the word device, treat 9000 of the device No. as 0 and set in multiples of 16.
Example) M9000, M9016, M9240

*3 The device number must be set in multiples of 16.

*4 The target device of the host station can be monitored only.
Monitoring the target device of any other station causes a system error.

97.8.2 Availability of writing/reading data to/from bit devices ([MELSEC-A])

The following shows the availability of writing/reading data to/from bit devices by device type.

When the device type is other than the bit type, set the device No. in multiples of 16.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type				
	Bit	Byte (8 bits)	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)
X	R/W	-/-	R/W	R/W	-/-
Y	R/W	-/-	R/W	R/W	-/-
B	R/W	-/-	R/W	R/W	-/-
M	R/W	-/-	R/W	R/W	-/-
L	R/W	-/-	R/W	R/W	-/-
F	R/W	-/-	R/W	R/W	-/-
TC	R/W	-/-	-/-	-/-	-/-
TT	R/W	-/-	-/-	-/-	-/-
CC	R/W	-/-	-/-	-/-	-/-
CT	R/W	-/-	-/-	-/-	-/-
SB	R/W	-/-	R/W	R/W	-/-
RX	R/W	-/-	R/W	R/W	-/-
RY	R/W	-/-	R/W	R/W	-/-
LB	R/W	-/-	R/W	R/W	-/-

97.8.3 Monitoring-supported word devices ([MELSEC-A])

The following table shows monitoring-supported word devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3315 Availability of writing/reading data to/from word devices ([MELSEC-A])

○: Available

×: Not available

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
TN	Timer current value	Decimal	0 to 32767	○	○
CN	Counter current value	Decimal	0 to 32767	○	○
D	Data register	Decimal	0 to 8999 9256 to 32767	○	○
D	Special data register	Decimal	9000 to 9255	○	○
W	Link register	Hexadecimal	0000 to 7FFF	○	○
SW	Link special register	Hexadecimal	0000 to 07FF	○	○
R	File register	Decimal	0 to 32767	○	○
ER	Extension file register(Block)	Decimal	ER (R block)-(Device) Notation example: ER255-100 • R block (decimal): 1 to 255 • Device (decimal): 0 to 8191	○	○
ZR	Extension file register	Decimal	0 to 1042431	○	○
Z	Index register	Decimal	0 to 6	○	○ Not usable as bit data
V	Index register	Decimal	0 to 6	○	○ Not usable as bit data
BM*2	Buffer memory (Intelligent function module)	Decimal	GM(R block)-(Device) Notation example: BMFF-100 • BM start No. (hexadecimal): 00 to FF • Device (decimal): 0 to 32767 For the BM start No., set the first 2 digits of the 3-digit number that represents the start I/O number of the buffer memory for the intelligent function module.	○	○ Not usable as bit data
Ww	Remote register	Hexadecimal	000 to 7FF	○	○
Wr	Remote register	Hexadecimal	000 to 7FF	○	○
LW	Link register	Hexadecimal	0000 to 1FFF	○	○
A	Accumulator	Decimal	0 to 1	○	○

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
☞ Page 2868 Monitoring a controller through the GOT (server/client function)

*2 Only the intelligent function module on the station connected to GOT can be specified.
Set the buffer memory within the address range of the buffer memory existing in the intelligent function module.

97.8.4 Availability of writing/reading data to/from word devices ([MELSEC-A])

The following shows the availability of writing/reading data to/from word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data
TN	R/W	R/W	-/-	R/W
CN	R/W	R/W	-/-	R/W
D	R/W	R/W	-/-	R/W
W	R/W	R/W	-/-	R/W
SW	R/W	R/W	-/-	R/W
R	R/W	R/W	-/-	R/W
ER	R/W	R/W	-/-	R/W
ZR	R/W	R/W	-/-	R/W
Z	R/W	R/W	-/-	-/-
V	R/W	R/W	-/-	R/W
BM	R/W	R/W	-/-	-/-
Ww	R/W	R/W	-/-	R/W
Wr	R/W	R/W	-/-	R/W
LW	R/W	R/W	-/-	R/W
A	R/W	R/W	-/-	R/W

97.9 [MELSEC-FX]

GT37 SoftGOT3000

Item	Reference
Specifications of bit devices	☞ Page 3316 Monitoring-supported bit devices ([MELSEC-FX])
	☞ Page 3316 Availability of writing/reading data to/from bit devices ([MELSEC-FX])
Specifications of word devices	☞ Page 3317 Monitoring-supported word devices ([MELSEC-FX])
	☞ Page 3318 Setting the buffer memory device ([MELSEC-FX])
	☞ Page 3322 Availability of writing/reading data to/from word devices ([MELSEC-FX])
Protection with a keyword	☞ Page 3322 Protection using a keyword ([MELSEC-FX])

97.9.1 Monitoring-supported bit devices ([MELSEC-FX])

The following table shows monitoring-supported bit devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3316 Availability of writing/reading data to/from bit devices ([MELSEC-FX])

○: Available

×: Not available

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
X	Input relay	Octal	0000 to 0377	○	○
Y	Output relay	Octal	0000 to 0377	○	○
M	Auxiliary relay	Decimal	0 to 7679	○	○
M	Special aux relay	Decimal	8000 to 8511	○	○
S	State	Decimal	0 to 4095	○	○
T	Timer contact	Decimal	0 to 511	○	○ Not usable as word data
C	Counter contact	Decimal	0 to 255	○	○ Not usable as word data

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
☞ Page 2868 Monitoring a controller through the GOT (server/client function)

97.9.2 Availability of writing/reading data to/from bit devices ([MELSEC-FX])

The following shows the availability of writing/reading data to/from bit devices by device type.

When the device type is other than the bit type, set the device No. in multiples of 16.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type				
	Bit	Byte (8 bits)	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)
X	R/W	-/-	R/W	R/W	-/-
Y	R/W	-/-	R/W	R/W	-/-
M	R/W	-/-	R/W	R/W	-/-
S	R/W	-/-	R/W	R/W	-/-
T	R/W	-/-	-/-	-/-	-/-
C	R/W	-/-	-/-	-/-	-/-

97.9.3 Monitoring-supported word devices ([MELSEC-FX])

The following table shows monitoring-supported word devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3322 Availability of writing/reading data to/from word devices ([MELSEC-FX])

○: Available

×: Not available

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
T	Timer current value	Decimal	0 to 511	○	○
C*3	Counter current value	Decimal	0 to 255	○	○
D	Data register	Decimal	0 to 7999	○	○
D	Special data register	Decimal	8000 to 8511	○	○
R	Extension register	Decimal	0 to 32767	○	○
Z	Index register	Decimal	0 to 7	○	○ Not usable as bit data
V	Index register	Decimal	0 to 7	○	○ Not usable as bit data
BM*5	Buffer memory	Decimal	☞ Page 3318 Setting the buffer memory device ([MELSEC-FX])	○	○
TS*2*4*6	Timer set value	Decimal	0 to 511	○	○
CS*3*4*6	Counter set value	Decimal	0 to 255	○	○

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
☞ Page 2868 Monitoring a controller through the GOT (server/client function)

*2 Only 16-bit (1-word) specification is possible.

*3 For CS0 to CS199 and C0 to C199, only 16-bit (1-word) specification is allowed.
For CS200 to CS255 and C200 to C255, only 32-bit (2-word) specification is allowed.

*4 The setting values of the timer and counter, which are not used for the program, cannot be monitored.
If monitoring is executed, a reading error occurs.

*5 Usable only for special blocks or special units compatible with FX1N, FX1NC, FX2N, FX2NC, FX3G, FX3GC, FX3U, or FX3UC.
(Except FX0N-3A, FX2N-2AD, and FX2N-2DA)

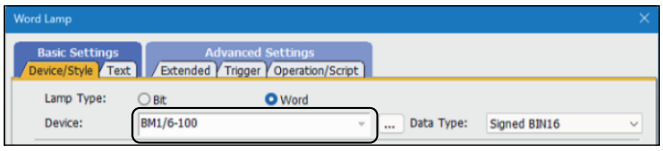
*6 GT SoftGOT3000 and GT Simulator3 cannot monitor the set values.

97.9.4 Setting the buffer memory device ([MELSEC-FX])

Buffer memory format ([MELSEC-FX])

The following shows the format in the setting dialog of objects or others.

Ex.
Unit No.: 1, MASK: 6, Device: 100



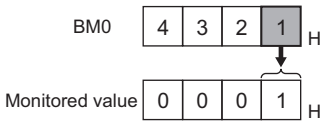
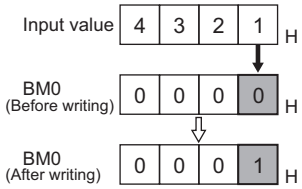
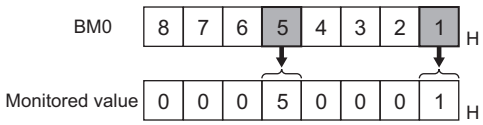
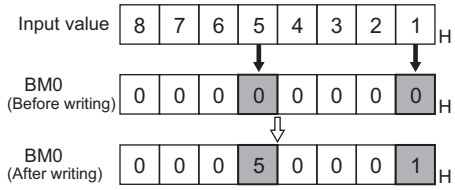
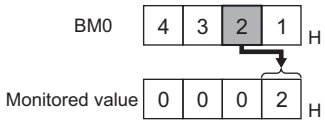
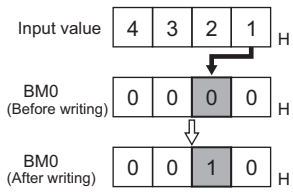
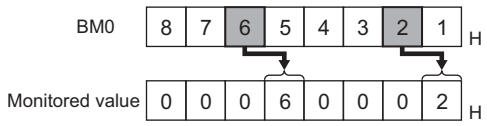
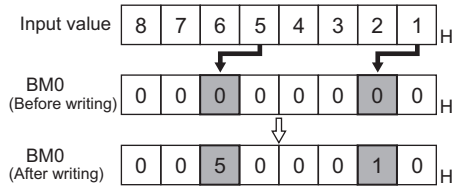
Device name	Format
Buffer memory	BM(Unit No.)/(MASK)-(Device)

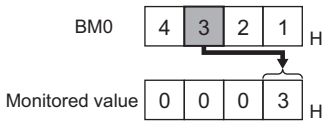
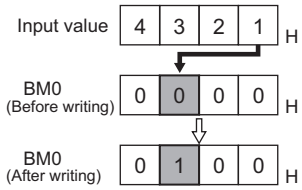
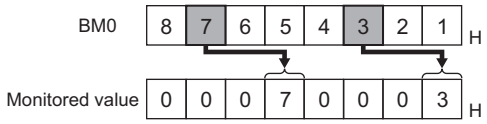
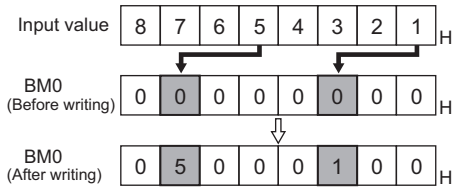
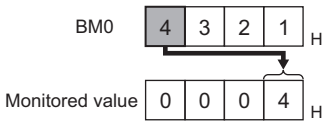
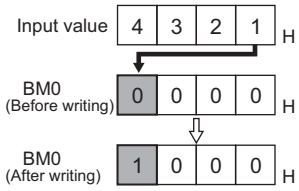
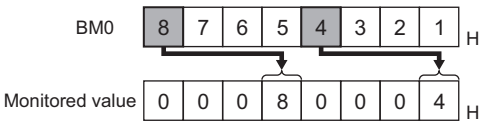
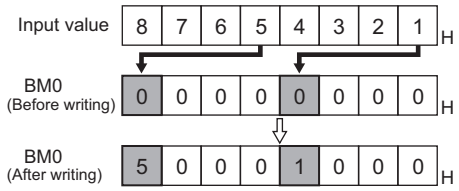
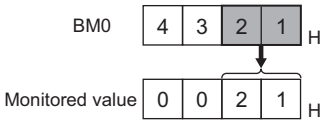
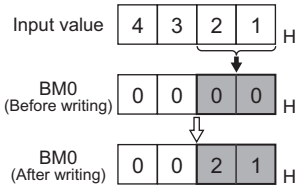
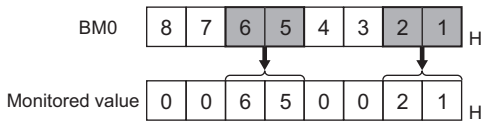
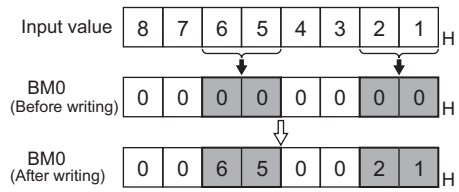
The buffer memory format includes the following elements.

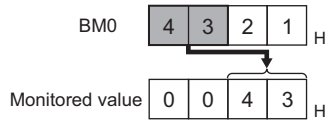
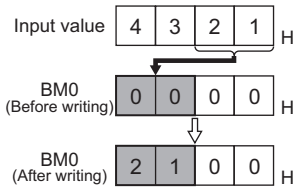
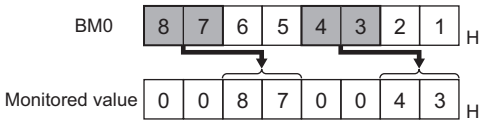
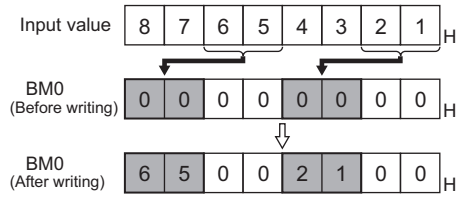
Item	Description	
MASK	Setting range	0 to 6
	Device No. representation	Decimal
	Explanation	Set this item when only specific bit of the buffer memory is monitored or written. When this item is 0, /(MASK) is unnecessary. For the processing corresponding to each setting value, refer to the following. ☞ Page 3319 MASK setting ([MELSEC-FX])
Module No.	Setting range	0 to 7 (direct), 100 to 115 (indirect)
	Device No. representation	Decimal
	Explanation	Set the unit number of the special block or special unit to be monitored or written. The unit number (No. 0 to No. 7) is assigned to the unit or block in order of distance from the main unit. For details on the unit number, refer to the following. 📖User's Manual (Hardware) of the MELSEC-FX used For indirect specification of a unit number, refer to the following. ☞ Page 3321 Indirect specification of a unit number ([MELSEC-FX])
Device	Setting range	0 to 32767
	Device No. representation	Decimal
	Explanation	Buffer memory

MASK setting ([MELSEC-FX])

The following shows the processing corresponding to each setting value for MASK.

MASK	Processing	
	Data type: 16-bit	**Data type: 32-bit**
0	The buffer memory value is monitored or written.	
1	Only b0 to b3 of the buffer memory is monitored or written. Example) Monitoring BM0 = 4321H with MASK 1: Monitored value = 0001H  Example) Writing the input value (4321H) to BM0 = 0000H with MASK 1: BM0 = 0001H  	Only b0 to b3 and b16 to b19 of the buffer memory is monitored or written. Example) Monitoring BM0 = 87654321H with MASK 1: Monitored value = 00050001H  Example) Writing the input value (87654321H) to BM0 = 00000000H with MASK 1: BM0 = 00050001H 
2	Only b4 to b7 of the buffer memory is monitored or written. Example) Monitoring BM0 = 4321H with MASK 2: Monitored value = 0002H  Example) Writing the input value (4321H) to BM0 = 0000H with MASK 2: BM0 = 0010H  	Only b4 to b7 and b20 to b23 of the buffer memory is monitored or written. Example) Monitoring BM0 = 87654321H with MASK 2: Monitored value = 00060002H  Example) Writing the input value (87654321H) to BM0 = 00000000H with MASK 2: BM0 = 00500010H 

MASK	Processing	
	Data type: 16-bit	**Data type: 32-bit**
3	Only b8 to b11 of the buffer memory is monitored or written. Example) Monitoring BM0 = 4321H with MASK 3: Monitored value = 0003H  Example) Writing the input value (4321H) to BM0 = 0000H with MASK 3: BM0 = 0100H  	Only b8 to b11 and b28 to b31 of the buffer memory is monitored or written. Example) Monitoring BM0 = 87654321H with MASK 3: Monitored value = 00070003H  Example) Writing the input value (87654321H) to BM0 = 00000000H with MASK 3: BM0 = 00050001H 
4	Only b12 to b15 of the buffer memory is monitored or written. Example) Monitoring BM0 = 4321H with MASK 4: Monitored value = 0004H  Example) Writing the input value (4321H) to BM0 = 0000H with MASK 4: BM0 = 1000H  	Only b12 to b15 and b28 to b31 of the buffer memory is monitored or written. Example) Monitoring BM0 = 87654321H with MASK 4: Monitored value = 00080004H  Example) Writing the input value (87654321H) to BM0=00000000H with MASK 4: BM0=50001000H 
5	Only b0 to b7 of the buffer memory is monitored or written. Example) Monitoring BM0 = 4321H with MASK 5: Monitored value = 0021H  Example) Writing the input value (4321H) to BM0 = 0000H with MASK 5: BM0 = 0021H  	Only b0 to b7 and b16 to b13 of the buffer memory is monitored or written. Example) Monitoring BM0 = 87654321H with MASK 5: Monitored value = 00650021H  Example) Writing the input value (87654321H) to BM0=00000000H with MASK 5: BM0=00650021H 

MASK	Processing	
	Data type: 16-bit	Data type: 32-bit
6	Only b8 to b15 of the buffer memory is monitored or written. Example) Monitoring BM0 = 4321H with MASK 6: Monitored value = 0043H  Example) Writing the input value (4321H) to BM0 = 0000H with MASK 6: BM0 = 2100H  	Only b8 to b15 and b24 to b31 of the buffer memory is monitored or written. Example) Monitoring BM0 = 87654321H with MASK 6: Monitored value = 00870043H  Example) Writing the input value (87654321H) to BM0=00000000H with MASK 6: BM0=65002100H 

Indirect specification of a unit number ([MELSEC-FX])

When you specify any of 100 to 115 for the unit number, the value of the corresponding GOT internal register (GD10 to GD25) is used as the unit number of a special block or special unit.

The following shows the correspondence between module numbers and GOT data registers (GD).

Module No.	GOT data registers (GD)	Setting range
100	GD10	[0] to [7] Setting a value outside the above range causes a device range error. If a nonexistent unit number is set, a communication timeout error occurs.
101	GD11	
:	:	
114	GD24	
115	GD25	

Precautions for using the buffer memory

When the special block or special unit is turned off, the data in the buffer memory, except the data in some keep areas, are initialized.

When the GOT monitors the buffer memory, the scan time of the PLC may momentarily increase.

Specify 16-bit data for a 16-bit buffer memory, and specify 32-bit data for a 32-bit buffer memory.

If 16-bit data is specified for a 32-bit buffer memory, monitoring/writing may not be performed properly.

For the data size of each buffer memory, refer to the following.

User's Manual of the special block or special unit used

When reading/writing data from/to the special block or special unit is performed by interrupting the sequence program, monitoring the buffer memory from the GOT or writing data from the GOT to the buffer memory may not be performed properly.

97.9.5 Availability of writing/reading data to/from word devices ([MELSEC-FX])

The following shows the availability of writing/reading data to/from word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data*1
T	R/W	R/W	-/-	R/W
C	R/W	R/W	-/-	R/W
D	R/W	R/W	-/-	R/W
R	R/W	R/W	-/-	R/W
Z	R/W	R/W	-/-	R/W
V	R/W	-/-	-/-	R/W
BM	R/W	R/W	-/-	R/W
TS	R/W	-/-	-/-	-/-
CS	R/W	R/W	-/-	-/-

*1 When executing the touch switch function that has been set during the bit specification of the word device, do not write any data to the word device through the sequence program.

97.9.6 Protection using a keyword ([MELSEC-FX])

How to select a protection level by using a keyword

You can set a protection level for equipment that is allowed to access the FX PLC online, and three protection levels are selectable.

When performing monitoring or changing settings with any on-line equipment is required, specify a keyword with referring to the following.

Registered keyword	Description
When registering a keyword only	Select a protection level by specifying an applicable letter for the initial letter in a keyword. All operations prohibited: Specify a keyword beginning with A, D to F, or 0 to 9. Incorrect write/read prohibited: Specify a keyword beginning with B. Incorrect write prohibited: Specify a keyword beginning with C.
When registering a keyword and the second keyword	Select a protection level in [Registration condition].

Monitoring availability at each keyword protection level

The following shows the device monitoring availability at each keyword protection level.

Item		When registering a keyword only			When registering a keyword and the second keyword			Keyword not registered or protection canceled
		All operations prohibited	Incorrect write/read prohibited	Write prohibited	All online operations prohibited	Read/write prohibited	Write prohibited	
Monitoring devices		○	○	○	—	○	○	○
Changing devices	Value of T or C, and file registers (D1000 and the following)	—*1	—*1	—*1	—	○	○	○
	Other than the above	○	○	○	—	○	○	○

*1 When the value of the T or C device is set indirectly, changing the device is available.

Difference between all online operations prohibition and all operations prohibition

When all online operations are prohibited, the programming tool and GOT cannot display devices and input data.
When all operations are prohibited, you cannot perform all operations with the programming tool, but the GOT can display devices and input data.

97.10 [MELIPC]

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This section shows the device range of MELIPC (MI5122-VW).
The settable device range is the same when [MELIPC] is selected and when [MELSEC iQ-R, RnMT/NC/RT, CR800-D] is selected.
For the device range when the GOT is connected to the MELSEC iQ-R series, refer to the following.
☞ Page 3165 [MELSEC iQ-R, RnMT/NC/RT, CR800-D]

97.11 [MELSERVO-J3-*A]

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Item	Reference
Specifications of bit devices	☞ Page 3326 Monitoring-supported bit devices ([MELSERVO-J3-*A])
	☞ Page 3326 Availability of writing/reading data to/from bit devices ([MELSERVO-J3-*A])
Specifications of word devices	☞ Page 3327 Monitoring-supported word devices ([MELSERVO-J3-*A])
	☞ Page 3327 Availability of writing/reading data to/from word devices ([MELSERVO-J3-*A])
Specifications of double-word devices	☞ Page 3328 Monitoring-supported double-word devices ([MELSERVO-J3-*A])
	☞ Page 3328 Availability of writing/reading data to/from double-word devices ([MELSERVO-J3-*A])
Specifications of virtual servo amplifier devices	☞ Page 3329 Virtual servo amplifier devices ([MELSERVO-J3-*A])
	☞ Page 3336 Precautions for virtual servo amplifier devices ([MELSERVO-J3-*A])

97.11.1 Monitoring-supported bit devices ([MELSERVO-J3-*A])

The following table shows monitoring-supported virtual bit devices for servo amplifiers.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3326 Availability of writing/reading data to/from bit devices ([MELSERVO-J3-*A])

For details on virtual servo amplifier devices, refer to the following.

☞ Page 3329 Virtual servo amplifier devices ([MELSERVO-J3-*A])

○: Available

×: Not available

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
SP	Servo amplifier request	Decimal	0 to 6	×	×
OM	Operation mode selection	Decimal	0 to 4	×	×
TMB	Instruction demand (for test operation)	Decimal	1 to 6	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.

☞ Page 2868 Monitoring a controller through the GOT (server/client function)

97.11.2 Availability of writing/reading data to/from bit devices ([MELSERVO-J3-*A])

The following shows the availability of writing/reading data to/from bit devices by device type.

When the device type is other than the bit type, set the device No. in multiples of 16.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type				
	Bit	Byte (8 bits)	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)
SP	-/W	-/-	-/-	-/-	-/-
OM	-/W	-/-	-/-	-/-	-/-
TMB	-/W	-/-	-/-	-/-	-/-

97.11.3 Monitoring-supported word devices ([MELSERVO-J3-*A])

The following table shows monitoring-supported virtual word devices for servo amplifiers.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3327 Availability of writing/reading data to/from word devices ([MELSERVO-J3-*A])

For details on virtual servo amplifier devices, refer to the following.

☞ Page 3329 Virtual servo amplifier devices ([MELSERVO-J3-*A])

○: Available

×: Not available

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
PA	Basic parameter	Decimal	1 to 19 1001 to 1019	○	×
PB	Gain filter parameter	Decimal	1 to 45 1001 to 1045	○	×
PC	Extension setting parameter	Decimal	1 to 50 1001 to 1050	○	×
PD	I/O setting parameter	Decimal	1 to 30 1001 to 1030	○	×
ST	Status display	Decimal	1 to 14	○	×
AL	Alarm (current alarm)	Decimal	0 to 1 11 to 25	○	×
AL	Alarm (alarm history)	Decimal	200 to 205 210 to 215 230 to 235	○	×
DI	External input signal	Decimal	0 to 2	×	×
DO	External output signal	Decimal	0 to 1	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.

☞ Page 2868 Monitoring a controller through the GOT (server/client function)

97.11.4 Availability of writing/reading data to/from word devices ([MELSERVO-J3-*A])

The following shows the availability of writing/reading data to/from word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data
PA	R/W	R/W	-/-	-/-
PB	R/W	R/W	-/-	-/-
PC	R/W	R/W	-/-	-/-
PD	R/W	R/W	-/-	-/-
ST	R/-	R/-	-/-	-/-
AL	R/-	R/-	-/-	-/-
DI*1	R/-	R/W	-/-	-/-
DO	R/-	R/-	-/-	-/-

*1 Only reading is available for DI0 to DI3.

97.11.5 Monitoring-supported double-word devices ([MELSERVO-J3-*A])

The following table shows monitoring-supported virtual double-word devices for servo amplifiers.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3328 Availability of writing/reading data to/from double-word devices ([MELSERVO-J3-*A])

For details on virtual servo amplifier devices, refer to the following.

☞ Page 3329 Virtual servo amplifier devices ([MELSERVO-J3-*A])

○: Available

×: Not available

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
TMI	Input signal for test operation (for test operation)	Decimal	0	×	×
TMO	Forced output of signal pin (for test operation)	Decimal	0	×	×
TMD	Set data (for test operation)	Decimal	0 to1, 3	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.

☞ Page 2868 Monitoring a controller through the GOT (server/client function)

97.11.6 Availability of writing/reading data to/from double-word devices ([MELSERVO-J3-*A])

The following shows the availability of writing/reading data to/from double-word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data
TMI	-/-	-/W	-/-	-/-
TMO	-/-	-/W	-/-	-/-
TMD	-/-	-/W	-/-	-/-

97.11.7 Virtual servo amplifier devices ([MELSERVO-J3-*A])

The following shows the correspondence between the virtual devices used in the GOT and the servo amplifier data.

Virtual device name	Reference
SP	☞ Page 3329 Servo amplifier request ([MELSERVO-J3-*A])
OM	☞ Page 3329 Operation mode selection ([MELSERVO-J3-*A])
TMB	☞ Page 3330 Instruction demand (for test operation) ([MELSERVO-J3-*A])
PA	☞ Page 3330 Basic parameter ([MELSERVO-J3-*A])
PB	☞ Page 3331 Gain filter parameter ([MELSERVO-J3-*A])
PC	☞ Page 3332 Extension setting parameter ([MELSERVO-J3-*A])
PD	☞ Page 3333 I/O setting parameter ([MELSERVO-J3-*A])
ST	☞ Page 3333 Status display ([MELSERVO-J3-*A])
AL	☞ Page 3334 Alarm ([MELSERVO-J3-*A])
DI	☞ Page 3335 External input signal ([MELSERVO-J3-*A])
DO	☞ Page 3335 External output signal ([MELSERVO-J3-*A])
TMI	☞ Page 3335 Input signal for test operation (for test operation) ([MELSERVO-J3-*A])
TMO	☞ Page 3335 Forced output of signal pin (for test operation) ([MELSERVO-J3-*A])
TMD	☞ Page 3335 Set data (for test operation) ([MELSERVO-J3-*A])

Servo amplifier request ([MELSERVO-J3-*A])

Virtual device name	Name	Symbol
SP0	Status display data clear	—
SP1	Current alarm clear	—
SP2	Alarm history clear	—
SP3	External input signal prohibited	—
SP4	External output signal prohibited	—
SP5	External input signal resumed	—
SP6	External output signal resumed	—

When using the servo amplifier request, note the following.

Precautions	Description
When setting a device for a bit switch	Do not select [Alternate] for [Switch Action] of the bit switch.

Operation mode selection ([MELSERVO-J3-*A])

Virtual device name	Name	Symbol
OM0	Normal mode (not test operation mode)	—
OM1	JOG operation	—
OM2	Positioning operation	—
OM3	Motorless operation	—
OM4	Output signal (DO) forced output	—

When using the operation mode selection, note the following.

Precautions	Description
When setting a device for a bit switch	Do not select [Alternate] for [Switch Action] of the bit switch.

Instruction demand (for test operation) ([MELSERVO-J3-*A])

Virtual device name	Name	Symbol
TMB1	Temporary stop command	—
TMB2	Test operation (positioning operation) start command	—
TMB3	Forward rotation direction	—
TMB4	Reverse rotation direction	—
TMB5	Restart for remaining distance	—
TMB6	Remaining distance clear	—

When using the instruction demand (for test operation), note the following.

Precautions	Description
When setting a device for a bit switch	Do not select [Alternate] for [Switch Action] of the bit switch.

Basic parameter ([MELSERVO-J3-*A])

Use an appropriate device according to the write destination of the servo amplifier.

- PA1 to PA50: Writing data to the RAM of a servo amplifier
- PA1001 to PA1050: Writing data to the EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

Virtual device name	Name	Symbol
PA1, PA1001	Control mode	*STY
PA2, PA1002	Regenerative brake option	*REG
PA3, PA1003	Absolute position detection system	*ABS
PA4, PA1004	Function selection A-1	*AOP1
PA5, PA1005	Number of command input pulses per revolution	*FBP
PA6, PA1006	Electronic gear numerator (command pulse multiplication numerator)	CMX
PA7, PA1007	Electronic gear denominator (command pulse multiplication denominator)	CDV
PA8, PA1008	Auto tuning mode	ATU
PA9, PA1009	Auto tuning response	RSP
PA10, PA1010	In-position range	INP
PA11, PA1011	Forward rotation torque limit	TLP
PA12, PA1012	Reverse rotation torque limit	TLN
PA13, PA1013	Command pulse input form	*PLSS
PA14, PA1014	Rotation direction selection	*POL
PA15, PA1015	Encoder output pulses	*ENR
PA16 to PA18, PA1016 to PA1018	For manufacturer setting	—
PA19, PA1019	Parameter block	*BLK

Gain filter parameter ([MELSERVO-J3-*A])

Use an appropriate device according to the write destination of the servo amplifier.

- PB1 to PB50: Writing data to the RAM of a servo amplifier
- PB1001 to PB1050: Writing data to the EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

Virtual device name	Name	Symbol
PB1, PB1001	Adaptive tuning mode (Adaptive filter II)	FILT
PB2, PB1002	Vibration suppression control tuning mode (advanced vibration suppression control)	VRFT
PB3, PB1003	Position command acceleration/deceleration time constant (position smoothing)	PST
PB4, PB1004	Feed forward gain	FFC
PB5, PB1005	For manufacturer setting	—
PB6, PB1006	Ratio of load inertia moment to servo motor inertia moment	GD2
PB7, PB1007	Model loop gain	PG1
PB8, PB1008	Position loop gain	PG2
PB9, PB1009	Speed loop gain	VG2
PB10, PB1010	Speed integral compensation	VIC
PB11, PB1011	Speed differential compensation	VDC
PB12, PB1012	For manufacturer setting	—
PB13, PB1013	Machine resonance suppression filter 1	NH1
PB14, PB1014	Notch shape selection 1	NHQ1
PB15, PB1015	Machine resonance suppression filter 2	NH2
PB16, PB1016	Notch shape selection 2	NHQ2
PB17, PB1017	For manufacturer setting	—
PB18, PB1018	Low-pass filter setting	LPF
PB19, PB1019	Vibration suppression control vibration frequency setting	VRF1
PB20, PB1020	Vibration suppression control resonance frequency setting	VRF2
PB21 to PB22, PB1021 to PB1022	For manufacturer setting	—
PB23, PB1023	Low-pass filter selection	VFBF
PB24, PB1024	Slight vibration suppression control	*MVS
PB25, PB1025	Function selection B-1	*BOP1
PB26, PB1026	Gain changing selection	*CDP
PB27, PB1027	Gain changing condition	CDL
PB28, PB1028	Gain changing time constant	CDT
PB29, PB1029	Ratio of load inertia moment to servo motor after gain switching	GD2B
PB30, PB1030	Gain changing position loop gain	PG2B
PB31, PB1031	Gain changing speed loop gain	VG2B
PB32, PB1032	Gain changing speed integral compensation	VICB
PB33, PB1033	Suppression control and vibration frequency setting after gain switching	VRF1B
PB34, PB1034	Suppression control and vibration resonance setting after gain switching	VRF2B
PB35 to PB45, PB1035 to PB1045	For manufacturer setting	—

Extension setting parameter ([MELSERVO-J3-*A])

Use an appropriate device according to the write destination of the servo amplifier.

- PC1 to PC50: Writing data to the RAM of a servo amplifier
- PC1001 to PC1050: Writing data to the EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

Virtual device name	Name	Symbol
PC1, PC1001	Acceleration time constant	STA
PC2, PC1002	Deceleration time constant	STB
PC3, PC1003	S-pattern acceleration/deceleration time constant	STC
PC4, PC1004	Torque command time constant	TQC
PC5, PC1005	Internal speed command1/limit1	SC1
PC6, PC1006	Internal speed command2/limit2	SC2
PC7, PC1007	Internal speed command3/limit3	SC3
PC8, PC1008	Internal speed command4/limit4	SC4
PC9, PC1009	Internal speed command5/limit5	SC5
PC10, PC1010	Internal speed command6/limit6	SC6
PC11, PC1011	Internal speed command7/limit7	SC7
PC12, PC1012	Analog speed command maximum speed/limit maximum speed	VCM
PC13, PC1013	Analog torque command maximum output	TLC
PC14, PC1014	Analog monitor 1 output	MOD1
PC15, PC1015	Analog monitor 2 output	MOD2
PC16, PC1016	Electromagnetic brake sequence output	MBR
PC17, PC1017	Zero speed	ZSP
PC18, PC1018	Alarm history clear	*BPS
PC19, PC1019	Encoder output pulse selection	*ENRS
PC20, PC1020	Station number setting	*SNO
PC21, PC1021	Communication function selection	*SOP
PC22, PC1022	Function selection C-1	*COP1
PC23, PC1023	Function selection C-2	*COP2
PC24, PC1024	Function selection C-3	*COP3
PC25, PC1025	For manufacturer setting	—
PC26, PC1026	Function selection C-5	*COP5
PC27 to PC29, PC1027 to PC1029	For manufacturer setting	—
PC30, PC1030	Acceleration time constant 2	STA2
PC31, PC1031	Deceleration time constant 2	STB2
PC32, PC1032	Command input pulse multiplication numerator 2	CMX2
PC33, PC1033	Command input pulse multiplication numerator 3	CMX3
PC34, PC1034	Command input pulse multiplication numerator 4	CMX4
PC35, PC1035	Internal torque limit 2	TL2
PC36, PC1036	Status display selection	*DMD
PC37, PC1037	Analog speed command offset/limit offset	VCO
PC38, PC1038	Analog torque command offset/limit offset	TPO
PC39, PC1039	Analog monitor 1 offset	MO1
PC40, PC1040	Analog monitor 2 offset	MO2
PC41 to PC50, PC1041 to PC1050	For manufacturer setting	—

I/O setting parameter ([MELSERVO-J3-*A])

Use an appropriate device according to the write destination of the servo amplifier.

- PD1 to PD50: Writing data to the RAM of a servo amplifier
- PD1001 to PD1050: Writing data to the EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

Virtual device name	Name	Symbol
PD1, PD1001	Input signal automatic ON selection 1	*DIA1
PD2, PD1002	For manufacturer setting	—
PD3, PD1003	Input device selection 1 (CN1-15)	*DI1
PD4, PD1004	Input device selection 2 (CN1-16)	*DI2
PD5, PD1005	Input device selection 3 (CN1-17)	*DI3
PD6, PD1006	Input device selection 4 (CN1-18)	*DI4
PD7, PD1007	Input device selection 5 (CN1-19)	*DI5
PD8, PD1008	Input device selection 6 (CN1-41)	*DI6
PD9, PD1009	For manufacturer setting	—
PD10, PD1010	Input device selection 8 (CN1-43)	*DI8
PD11, PD1011	Input device selection 9 (CN1-44)	*DI9
PD12, PD1012	Input device selection 10 (CN1-45)	*DI10
PD13, PD1013	Output device selection 1 (CN1-22)	*DO1
PD14, PD1014	Output device selection 2 (CN1-23)	*DO2
PD15, PD1015	Output device selection 3 (CN1-24)	*DO3
PD16, PD1016	Output device selection 4 (CN1-25)	*DO4
PD17, PD1017	For manufacturer setting	—
PD18, PD1018	Output device selection 6 (CN1-49)	*DO6
PD19, PD1019	Input filter setting	*DIF
PD20, PD1020	Function selection D-1	*DOP1
PD21, PD1021	For manufacturer setting	—
PD22, PD1022	Function selection D-3	*DOP3
PD23, PD1023	For manufacturer setting	—
PD24, PD1024	Function selection D-5	*DOP5
PD25 to PD30, PD1025 to PD1030	For manufacturer setting	—

Status display ([MELSERVO-J3-*A])

Virtual device name	Name	Symbol
ST0	Cumulative feedback pulses	—
ST1	Servo motor speed	—
ST2	Droop pulses	—
ST3	Cumulative command pulses	—
ST4	Command pulse frequency	—
ST5	Analog speed command voltage/limit voltage	—
ST6	Analog torque command voltage/limit voltage	—
ST7	Regenerative load ratio	—
ST8	Effective load ratio	—
ST9	Peak load ratio	—
ST10	Instantaneous torque	—
ST11	Within one-revolution position	—
ST12	ABS counter	—
ST13	Load inertia moment ratio	—
ST14	Bus voltage	—

Alarm ([MELSERVO-J3-*A])

Virtual device name	Name	Symbol
AL0	Current alarm number	—
AL1	Detailed data of current alarms	—
AL11	Servo status when alarm occurs, cumulative feedback pulses	—
AL12	Servo status when alarm occurs, servo motor speed	—
AL13	Servo status when alarm occurs, droop pulses	—
AL14	Servo status when alarm occurs, cumulative command pulses	—
AL15	Servo status when alarm occurs, command pulse frequency	—
AL16	Servo status when alarm occurs, analog speed command voltage/limit voltage	—
AL17	Servo status when alarm occurs, analog torque command voltage/limit voltage	—
AL18	Servo status when alarm occurs, regenerative load ratio	—
AL19	Servo status when alarm occurs, effective load ratio	—
AL20	Servo status when alarm occurs, peak load ratio	—
AL21	Servo status when alarm occurs, Instantaneous torque	—
AL22	Servo status when alarm occurs, within one-revolution position	—
AL23	Servo status when alarm occurs, ABS counter	—
AL24	Servo status when alarm occurs, load inertia moment ratio	—
AL25	Servo status when alarm occurs, bus voltage	—
AL200	Alarm number from Alarm History most recent alarm	—
AL201	Alarm number from Alarm History first alarm in past	—
AL202	Alarm number from Alarm History second alarm in past	—
AL203	Alarm number from Alarm History third alarm in past	—
AL204	Alarm number from Alarm History fourth alarm in past	—
AL205	Alarm number from Alarm History fifth alarm in past	—
AL210	Alarm occurrence time in alarm history most recent alarm	—
AL211	Alarm occurrence time in alarm history first alarm in past	—
AL212	Alarm occurrence time in alarm history second alarm in past	—
AL213	Alarm occurrence time in alarm history third alarm in past	—
AL214	Alarm occurrence time in alarm history fourth alarm in past	—
AL215	Alarm occurrence time in alarm history fifth alarm in past	—
AL230	Detailed alarm from Alarm History most recent alarm	—
AL231	Detailed alarm from Alarm History first alarm in past	—
AL232	Detailed alarm from Alarm History second alarm in past	—
AL233	Detailed alarm from Alarm History third alarm in past	—
AL234	Detailed alarm from Alarm History fourth alarm in past	—
AL235	Detailed alarm from Alarm History fifth alarm in past	—

External input signal ([MELSERVO-J3-*A])

Virtual device name	Name	Symbol	Data to be read from the servo amplifier
DI0	Input device statuses	—	For the mapping of the bits corresponding to the data to be read, refer to the following. MR-J3-_A Instruction Manual
DI1	External input pin statuses	—	
DI2	Statuses of input devices switched on through communication	—	

External output signal ([MELSERVO-J3-*A])

Virtual device name	Name	Symbol	Data to be read from the servo amplifier
DO0	Output device statuses	—	For the mapping of the bits corresponding to the data to be read, refer to the following. MR-J3-_A Instruction Manual
DO1	External output pin statuses	—	

Input signal for test operation (for test operation) ([MELSERVO-J3-*A])

Virtual device name	Name	Symbol
TMI0	Input signal for test operation	—

When using the input signal for test operation (for test operation), note the following.

Precautions	Description
Writing a value to a virtual device using an object	Numerical input cannot be used. Use a word switch for writing.

Forced output of signal pin (for test operation) ([MELSERVO-J3-*A])

Virtual device name	Name	Symbol
TMO0	Forced output of signal pin	—

When using the forced output of signal pin (for test operation), note the following.

Precautions	Description
Writing a value to a virtual device using an object	Numerical input cannot be used. Use a word switch for writing.

Set data (for test operation) ([MELSERVO-J3-*A])

Virtual device name	Name	Symbol
TMD0	Writes the speed (test mode)	—
TMD1	Writes the acceleration/deceleration time constant (test mode)	—
TMD3	Writes the moving distance (test mode)	—

When using the set data (for test operation), note the following.

Precautions	Description
Writing a value to a virtual device using an object	Numerical input cannot be used. Use a word switch for writing.

97.11.8 Precautions for virtual servo amplifier devices ([MELSERVO-J3-*A])

Monitoring servo amplifier

Carefully read the manual of servo amplifier to be connected and fully understand the operating procedures before monitoring.

Before operation, check the parameter settings and adjust them as required. Improper settings may cause some machines to perform unexpected operation.

The parameter settings must not be changed excessively. Operation will be insatiable.

Data length of a virtual device

Set the data length of a virtual device as shown below.

Virtual device	Data length
PRM, ST, AL, PA, PB, PC, PD, POS, SPD, ACT, DCT, DWL, AUX	16 bits or 32 bits Depending on the servo amplifier data
DI, DO, TMI, TMO, TMD	32 bits

If the above data length is not set, data will be specified incorrectly for the servo amplifier or cannot be properly monitored by the GOT.

Item	Operation	
Monitoring	Handling 16-bit data as 32-bit data	The upper 16 bits are displayed as 0.
	Handling 32-bit data as 16-bit data	The lower 16 bits only are displayed.
Writing	The GOT writes within the range of data length set. Note that the servo amplifier responds correctly while the written data is invalid in the servo amplifier side when the written data is out of the range of values which can be set by the servo amplifier.	

Memory to which parameter values are written

Parameter values are written to the RAM or EEPROM of a servo amplifier.

Write destination	Precautions
RAM	Remember that the written parameter values are cleared when the servo amplifier is turned off.
EEPROM	The written parameter values are not cleared when the servo amplifier is turned off. However, there is a limit on the number of times data can be written to EEPROM. If you update the data frequently (at least once an hour), write parameter values to RAM. For details, refer to the manual of the servo amplifier used.

Data type and format settings for using virtual servo amplifier devices (direct connection between the GOT and servo amplifier)

To specify virtual servo amplifier devices in the object setting or other settings, the data type and format must be set according to the notation of the values handled by the virtual devices.

For notation of the virtual device values, refer to the following.

Instruction manual for the servo amplifier used

MR Configurator2 Help

The following shows a setting example for using virtual servo amplifier devices for an object.

Ex.

When using a numerical display

Notation of the virtual device values	Setting
Decimal number (positive values only)	• [Data Type]: [Unsigned BIN16] ([Unsigned BIN32] for 65536 or more) • [Format]: [Unsigned Decimal]
Decimal number (positive and negative values)	• [Data Type]: [Signed BIN16] ([Signed BIN32] for -32769 or less, and 32768 or more) • [Format]: [Signed Decimal]
Hexadecimal number	• [Data Type]: [Unsigned BIN16] ([Unsigned BIN32] for 0x10000 or more) • [Format]: [Hexadecimal]
Decimal point notation (positive values only)	• [Data Type]: [Real] • [Format]: [Real] • [Digits (Integral)]: Set the number of digits in the integral portion. • [Digits (Fractional)]: Set the number of digits in the fractional portion.
Decimal point notation (positive and negative values)	
When the notation varies by digit	• [Data Type]: [Unsigned BIN16] ([Unsigned BIN32] for 0x10000 or more) • [Format]: [Hexadecimal] • On the [Operation/Script] tab, select [Data Operation] for [Operation Type], and set [Bit Mask] or [Bit Shift].

Specifying consecutive virtual servo amplifier devices

The GOT does not support writing/reading data to/from consecutive virtual servo amplifier devices.

97.12 [MELSERVO-J3-*T]

GT37 SoftGOT3000

Item	Reference
Specifications of bit devices	☞ Page 3339 Monitoring-supported bit devices ([MELSERVO-J3-*T])
	☞ Page 3339 Availability of writing/reading data to/from bit devices ([MELSERVO-J3-*T])
Specifications of word devices	☞ Page 3340 Monitoring-supported word devices ([MELSERVO-J3-*T])
	☞ Page 3341 Availability of writing/reading data to/from word devices ([MELSERVO-J3-*T])
Specifications of double-word devices	☞ Page 3342 Monitoring-supported double-word devices ([MELSERVO-J3-*T])
	☞ Page 3342 Availability of writing/reading data to/from double-word devices ([MELSERVO-J3-*T])
Specifications of virtual servo amplifier devices	☞ Page 3343 Virtual servo amplifier devices ([MELSERVO-J3-*T])
	☞ Page 3352 Precautions for virtual servo amplifier devices ([MELSERVO-J3-*T])

97.12.1 Monitoring-supported bit devices ([MELSERVO-J3-*T])

The following table shows monitoring-supported virtual bit devices for servo amplifiers.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3339 Availability of writing/reading data to/from bit devices ([MELSERVO-J3-*T])

For details on virtual servo amplifier devices, refer to the following.

☞ Page 3343 Virtual servo amplifier devices ([MELSERVO-J3-*T])

○: Available

×: Not available

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
SP	Servo amplifier request	Decimal	0 to 6	×	×
OM	Operation mode selection	Decimal	0 to 5	×	×
TMB	Instruction demand (for test operation)	Decimal	1 to 6	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.

☞ Page 2868 Monitoring a controller through the GOT (server/client function)

97.12.2 Availability of writing/reading data to/from bit devices ([MELSERVO-J3-*T])

The following shows the availability of writing/reading data to/from bit devices by device type.

When the device type is other than the bit type, set the device No. in multiples of 16.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type				
	Bit	Byte (8 bits)	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)
SP	-/W	-/-	-/-	-/-	-/-
OM	-/W	-/-	-/-	-/-	-/-
TMB	-/W	-/-	-/-	-/-	-/-

97.12.3 Monitoring-supported word devices ([MELSERVO-J3-*T])

The following table shows monitoring-supported virtual word devices for servo amplifiers.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3341 Availability of writing/reading data to/from word devices ([MELSERVO-J3-*T])

For details on virtual servo amplifier devices, refer to the following.

☞ Page 3343 Virtual servo amplifier devices ([MELSERVO-J3-*T])

○: Available

×: Not available

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
PA	Basic parameter	Decimal	1 to 19 1001 to 1019	○	×
PB	Gain filter parameter	Decimal	1 to 45 1001 to 1045	○	×
PC	Extension setting parameter	Decimal	1 to 50 1001 to 1050	○	×
PD	I/O setting parameter	Decimal	1 to 30 1001 to 1030	○	×
PO	Option unit parameter	Decimal	1 to 35 1001 to 1035	○	×
ST	Status display	Decimal	0 to 17	○	×
AL	Alarm (current alarm)	Decimal	0 to 1 11 to 28	○	×
AL	Alarm (alarm history)	Decimal	200 to 205 210 to 215 230 to 235	○	×
POS	Point table (position)	Decimal	1 to 255 1001 to 1255	○	×
SPD	Point table (speed)	Decimal	1 to 255 1001 to 1255	○	×
ACT	Point table (acceleration time constant)	Decimal	1 to 255 1001 to 1255	○	×
DCT	Point table (deceleration time constant)	Decimal	1 to 255 1001 to 1255	○	×
DWL	Point table (dwell)	Decimal	1 to 255 1001 to 1255	○	×
AUX	Point table (auxiliary function)	Decimal	1 to 255 1001 to 1255	○	×
MCD*2	Point table (M code)	Decimal	1 to 255 1001 to 1255	○	×
DI	External input signal	Decimal	0 to 7	×	×
DO	External output signal	Decimal	0 to 4	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
☞ Page 2868 Monitoring a controller through the GOT (server/client function)

*2 MCD cannot be used as a real number.

97.12.4 Availability of writing/reading data to/from word devices ([MELSERVO-J3-*T])

The following shows the availability of writing/reading data to/from word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data
PA	R/W	R/W	-/-	-/-
PB	R/W	R/W	-/-	-/-
PC	R/W	R/W	-/-	-/-
PD	R/W	R/W	-/-	-/-
PO	R/W	R/W	-/-	-/-
ST	R/-	R/-	-/-	-/-
AL	R/-	R/-	-/-	-/-
POS	R/W	R/W	-/-	-/-
SPD	R/W	R/W	-/-	-/-
ACT	R/W	R/W	-/-	-/-
DCT	R/W	R/W	-/-	-/-
DWL	R/W	R/W	-/-	-/-
AUX	R/W	R/W	-/-	-/-
MCD	R/W	R/W	-/-	-/-
DI*1	R/-	R/W	-/-	-/-
DO	R/-	R/-	-/-	-/-

*1 Only reading is available for DI0 to DI4.

97.12.5 Monitoring-supported double-word devices ([MELSERVO-J3-*T])

The following table shows monitoring-supported virtual double-word devices for servo amplifiers.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3342 Availability of writing/reading data to/from double-word devices ([MELSERVO-J3-*T])

For details on virtual servo amplifier devices, refer to the following.

☞ Page 3343 Virtual servo amplifier devices ([MELSERVO-J3-*T])

○: Available

×: Not available

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
TMI	Input signal for test operation (for test operation)	Decimal	0 to 2	×	×
TMO	Forced output of signal pin (for test operation)	Decimal	0 to 1	×	×
TMD	Set data (for test operation)	Decimal	0 to1, 3	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.

☞ Page 2868 Monitoring a controller through the GOT (server/client function)

97.12.6 Availability of writing/reading data to/from double-word devices ([MELSERVO-J3-*T])

The following shows the availability of writing/reading data to/from double-word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data
TMI	-/-	-/W	-/-	-/-
TMO	-/-	-/W	-/-	-/-
TMD	-/-	-/W	-/-	-/-

97.12.7 Virtual servo amplifier devices ([MELSERVO-J3-*T])

The following shows the correspondence between the virtual devices used in the GOT and the servo amplifier data.

Virtual device name	Reference
SP	☞ Page 3343 Servo amplifier request ([MELSERVO-J3-*T])
OM	☞ Page 3344 Operation mode selection ([MELSERVO-J3-*T])
TMB	☞ Page 3344 Instruction demand (for test operation) ([MELSERVO-J3-*T])
PA	☞ Page 3344 Basic parameter ([MELSERVO-J3-*T])
PB	☞ Page 3345 Gain filter parameter ([MELSERVO-J3-*T])
PC	☞ Page 3346 Extension setting parameter ([MELSERVO-J3-*T])
PD	☞ Page 3347 I/O setting parameter ([MELSERVO-J3-*T])
PO	☞ Page 3347 Option unit parameter ([MELSERVO-J3-*T])
ST	☞ Page 3348 Status display ([MELSERVO-J3-*T])
AL	☞ Page 3349 Alarm ([MELSERVO-J3-*T])
POS	☞ Page 3349 Point table (position) ([MELSERVO-J3-*T])
SPD	☞ Page 3350 Point table (speed) ([MELSERVO-J3-*T])
ACT	☞ Page 3350 Point table (acceleration time constant) ([MELSERVO-J3-*T])
DCT	☞ Page 3350 Point table (deceleration time constant) ([MELSERVO-J3-*T])
DWL	☞ Page 3350 Point table (dwell) ([MELSERVO-J3-*T])
AUX	☞ Page 3350 Point table (auxiliary function) ([MELSERVO-J3-*T])
MCD	☞ Page 3350 Point table (M code) ([MELSERVO-J3-*T])
DI	☞ Page 3351 External input signal ([MELSERVO-J3-*T])
DO	☞ Page 3351 External output signal ([MELSERVO-J3-*T])
TMI	☞ Page 3351 Input signal for test operation (for test operation) ([MELSERVO-J3-*T])
TMO	☞ Page 3351 Forced output of signal pin (for test operation) ([MELSERVO-J3-*T])
TMD	☞ Page 3351 Set data (for test operation) ([MELSERVO-J3-*T])

Servo amplifier request ([MELSERVO-J3-*T])

Virtual device name	Name	Symbol
SP0	Status display data clear	—
SP1	Current alarm clear	—
SP2	Alarm history clear	—
SP3	External input signal prohibited	—
SP4	External output signal prohibited	—
SP5	External input signal resumed	—
SP6	External output signal resumed	—

When using the servo amplifier request, note the following.

Precautions	Description
When setting a device for a bit switch	Do not select [Alternate] for [Switch Action] of the bit switch.

Operation mode selection ([MELSERVO-J3-*T])

Virtual device name	Name	Symbol
OM0	Normal mode (not test operation mode)	—
OM1	JOG operation	—
OM2	Positioning operation	—
OM3	Motorless operation	—
OM4	Output signal (DO) forced output	—
OM5	Single-step feed	—

When using the operation mode selection, note the following.

Precautions	Description
When setting a device for a bit switch	Do not select [Alternate] for [Switch Action] of the bit switch.

Instruction demand (for test operation) ([MELSERVO-J3-*T])

Virtual device name	Name	Symbol
TMB1	Temporary stop command	—
TMB2	Test operation (positioning operation) start command	—
TMB3	Forward rotation direction	—
TMB4	Reverse rotation direction	—
TMB5	Restart for remaining distance	—
TMB6	Remaining distance clear	—

When using the instruction demand (for test operation), note the following.

Precautions	Description
When setting a device for a bit switch	Do not select [Alternate] for [Switch Action] of the bit switch.

Basic parameter ([MELSERVO-J3-*T])

Use an appropriate device according to the write destination of the servo amplifier.

- PA1 to PA50: Writing data to the RAM of a servo amplifier
- PA1001 to PA1050: Writing data to the EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

Virtual device name	Name	Symbol
PA1, PA1001	Control mode	*STY
PA2, PA1002	Regenerative brake option	*REG
PA3, PA1003	Absolute position detection system	*ABS
PA4, PA1004	Function selection A-1	*AOP1
PA5, PA1005	Feeding function selection	*FTY
PA6, PA1006	Electronic gear numerator	*CMX
PA7, PA1007	Electronic gear denominator	*CDV
PA8, PA1008	Auto tuning mode	ATU
PA9, PA1009	Auto tuning response	RSP
PA10, PA1010	In-position range	INP
PA11, PA1011	Forward rotation torque limit	TLP
PA12, PA1012	Reverse rotation torque limit	TLN
PA13, PA1013	For manufacturer setting	—
PA14, PA1014	Rotation direction selection	*POL
PA15, PA1015	Encoder output pulses	*ENR
PA16 to PA18, PA1016 to PA1018	For manufacturer setting	—
PA19, PA1019	Parameter block	*BLK

Gain filter parameter ([MELSERVO-J3-*T])

Use an appropriate device according to the write destination of the servo amplifier.

- PB1 to PB50: Writing data to the RAM of a servo amplifier
- PB1001 to PB1050: Writing data to the EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

Virtual device name	Name	Symbol
PB1, PB1001	Adaptive tuning mode (Adaptive filter II)	FILT
PB2, PB1002	Vibration suppression control tuning mode (advanced vibration suppression control)	VRFT
PB3, PB1003	For manufacturer setting	—
PB4, PB1004	Feed forward gain	FFC
PB5, PB1005	For manufacturer setting	—
PB6, PB1006	Ratio of load inertia moment to servo motor inertia moment	GD2
PB7, PB1007	Model loop gain	PG1
PB8, PB1008	Position loop gain	PG2
PB9, PB1009	Speed loop gain	VG2
PB10, PB1010	Speed integral compensation	VIC
PB11, PB1011	Speed differential compensation	VDC
PB12, PB1012	For manufacturer setting	—
PB13, PB1013	Machine resonance suppression filter 1	NH1
PB14, PB1014	Notch shape selection 1	NHQ1
PB15, PB1015	Machine resonance suppression filter 2	NH2
PB16, PB1016	Notch shape selection 2	NHQ2
PB17, PB1017	For manufacturer setting	—
PB18, PB1018	Low-pass filter setting	LPF
PB19, PB1019	Vibration suppression control vibration frequency setting	VRF1
PB20, PB1020	Vibration suppression control resonance frequency setting	VRF2
PB21 to PB22, PB1021 to PB1022	For manufacturer setting	—
PB23, PB1023	Low-pass filter selection	VFBF
PB24, PB1024	Slight vibration suppression control	*MVS
PB25, PB1025	For manufacturer setting	—
PB26, PB1026	Gain changing selection	*CDP
PB27, PB1027	Gain changing condition	CDL
PB28, PB1028	Gain changing time constant	CDT
PB29, PB1029	Ratio of load inertia moment to servo motor after gain switching	GD2B
PB30, PB1030	Gain changing position loop gain	PG2B
PB31, PB1031	Gain changing speed loop gain	VG2B
PB32, PB1032	Gain changing speed integral compensation	VICB
PB33, PB1033	Suppression control and vibration frequency setting after gain switching	VRF1B
PB34, PB1034	Suppression control and vibration resonance setting after gain switching	VRF2B
PB35 to PB45, PB1035 to PB1045	For manufacturer setting	—

Extension setting parameter ([MELSERVO-J3-*T])

Use an appropriate device according to the write destination of the servo amplifier.

- PC1 to PC50: Writing data to the RAM of a servo amplifier
- PC1001 to PC1050: Writing data to the EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

Virtual device name	Name	Symbol
PC1, PC1001	For manufacturer setting	—
PC2, PC1002	Home position return type	*ZTY
PC3, PC1003	Direction of home position return	*ZDIR
PC4, PC1004	Home position return speed	ZRF
PC5, PC1005	Creep speed	CRF
PC6, PC1006	Home position shift distance	ZST
PC7, PC1007	Home position return position data	*ZPS
PC8, PC1008	Moving distance after proximity dog	DCT
PC9, PC1009	Stopper type home position return stopper time	ZTM
PC10, PC1010	Stopper type home position return torque limit value	ZTT
PC11, PC1011	Rough match output range	CRP
PC12, PC1012	Jog speed	JOG
PC13, PC1013	S-pattern acceleration/deceleration time constant	*STC
PC14, PC1014	Backlash compensation	*BKC
PC15, PC1015	For manufacturer setting	—
PC16, PC1016	Electromagnetic brake sequence output	MBR
PC17, PC1017	Zero speed	ZSP
PC18, PC1018	Alarm history clear	*BPS
PC19, PC1019	Encoder output pulse selection	*ENRS
PC20, PC1020	Station number setting	*SNO
PC21, PC1021	RS-422 communication function selection	*SOP
PC22, PC1022	Function selection C-1	*COP1
PC23, PC1023	For manufacturer setting	—
PC24, PC1024	Function selection C-3	*COP3
PC25, PC1025	For manufacturer setting	—
PC26, PC1026	Function selection C-5	*COP5
PC27, PC1027	For manufacturer setting	—
PC28, PC1028	Function selection C-7	*COP7
PC29 to PC30, PC1029 to PC1030	For manufacturer setting	—
PC31, PC1031	Software limit + Low	LMPL
PC32, PC1032	Software limit + High	LMPH
PC33, PC1033	Software limit - Low	LMNL
PC34, PC1034	Software limit - High	LMNH
PC35, PC1035	Internal torque limit 2	TL2
PC36, PC1036	Status display selection	*DMD
PC37, PC1037	Position range output address + Low	*LPPL
PC38, PC1038	Position range output address + High	*LPPH
PC39, PC1039	Position range output address - Low	*LNPL
PC40, PC1040	Position range output address - High	*LNPH
PC41 to PC50, PC1041 to PC1050	For manufacturer setting	—

I/O setting parameter ([MELSERVO-J3-*T])

Use an appropriate device according to the write destination of the servo amplifier.

- PD1 to PD50: Writing data to the RAM of a servo amplifier
- PD1001 to PD1050: Writing data to the EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

Virtual device name	Name	Symbol
PD1, PD1001	Input signal automatic ON selection 1	*DIA1
PD2, PD1002	For manufacturer setting	—
PD3, PD1003	Input signal automatic ON selection 3	*DIA3
PD4, PD1004	Input signal automatic ON selection 4	*DIA4
PD5, PD1005	For manufacturer setting	—
PD6, PD1006	Input device selection 2 (CN6-2)	*DI2
PD7, PD1007	Input device selection 3 (CN6-3)	*DI3
PD8, PD1008	Input device selection 4 (CN6-4)	*DI4
PD9, PD1009	Output signal device selection 1 (CN6-14)	*DO1
PD10, PD1010	Output signal device selection 2 (CN6-15)	*DO2
PD11, PD1011	Output signal device selection 3 (CN6-16)	*DD3
PD12 to PD15, PD1012 to PD1015	For manufacturer setting	—
PD16, PD1016	Input polarity selection	*DIAB
PD17 to PD18, PD1017 to PD1018	For manufacturer setting	—
PD19, PD1019	Input filter setting	*DIF
PD20, PD1020	Function selection D-1	*DOP1
PD21, PD1021	For manufacturer setting	—
PD22, PD1022	Function selection D-3	*DOP3
PD23, PD1023	For manufacturer setting	—
PD24, PD1024	Function selection D-5	*DOP5
PD25 to PD30, PD1025 to PD1030	For manufacturer setting	—

Option unit parameter ([MELSERVO-J3-*T])

Use an appropriate device according to the write destination of the servo amplifier.

- PO1 to PO35: Writing data to the RAM of a servo amplifier
- PO1001 to PO1035: Writing data to the EEPROM of a servo amplifier

Virtual device name	Name	Symbol
PO1, PO1001	For manufacturer setting	—
PO2, PO1002	MR-J3-D01 Input signal device selection 1 (CN10-21, 26)	*ODI1
PO3, PO1003	MR-J3-D01 Input signal device selection 2 (CN10-27, 28)	*ODI2
PO4, PO1004	MR-J3-D01 Input signal device selection 3 (CN10-29, 30)	*ODI3
PO5, PO1005	MR-J3-D01 Input signal device selection 4 (CN10-31, 32)	*ODI4
PO6, PO1006	MR-J3-D01 Input signal device selection 5 (CN10-33, 34)	*ODI5
PO7, PO1007	MR-J3-D01 Input signal device selection 6 (CN10-35, 36)	*ODI6
PO8, PO1008	MR-J3-D01 Output signal device selection 1 (CN10-46, 47)	*ODO1
PO9, PO1009	MR-J3-D01 Output signal device selection 2 (CN10-48, 49)	*ODO2
PO10, PO1010	Function selection 0-1	*OOP1
PO11, PO1011	For manufacturer setting	—
PO12, PO1012	Function selection 0-3	*OOP3
PO13, PO1013	MR-J3-D01 Analog monitor 1 output	MOD1
PO14, PO1014	MR-J3-D01 Analog monitor 2 output	MOD2
PO15, PO1015	MR-J3-D01 Analog monitor 1 offset	MO1

Virtual device name	Name	Symbol
PO16, PO1016	MR-J3-D01 Analog monitor 2 offset	MO2
PO17 to 20, PO1017 to PO1020	For manufacturer setting	—
PO21, PO1021	MR-J3-D01 Override offset	VCO
PO22, PO1022	MR-J3-D01 Analog torque limitation offset	TLO
PO23 to PO35, PO1023 to PO1035	For manufacturer setting	—

Status display ([MELSERVO-J3-*T])

Virtual device name	Name	Symbol
ST0	Current position	—
ST1	Command position	—
ST2	Command remaining distance	—
ST3	Point table No.	—
ST4	Cumulative feedback pulses	—
ST5	Servo motor speed	—
ST6	Droop pulses	—
ST7	Override voltage	—
ST8	Override	—
ST9	Analog torque command voltage/limit voltage	—
ST10	Regenerative load ratio	—
ST11	Effective load ratio	—
ST12	Peak load ratio	—
ST13	Instantaneous torque	—
ST14	Within one-revolution position	—
ST15	ABS counter	—
ST16	Load inertia moment ratio	—
ST17	Bus voltage	—

Alarm ([MELSERVO-J3-*T])

Virtual device name	Name	Symbol
AL0	Current alarm number	—
AL1	Detailed data of current alarms	—
AL11	Servo status when alarm occurs, current position	—
AL12	Servo status when alarm occurs, command position	—
AL13	Servo status when alarm occurs, command remaining distance	—
AL14	Servo status when alarm occurs, point table No.	—
AL15	Servo status when alarm occurs, cumulative feedback pulses	—
AL16	Servo status when alarm occurs, servo motor speed	—
AL17	Servo status when alarm occurs, droop pulses	—
AL18	Servo status when alarm occurs, override voltage	—
AL19	Servo status when alarm occurs, override	—
AL20	Servo status when alarm occurs, analog torque limit voltage	—
AL21	Servo status when alarm occurs, regenerative load ratio	—
AL22	Servo status when alarm occurs, effective load ratio	—
AL23	Servo status when alarm occurs, peak load ratio	—
AL24	Servo status when alarm occurs, Instantaneous torque	—
AL25	Servo status when alarm occurs, within one-revolution position	—
AL26	Servo status when alarm occurs, ABS counter	—
AL27	Servo status when alarm occurs, load inertia moment ratio	—
AL28	Servo status when alarm occurs, Bus voltage	—
AL200	Alarm number from Alarm History most recent alarm	—
AL201	Alarm number from Alarm History first alarm in past	—
AL202	Alarm number from Alarm History second alarm in past	—
AL203	Alarm number from Alarm History third alarm in past	—
AL204	Alarm number from Alarm History fourth alarm in past	—
AL205	Alarm number from Alarm History fifth alarm in past	—
AL210	Alarm occurrence time in alarm history most recent alarm	—
AL211	Alarm occurrence time in alarm history first alarm in past	—
AL212	Alarm occurrence time in alarm history second alarm in past	—
AL213	Alarm occurrence time in alarm history third alarm in past	—
AL214	Alarm occurrence time in alarm history fourth alarm in past	—
AL215	Alarm occurrence time in alarm history fifth alarm in past	—
AL230	Detailed alarm from Alarm History most recent alarm	—
AL231	Detailed alarm from Alarm History first alarm in past	—
AL232	Detailed alarm from Alarm History second alarm in past	—
AL233	Detailed alarm from Alarm History third alarm in past	—
AL234	Detailed alarm from Alarm History fourth alarm in past	—
AL235	Detailed alarm from Alarm History fifth alarm in past	—

Point table (position) ([MELSERVO-J3-*T])

Use an appropriate device according to the write destination of the servo amplifier.

- POS1 to POS255: Writing data to the RAM of a servo amplifier
- POS1001 to POS1255: Writing data to the EEPROM of a servo amplifier

Virtual device name	Name	Symbol
POS1 to POS255, POS1001 to POS1255	Point table/position data No. 1 to No. 255	—

Point table (speed) ([MELSERVO-J3-*T])

Use an appropriate device according to the write destination of the servo amplifier.

- SPD1 to SPD255: Writing data to the RAM of a servo amplifier
- SPD1001 to SPD1255: Writing data to the EEPROM of a servo amplifier

Virtual device name	Name	Symbol
SPD1 to SPD255, SPD1001 to SPD1255	Point table/speed data No. 1 to No. 255	—

Point table (acceleration time constant) ([MELSERVO-J3-*T])

Use an appropriate device according to the write destination of the servo amplifier.

- ACT1 to ACT255: Writing data to the RAM of a servo amplifier
- ACT1001 to ACT1255: Writing data to the EEPROM of a servo amplifier

Virtual device name	Name	Symbol
ACT1 to ACT255, ACT1001 to ACT1255	Point table/acceleration time constant No. 1 to No. 255	—

Point table (deceleration time constant) ([MELSERVO-J3-*T])

Use an appropriate device according to the write destination of the servo amplifier.

- DCT1 to DCT255: Writing data to the RAM of a servo amplifier
- DCT1001 to DCT1255: Writing data to the EEPROM of a servo amplifier

Virtual device name	Name	Symbol
DCT1 to DCT255, DCT1001 to DCT1255	Point table/deceleration time constant No. 1 to No. 255	—

Point table (dwell) ([MELSERVO-J3-*T])

Use an appropriate device according to the write destination of the servo amplifier.

- DWL1 to DWL255: Writing data to the RAM of a servo amplifier
- DWL1001 to DWL1255: Writing data to the EEPROM of a servo amplifier

Virtual device name	Name	Symbol
DWL1 to DWL255, DWL1001 to DWL1255	Point table/dwell No. 1 to No. 255	—

Point table (auxiliary function) ([MELSERVO-J3-*T])

Use an appropriate device according to the write destination of the servo amplifier.

- AUX1 to AUX255: Writing data to the RAM of a servo amplifier
- AUX1001 to AUX1255: Writing data to the EEPROM of a servo amplifier

Virtual device name	Name	Symbol
AUX1 to AUX255, AUX1001 to AUX1255	Point table/auxiliary function No. 1 to No. 255	—

Point table (M code) ([MELSERVO-J3-*T])

Use an appropriate device according to the write destination of the servo amplifier.

- MCD1 to MCD255: Writing data to the RAM of a servo amplifier
- MCD1001 to MCD1255: Writing data to the EEPROM of a servo amplifier

Virtual device name	Name	Symbol
MCD1 to MCD255, MCD1001 to MCD1255	Point table/M code No. 1 to No. 255	—

External input signal ([MELSERVO-J3-*T])

Virtual device name	Name	Symbol	Data to be read from the servo amplifier
DI0	Input device statuses 1	—	For the mapping of the bits corresponding to the data to be read, refer to the following. ☞ MR-J3-_T Instruction Manual
DI1	Input device statuses 2	—	
DI2	Input device statuses 3	—	
DI3	External input pin statuses 1	—	
DI4	External input pin statuses 2	—	
DI5	Statuses of input devices switched on through communication 1	—	For the mapping of the bits corresponding to the data to be read or written, refer to the following. ☞ MR-J3-_T Instruction Manual
DI6	Statuses of input devices switched on through communication 2	—	
DI7	Statuses of input devices switched on through communication 3	—	

External output signal ([MELSERVO-J3-*T])

Virtual device name	Name	Symbol	Data to be read from the servo amplifier
DO0	Output device statuses 1	—	For the mapping of the bits corresponding to the data to be read, refer to the following. ☞ MR-J3-_T Instruction Manual
DO1	Output device statuses 2	—	
DO2	Output device statuses 3	—	
DO3	External output pin statuses 1	—	
DO4	External output pin statuses 2	—	

Input signal for test operation (for test operation) ([MELSERVO-J3-*T])

Virtual device name	Name	Symbol
TMI0	Input signal for test operation 1	—
TMI1	Input signal for test operation 2	—
TMI2	Input signal for test operation 3	—

When using the input signal for test operation (for test operation), note the following.

Precautions	Description
Writing a value to a virtual device using an object	Numerical input cannot be used. Use a word switch for writing.

Forced output of signal pin (for test operation) ([MELSERVO-J3-*T])

Virtual device name	Name	Symbol
TMO0	Forced output from signal pin (CN6)	—
TMO1	Forced output from signal pin (CN10)	—

When using the forced output of signal pin (for test operation), note the following.

Precautions	Description
Writing a value to a virtual device using an object	Numerical input cannot be used. Use a word switch for writing.

Set data (for test operation) ([MELSERVO-J3-*T])

Virtual device name	Name	Symbol
TMD0	Writes the speed (test mode)	—
TMD1	Writes the acceleration/deceleration time constant (test mode)	—
TMD3	Writes the moving distance (test mode)	—

When using the set data (for test operation), note the following.

Precautions	Description
Writing a value to a virtual device using an object	Numerical input cannot be used. Use a word switch for writing.

97.12.8 Precautions for virtual servo amplifier devices ([MELSERVO-J3-*T])

For the precautions for virtual servo amplifier devices, refer to the following.

☞ Page 3336 Precautions for virtual servo amplifier devices ([MELSERVO-J3-*A])

97.13 [MELSERVO-J4-*A, -JE-*A]

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Item	Reference
Specifications of bit devices	☞ Page 3354 Monitoring-supported bit devices ([MELSERVO-J4-*A, -JE-*A])
	☞ Page 3354 Availability of writing/reading data to/from bit devices ([MELSERVO-J4-*A, -JE-*A])
Specifications of word devices	☞ Page 3355 Monitoring-supported word devices ([MELSERVO-J4-*A, -JE-*A])
	☞ Page 3356 Availability of writing/reading data to/from word devices ([MELSERVO-J4-*A, -JE-*A])
Specifications of double-word devices	☞ Page 3357 Monitoring-supported double-word devices ([MELSERVO-J4-*A, -JE-*A])
	☞ Page 3357 Availability of writing/reading data to/from double-word devices ([MELSERVO-J4-*A, -JE-*A])
Specifications of virtual servo amplifier devices	☞ Page 3358 Virtual servo amplifier devices ([MELSERVO-J4-*A, -JE-*A])
	☞ Page 3373 Precautions for virtual servo amplifier devices ([MELSERVO-J4-*A, -JE-*A])

97.13.1 Monitoring-supported bit devices ([MELSERVO-J4-*A, -JE-*A])

The following table shows monitoring-supported virtual bit devices for servo amplifiers.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3354 Availability of writing/reading data to/from bit devices ([MELSERVO-J4-*A, -JE-*A])

For details on virtual servo amplifier devices, refer to the following.

☞ Page 3358 Virtual servo amplifier devices ([MELSERVO-J4-*A, -JE-*A])

○: Available

×: Not available

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
SP	Servo amplifier request	Decimal	0 to 6	×	×
OM	Operation mode selection	Decimal	0 to 4	×	×
TMB	Instruction demand (for test operation)	Decimal	1 to 6	×	×
OTI	One-touch tuning instruction	Decimal	0 to 5	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.

☞ Page 2868 Monitoring a controller through the GOT (server/client function)

97.13.2 Availability of writing/reading data to/from bit devices ([MELSERVO-J4-*A, -JE-*A])

The following shows the availability of writing/reading data to/from bit devices by device type.

When the device type is other than the bit type, set the device No. in multiples of 16.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type				
	Bit	Byte (8 bits)	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)
SP	-/W	-/-	-/-	-/-	-/-
OM	-/W	-/-	-/-	-/-	-/-
TMB	-/W	-/-	-/-	-/-	-/-
OTI	-/W	-/-	-/-	-/-	-/-

97.13.3 Monitoring-supported word devices ([MELSERVO-J4-*A, -JE-*A])

The following table shows monitoring-supported virtual word devices for servo amplifiers.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3356 Availability of writing/reading data to/from word devices ([MELSERVO-J4-*A, -JE-*A])

For details on virtual servo amplifier devices, refer to the following.

☞ Page 3358 Virtual servo amplifier devices ([MELSERVO-J4-*A, -JE-*A])

○: Available

×: Not available

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
PA	Basic parameter	Decimal	1 to 32 1001 to 1032	○	×
PB	Gain filter parameter	Decimal	1 to 64 1001 to 1064	○	×
PC	Extension setting parameter	Decimal	1 to 80 1001 to 1080	○	×
PD	I/O setting parameter	Decimal	1 to 48 1001 to 1048	○	×
PL	Linear servo motor/DD motor setting parameter	Decimal	1 to 48 1001 to 1048	○	×
ST	Status display	Decimal	0 to 41	○	×
AL	Alarm (current alarm, J3A compatible)	Decimal	0 to 1 11 to 25	○	×
AL	Alarm (alarm history, J3A compatible)	Decimal	200 to 205 210 to 215 230 to 235	○	×
PE	Extension setting No.2 parameter	Decimal	1 to 64 1001 to 1064	○	×
PF	Extension setting No.3 parameter	Decimal	1 to 48 1001 to 1048	○	×
ALM	Alarm (current alarm, J4A extend)	Decimal	0 to 1 11 to 52	○	×
ALM	Alarm (alarm history, J4A extend)	Decimal	200 to 215 220 to 235 240 to 255	○	×
MD	Machine diagnosis data	Decimal	0 to 11	×	×
OTS	One-touch tuning data	Decimal	0 to 3	×	×
DI	External input signal	Decimal	0 to 2	×	×
DO	External output signal	Decimal	0 to 1	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.

☞ Page 2868 Monitoring a controller through the GOT (server/client function)

97.13.4 Availability of writing/reading data to/from word devices ([MELSERVO-J4-*A, -JE-*A])

The following shows the availability of writing/reading data to/from word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data
PA	R/W	R/W	-/-	-/-
PB	R/W	R/W	-/-	-/-
PC	R/W	R/W	-/-	-/-
PD	R/W	R/W	-/-	-/-
PL	R/W	R/W	-/-	-/-
ST	R/-	R/-	-/-	-/-
AL	R/-	R/-	-/-	-/-
PE	R/W	R/W	-/-	-/-
PF	R/W	R/W	-/-	-/-
ALM	R/-	R/-	-/-	-/-
MD	R/-	R/-	-/-	-/-
OTS	R/-	R/-	-/-	-/-
DI*1	R/-	R/W	-/-	-/-
DO	R/-	R/-	-/-	-/-

*1 Only reading is available for DI0 and DI1.

97.13.5 Monitoring-supported double-word devices ([MELSERVO-J4-*A, -JE-*A])

The following table shows monitoring-supported virtual double-word devices for servo amplifiers.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3357 Availability of writing/reading data to/from double-word devices ([MELSERVO-J4-*A, -JE-*A])

For details on virtual servo amplifier devices, refer to the following.

☞ Page 3358 Virtual servo amplifier devices ([MELSERVO-J4-*A, -JE-*A])

○: Available

×: Not available

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
ALD	Life diagnosis	Decimal	0 to 1	×	×
TMI	Input signal for test operation (for test operation)	Decimal	0	×	×
TMO	Forced output of signal pin (for test operation)	Decimal	0	×	×
TMD	Set data (for test operation)	Decimal	0 to1, 3	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.

☞ Page 2868 Monitoring a controller through the GOT (server/client function)

97.13.6 Availability of writing/reading data to/from double-word devices ([MELSERVO-J4-*A, -JE-*A])

The following shows the availability of writing/reading data to/from double-word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data
ALD	-/-	R/-	-/-	-/-
TMI	-/-	-/W	-/-	-/-
TMO	-/-	-/W	-/-	-/-
TMD	-/-	-/W	-/-	-/-

97.13.7 Virtual servo amplifier devices ([MELSERVO-J4-*A, -JE-*A])

The following shows the correspondence between the virtual devices used in the GOT and the servo amplifier data.

Virtual device name	Reference
SP	☞ Page 3358 Servo amplifier request ([MELSERVO-J4-*A, -JE-*A])
OM	☞ Page 3359 Operation mode selection ([MELSERVO-J4-*A, -JE-*A])
TMB	☞ Page 3359 Instruction demand (for test operation) ([MELSERVO-J4-*A, -JE-*A])
OTI	☞ Page 3359 One-touch tuning instruction ([MELSERVO-J4-*A, -JE-*A])
PA	☞ Page 3360 Basic parameter ([MELSERVO-J4-*A, -JE-*A])
PB	☞ Page 3361 Gain filter parameter ([MELSERVO-J4-*A, -JE-*A])
PC	☞ Page 3363 Extension setting parameter ([MELSERVO-J4-*A, -JE-*A])
PD	☞ Page 3365 I/O setting parameter ([MELSERVO-J4-*A, -JE-*A])
PL	☞ Page 3366 Linear servo motor/DD motor setting parameter ([MELSERVO-J4-*A, -JE-*A])
ST	☞ Page 3367 Status display ([MELSERVO-J4-*A, -JE-*A])
AL	☞ Page 3368 Alarm (MELSERVO-J3-*A compatible) ([MELSERVO-J4-*A, -JE-*A])
PE	☞ Page 3369 Extension setting No.2 parameter ([MELSERVO-J4-*A, -JE-*A])
PF	☞ Page 3369 Extension setting No.3 parameter ([MELSERVO-J4-*A, -JE-*A])
ALM	☞ Page 3370 Alarm (MELSERVO-J4-*A extended) ([MELSERVO-J4-*A, -JE-*A])
MD	☞ Page 3371 Machine diagnosis data ([MELSERVO-J4-*A, -JE-*A])
OTS	☞ Page 3372 One-touch tuning data ([MELSERVO-J4-*A, -JE-*A])
DI	☞ Page 3372 External input signal in MR-J4-□A ([MELSERVO-J4-*A, -JE-*A])
	☞ Page 3372 External input signal in MR-JE-□A ([MELSERVO-J4-*A, -JE-*A])
DO	☞ Page 3372 External output signal in MR-J4-□A ([MELSERVO-J4-*A, -JE-*A])
	☞ Page 3372 External output signal in MR-JE-□A ([MELSERVO-J4-*A, -JE-*A])
ALD	☞ Page 3372 Life diagnosis ([MELSERVO-J4-*A, -JE-*A])
TMI	☞ Page 3373 Input signal for test operation (for test operation) ([MELSERVO-J4-*A, -JE-*A])
TMO	☞ Page 3373 Forced output of signal pin (for test operation) ([MELSERVO-J4-*A, -JE-*A])
TMD	☞ Page 3373 Set data (for test operation) ([MELSERVO-J4-*A, -JE-*A])

Servo amplifier request ([MELSERVO-J4-*A, -JE-*A])

○: Available

×: Not available

Virtual device name	Name	Symbol	MR-J4-□A	MR-JE-□A
SP0	Status display data clear	—	○	○
SP1	Current alarm clear	—	○	○
SP2	Alarm history clear	—	○	○
SP3	External input signal prohibited	—	○	○
SP4	External output signal prohibited	—	○	○
SP5	External input signal resumed	—	○	○
SP6	External output signal resumed	—	○	○

When using the servo amplifier request, note the following.

Precautions	Description
When setting a device for a bit switch	Do not select [Alternate] for [Switch Action] of the bit switch.

Operation mode selection ([MELSERVO-J4-*A, -JE-*A])

○: Available

×: Not available

Virtual device name	Name	Symbol	MR-J4-□A	MR-JE-□A
OM0	Normal mode (not test operation mode)	—	○	○
OM1	JOG operation	—	○	○
OM2	Positioning operation	—	○	○
OM4	Output signal (DO) forced output	—	○	○

When using the operation mode selection, note the following.

Precautions	Description
When setting a device for a bit switch	Do not select [Alternate] for [Switch Action] of the bit switch.

Instruction demand (for test operation) ([MELSERVO-J4-*A, -JE-*A])

○: Available

×: Not available

Virtual device name	Name	Symbol	MR-J4-□A	MR-JE-□A
TMB1	Temporary stop command	—	○	○
TMB2	Test operation (positioning operation) start command	—	○	○
TMB3	Forward rotation direction	—	○	○
TMB4	Reverse rotation direction	—	○	○
TMB5	Restart for remaining distance	—	○	○
TMB6	Remaining distance clear	—	○	○

When using the instruction demand (for test operation), note the following.

Precautions	Description
When setting a device for a bit switch	Do not select [Alternate] for [Switch Action] of the bit switch.

One-touch tuning instruction ([MELSERVO-J4-*A, -JE-*A])

○: Available

×: Not available

Virtual device name	Name	Symbol	MR-J4-□A	MR-JE-□A
OTI0	One-touch tuning start command (Basic mode)	—	○	○
OTI1	One-touch tuning start command (High mode)	—	○	○
OTI2	One-touch tuning start command (Low mode)	—	○	○
OTI3	One-touch tuning stop command	—	○	○
OTI4	Return to initial value	—	○	○
OTI5	Return to value before adjustment	—	○	○

Basic parameter ([MELSERVO-J4-*A, -JE-*A])

Use an appropriate device according to the write destination of the servo amplifier.

- PA1 to PA32: Writing data to the RAM of a servo amplifier
- PA1001 to PA1032: Writing data to the EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

○: Available

×: Not available

Virtual device name	Name	Symbol	MR-J4-□A	MR-JE-□A
PA1, PA1001	Operation mode	*STY	○	○
PA2, PA1002	Regenerative brake option	*REG	○	○
PA3, PA1003	Absolute position detection system	*ABS	○	×
PA4, PA1004	Function selection A-1	*AOP1	○	○
PA5, PA1005	Number of command input pulses per revolution	*FBP	○	○
PA6, PA1006	Electronic gear numerator (command pulse multiplication numerator)	CMX	○	○
PA7, PA1007	Electronic gear denominator (command pulse multiplication denominator)	CDV	○	○
PA8, PA1008	Auto tuning mode	ATU	○	○
PA9, PA1009	Auto tuning response	RSP	○	○
PA10, PA1010	In-position range	INP	○	○
PA11, PA1011	Forward rotation torque limit	TLP	○	○
PA12, PA1012	Reverse rotation torque limit	TLN	○	○
PA13, PA1013	Command pulse input form	*PLSS	○	○
PA14, PA1014	Rotation direction selection	*POL	○	○
PA15, PA1015	Encoder output pulses	*ENR	○	○
PA16, PA1016	Encoder output pulses 2	*ENR2	○	○
PA17 to PA18, PA1017 to PA1018	For manufacturer setting	—	×	×
PA19, PA1019	Parameter block	*BLK	○	○
PA20, PA1020	Tough drive setting	*TDS	○	○
PA21, PA1021	Function selection A-3	*AOP3	○	○
PA22, PA1022	For manufacturer setting	—	×	×
PA23, PA1023	Drive recorder arbitrary alarm trigger setting	DRAT	○	○
PA24, PA1024	Function selection A-4	*AOP4	○	○
PA25, PA1025	One-touch tuning - Overshoot permissible level	OTHOV	○	○
PA26, PA1026	Function selection A-5	*AOP5	○	○
PA27 to PA32, PA1027 to PA1032	For manufacturer setting	—	×	×

Gain filter parameter ([MELSERVO-J4-*A, -JE-*A])

Use an appropriate device according to the write destination of the servo amplifier.

- PB1 to PB64: Writing data to the RAM of a servo amplifier
- PB1001 to PB1064: Writing data to the EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

○: Available

×: Not available

Virtual device name	Name	Symbol	MR-J4-□A	MR-JE-□A
PB1, PB1001	Adaptive tuning mode (Adaptive filter II)	FILT	○	○
PB2, PB1002	Vibration suppression control tuning mode (advanced vibration suppression control)	VRFT	○	○
PB3, PB1003	Position command acceleration/deceleration time constant (position smoothing)	PST	○	○
PB4, PB1004	Feed forward gain	FFC	○	○
PB5, PB1005	For manufacturer setting	—	×	×
PB6, PB1006	Load inertia moment ratio	GD2	○	○
PB7, PB1007	Model control gain	PG1	○	○
PB8, PB1008	Position control gain	PG2	○	○
PB9, PB1009	Speed control gain	VG2	○	○
PB10, PB1010	Speed integral compensation	VIC	○	○
PB11, PB1011	Speed differential compensation	VDC	○	○
PB12, PB1012	Overshoot amount compensation	OVA	○	○
PB13, PB1013	Machine resonance suppression filter 1	NH1	○	○
PB14, PB1014	Notch shape selection 1	NHQ1	○	○
PB15, PB1015	Machine resonance suppression filter 2	NH2	○	○
PB16, PB1016	Notch shape selection 2	NHQ2	○	○
PB17, PB1017	Shaft resonance suppression filter	NHF	○	○
PB18, PB1018	Low-pass filter setting	LPF	○	○
PB19, PB1019	Vibration suppression control 1 - Vibration frequency	VRF11	○	○
PB20, PB1020	Vibration suppression control 1 - Resonance frequency	VRF12	○	○
PB21, PB1021	Vibration suppression control 1 - Vibration frequency damping	VRF13	○	○
PB22, PB1022	Vibration suppression control 1 - Resonance frequency damping	VRF14	○	○
PB23, PB1023	Low-pass filter selection	VFBF	○	○
PB24, PB1024	Slight vibration suppression control	*MVS	○	○
PB25, PB1025	Function selection B-1	*BOP1	○	○
PB26, PB1026	Gain changing function	*CDP	○	○
PB27, PB1027	Gain changing condition	CDL	○	○
PB28, PB1028	Gain changing time constant	CDT	○	○
PB29, PB1029	Load to motor inertia ratio after gain switching	GD2B	○	○
PB30, PB1030	Position loop gain after gain switching	PG2B	○	○
PB31, PB1031	Speed loop gain after gain switching	VG2B	○	○
PB32, PB1032	Speed integral compensation after gain switching	VICB	○	○
PB33, PB1033	Vibration suppression control 1 - Vibration frequency after gain switching	VRF1B	○	○
PB34, PB1034	Vibration suppression control 1 - Resonance frequency after gain switching	VRF2B	○	○
PB35, PB1035	Vibration suppression control 1 - Vibration frequency damping after gain switching	VRF3B	○	○
PB36, PB1036	Vibration suppression control 1 - Resonance frequency damping after gain switching	VRF4B	○	○
PB37 to PB44, PB1037 to PB1044	For manufacturer setting	—	×	×
PB45, PB1045	Command notch filter	CNHF	○	○

Virtual device name	Name	Symbol	MR-J4-□A	MR-JE-□A
PB46, PB1046	Machine resonance suppression filter 3	NH3	○	○
PB47, PB1047	Notch shape selection 3	NHQ3	○	○
PB48, PB1048	Machine resonance suppression filter 4	NH4	○	○
PB49, PB1049	Notch shape selection 4	NHQ4	○	○
PB50, PB1050	Machine resonance suppression filter 5	NH5	○	○
PB51, PB1051	Notch shape selection 5	NHQ5	○	○
PB52, PB1052	Vibration suppression control 2 - Vibration frequency	VRF21	○	○
PB53, PB1053	Vibration suppression control 2 - Resonance frequency	VRF22	○	○
PB54, PB1054	Vibration suppression control 2 - Vibration frequency damping	VRF23	○	○
PB55, PB1055	Vibration suppression control 2 - Resonance frequency damping	VRF24	○	○
PB56, PB1056	Vib. supp. ctrl. 2 - Vib. frq. after gain changing	VRF21B	○	○
PB57, PB1057	Vib. supp. ctrl. 2 - Res. frq. after gain changing	VRF22B	○	○
PB58, PB1058	Vib. supp. ctrl. 2 - Vib. frq. damping after gain chng	VRF23B	○	○
PB59, PB1059	Vib. supp. ctrl. 2 - Res. frq. damping after gain chng	VRF24B	○	○
PB60, PB1060	Gain changing model loop gain	PG1B	○	○
PB61 to PB64, PB1061 to PB1064	For manufacturer setting	—	×	×

Extension setting parameter ([MELSERVO-J4-*A, -JE-*A])

Use an appropriate device according to the write destination of the servo amplifier.

- PC1 to PC80: Writing data to the RAM of a servo amplifier
- PC1001 to PC1080: Writing data to the EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

○: Available

×: Not available

Virtual device name	Name	Symbol	MR-J4-□A	MR-JE-□A
PC1, PC1001	Acceleration time constant	STA	○	○
PC2, PC1002	Deceleration time constant	STB	○	○
PC3, PC1003	S-pattern acceleration/deceleration time constant	STC	○	○
PC4, PC1004	Torque command time constant	TQC	○	○
PC5, PC1005	Internal speed command1/limit1	SC1	○	○
PC6, PC1006	Internal speed command2/limit2	SC2	○	○
PC7, PC1007	Internal speed command3/limit3	SC3	○	○
PC8, PC1008	Internal speed command4/limit4	SC4	○	○
PC9, PC1009	Internal speed command5/limit5	SC5	○	○
PC10, PC1010	Internal speed command6/limit6	SC6	○	○
PC11, PC1011	Internal speed command7/limit7	SC7	○	○
PC12, PC1012	Analog speed command maximum speed/limit maximum speed	VCM	○	○
PC13, PC1013	Analog torque command maximum output	TLC	○	○
PC14, PC1014	Analog monitor 1 output	MOD1	○	○
PC15, PC1015	Analog monitor 2 output	MOD2	○	○
PC16, PC1016	Electromagnetic brake sequence output	MBR	○	○
PC17, PC1017	Zero speed	ZSP	○	○
PC18, PC1018	Alarm history clear	*BPS	○	○
PC19, PC1019	Encoder output pulse selection	*ENRS	○	○
PC20, PC1020	Station number setting	*SNO	○	×
PC21, PC1021	Communication function selection	*SOP	○	×
PC22, PC1022	Function selection C-1	*COP1	○	○
PC23, PC1023	Function selection C-2	*COP2	○	○
PC24, PC1024	Function selection C-3	*COP3	○	○
PC25, PC1025	For manufacturer setting	—	×	×
PC26, PC1026	Function selection C-5	*COP5	○	○
PC27, PC1027	Function selection C-6	*COP6	○	○
PC28 to PC29, PC1028 to PC1029	For manufacturer setting	—	×	×
PC30, PC1030	Acceleration time constant 2	STA2	○	○
PC31, PC1031	Deceleration time constant 2	STB2	○	○
PC32, PC1032	Command input pulse multiplication numerator 2	CMX2	○	○
PC33, PC1033	Command input pulse multiplication numerator 3	CMX3	○	○
PC34, PC1034	Command input pulse multiplication numerator 4	CMX4	○	○
PC35, PC1035	Internal torque limit 2	TL2	○	○
PC36, PC1036	Status display selection	*DMD	○	○
PC37, PC1037	Analog speed command offset/limit offset	VCO	○	○
PC38, PC1038	Analog torque command offset/limit offset	TPO	○	○
PC39, PC1039	Analog monitor 1 offset	MO1	○	○
PC40, PC1040	Analog monitor 2 offset	MO2	○	○
PC41 to PC42, PC1041 to PC1042	For manufacturer setting	—	×	×
PC43, PC1043	Error excessive alarm detection level	ERZ	○	○

Virtual device name	Name	Symbol	MR-J4-□A	MR-JE-□A
PC44 to PC 50, PC1044 to PC1050	For manufacturer setting	—	×	×
PC51, PC1051	Forced stop deceleration time constant	RSBR	○	○
PC52 to PC53, PC1052 to PC1053	For manufacturer setting	—	×	×
PC54, PC1054	Vertical axis freefall prevention compensation amount	RSUP1	○	○
PC55 to PC59, PC1055 to PC1059	For manufacturer setting	—	×	×
PC60, PC1060	Function selection C-D	*COPD	○	○
PC61 to PC65, PC1061 to PC1065	For manufacturer setting	—	×	×
PC66, PC1066	Mark detection range+	LPSPL	×	○
PC67, PC1067	Mark detection range+	LPSPH	×	○
PC68, PC1068	Mark detection range-	LPSNL	×	○
PC69, PC1069	Mark detection range-	LPSNH	×	○
PC70, PC1070	Modbus-RTU Communication station number setting	*SNOM	×	○
PC71, PC1071	Function selection C-F	*COPF	×	○
PC72, PC1072	Function selection C-G	*COPG	×	○
PC73, PC1073	Error excessive warning level	ERW	×	○
PC74 to PC80, PC1074 to PC1080	For manufacturer setting	—	×	×

I/O setting parameter ([MELSERVO-J4-*A, -JE-*A])

Use an appropriate device according to the write destination of the servo amplifier.

- PD1 to PD48: Writing data to the RAM of a servo amplifier
- PD1001 to PD1048: Writing data to the EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

○: Available

×: Not available

Virtual device name	Name	Symbol	MR-J4-□A	MR-JE-□A
PD1, PD1001	Input signal automatic on selection 1	*DIA1	○	○
PD2, PD1002	For manufacturer setting	—	×	×
PD3, PD1003	Input device selection 1L	*DI1L	○	○
PD4, PD1004	Input device selection 1H	*DI1H	○	○
PD5, PD1005	Input device selection 2L	*DI2L	○	×
PD6, PD1006	Input device selection 2H	*DI2H	○	×
PD7, PD1007	Input device selection 3L	*DI3L	○	×
PD8, PD1008	Input device selection 3H	*DI3H	○	×
PD9, PD1009	Input device selection 4L	*DI4L	○	×
PD10, PD1010	Input device selection 4H	*DI4H	○	×
PD11, PD1011	Input device selection 5L	*DI5L	○	○
PD12, PD1012	Input device selection 5H	*DI5H	○	○
PD13, PD1013	Input device selection 6L	*DI6L	○	○
PD14, PD1014	Input device selection 6H	*DI6H	○	○
PD15 to PD16, PD1015 to PD1016	For manufacturer setting	—	×	×
PD17, PD1017	Input device selection 8L	*DI8L	○	○
PD18, PD1018	Input device selection 8H	*DI8H	○	○
PD19, PD1019	Input device selection 9L	*DI9L	○	○
PD20, PD1020	Input device selection 9H	*DI9H	○	○
PD21, PD1021	Input device selection 10L	*DI10L	○	×
PD22, PD1022	Input device selection 10H	*DI10H	○	×
PD23, PD1023	Output device selection 1	*DO1	○	×
PD24, PD1024	Output device selection 2	*DO2	○	○
PD25, PD1025	Output device selection 3	*DO3	○	○
PD26, PD1026	Output device selection 4	*DO4	○	×
PD27, PD1027	For manufacturer setting	—	×	×
PD28, PD1028	Output device selection 6	*DO6	○	○
PD29, PD1029	Input filter setting	*DIF	○	○
PD30, PD1030	Function selection D-1	*DOP1	○	○
PD31, PD1031	For manufacturer setting	—	×	×
PD32, PD1032	Function selection D-3	*DOP3	○	○
PD33, PD1033	For manufacturer setting	—	×	×
PD34, PD1034	Function selection D-5	*DOP5	○	○
PD35 to PD40, PD1035 to PD1040	For manufacturer setting	—	×	×
PD41, PD1041	Input signal automatic on selection 3	*DIA3	×	○
PD42, PD1042	Input signal automatic on selection 4	*DIA4	×	○
PD43, PD1043	Input device selection 11L	*DI11L	×	○
PD44, PD1044	Input device selection 11H	*DI11H	×	○
PD45, PD1045	Input device selection 12L	*DI12L	×	○
PD46, PD1046	Input device selection 12H	*DI12H	×	○
PD47 to PD48, PD1047 to PD1048	For manufacturer setting	—	×	×

Linear servo motor/DD motor setting parameter ([MELSERVO-J4-*A, -JE-*A])

Use an appropriate device according to the write destination of the servo amplifier.

- PL1 to PL48: Writing data to the RAM of a servo amplifier
- PL1001 to PL1048: Writing data to the EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

○: Available

×: Not available

Virtual device name	Name	Symbol	MR-J4-□A	MR-JE-□A
PL1, PL1001	Linear servo motor/DD motor function selection 1	*LIT1	○	×
PL2, PL1002	Linear encoder resolution - Numerator	*LIM	○	×
PL3, PL1003	Linear encoder resolution setting Denominator	*LID	○	×
PL4, PL1004	Linear servo motor/DD motor function selection 2	*LIT2	○	×
PL5, PL1005	Position deviation error detection level	LB1	○	×
PL6, PL1006	Speed deviation error detection level	LB2	○	×
PL7, PL1007	Torque/thrust deviation error detection level	LB3	○	×
PL8, PL1008	Linear servo motor/DD motor function selection 3	*LIT3	○	×
PL9, PL1009	Magnetic pole detection voltage level	LPWM	○	×
PL10 to PL16, PL1010 to PL1016	For manufacturer setting	—	×	×
PL17, PL1017	Magnetic pole detection - Minute position detection method - Function selection	LTSTS	○	×
PL18, PL1018	Magnetic pole detection - Minute position detection method - Identification signal amplitude	IDLV	○	×
PL19 to PL48, PL1019 to PL1048	For manufacturer setting	—	×	×

Status display ([MELSERVO-J4-*A, -JE-*A])

○: Available

×: Not available

Virtual device name	Name	Symbol	MR-J4-□A	MR-JE-□A
ST0	Cumulative feedback pulses	—	○	○
ST1	Servo motor speed	—	○	○
ST2	Droop pulses	—	○	○
ST3	Cumulative command pulses	—	○	○
ST4	Command pulse frequency	—	○	○
ST5	Analog speed command voltage/limit voltage	—	○	○
ST6	Analog torque command voltage/limit voltage	—	○	○
ST7	Regenerative load ratio	—	○	○
ST8	Effective load ratio	—	○	○
ST9	Peak load ratio	—	○	○
ST10	Instantaneous torque	—	○	○
ST11	Within one-revolution position (1 pulse unit)	—	○	○
ST12	ABS counter	—	○	○
ST13	Load to motor inertia ratio	—	○	○
ST14	Bus voltage	—	○	○
ST15 to ST31	For manufacturer setting	—	×	×
ST32	Internal temperature of encoder	—	○	○
ST33	Settling time	—	○	○
ST34	Oscillation detection frequency	—	○	○
ST35	Number of tough drive operations	—	○	○
ST36 to ST39	For manufacturer setting	—	×	×
ST40	Unit power consumption 1 (increment of 1 W)	—	○	○
ST41	Unit total power consumption 1 (increment of 1 Wh)	—	○	○

Alarm (MELSERVO-J3-*A compatible) ([MELSERVO-J4-*A, -JE-*A])

○: Available

×: Not available

Virtual device name	Name	Symbol	MR-J4-□A	MR-JE-□A
AL0	Current alarm number	—	○	○
AL1	Detailed data of current alarms	—	○	×
AL11	Servo status when alarm occurs, cumulative feedback pulses	—	○	○
AL12	Servo status when alarm occurs, servo motor speed	—	○	○
AL13	Servo status when alarm occurs, droop pulses	—	○	○
AL14	Servo status when alarm occurs, cumulative command pulses	—	○	○
AL15	Servo status when alarm occurs, command pulse frequency	—	○	○
AL16	Servo status(alarm) analog speed command voltage/limit voltage	—	○	○
AL17	Servo status(alarm) analog torque command voltage/limit voltage	—	○	○
AL18	Servo status when alarm occurs, regenerative load ratio	—	○	○
AL19	Servo status when alarm occurs, effective load ratio	—	○	○
AL20	Servo status when alarm occurs, peak load ratio	—	○	○
AL21	Servo status when alarm occurs Instantaneous torque	—	○	○
AL22	Servo status(alarm) Within one-revolution position(1 pulse unit)	—	○	○
AL23	Servo status when alarm occurs, ABS counter	—	○	○
AL24	Servo status when alarm occurs, load inertia moment ratio	—	○	○
AL25	Servo status when alarm occurs, bus voltage	—	○	○
AL200	Alarm number from Alarm History most recent alarm	—	○	○
AL201	Alarm number from Alarm History first alarm in past	—	○	○
AL202	Alarm number from Alarm History second alarm in past	—	○	○
AL203	Alarm number from Alarm History third alarm in past	—	○	○
AL204	Alarm number from Alarm History fourth alarm in past	—	○	○
AL205	Alarm number from Alarm History fifth alarm in past	—	○	○
AL210	Alarm occurrence time in alarm history most recent alarm	—	○	○
AL211	Alarm occurrence time in alarm history first alarm in past	—	○	○
AL212	Alarm occurrence time in alarm history second alarm in past	—	○	○
AL213	Alarm occurrence time in alarm history third alarm in past	—	○	○
AL214	Alarm occurrence time in alarm history fourth alarm in past	—	○	○
AL215	Alarm occurrence time in alarm history fifth alarm in past	—	○	○
AL230	Detailed alarm from Alarm History most recent alarm	—	○	×
AL231	Detailed alarm from Alarm History first alarm in past	—	○	×
AL232	Detailed alarm from Alarm History second alarm in past	—	○	×
AL233	Detailed alarm from Alarm History third alarm in past	—	○	×
AL234	Detailed alarm from Alarm History fourth alarm in past	—	○	×
AL235	Detailed alarm from Alarm History fifth alarm in past	—	○	×

Extension setting No.2 parameter ([MELSERVO-J4-*A, -JE-*A])

Use an appropriate device according to the write destination of the servo amplifier.

- PE1 to PE64: Writing data to the RAM of a servo amplifier
- PE1001 to PE1064: Writing data to the EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

○: Available

×: Not available

Virtual device name	Name	Symbol	MR-J4-□A	MR-JE-□A
PE1 to PE40, PE1001 to PE1040	For manufacturer setting	—	×	×
PE41, PE1041	Function selection E-3	EOP3	○	○
PE42 to PE43, PE1042 to PE1043	For manufacturer setting	—	×	×
PE44, PE1044	Lost motion compensation positive-side compensation value selection	LMCP	×	○
PE45, PE1045	Lost motion compensation negative-side compensation value selection	LMCN	×	○
PE46, PE1046	Lost motion filter setting	LMFLT	×	○
PE47, PE1047	Torque offset	TOF	×	○
PE48, PE1048	Lost motion compensation function selection	*LMOP	×	○
PE49, PE1049	Lost motion compensation timing	LMCD	×	○
PE50, PE1050	Lost motion compensation non-sensitive band	LMCT	×	○
PE51 to PE64, PE1051 to PE1064	For manufacturer setting	—	×	×

Extension setting No.3 parameter ([MELSERVO-J4-*A, -JE-*A])

Use an appropriate device according to the write destination of the servo amplifier.

- PF1 to PF48: Writing data to the RAM of a servo amplifier
- PF1001 to PF1048: Writing data to the EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

○: Available

×: Not available

Virtual device name	Name	Symbol	MR-J4-□A	MR-JE-□A
PF1 to PF8, PF1001 to PF1008	For manufacturer setting	—	×	×
PF9, PF1009	Function selection F-5	*FOP5	○	○
PF10 to PF14, PF1010 to PF1014	For manufacturer setting	—	×	×
PF15, PF1015	Electronic dynamic brake operating time	DBT	○	×
PF16 to PF20, PF1016 to PF1020	For manufacturer setting	—	×	×
PF21, PF1021	Drive recorder switching time setting	DRT	○	○
PF22, PF1022	For manufacturer setting	—	×	×
PF23, PF1023	Vibration tough drive - Oscillation detection level	OSCL1	○	○
PF24, PF1024	Vibration tough drive function selection	OSCL2	○	○
PF25, PF1025	Instantaneous power failure tough drive - Detection time	CVAT	○	○
PF26 to PF30, PF1026 to PF1030	For manufacturer setting	—	×	×
PF31, PF1031	Machine diagnosis function - Friction judgment speed	FRIC	○	○
PF32 to PF44, PF1032 to PF1044	For manufacturer setting	—	×	×
PF45, PF1045	Function selection F-12	*FOP12	×	○
PF46, PF1046	Modbus-RTU comm. - Communication time-out time	MIC	×	○

Virtual device name	Name	Symbol	MR-J4-□A	MR-JE-□A
PF47 to PF48, PF1047 to PF1048	For manufacturer setting	—	×	×

Alarm (MELSERVO-J4-*A extended) ([MELSERVO-J4-*A, -JE-*A])

○: Available

×: Not available

Virtual device name	Name	Symbol	MR-J4-□A	MR-JE-□A
ALM0	Current alarm number	—	○	○
ALM1	Detailed data of current alarms	—	○	×
ALM11	Servo status(alarm) Cumulative feedback pulses	—	○	○
ALM12	Servo status(alarm) Servo motor speed	—	○	○
ALM13	Servo status(alarm) Droop pulses	—	○	○
ALM14	Servo status(alarm) Cumulative command pulses	—	○	○
ALM15	Servo status(alarm) Command pulse frequency	—	○	○
ALM16	Servo status(alarm) analog speed command voltage/limit voltage	—	○	○
ALM17	Servo status(alarm) analog torque command voltage/limit voltage	—	○	○
ALM18	Servo status(alarm) Regenerative load ratio	—	○	○
ALM19	Servo status(alarm) Effective load ratio	—	○	○
ALM20	Servo status(alarm) Peak load ratio	—	○	○
ALM21	Servo status(alarm) Instantaneous torque	—	○	○
ALM22	Servo status(alarm) Within one-revolution position(1 pulse unit)	—	○	○
ALM23	Servo status(alarm) ABS counter	—	○	○
ALM24	Servo status(alarm) Load to motor inertia ratio	—	○	○
ALM25	Servo status(alarm) Bus voltage	—	○	○
ALM26 to ALM42	For manufacturer setting	—	×	×
ALM43	Servo status(alarm) Internal temperature of encoder	—	○	○
ALM44	Servo status(alarm) Settling time	—	○	○
ALM45	Servo status(alarm) Oscillation detection frequency	—	○	○
ALM46	Servo status(alarm) Number of tough drive operations	—	○	○
ALM47 to ALM50	For manufacturer setting	—	×	×
ALM51	Servo status(alarm) Unit power consumption 1 (increment of 1 W)	—	○	○
ALM52	Servo status(alarm) Unit total power consumption 1 (increment of 1 Wh)	—	○	○
ALM200	Alarm number from Alarm History most recent alarm	—	○	○
ALM201	Alarm number from Alarm History 1st alarm in past	—	○	○
ALM202	Alarm number from Alarm History 2nd alarm in past	—	○	○
ALM203	Alarm number from Alarm History 3rd alarm in past	—	○	○
ALM204	Alarm number from Alarm History 4th alarm in past	—	○	○
ALM205	Alarm number from Alarm History 5th alarm in past	—	○	○
ALM206	Alarm number from Alarm History 6th alarm in past	—	○	○
ALM207	Alarm number from Alarm History 7th alarm in past	—	○	○
ALM208	Alarm number from Alarm History 8th alarm in past	—	○	○
ALM209	Alarm number from Alarm History 9th alarm in past	—	○	○
ALM210	Alarm number from Alarm History 10th alarm in past	—	○	○
ALM211	Alarm number from Alarm History 11th alarm in past	—	○	○
ALM212	Alarm number from Alarm History 12th alarm in past	—	○	○
ALM213	Alarm number from Alarm History 13th alarm in past	—	○	○
ALM214	Alarm number from Alarm History 14th alarm in past	—	○	○
ALM215	Alarm number from Alarm History 15th alarm in past	—	○	○
ALM220	Alarm occurrence time in alarm history most recent alarm	—	○	○
ALM221	Alarm occurrence time in alarm history 1st alarm in past	—	○	○
ALM222	Alarm occurrence time in alarm history 2nd alarm in past	—	○	○
ALM223	Alarm occurrence time in alarm history 3rd alarm in past	—	○	○

Virtual device name	Name	Symbol	MR-J4-□A	MR-JE-□A
ALM224	Alarm occurrence time in alarm history 4th alarm in past	—	○	○
ALM225	Alarm occurrence time in alarm history 5th alarm in past	—	○	○
ALM226	Alarm occurrence time in alarm history 6th alarm in past	—	○	○
ALM227	Alarm occurrence time in alarm history 7th alarm in past	—	○	○
ALM228	Alarm occurrence time in alarm history 8th alarm in past	—	○	○
ALM229	Alarm occurrence time in alarm history 9th alarm in past	—	○	○
ALM230	Alarm occurrence time in alarm history 10th alarm in past	—	○	○
ALM231	Alarm occurrence time in alarm history 11th alarm in past	—	○	○
ALM232	Alarm occurrence time in alarm history 12th alarm in past	—	○	○
ALM233	Alarm occurrence time in alarm history 13th alarm in past	—	○	○
ALM234	Alarm occurrence time in alarm history 14th alarm in past	—	○	○
ALM235	Alarm occurrence time in alarm history 15th alarm in past	—	○	○
ALM240	Detailed alarm from Alarm History most recent alarm	—	○	×
ALM241	Detailed alarm from Alarm History 1st alarm in past	—	○	×
ALM242	Detailed alarm from Alarm History 2nd alarm in past	—	○	×
ALM243	Detailed alarm from Alarm History 3rd alarm in past	—	○	×
ALM244	Detailed alarm from Alarm History 4th alarm in past	—	○	×
ALM245	Detailed alarm from Alarm History 5th alarm in past	—	○	×
ALM246	Detailed alarm from Alarm History 6th alarm in past	—	○	×
ALM247	Detailed alarm from Alarm History 7th alarm in past	—	○	×
ALM248	Detailed alarm from Alarm History 8th alarm in past	—	○	×
ALM249	Detailed alarm from Alarm History 9th alarm in past	—	○	×
ALM250	Detailed alarm from Alarm History 10th alarm in past	—	○	×
ALM251	Detailed alarm from Alarm History 11th alarm in past	—	○	×
ALM252	Detailed alarm from Alarm History 12th alarm in past	—	○	×
ALM253	Detailed alarm from Alarm History 13th alarm in past	—	○	×
ALM254	Detailed alarm from Alarm History 14th alarm in past	—	○	×
ALM255	Detailed alarm from Alarm History 15th alarm in past	—	○	×

Machine diagnosis data ([MELSERVO-J4-*A, -JE-*A])

○: Available

×: Not available

Virtual device name	Name	Symbol	MR-J4-□A	MR-JE-□A
MD0	Machine diagnosis data, station number	—	○	○
MD1	Machine diagnosis data shift judgment (test mode)	—	○	○
MD2	Machine diagnosis data status	—	○	○
MD3	Machine diagnosis data coulomb friction torque in positive direction	—	○	○
MD4	Machine diagnosis data friction torque at rated speed in positive direction	—	○	○
MD5	Machine diagnosis data coulomb friction torque in negative direction	—	○	○
MD6	Machine diagnosis data friction torque at rated speed in negative direction	—	○	○
MD7	Machine diagnosis data oscillation frequency (motor is stopped)	—	○	○
MD8	Machine diagnosis data vibration level (motor is stopped)	—	○	○
MD9	Machine diagnosis data oscillation frequency (motor is operating)	—	○	○
MD10	Machine diagnosis data vibration level (motor is operating)	—	○	○
MD11	Machine diagnosis data, rated speed at forward or reverse rotation torque	—	○	○

One-touch tuning data ([MELSERVO-J4-*A, -JE-*A])

○: Available

×: Not available

Virtual device name	Name	Symbol	MR-J4-□A	MR-JE-□A
OTS0	One-touch tuning status confirmation	—	○	○
OTS1	Error code list	—	○	○
OTS2	Setting time	—	○	○
OTS3	Overshoot amount	—	○	○

External input signal in MR-J4-□A ([MELSERVO-J4-*A, -JE-*A])

Virtual device name	Name	Symbol	Data to be read from the servo amplifier
DI0	Input device statuses	—	For the mapping of the bits corresponding to the data to be read, refer to the following. MR-J4-_A_(-RJ)/MR-J4-03A6(-RJ) SERVO AMPLIFIER INSTRUCTION MANUAL
DI1	External input pin statuses	—	
DI2	Statuses of input devices switched on through communication	—	

External input signal in MR-JE-□A ([MELSERVO-J4-*A, -JE-*A])

Virtual device name	Name	Symbol	Data to be read from the servo amplifier
DI0	Input device statuses	—	System information
DI1	External input pin statuses	—	For the mapping of the bits corresponding to the data to be read, refer to the following. MR-JE-_A SERVO AMPLIFIER INSTRUCTION MANUAL
DI2	Statuses of input devices switched on through communication	—	System information

External output signal in MR-J4-□A ([MELSERVO-J4-*A, -JE-*A])

Virtual device name	Name	Symbol	Data to be read from the servo amplifier
DO0	Output device statuses	—	For the mapping of the bits corresponding to the data to be read, refer to the following. MR-J4-_A_(-RJ)/MR-J4-03A6(-RJ) SERVO AMPLIFIER INSTRUCTION MANUAL
DO1	External output pin statuses	—	

External output signal in MR-JE-□A ([MELSERVO-J4-*A, -JE-*A])

Virtual device name	Name	Symbol	Data to be read from the servo amplifier
DO0	Output device statuses	—	For the mapping of the bits corresponding to the data to be read, refer to the following. MR-JE-_A SERVO AMPLIFIER INSTRUCTION MANUAL
DO1	External output pin statuses	—	System information

Life diagnosis ([MELSERVO-J4-*A, -JE-*A])

○: Available

×: Not available

Virtual device name	Name	Symbol	MR-J4-□A	MR-JE-□A
ALD0	Cumulative power-on time	—	○	○
ALD1	Number of inrush current switching times	—	○	○

Input signal for test operation (for test operation) ([MELSERVO-J4-*A, -JE-*A])

○: Available

×: Not available

Virtual device name	Name	Symbol	MR-J4-□A	MR-JE-□A
TMI0	Input signal for test operation	—	○	○

When using the input signal for test operation (for test operation), note the following.

Precautions	Description
Writing a value to a virtual device using an object	Numerical input cannot be used. Use a word switch for writing.

Forced output of signal pin (for test operation) ([MELSERVO-J4-*A, -JE-*A])

○: Available

×: Not available

Virtual device name	Name	Symbol	MR-J4-□A	MR-JE-□A
TMO0	Forced output of signal pin	—	○	○

When using the forced output of signal pin (for test operation), note the following.

Precautions	Description
Writing a value to a virtual device using an object	Numerical input cannot be used. Use a word switch for writing.

Set data (for test operation) ([MELSERVO-J4-*A, -JE-*A])

○: Available

×: Not available

Virtual device name	Name	Symbol	MR-J4-□A	MR-JE-□A
TMD0	Writes the speed (test mode)	—	○	○
TMD1	Writes the acceleration/deceleration time constant (test mode)	—	○	○
TMD3	Writes the moving distance (test mode)	—	○	○

When using the set data (for test operation), note the following.

Precautions	Description
Writing a value to a virtual device using an object	Numerical input cannot be used. Use a word switch for writing.

97.13.8 Precautions for virtual servo amplifier devices ([MELSERVO-J4-*A, -JE-*A])

For the precautions for virtual servo amplifier devices, refer to the following.

☞ Page 3336 Precautions for virtual servo amplifier devices ([MELSERVO-J3-*A])

97.14 [MELSERVO-J4-*A-RJ]

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Item	Reference
Specifications of bit devices	☞ Page 3375 Monitoring-supported bit devices ([MELSERVO-J4-*A-RJ])
	☞ Page 3375 Availability of writing/reading data to/from bit devices ([MELSERVO-J4-*A-RJ])
Specifications of word devices	☞ Page 3376 Monitoring-supported word devices ([MELSERVO-J4-*A-RJ])
	☞ Page 3377 Availability of writing/reading data to/from word devices ([MELSERVO-J4-*A-RJ])
Specifications of double-word devices	☞ Page 3378 Monitoring-supported double-word devices ([MELSERVO-J4-*A-RJ])
	☞ Page 3378 Availability of writing/reading data to/from double-word devices ([MELSERVO-J4-*A-RJ])
Specifications of virtual servo amplifier devices	☞ Page 3379 Virtual servo amplifier devices ([MELSERVO-J4-*A-RJ])
	☞ Page 3398 Precautions for virtual servo amplifier devices ([MELSERVO-J4-*A-RJ])

97.14.1 Monitoring-supported bit devices ([MELSERVO-J4-*A-RJ])

The following table shows monitoring-supported virtual bit devices for servo amplifiers.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3375 Availability of writing/reading data to/from bit devices ([MELSERVO-J4-*A-RJ])

For details on virtual servo amplifier devices, refer to the following.

☞ Page 3379 Virtual servo amplifier devices ([MELSERVO-J4-*A-RJ])

○: Available

×: Not available

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
SP	Servo amplifier request	Decimal	0 to 6	×	×
OM	Operation mode selection	Decimal	0 to 5	×	×
TMB	Instruction demand (for test operation)	Decimal	1 to 6	×	×
OTI	One-touch tuning instruction	Decimal	0 to 5	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.

☞ Page 2868 Monitoring a controller through the GOT (server/client function)

97.14.2 Availability of writing/reading data to/from bit devices ([MELSERVO-J4-*A-RJ])

The following shows the availability of writing/reading data to/from bit devices by device type.

When the device type is other than the bit type, set the device No. in multiples of 16.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type				
	Bit	Byte (8 bits)	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)
SP	-/W	-/-	-/-	-/-	-/-
OM	-/W	-/-	-/-	-/-	-/-
TMB	-/W	-/-	-/-	-/-	-/-
OTI	-/W	-/-	-/-	-/-	-/-

97.14.3 Monitoring-supported word devices ([MELSERVO-J4-*A-RJ])

The following table shows monitoring-supported virtual word devices for servo amplifiers.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3377 Availability of writing/reading data to/from word devices ([MELSERVO-J4-*A-RJ])

For details on virtual servo amplifier devices, refer to the following.

☞ Page 3379 Virtual servo amplifier devices ([MELSERVO-J4-*A-RJ])

○: Available

×: Not available

Device name		Device No. representation	Setting range	EG device specifications[*1]	
				Assignment to EG devices	Access using a client
PA	Basic parameter	Decimal	1 to 32 1001 to 1032	○	×
PB	Gain filter parameter	Decimal	1 to 64 1001 to 1064	○	×
PC	Extension setting parameter	Decimal	1 to 80 1001 to 1080	○	×
PD	I/O setting parameter	Decimal	1 to 48 1001 to 1048	○	×
PO	Option unit parameter	Decimal	1 to 32 1001 to 1032	○	×
PL	Linear servo motor/DD motor setting parameter	Decimal	1 to 48 1001 to 1048	○	×
PT	Positioning control parameter	Decimal	1 to 48 1001 to 1048	○	×
ST	Status display	Decimal	0 to 48	○	×
AL	Alarm (current alarm, J3A compatible)	Decimal	0 to 1 11 to 25	○	×
AL	Alarm (alarm history, J3A compatible)	Decimal	200 to 205 210 to 215 230 to 235	○	×
PE	Extension setting No.2 parameter	Decimal	1 to 64 1001 to 1064	○	×
PF	Extension setting No.3 parameter	Decimal	1 to 48 1001 to 1048	○	×
ALM	Alarm (current alarm, J4A extend)	Decimal	0 to 1 11 to 59	○	×
ALM	Alarm (alarm history, J4A extend)	Decimal	200 to 215 220 to 235 240 to 255	○	×
POS	Point table (position)	Decimal	1 to 255 1001 to 1255	○	×
SPD	Point table (speed)	Decimal	1 to 255 1001 to 1255	○	×
ACT	Point table (acceleration time constant)	Decimal	1 to 255 1001 to 1255	○	×
DCT	Point table (deceleration time constant)	Decimal	1 to 255 1001 to 1255	○	×
DWL	Point table (dwell)	Decimal	1 to 255 1001 to 1255	○	×
AUX	Point table (auxiliary function)	Decimal	1 to 255 1001 to 1255	○	×
MCD[*2]	Point table (M code)	Decimal	1 to 255 1001 to 1255	○	×
MD	Machine diagnosis data	Decimal	0 to 11	×	×
OTS	One-touch tuning data	Decimal	0 to 3	×	×

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
DI	External input signal	Decimal	0 to 6	×	×
DO	External output signal	Decimal	0 to 4	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
☞ Page 2868 Monitoring a controller through the GOT (server/client function)

*2 MCD cannot be used as a real number.

97.14.4 Availability of writing/reading data to/from word devices ([MELSERVO-J4-*A-RJ])

The following shows the availability of writing/reading data to/from word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data
PA	R/W	R/W	-/-	-/-
PB	R/W	R/W	-/-	-/-
PC	R/W	R/W	-/-	-/-
PD	R/W	R/W	-/-	-/-
PO	R/W	R/W	-/-	-/-
PL	R/W	R/W	-/-	-/-
PT	R/W	R/W	-/-	-/-
ST	R/-	R/-	-/-	-/-
AL	R/-	R/-	-/-	-/-
PE	R/W	R/W	-/-	-/-
PF	R/W	R/W	-/-	-/-
ALM	R/-	R/-	-/-	-/-
POS	R/W	R/W	-/-	-/-
SPD	R/W	R/W	-/-	-/-
ACT	R/W	R/W	-/-	-/-
DCT	R/W	R/W	-/-	-/-
DWL	R/W	R/W	-/-	-/-
AUX	R/W	R/W	-/-	-/-
MCD	R/W	R/W	-/-	-/-
MD	R/-	R/-	-/-	-/-
OTS	R/-	R/-	-/-	-/-
DI*1	R/-	R/W	-/-	-/-
DO	R/-	R/-	-/-	-/-

*1 Only reading is available for DI0 and DI1.

97.14.5 Monitoring-supported double-word devices ([MELSERVO-J4-*A-RJ])

The following table shows monitoring-supported virtual double-word devices for servo amplifiers.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3378 Availability of writing/reading data to/from double-word devices ([MELSERVO-J4-*A-RJ])

For details on virtual servo amplifier devices, refer to the following.

☞ Page 3379 Virtual servo amplifier devices ([MELSERVO-J4-*A-RJ])

○: Available

×: Not available

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
LD	Current position latch data	Decimal	0 to 1	×	×
RR*2	Value of the general-purpose register (Rx)	Decimal	1 to 4 1001 to 1004	×	×
RD	Value of the general-purpose register (Dx)	Decimal	1 to 4	×	×
ALD	Life diagnosis	Decimal	0 to 1	×	×
TMI	Input signal for test operation (for test operation)	Decimal	0 to 2	×	×
TMO	Forced output of signal pin (for test operation)	Decimal	0	×	×
TMD	Set data (for test operation)	Decimal	0 to1, 3	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
☞ Page 2868 Monitoring a controller through the GOT (server/client function)

*2 Use the integer number when writing parameters to Rx.

97.14.6 Availability of writing/reading data to/from double-word devices ([MELSERVO-J4-*A-RJ])

The following shows the availability of writing/reading data to/from double-word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data
LD	-/-	R/-	-/-	-/-
RR	-/-	R/W	-/-	-/-
RD	-/-	R/W	-/-	-/-
ALD	-/-	R/-	-/-	-/-
TMI	-/-	-/W	-/-	-/-
TMO	-/-	-/W	-/-	-/-
TMD	-/-	-/W	-/-	-/-

97.14.7 Virtual servo amplifier devices ([MELSERVO-J4-*A-RJ])

The following shows the correspondence between the virtual devices used in the GOT and the servo amplifier data.

Virtual device name	Reference
SP	☞ Page 3380 Servo amplifier request ([MELSERVO-J4-*A-RJ])
OM	☞ Page 3380 Operation mode selection ([MELSERVO-J4-*A-RJ])
TMB	☞ Page 3380 Instruction demand (for test operation) ([MELSERVO-J4-*A-RJ])
OTI	☞ Page 3380 One-touch tuning instruction ([MELSERVO-J4-*A-RJ])
PA	☞ Page 3381 Basic parameter ([MELSERVO-J4-*A-RJ])
PB	☞ Page 3381 Gain filter parameter ([MELSERVO-J4-*A-RJ])
PC	☞ Page 3383 Extension setting parameter ([MELSERVO-J4-*A-RJ])
PD	☞ Page 3385 I/O setting parameter ([MELSERVO-J4-*A-RJ])
PO	☞ Page 3386 Option setting parameter ([MELSERVO-J4-*A-RJ])
PL	☞ Page 3387 Linear servo motor/DD motor setting parameter ([MELSERVO-J4-*A-RJ])
PT	☞ Page 3387 Positioning control parameter ([MELSERVO-J4-*A-RJ])
ST	☞ Page 3389 Status display ([MELSERVO-J4-*A-RJ])
AL	☞ Page 3390 Alarm (MELSERVO-J3-*A compatible) ([MELSERVO-J4-*A-RJ])
PE	☞ Page 3391 Extension setting No.2 parameter ([MELSERVO-J4-*A-RJ])
PF	☞ Page 3392 Extension setting No.3 parameter ([MELSERVO-J4-*A-RJ])
ALM	☞ Page 3393 Alarm (MELSERVO-J4-*A extended) ([MELSERVO-J4-*A-RJ])
POS	☞ Page 3395 Point table (position) ([MELSERVO-J4-*A-RJ])
SPD	☞ Page 3395 Point table (speed) ([MELSERVO-J4-*A-RJ])
ACT	☞ Page 3395 Point table (acceleration time constant) ([MELSERVO-J4-*A-RJ])
DCT	☞ Page 3395 Point table (deceleration time constant) ([MELSERVO-J4-*A-RJ])
DWL	☞ Page 3395 Point table (dwell) ([MELSERVO-J4-*A-RJ])
AUX	☞ Page 3396 Point table (auxiliary function) ([MELSERVO-J4-*A-RJ])
MCD	☞ Page 3396 Point table (M code) ([MELSERVO-J4-*A-RJ])
MD	☞ Page 3396 Machine diagnosis data ([MELSERVO-J4-*A-RJ])
OTS	☞ Page 3396 One-touch tuning data ([MELSERVO-J4-*A-RJ])
DI	☞ Page 3397 External input signal ([MELSERVO-J4-*A-RJ])
DO	☞ Page 3397 External output signal ([MELSERVO-J4-*A-RJ])
LD	☞ Page 3397 Current position latch data ([MELSERVO-J4-*A-RJ])
RR	☞ Page 3397 Value of the general-purpose register (Rx) ([MELSERVO-J4-*A-RJ])
RD	☞ Page 3397 Value of the general-purpose register (Dx) ([MELSERVO-J4-*A-RJ])
ALD	☞ Page 3397 Life diagnosis ([MELSERVO-J4-*A-RJ])
TMI	☞ Page 3398 Input signal for test operation (for test operation) ([MELSERVO-J4-*A-RJ])
TMO	☞ Page 3398 Forced output of signal pin (for test operation) ([MELSERVO-J4-*A-RJ])
TMD	☞ Page 3398 Set data (for test operation) ([MELSERVO-J4-*A-RJ])

Servo amplifier request ([MELSERVO-J4-*A-RJ])

Virtual device name	Name	Symbol
SP0	Status display data clear	—
SP1	Current alarm clear	—
SP2	Alarm history clear	—
SP3	External input signal prohibited	—
SP4	External output signal prohibited	—
SP5	External input signal resumed	—
SP6	External output signal resumed	—

When using the servo amplifier request, note the following.

Precautions	Description
When setting a device for a bit switch	Do not select [Alternate] for [Switch Action] of the bit switch.

Operation mode selection ([MELSERVO-J4-*A-RJ])

Virtual device name	Name	Symbol
OM0	Normal mode (not test operation mode)	—
OM1	JOG operation	—
OM2	Positioning operation	—
OM4	Output signal (DO) forced output	—
OM5	Single-step feed operation	—

When using the operation mode selection, note the following.

Precautions	Description
When setting a device for a bit switch	Do not select [Alternate] for [Switch Action] of the bit switch.

Instruction demand (for test operation) ([MELSERVO-J4-*A-RJ])

Virtual device name	Name	Symbol
TMB1	Temporary stop command	—
TMB2	Test operation (positioning operation) start command	—
TMB3	Forward rotation direction	—
TMB4	Reverse rotation direction	—
TMB5	Restart for remaining distance	—
TMB6	Remaining distance clear	—

When using the instruction demand (for test operation), note the following.

Precautions	Description
When setting a device for a bit switch	Do not select [Alternate] for [Switch Action] of the bit switch.

One-touch tuning instruction ([MELSERVO-J4-*A-RJ])

Virtual device name	Name	Symbol
OTI0	One-touch tuning start command (Basic mode)	—
OTI1	One-touch tuning start command (High mode)	—
OTI2	One-touch tuning start command (Low mode)	—
OTI3	One-touch tuning stop command	—
OTI4	Return to initial value	—
OTI5	Return to value before adjustment	—

Basic parameter ([MELSERVO-J4-*A-RJ])

Use an appropriate device according to the write destination of the servo amplifier.

- PA1 to PA32: Writing data to the RAM of a servo amplifier
- PA1001 to PA1032: Writing data to the EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

Virtual device name	Name	Symbol
PA1, PA1001	Operation mode	*STY
PA2, PA1002	Regenerative brake option	*REG
PA3, PA1003	Absolute position detection system	*ABS
PA4, PA1004	Function selection A-1	*AOP1
PA5, PA1005	Number of command input pulses per revolution	*FBP
PA6, PA1006	Electronic gear numerator (command pulse multiplication numerator)/number of gear teeth on machine side	*CMX
PA7, PA1007	Electronic gear denominator (command pulse multiplication denominator)/number of gear teeth on servo motor side	*CDV
PA8, PA1008	Auto tuning mode	ATU
PA9, PA1009	Auto tuning response	RSP
PA10, PA1010	In-position range	INP
PA11, PA1011	Forward rotation torque limit/positive direction thrust limit	TLP
PA12, PA1012	Reverse rotation torque limit/negative direction thrust limit	TLN
PA13, PA1013	Command pulse input form	*PLSS
PA14, PA1014	Rotation direction selection/travel direction selection	*POL
PA15, PA1015	Encoder output pulses	*ENR
PA16, PA1016	Encoder output pulses 2	*ENR2
PA17, PA1017	Servo motor series setting	*MSR
PA18, PA1018	Servo motor type setting	*MTY
PA19, PA1019	Parameter block	*BLK
PA20, PA1020	Tough drive setting	*TDS
PA21, PA1021	Function selection A-3	*AOP3
PA22, PA1022	Position control composition selection	*PCS
PA23, PA1023	Drive recorder arbitrary alarm trigger setting	DRAT
PA24, PA1024	Function selection A-4	AOP4
PA25, PA1025	One-touch tuning - Overshoot permissible level	OTHOV
PA26, PA1026	Function selection A-5	*AOP5
PA27 to PA32, PA1027 to PA1032	For manufacturer setting	—

Gain filter parameter ([MELSERVO-J4-*A-RJ])

Use an appropriate device according to the write destination of the servo amplifier.

- PB1 to PB64: Writing data to the RAM of a servo amplifier
- PB1001 to PB1064: Writing data to the EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

Virtual device name	Name	Symbol
PB1, PB1001	Adaptive tuning mode (Adaptive filter II)	FILT
PB2, PB1002	Vibration suppression control tuning mode (advanced vibration suppression control II)	VRFT
PB3, PB1003	Position command acceleration/deceleration time constant (position smoothing)	PST
PB4, PB1004	Feed forward gain	FFC
PB5, PB1005	For manufacturer setting	—
PB6, PB1006	Load inertia moment ratio/Load mass ratio	GD2
PB7, PB1007	Model loop gain	PG1
PB8, PB1008	Position loop gain	PG2
PB9, PB1009	Speed loop gain	VG2

Virtual device name	Name	Symbol
PB10, PB1010	Speed integral compensation	VIC
PB11, PB1011	Speed differential compensation	VDC
PB12, PB1012	Overshoot amount compensation	OVA
PB13, PB1013	Machine resonance suppression filter 1	NH1
PB14, PB1014	Notch shape selection 1	NHQ1
PB15, PB1015	Machine resonance suppression filter 2	NH2
PB16, PB1016	Notch shape selection 2	NHQ2
PB17, PB1017	Shaft resonance suppression filter	NHF
PB18, PB1018	Low-pass filter setting	LPF
PB19, PB1019	Vibration suppression control 1 - Vibration frequency	VRF11
PB20, PB1020	Vibration suppression control 1 - Resonance freq.	VRF12
PB21, PB1021	Vib. supp. ctrl. 1 - Vibration frequency damping	VRF13
PB22, PB1022	Vib. supp. ctrl. 1 - Resonance frequency damping	VRF14
PB23, PB1023	Low-pass filter selection	VFBF
PB24, PB1024	Slight vibration suppression control	*MVS
PB25, PB1025	Function selection B-1	*BOP1
PB26, PB1026	Gain changing function	*CDP
PB27, PB1027	Gain changing condition	CDL
PB28, PB1028	Gain changing time constant	CDT
PB29, PB1029	Load to motor inertia ratio/load to motor mass ratio after gain switching	GD2B
PB30, PB1030	Gain changing position loop gain	PG2B
PB31, PB1031	Gain changing speed loop gain	VG2B
PB32, PB1032	Gain changing speed integral compensation	VICB
PB33, PB1033	Vib. supp. ctrl. 1 - Vib. frq. after gain changing	VRF1B
PB34, PB1034	Vibration suppression control 1 - Resonance frequency after gain switching	VRF2B
PB35, PB1035	Vibration suppression control 1 - Vibration frequency damping after gain switching	VRF3B
PB36, PB1036	Vibration suppression control 1 - Resonance frequency damping after gain switching	VRF4B
PB37 to PB44, PB1037 to PB1044	For manufacturer setting	—
PB45, PB1045	Command notch filter	CNHF
PB46, PB1046	Machine resonance suppression filter 3	NH3
PB47, PB1047	Notch shape selection 3	NHQ3
PB48, PB1048	Machine resonance suppression filter 4	NH4
PB49, PB1049	Notch shape selection 4	NHQ4
PB50, PB1050	Machine resonance suppression filter 5	NH5
PB51, PB1051	Notch shape selection 5	NHQ5
PB52, PB1052	Vibration suppression control 2 - Vibration frequency	VRF21
PB53, PB1053	Vibration suppression control 2 - Resonance frequency	VRF22
PB54, PB1054	Vibration suppression control 2 - Vibration frequency damping	VRF23
PB55, PB1055	Vibration suppression control 2 - Resonance frequency damping	VRF24
PB56, PB1056	Vibration suppression control 2 - Vibration frequency after gain switching	VRF21B
PB57, PB1057	Vibration suppression control 2 - Resonance frequency after gain switching	VRF22B
PB58, PB1058	Vibration suppression control 2 - Vibration frequency damping after gain switching	VRF23B
PB59, PB1059	Vibration suppression control 2 - Resonance frequency damping after gain switching	VRF24B
PB60, PB1060	Model loop gain after gain switching	PG1B
PB61 to PB64, PB1061 to PB1064	For manufacturer setting	—

Extension setting parameter ([MELSERVO-J4-*A-RJ])

Use an appropriate device according to the write destination of the servo amplifier.

- PC1 to PC80: Writing data to the RAM of a servo amplifier
- PC1001 to PC1080: Writing data to the EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

Virtual device name	Name	Symbol
PC1, PC1001	JOG operation acceleration time constant/acceleration time constant 1	STA
PC2, PC1002	JOG operation deceleration time constant/deceleration time constant 1	STB
PC3, PC1003	S-pattern acceleration/deceleration time constant	*STC
PC4, PC1004	Torque command time constant/thrust command time constant	TQC
PC5, PC1005	Automatic operation speed 1	SC1
PC6, PC1006	Automatic operation speed 2	SC2
PC7, PC1007	Manual operation speed 1	SC3
PC8, PC1008	Internal speed command4/limit4	SC4
PC9, PC1009	Internal speed command5/limit5	SC5
PC10, PC1010	Internal speed command6/limit6	SC6
PC11, PC1011	Internal speed command7/limit7	SC7
PC12, PC1012	Analog speed command maximum speed/limit maximum speed	VCM
PC13, PC1013	Analog torque command maximum output	TLC
PC14, PC1014	Analog monitor 1 output	MOD1
PC15, PC1015	Analog monitor 2 output	MOD2
PC16, PC1016	Electromagnetic brake sequence output	MBR
PC17, PC1017	Zero speed	ZSP
PC18, PC1018	Alarm history clear	*BPS
PC19, PC1019	Encoder output pulse selection	*ENRS
PC20, PC1020	Station number setting	*SNO
PC21, PC1021	RS-422 communication function selection	*SOP
PC22, PC1022	Function selection C-1	*COP1
PC23, PC1023	Function selection C-2	*COP2
PC24, PC1024	Function selection C-3	*COP3
PC25, PC1025	For manufacturer setting	—
PC26, PC1026	Function selection C-5	*COP5
PC27, PC1027	Function selection C-6	*COP6
PC28, PC1028	Function selection C-7	*COP7
PC29, PC1029	For manufacturer setting	—
PC30, PC1030	Home position return acceleration time constant/acceleration time constant 2	STA2
PC31, PC1031	Home position return deceleration time constant/deceleration time constant 2	STB2
PC32, PC1032	Command input pulse multiplication numerator 2	CMX2
PC33, PC1033	Command input pulse multiplication numerator 3	CMX3
PC34, PC1034	Command input pulse multiplication numerator 4	CMX4
PC35, PC1035	Internal torque limit 2/internal thrust limit 2	TL2
PC36, PC1036	Status display selection	*DMD
PC37, PC1037	Analog override offset	VCO
PC38, PC1038	Analog torque command offset/limit offset	TPO
PC39, PC1039	Analog monitor 1 offset	MO1
PC40, PC1040	Analog monitor 2 offset	MO2
PC41 to PC42, PC1041 to PC1042	For manufacturer setting	—
PC43, PC1043	Error excessive alarm detection level	ERZ
PC44, PC1044	Function selection C-9	*COP9
PC45, PC1045	Function selection C-A	*COPA

Virtual device name	Name	Symbol
PC46 to PC50, PC1046 to PC1050	For manufacturer setting	—
PC51, PC1051	Forced stop deceleration time constant	RSBR
PC52 to PC53, PC1052 to PC1053	For manufacturer setting	—
PC54, PC1054	Vertical axis freefall prevention compensation amount	RSUP1
PC55 to PC59, PC1055 to PC1059	For manufacturer setting	—
PC60, PC1060	Function selection C-D	*COPD
PC61 to PC65, PC1061 to PC1065	For manufacturer setting	—
PC66, PC1066	Mark detection range+(Low)	LPSPL
PC67, PC1067	Mark detection range+(High)	LPSPH
PC68, PC1068	Mark detection range-(Low)	LPSNL
PC69, PC1069	Mark detection range-(High)	LPSNH
PC70, PC1070	Modbus-RTU Communication station number setting	*SNOM
PC71, PC1071	Function selection C-F	*COPF
PC72, PC1072	Function selection C-G	*COPG
PC73, PC1073	Error excessive warning level	ERW
PC74 to PC80, PC1074 to PC1080	For manufacturer setting	—

I/O setting parameter ([MELSERVO-J4-*A-RJ])

Use an appropriate device according to the write destination of the servo amplifier.

- PD1 to PD48: Writing data to the RAM of a servo amplifier
- PD1001 to PD1048: Writing data to the EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

Virtual device name	Name	Symbol
PD1, PD1001	Input signal automatic on selection 1	*DIA1
PD2, PD1002	For manufacturer setting	—
PD3, PD1003	Input device selection 1L	*DI1L
PD4, PD1004	Input device selection 1H	*DI1H
PD5, PD1005	Input device selection 2L	*DI2L
PD6, PD1006	Input device selection 2H	*DI2H
PD7, PD1007	Input device selection 3L	*DI3L
PD8, PD1008	Input device selection 3H	*DI3H
PD9, PD1009	Input device selection 4L	*DI4L
PD10, PD1010	Input device selection 4H	*DI4H
PD11, PD1011	Input device selection 5L	*DI5L
PD12, PD1012	Input device selection 5H	*DI5H
PD13, PD1013	Input device selection 6L	*DI6L
PD14, PD1014	Input device selection 6H	*DI6H
PD15 to PD16, PD1015 to PD1016	For manufacturer setting	—
PD17, PD1017	Input device selection 8L	*DI8L
PD18, PD1018	Input device selection 8H	*DI8H
PD19, PD1019	Input device selection 9L	*DI9L
PD20, PD1020	Input device selection 9H	*DI9H
PD21, PD1021	Input device selection 10L	*DI10L
PD22, PD1022	Input device selection 10H	*DI10H
PD23, PD1023	Output device selection 1	*DO1
PD24, PD1024	Output device selection 2	*DO2
PD25, PD1025	Output device selection 3	*DO3
PD26, PD1026	Output device selection 4	*DO4
PD27, PD1027	For manufacturer setting	—
PD28, PD1028	Output device selection 6	*DO6
PD29, PD1029	Input filter setting	*DIF
PD30, PD1030	Function selection D-1	*DOP1
PD31, PD1031	Function selection D-2	*DOP2
PD32, PD1032	Function selection D-3	*DOP3
PD33, PD1033	Function selection D-4	*DOP4
PD34, PD1034	Function selection D-5	*DOP5
PD35 to PD40, PD1035 to PD1040	For manufacturer setting	—
PD41, PD1041	Input signal automatic on selection 3	*DIA3
PD42, PD1042	Input signal automatic on selection 4	*DIA4
PD43, PD1043	Input device selection 11L	*DI11L
PD44, PD1044	Input device selection 11H	*DI11H
PD45, PD1045	Input device selection 12L	*DI12L
PD46, PD1046	Input device selection 12H	*DI12H
PD47, PD1047	Output device selection 7	*DO7
PD48, PD1048	For manufacturer setting	—

Option setting parameter ([MELSERVO-J4-*A-RJ])

Use an appropriate device according to the write destination of the servo amplifier.

- PO1 to PO32: Writing data to the RAM of a servo amplifier
- PO1001 to PO1032: Writing data to the EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

Virtual device name	Name	Symbol
PO1, PO1001	For manufacturer setting	—
PO2, PO1002	MR-D01 input device selection 1	*ODI1
PO3, PO1003	MR-D01 input device selection 2	*ODI2
PO4, PO1004	MR-D01 input device selection 3	*ODI3
PO5, PO1005	MR-D01 input device selection 4	*ODI4
PO6, PO1006	MR-D01 input device selection 5	*ODI5
PO7, PO1007	MR-D01 input device selection 6	*ODI6
PO8, PO1008	MR-D01 output device selection 1	*ODO1
PO9, PO1009	MR-D01 output device selection 2	*ODO2
PO10, PO1010	Function selection O-1	*OOP1
PO11, PO1011	Function selection O-2	*OOP2
PO12, PO1012	Function selection O-3	*OOP3
PO13, PO1013	MR-D01 analog monitor 1 output selection	OMOD1
PO14, PO1014	MR-D01 analog monitor 2 output selection	OMOD2
PO15, PO1015	MR-D01 analog monitor 1 offset	OMO1
PO16, PO1016	MR-D01 analog monitor 2 offset	OMO2
PO17 to PO20, PO1017 to PO1020	For manufacturer setting	—
PO21, PO1021	MR-D01 override offset	OVCO
PO22, PO1022	MR-D01 analog torque limit offset	OTLO
PO23 to PO26, PO1023 to PO1026	For manufacturer setting	—
PO27, PO1027	MR-D01 input device selection 7	*ODI7
PO28, PO1028	MR-D01 input device selection 8	*ODI8
PO29 to PO32, PO1029 to PO1032	For manufacturer setting	—

Linear servo motor/DD motor setting parameter ([MELSERVO-J4-*A-RJ])

Use an appropriate device according to the write destination of the servo amplifier.

- PL1 to PL48: Writing data to the RAM of a servo amplifier
- PL1001 to PL1048: Writing data to the EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

Virtual device name	Name	Symbol
PL1, PL1001	Linear servo motor/DD motor function selection 1	*LIT1
PL2, PL1002	Linear encoder resolution - Numerator	*LIM
PL3, PL1003	Linear encoder resolution setting Denominator	*LID
PL4, PL1004	Linear servo motor/DD motor function selection 2	*LIT2
PL5, PL1005	Position deviation error detection level	LB1
PL6, PL1006	Speed deviation error detection level	LB2
PL7, PL1007	Torque/thrust deviation error detection level	LB3
PL8, PL1008	Linear servo motor/DD motor function selection 3	*LIT3
PL9, PL1009	Magnetic pole detection voltage level	LPWM
PL10 to PL16, PL1010 to PL1016	For manufacturer setting	—
PL17, PL1017	Magnetic pole detection - Minute position detection method - Function selection	LTSTS
PL18, PL1018	Magnetic pole detection - Minute position detection method - Identification signal amplitude	IDLV
PL19 to PL48, PL1019 to PL1048	For manufacturer setting	—

Positioning control parameter ([MELSERVO-J4-*A-RJ])

Use an appropriate device according to the write destination of the servo amplifier.

- PT1 to PT48: Writing data to the RAM of a servo amplifier
- PT1001 to PT1048: Writing data to the EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

Virtual device name	Name	Symbol
PT1, PT1001	Command mode selection	*CTY
PT2, PT1002	Function selection T-1	*TOP1
PT3, PT1003	Feeding function selection	*FTY
PT4, PT1004	Home position return type	*ZTY
PT5, PT1005	Home position return speed	ZRF
PT6, PT1006	Creep speed	CRF
PT7, PT1007	Home position shift distance	ZST
PT8, PT1008	Home position return position data	*ZPS
PT9, PT1009	Moving distance after proximity dog	DCT
PT10, PT1010	Stopper type home position return stopper time	ZTM
PT11, PT1011	Stopper type home position return torque limit value	ZTT
PT12, PT1012	Rough match output range	CRP
PT13, PT1013	JOG operation	JOG
PT14, PT1014	Backlash compensation	*BKC
PT15, PT1015	Software limit +(Low)	LMPL
PT16, PT1016	Software limit +(High)	LMPH
PT17, PT1017	Software limit -(Low)	LMNL
PT18, PT1018	Software limit -(High)	LMNH
PT19, PT1019	Position range output address +(Low)	*LPPL
PT20, PT1020	Position range output address +(High)	*LPPH
PT21, PT1021	Position range output address -(Low)	*LNPL
PT22, PT1022	Position range output address -(High)	*LNPH

Virtual device name	Name	Symbol
PT23, PT1023	OUT1 output setting time	OUT1
PT24, PT1024	OUT2 output setting time	OUT2
PT25, PT1025	OUT3 output setting time	OUT3
PT26, PT1026	Function selection T-2	*TOP2
PT27, PT1027	Operation mode selection	*ODM
PT28, PT1028	Number of stations per rotation	*STN
PT29, PT1029	Function selection T-3	*TOP3
PT30, PT1030	Mark sensor stop movement amount (Low)	MSTL
PT31, PT1031	Mark sensor stop movement amount (High)	MSTH
PT32 to PT33, PT1032 to PT1033	For manufacturer setting	—
PT34, PT1034	Point table/program default	*PDEF
PT35, PT1035	Function selection T-5	*TOP5
PT36 to PT37, PT1036 to PT1037	For manufacturer setting	—
PT38, PT1038	Function selection T-7	*TOP7
PT39, PT1039	Torque limit delay time	INT
PT40, PT1040	Station home position shift distance	*SZS
PT41, PT1041	Home position return inhibit selection	ORP
PT42, PT1042	Digital override minimum multiplication	*OVM
PT43, PT1043	Digital override pitch width	*OVS
PT44, PT1044	For manufacturer setting	—
PT45, PT1045	Home position return type 2	*CZTY
PT46 to PT48, PT1046 to PT1048	For manufacturer setting	—

Status display ([MELSERVO-J4-*A-RJ])

Virtual device name	Name	Symbol
ST0	Cumulative feedback pulses	—
ST1	Servo motor speed	—
ST2	Droop pulses	—
ST3	Cumulative command pulses	—
ST4	Command pulse frequency	—
ST5	Analog speed command voltage/analog speed limit voltage	—
ST6	Analog torque limit voltage/analog torque command voltage	—
ST7	Regenerative load ratio	—
ST8	Effective load ratio	—
ST9	Peak load ratio	—
ST10	Instantaneous torque	—
ST11	Within one-revolution position	—
ST12	ABS counter	—
ST13	Load inertia moment ratio	—
ST14	Bus voltage	—
ST15	Load-side cumulative feedback pulses	—
ST16	Load-side encoder droop pulses	—
ST17	Load-side encoder information 1	—
ST18	Load-side encoder information 2	—
ST19 to ST21	For manufacturer setting	—
ST22	Temperature of servo motor thermistor	—
ST23	Servo motor-side cumulative feedback pulses (before gear)	—
ST24	Electrical angle	—
ST25 to ST29	For manufacturer setting	—
ST30	Motor/load side position difference	—
ST31	Motor/load side speed difference	—
ST32	Internal temperature of encoder	—
ST33	Settling time	—
ST34	Oscillation detection frequency	—
ST35	Number of tough drive operations	—
ST36 to ST39	For manufacturer setting	—
ST40	Unit power consumption	—
ST41	Unit total power consumption	—
ST42	Current position	—
ST43	Command position	—
ST44	Command remaining distance	—
ST45	Point table No./program No./station position No.	—
ST46	Step No.	—
ST47	Analog override voltage	—
ST48	Override level	—

Alarm (MELSERVO-J3-*A compatible) ([MELSERVO-J4-*A-RJ])

Virtual device name	Name	Symbol
AL0	Current alarm number	—
AL1	Detailed data of current alarms	—
AL11	Servo status when alarm occurs, cumulative feedback pulses	—
AL12	Servo status when alarm occurs, servo motor speed	—
AL13	Servo status when alarm occurs, droop pulses	—
AL14	Servo status when alarm occurs, cumulative command pulses	—
AL15	Servo status when alarm occurs, command pulse frequency	—
AL16	Servo status(alarm) analog speed command voltage/limit voltage	—
AL17	Servo status(alarm) analog torque command voltage/limit voltage	—
AL18	Servo status when alarm occurs, regenerative load ratio	—
AL19	Servo status when alarm occurs, effective load ratio	—
AL20	Servo status when alarm occurs, peak load ratio	—
AL21	Servo status when alarm occurs Instantaneous torque	—
AL22	Servo status(alarm) Within one-revolution position(1 pulse unit)	—
AL23	Servo status when alarm occurs, ABS counter	—
AL24	Servo status when alarm occurs, load inertia moment ratio	—
AL25	Servo status when alarm occurs, bus voltage	—
AL200	Alarm number from Alarm History most recent alarm	—
AL201	Alarm number from Alarm History first alarm in past	—
AL202	Alarm number from Alarm History second alarm in past	—
AL203	Alarm number from Alarm History third alarm in past	—
AL204	Alarm number from Alarm History fourth alarm in past	—
AL205	Alarm number from Alarm History fifth alarm in past	—
AL210	Alarm occurrence time in alarm history most recent alarm	—
AL211	Alarm occurrence time in alarm history first alarm in past	—
AL212	Alarm occurrence time in alarm history second alarm in past	—
AL213	Alarm occurrence time in alarm history third alarm in past	—
AL214	Alarm occurrence time in alarm history fourth alarm in past	—
AL215	Alarm occurrence time in alarm history fifth alarm in past	—
AL230	Detailed alarm from Alarm History most recent alarm	—
AL231	Detailed alarm from Alarm History first alarm in past	—
AL232	Detailed alarm from Alarm History second alarm in past	—
AL233	Detailed alarm from Alarm History third alarm in past	—
AL234	Detailed alarm from Alarm History fourth alarm in past	—
AL235	Detailed alarm from Alarm History fifth alarm in past	—

Extension setting No.2 parameter ([MELSERVO-J4-*A-RJ])

Use an appropriate device according to the write destination of the servo amplifier.

- PE1 to PE64: Writing data to the RAM of a servo amplifier
- PE1001 to PE1064: Writing data to the EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

Virtual device name	Name	Symbol
PE1, PE1001	Fully closed loop function selection 1	*FCT1
PE2, PE1002	For manufacturer setting	—
PE3, PE1003	Fully closed loop function selection 2	*FCT2
PE4, PE1004	Fully closed loop control - Feedback pulse electronic gear 1 - Numerator	*FBN
PE5, PE1005	Fully closed loop control - Feedback pulse electronic gear 1 - Denominator	*FBD
PE6, PE1006	Fully closed loop ctrl. - Spd. dev. err. detection level	BC1
PE7, PE1007	Fully closed loop ctrl. - Pos. dev. err. detection level	BC2
PE8, PE1008	Fully closed dual feedback filter	DUF
PE9, PE1009	For manufacturer setting	—
PE10, PE1010	Fully closed loop function selection 3	FCT3
PE11 to PE33, PE1011 to PE1033	For manufacturer setting	—
PE34, PE1034	Fully closed loop control - Feedback pulse electronic gear 2 - Numerator	*FBN2
PE35, PE1035	Fully closed loop control - Feedback pulse electronic gear 2 - Denominator	*FBD2
PE36 to PE40, PE1036 to PE1040	For manufacturer setting	—
PE41, PE1041	Function selection E-3	EOP3
PE42 to PE43, PE1042 to PE1043	For manufacturer setting	—
PE44, PE1044	Lost motion positive side compensation value sel.	LMCP
PE45, PE1045	Lost motion negative side compensation value sel.	LMCN
PE46, PE1046	Lost motion filter setting	LMFLT
PE47, PE1047	Torque offset	TOF
PE48, PE1048	Lost motion compensation function selection	*LMOP
PE49, PE1049	Lost motion compensation timing	LMCD
PE50, PE1050	Lost motion compensation dead zone	LMCT
PE51 to PE64, PE1051 to PE1064	For manufacturer setting	—

Extension setting No.3 parameter ([MELSERVO-J4-*A-RJ])

Use an appropriate device according to the write destination of the servo amplifier.

- PF1 to PF48: Writing data to the RAM of a servo amplifier
- PF1001 to PF1048: Writing data to the EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

Virtual device name	Name	Symbol
PF1 to PF8, PF1001 to PF1008	For manufacturer setting	—
PF9, PF1009	Function selection F-5	*FOP5
PF10 to PF14, PF1010 to PF1014	For manufacturer setting	—
PF15, PF1015	Electronic dynamic brake operating time	DBT
PF16 to PF17, PF1016 to PF1017	For manufacturer setting	—
PF18, PF1018	STO diagnostic error detection time	*STOD
PF19 to PF20, PF1019 to PF1020	For manufacturer setting	—
PF21, PF1021	Drive recorder switching time setting	DRT
PF22, PF1022	For manufacturer setting	—
PF23, PF1023	Vibration tough drive - Oscillation detection level	OSCL1
PF24, PF1024	Vibration tough drive function selection	OSCL2
PF25, PF1025	SEMI-F47 function - Instantaneous power failure detection time	CVAT
PF26 to PF30, PF1026 to PF1030	For manufacturer setting	—
PF31, PF1031	Machine diagnosis function - Friction judgment speed	FRIC
PF32 to PF33, PF1032 to PF1033	For manufacturer setting	—
PF34, PF1034	RS-422 communication function selection 3	*SOP3
PF35 to PF44, PF1035 to PF1044	For manufacturer setting	—
PF45, PF1045	Function selection F-12	*FOP12
PF46, PF1046	Modbus-RTU comm. - Communication time-out time	MIC
PF47 to PF48, PF1047 to PF1048	For manufacturer setting	—

Alarm (MELSERVO-J4-*A extended) ([MELSERVO-J4-*A-RJ])

Virtual device name	Name	Symbol
ALM0	Current alarm number	—
ALM1	Detailed data of current alarms	—
ALM11	Servo status(alarm) Cumulative feedback pulses	—
ALM12	Servo status(alarm) Servo motor speed	—
ALM13	Servo status(alarm) Droop pulses	—
ALM14	Servo status(alarm) Cumulative command pulses	—
ALM15	Servo status(alarm) Command pulse frequency	—
ALM16	Servo status(alarm) analog speed command voltage/limit voltage	—
ALM17	Servo status(alarm) analog torque command voltage/limit voltage	—
ALM18	Servo status(alarm) Regenerative load ratio	—
ALM19	Servo status(alarm) Effective load ratio	—
ALM20	Servo status(alarm) Peak load ratio	—
ALM21	Servo status(alarm) Instantaneous torque	—
ALM22	Servo status(alarm) Within one-revolution position(1 pulse unit)	—
ALM23	Servo status(alarm) ABS counter	—
ALM24	Servo status(alarm) Load to motor inertia ratio	—
ALM25	Servo status(alarm) Bus voltage	—
ALM26	Servo status(alarm) Load-side cumulative feedback pulses	—
ALM27	Servo status(alarm) Load-side droop pulses	—
ALM28	Servo status(alarm) Load-side encoder information 1	—
ALM29	Servo status(alarm) Load-side encoder information 2	—
ALM30 to ALM32	For manufacturer setting	—
ALM33	Servo status(alarm) Temperature of servo motor thermistor	—
ALM34	Servo status(alarm) Servo motor-side cumulative feedback pulses (before gear)	—
ALM35	Servo status(alarm) Electrical angle	—
ALM36 to ALM40	For manufacturer setting	—
ALM41	Servo status(alarm) Motor/load side position difference	—
ALM42	Servo status(alarm) Motor/load side speed difference	—
ALM43	Servo status(alarm) Encoder inside temperature	—
ALM44	Servo status(alarm) Settling time	—
ALM45	Servo status(alarm) Oscillation detection frequency	—
ALM46	Servo status(alarm) Number of tough drive operations	—
ALM47 to ALM50	For manufacturer setting	—
ALM51	Servo status(alarm) Unit power consumption	—
ALM52	Servo status(alarm) Unit total power consumption	—
ALM53	Servo status(alarm) Current position	—
ALM54	Servo status(alarm) Command position	—
ALM55	Servo status(alarm) Command remaining distance	—
ALM56	Servo status(alarm) Point table No./Program No./Station position No.	—
ALM57	Servo status(alarm) Step No.	—
ALM58	Servo status(alarm) Analog override voltage	—
ALM59	Servo status(alarm) Override level	—
ALM200	Alarm number from Alarm History most recent alarm	—
ALM201	Alarm number from Alarm History 1st alarm in past	—
ALM202	Alarm number from Alarm History 2nd alarm in past	—
ALM203	Alarm number from Alarm History 3rd alarm in past	—
ALM204	Alarm number from Alarm History 4th alarm in past	—
ALM205	Alarm number from Alarm History 5th alarm in past	—
ALM206	Alarm number from Alarm History 6th alarm in past	—
ALM207	Alarm number from Alarm History 7th alarm in past	—
ALM208	Alarm number from Alarm History 8th alarm in past	—

Virtual device name	Name	Symbol
ALM209	Alarm number from Alarm History 9th alarm in past	—
ALM210	Alarm number from Alarm History 10th alarm in past	—
ALM211	Alarm number from Alarm History 11th alarm in past	—
ALM212	Alarm number from Alarm History 12th alarm in past	—
ALM213	Alarm number from Alarm History 13th alarm in past	—
ALM214	Alarm number from Alarm History 14th alarm in past	—
ALM215	Alarm number from Alarm History 15th alarm in past	—
ALM220	Alarm occurrence time in alarm history most recent alarm	—
ALM221	Alarm occurrence time in alarm history 1st alarm in past	—
ALM222	Alarm occurrence time in alarm history 2nd alarm in past	—
ALM223	Alarm occurrence time in alarm history 3rd alarm in past	—
ALM224	Alarm occurrence time in alarm history 4th alarm in past	—
ALM225	Alarm occurrence time in alarm history 5th alarm in past	—
ALM226	Alarm occurrence time in alarm history 6th alarm in past	—
ALM227	Alarm occurrence time in alarm history 7th alarm in past	—
ALM228	Alarm occurrence time in alarm history 8th alarm in past	—
ALM229	Alarm occurrence time in alarm history 9th alarm in past	—
ALM230	Alarm occurrence time in alarm history 10th alarm in past	—
ALM231	Alarm occurrence time in alarm history 11th alarm in past	—
ALM232	Alarm occurrence time in alarm history 12th alarm in past	—
ALM233	Alarm occurrence time in alarm history 13th alarm in past	—
ALM234	Alarm occurrence time in alarm history 14th alarm in past	—
ALM235	Alarm occurrence time in alarm history 15th alarm in past	—
ALM240	Detailed alarm from Alarm History most recent alarm	—
ALM241	Detailed alarm from Alarm History 1st alarm in past	—
ALM242	Detailed alarm from Alarm History 2nd alarm in past	—
ALM243	Detailed alarm from Alarm History 3rd alarm in past	—
ALM244	Detailed alarm from Alarm History 4th alarm in past	—
ALM245	Detailed alarm from Alarm History 5th alarm in past	—
ALM246	Detailed alarm from Alarm History 6th alarm in past	—
ALM247	Detailed alarm from Alarm History 7th alarm in past	—
ALM248	Detailed alarm from Alarm History 8th alarm in past	—
ALM249	Detailed alarm from Alarm History 9th alarm in past	—
ALM250	Detailed alarm from Alarm History 10th alarm in past	—
ALM251	Detailed alarm from Alarm History 11th alarm in past	—
ALM252	Detailed alarm from Alarm History 12th alarm in past	—
ALM253	Detailed alarm from Alarm History 13th alarm in past	—
ALM254	Detailed alarm from Alarm History 14th alarm in past	—
ALM255	Detailed alarm from Alarm History 15th alarm in past	—

Point table (position) ([MELSERVO-J4-*A-RJ])

Use an appropriate device according to the write destination of the servo amplifier.

- POS1 to POS255: Writing data to the RAM of a servo amplifier
- POS1001 to POS1255: Writing data to the EEPROM of a servo amplifier

Virtual device name	Name	Symbol
POS1 to POS255, POS1001 to POS1255	Point table/position data No. 1 to No. 255	—

Point table (speed) ([MELSERVO-J4-*A-RJ])

Use an appropriate device according to the write destination of the servo amplifier.

- SPD1 to SPD255: Writing data to the RAM of a servo amplifier
- SPD1001 to SPD1255: Writing data to the EEPROM of a servo amplifier

Virtual device name	Name	Symbol
SPD1 to SPD255, SPD1001 to SPD1255	Point table/speed data No. 1 to No. 255	—

Point table (acceleration time constant) ([MELSERVO-J4-*A-RJ])

Use an appropriate device according to the write destination of the servo amplifier.

- ACT1 to ACT255: Writing data to the RAM of a servo amplifier
- ACT1001 to ACT1255: Writing data to the EEPROM of a servo amplifier

Virtual device name	Name	Symbol
ACT1 to ACT255, ACT1001 to ACT1255	Point table/acceleration time constant No. 1 to No. 255	—

Point table (deceleration time constant) ([MELSERVO-J4-*A-RJ])

Use an appropriate device according to the write destination of the servo amplifier.

- DCT1 to DCT255: Writing data to the RAM of a servo amplifier
- DCT1001 to DCT1255: Writing data to the EEPROM of a servo amplifier

Virtual device name	Name	Symbol
DCT1 to DCT255, DCT1001 to DCT1255	Point table/deceleration time constant No. 1 to No. 255	—

Point table (dwell) ([MELSERVO-J4-*A-RJ])

Use an appropriate device according to the write destination of the servo amplifier.

- DWL1 to DWL255: Writing data to the RAM of a servo amplifier
- DWL1001 to DWL1255: Writing data to the EEPROM of a servo amplifier

Virtual device name	Name	Symbol
DWL1 to DWL255, DWL1001 to DWL1255	Point table/dwell No. 1 to No. 255	—

Point table (auxiliary function) ([MELSERVO-J4-*A-RJ])

Use an appropriate device according to the write destination of the servo amplifier.

- AUX1 to AUX255: Writing data to the RAM of a servo amplifier
- AUX1001 to AUX1255: Writing data to the EEPROM of a servo amplifier

Virtual device name	Name	Symbol
AUX1 to AUX255, AUX1001 to AUX1255	Point table/auxiliary function No. 1 to No. 255	—

Point table (M code) ([MELSERVO-J4-*A-RJ])

Use an appropriate device according to the write destination of the servo amplifier.

- MCD1 to MCD255: Writing data to the RAM of a servo amplifier
- MCD1001 to MCD1255: Writing data to the EEPROM of a servo amplifier

Virtual device name	Name	Symbol
MCD1 to MCD255, MCD1001 to MCD1255	Point table/M code No. 1 to No. 255	—

Machine diagnosis data ([MELSERVO-J4-*A-RJ])

Virtual device name	Name	Symbol
MD0	Machine diagnosis data, station number	—
MD1	Machine diagnosis data shift judgment (test mode)	—
MD2	Machine diagnosis data status	—
MD3	Machine diagnosis data coulomb friction torque in positive direction	—
MD4	Machine diagnosis data friction torque at rated speed in positive direction	—
MD5	Machine diagnosis data coulomb friction torque in negative direction	—
MD6	Machine diagnosis data friction torque at rated speed in negative direction	—
MD7	Machine diagnosis data oscillation frequency (motor is stopped)	—
MD8	Machine diagnosis data vibration level (motor is stopped)	—
MD9	Machine diagnosis data oscillation frequency (motor is operating)	—
MD10	Machine diagnosis data vibration level (motor is operating)	—
MD11	Machine diagnosis data, rated speed at forward or reverse rotation torque	—

One-touch tuning data ([MELSERVO-J4-*A-RJ])

Virtual device name	Name	Symbol
OTS0	One-touch tuning status confirmation	—
OTS1	Error code list	—
OTS2	Settling time	—
OTS3	Overshoot amount	—

External input signal ([MELSERVO-J4-*A-RJ])

Virtual device name	Name	Symbol	Data to be read from the servo amplifier
DI0	Input device statuses 1	—	For the mapping of the bits corresponding to the data to be read, refer to the following. MR-J4-_A_(-RJ)/MR-J4-03A6(-RJ) SERVO AMPLIFIER INSTRUCTION MANUAL
DI1	Input device statuses 2	—	
DI2	Input device statuses 3	—	
DI3	External input pin statuses	—	
DI4	Statuses of input devices switched on through communication 1	—	For the mapping of the bits corresponding to the data to be read or written, refer to the following. MR-J4-_A_(-RJ)/MR-J4-03A6(-RJ) SERVO AMPLIFIER INSTRUCTION MANUAL
DI5	Statuses of input devices switched on through communication 2	—	
DI6	Statuses of input devices switched on through communication 3	—	

External output signal ([MELSERVO-J4-*A-RJ])

Virtual device name	Name	Symbol	Data to be read from the servo amplifier
DO0	Output device statuses 1	—	For the mapping of the bits corresponding to the data to be read, refer to the following. MR-J4-_A_(-RJ)/MR-J4-03A6(-RJ) SERVO AMPLIFIER INSTRUCTION MANUAL
DO1	Output device statuses 2	—	
DO2	Output device statuses 3	—	
DO3	Output device statuses 4	—	
DO4	External output pin statuses	—	

Current position latch data ([MELSERVO-J4-*A-RJ])

Virtual device name	Name	Symbol
LD0	Position data unit	—
LD1	Current position latch data	—

Value of the general-purpose register (Rx) ([MELSERVO-J4-*A-RJ])

Use an appropriate device according to the write destination of the servo amplifier.

- RR1 to RR4: Writing data to the RAM of a servo amplifier
- RR1001 to RR1004: Writing data to the EEPROM of a servo amplifier

Virtual device name	Name	Symbol
RR1, RR1001	Value of the general-purpose register (R1)	—
RR2, RR1002	Value of the general-purpose register (R2)	—
RR3, RR1003	Value of the general-purpose register (R3)	—
RR4, RR1004	Value of the general-purpose register (R4)	—

Value of the general-purpose register (Dx) ([MELSERVO-J4-*A-RJ])

Virtual device name	Name	Symbol
RD1	Value of the general-purpose register (D1)	—
RD2	Value of the general-purpose register (D2)	—
RD3	Value of the general-purpose register (D3)	—
RD4	Value of the general-purpose register (D4)	—

Life diagnosis ([MELSERVO-J4-*A-RJ])

Virtual device name	Name	Symbol
ALD0	Cumulative power-on time	—
ALD1	Number of inrush current switching times	—

Input signal for test operation (for test operation) ([MELSERVO-J4-*A-RJ])

Virtual device name	Name	Symbol
TMI0	Input signal for test operation 1	—
TMI1	Input signal for test operation 2	—
TMI2	Input signal for test operation 3	—

When using the input signal for test operation (for test operation), note the following.

Precautions	Description
Writing a value to a virtual device using an object	Numerical input cannot be used. Use a word switch for writing.

Forced output of signal pin (for test operation) ([MELSERVO-J4-*A-RJ])

Virtual device name	Name	Symbol
TMO0	Forced output of signal pin	—

When using the forced output of signal pin (for test operation), note the following.

Precautions	Description
Writing a value to a virtual device using an object	Numerical input cannot be used. Use a word switch for writing.

Set data (for test operation) ([MELSERVO-J4-*A-RJ])

Virtual device name	Name	Symbol
TMD0	Writes the speed (test mode)	—
TMD1	Writes the acceleration/deceleration time constant (test mode)	—
TMD3	Writes the moving distance (test mode)	—

When using the set data (for test operation), note the following.

Precautions	Description
Writing a value to a virtual device using an object	Numerical input cannot be used. Use a word switch for writing.

97.14.8 Precautions for virtual servo amplifier devices ([MELSERVO-J4-*A-RJ])

For the precautions for virtual servo amplifier devices, refer to the following.

☞ Page 3336 Precautions for virtual servo amplifier devices ([MELSERVO-J3-*A])

97.15 [MELSERVO-JE-*C]

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Item	Reference
Specifications of bit devices	☞ Page 3399 Monitoring-supported bit devices ([MELSERVO-JE-*C])
	☞ Page 3399 Availability of writing/reading data to/from bit devices ([MELSERVO-JE-*C])
Specifications of word devices	☞ Page 3400 Monitoring-supported word devices ([MELSERVO-JE-*C])
	☞ Page 3401 Availability of writing/reading data to/from word devices ([MELSERVO-JE-*C])
Specifications of double-word devices	☞ Page 3402 Monitoring-supported double-word devices ([MELSERVO-JE-*C])
	☞ Page 3402 Availability of writing/reading data to/from double-word devices ([MELSERVO-JE-*C])
Specifications of virtual servo amplifier devices	☞ Page 3403 Virtual servo amplifier devices ([MELSERVO-JE-*C])
	☞ Page 3417 Precautions for virtual servo amplifier devices ([MELSERVO-JE-*C])

97.15.1 Monitoring-supported bit devices ([MELSERVO-JE-*C])

The following table shows monitoring-supported virtual bit devices for servo amplifiers.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3399 Availability of writing/reading data to/from bit devices ([MELSERVO-JE-*C])

For details on virtual servo amplifier devices, refer to the following.

☞ Page 3403 Virtual servo amplifier devices ([MELSERVO-JE-*C])

○: Available

×: Not available

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
SP	Servo amplifier request	Decimal	0 to 6	×	×
OM	Operation mode selection	Decimal	0 to 2 4 to 5	×	×
TMB	Instruction demand (for test operation)	Decimal	1 to 6	×	×
OTI	One-touch tuning instruction	Decimal	0 to 5	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
☞ Page 2868 Monitoring a controller through the GOT (server/client function)

97.15.2 Availability of writing/reading data to/from bit devices ([MELSERVO-JE-*C])

The following shows the availability of writing/reading data to/from bit devices by device type.

When the device type is other than the bit type, set the device No. in multiples of 16.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type				
	Bit	Byte (8 bits)	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)
SP	-/W	-/-	-/-	-/-	-/-
OM	-/W	-/-	-/-	-/-	-/-
TMB	-/W	-/-	-/-	-/-	-/-
OTI	-/W	-/-	-/-	-/-	-/-

97.15.3 Monitoring-supported word devices ([MELSERVO-JE-*C])

The following table shows monitoring-supported virtual word devices for servo amplifiers.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3401 Availability of writing/reading data to/from word devices ([MELSERVO-JE-*C])

For details on virtual servo amplifier devices, refer to the following.

☞ Page 3403 Virtual servo amplifier devices ([MELSERVO-JE-*C])

○: Available

×: Not available

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
PA	Basic parameter	Decimal	1 to 32 1001 to 1032	○	×
PB	Gain filter parameter	Decimal	1 to 64 1001 to 1064	○	×
PC	Extension setting parameter	Decimal	1 to 80 1001 to 1080	○	×
PD	I/O setting parameter	Decimal	1 to 48 1001 to 1048	○	×
PT	Positioning control parameter	Decimal	1 to 80 1001 to 1080	○	×
PN	Network setting parameter	Decimal	1 to 48 1001 to 1048	×	×
ST	Status display	Decimal	0 to 48	○	×
PE	Extension setting No.2 parameter	Decimal	1 to 64 1001 to 1064	○	×
PF	Extension setting No.3 parameter	Decimal	1 to 48 1001 to 1048	○	×
ALM	Alarm (Current alarm)	Decimal	0 to 1 11 to 59	○	×
ALM	Alarm (Alarm history)	Decimal	200 to 215 220 to 235 240 to 255	○	×
MD	Machine diagnosis data	Decimal	0 to 11	×	×
OTS	One-touch tuning data	Decimal	0 to 3	×	×
DI	External input signal	Decimal	0 to 6	×	×
DO	External output signal	Decimal	0 to 4	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
☞ Page 2868 Monitoring a controller through the GOT (server/client function)

97.15.4 Availability of writing/reading data to/from word devices ([MELSERVO-JE-*C])

The following shows the availability of writing/reading data to/from word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data
PA	R/W	R/W	-/-	-/-
PB	R/W	R/W	-/-	-/-
PC	R/W	R/W	-/-	-/-
PD	R/W	R/W	-/-	-/-
PT	R/W	R/W	-/-	-/-
PN	R/W	R/W	-/-	-/-
ST	R/-	R/-	-/-	-/-
PE	R/W	R/W	-/-	-/-
PF	R/W	R/W	-/-	-/-
ALM	R/-	R/-	-/-	-/-
MD	R/-	R/-	-/-	-/-
OTS	R/-	R/-	-/-	-/-
DI*1	R/-	R/W	-/-	-/-
DO	R/-	R/-	-/-	-/-

*1 Only reading is available for DI0 to DI3.

97.15.5 Monitoring-supported double-word devices ([MELSERVO-JE-*C])

The following table shows monitoring-supported virtual double-word devices for servo amplifiers.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3402 Availability of writing/reading data to/from double-word devices ([MELSERVO-JE-*C])

For details on virtual servo amplifier devices, refer to the following.

☞ Page 3403 Virtual servo amplifier devices ([MELSERVO-JE-*C])

○: Available

×: Not available

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
LD	Current position latch data	Decimal	0 to 1	×	×
RR	Value of the general-purpose register (Rx)	Decimal	1 to 4 1001 to 1004	×	×
RD	Value of the general-purpose register (Dx)	Decimal	1 to 4	×	×
ALD	Life diagnosis	Decimal	0 to 1	×	×
TMI	Input signal for test operation (for test operation)	Decimal	0 to 2	×	×
TMO	Forced output of signal pin (for test operation)	Decimal	0	×	×
TMD	Set data (for test operation)	Decimal	0 to 1 3	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.

☞ Page 2868 Monitoring a controller through the GOT (server/client function)

97.15.6 Availability of writing/reading data to/from double-word devices ([MELSERVO-JE-*C])

The following shows the availability of writing/reading data to/from double-word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of double-word data
LD	-/-	R/-	-/-	-/-
RR	-/-	R/W	-/-	-/-
RD	-/-	R/W	-/-	-/-
ALD	-/-	R/-	-/-	-/-
TMI	-/-	-/W	-/-	-/-
TMO	-/-	-/W	-/-	-/-
TMD	-/-	-/W	-/-	-/-

97.15.7 Virtual servo amplifier devices ([MELSERVO-JE-*C])

The following shows the correspondence between the virtual devices used in the GOT and the servo amplifier data.

Virtual device name	Reference
SP	☞ Page 3404 Servo amplifier request ([MELSERVO-JE-*C])
OM	☞ Page 3404 Operation mode selection ([MELSERVO-JE-*C])
TMB	☞ Page 3404 Instruction demand (for test operation) ([MELSERVO-JE-*C])
OTI	☞ Page 3404 One-touch tuning instruction ([MELSERVO-JE-*C])
PA	☞ Page 3405 Basic parameter ([MELSERVO-JE-*C])
PB	☞ Page 3405 Gain filter parameter ([MELSERVO-JE-*C])
PC	☞ Page 3407 Extension setting parameter ([MELSERVO-JE-*C])
PD	☞ Page 3409 I/O setting parameter ([MELSERVO-JE-*C])
PT	☞ Page 3410 Positioning control parameter ([MELSERVO-JE-*C])
PN	☞ Page 3411 Network setting parameter ([MELSERVO-JE-*C])
ST	☞ Page 3412 Status display ([MELSERVO-JE-*C])
PE	☞ Page 3412 Extension setting No.2 parameter ([MELSERVO-JE-*C])
PF	☞ Page 3413 Extension setting No.3 parameter ([MELSERVO-JE-*C])
ALM	☞ Page 3413 Alarm (MELSERVO-J4-*A extended) ([MELSERVO-JE-*C])
MD	☞ Page 3415 Machine diagnosis data ([MELSERVO-JE-*C])
OTS	☞ Page 3415 One-touch tuning data ([MELSERVO-JE-*C])
DI	☞ Page 3415 External input signal ([MELSERVO-JE-*C])
DO	☞ Page 3416 External output signal ([MELSERVO-JE-*C])
LD	☞ Page 3416 Current position latch data ([MELSERVO-JE-*C])
RR	☞ Page 3416 Value of the general-purpose register (Rx) ([MELSERVO-JE-*C])
RD	☞ Page 3416 Value of the general-purpose register (Dx) ([MELSERVO-JE-*C])
ALD	☞ Page 3416 Life diagnosis ([MELSERVO-JE-*C])
TMI	☞ Page 3417 Input signal for test operation (for test operation) ([MELSERVO-JE-*C])
TMO	☞ Page 3417 Forced output of signal pin (for test operation) ([MELSERVO-JE-*C])
TMD	☞ Page 3417 Set data (for test operation) ([MELSERVO-JE-*C])

Servo amplifier request ([MELSERVO-JE-*C])

Virtual device name	Name	Symbol
SP0	Status display data clear	—
SP1	Current alarm clear	—
SP2	Alarm history clear	—
SP3	External input signal prohibited	—
SP4	External output signal prohibited	—
SP5	External input signal resumed	—
SP6	External output signal resumed	—

When using the servo amplifier request, note the following.

Precautions	Description
When setting a device for a bit switch	Do not select [Alternate] for [Switch Action] of the bit switch.

Operation mode selection ([MELSERVO-JE-*C])

Virtual device name	Name	Symbol
OM0	Normal mode (not test operation mode)	—
OM1	JOG operation	—
OM2	Positioning operation	—
OM4	Output signal (DO) forced output	—
OM5	Single-step feed operation	—

When using the operation mode selection, note the following.

Precautions	Description
When setting a device for a bit switch	Do not select [Alternate] for [Switch Action] of the bit switch.

Instruction demand (for test operation) ([MELSERVO-JE-*C])

Virtual device name	Name	Symbol
TMB1	Temporary stop command	—
TMB2	Test operation (positioning operation) start command	—
TMB3	Forward rotation direction	—
TMB4	Reverse rotation direction	—
TMB5	Restart for remaining distance	—
TMB6	Remaining distance clear	—

When using the instruction demand (for test operation), note the following.

Precautions	Description
When setting a device for a bit switch	Do not select [Alternate] for [Switch Action] of the bit switch.

One-touch tuning instruction ([MELSERVO-JE-*C])

Virtual device name	Name	Symbol
OTI0	One-touch tuning start command (Basic mode)	—
OTI1	One-touch tuning start command (High mode)	—
OTI2	One-touch tuning start command (Low mode)	—
OTI3	One-touch tuning stop command	—
OTI4	Return to initial value	—
OTI5	Return to value before adjustment	—

Basic parameter ([MELSERVO-JE-*C])

Use an appropriate device according to the write destination of the servo amplifier.

- PA1 to PA32: Writing data to the RAM of a servo amplifier
- PA1001 to PA1032: Writing data to the EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

Device name	Name	Symbol
PA1, PA1001	Operation mode	*STY
PA2, PA1002	Regenerative brake option	*REG
PA3, PA1003	Absolute position detection system	*ABS
PA4, PA1004	Function selection A-1	*AOP1
PA5, PA1005	Number of command input pulses per revolution	*FBP
PA6, PA1006	Electronic gear numerator	CMX
PA7, PA1007	Electronic gear denominator	CDV
PA8, PA1008	Auto tuning mode	ATU
PA9, PA1009	Auto tuning response	RSP
PA10, PA1010	In-position range	INP
PA11, PA1011	Forward rotation torque limit	TLP
PA12, PA1012	Reverse rotation torque limit	TLN
PA13, PA1013	Command pulse input form	*PLSS
PA14, PA1014	Rotation direction selection	*POL
PA15, PA1015	Encoder output pulses	*ENR
PA16, PA1016	Encoder output pulses 2	*ENR2
PA17 to PA18, PA1017 to PA1018	For manufacturer setting	—
PA19, PA1019	Parameter block	*BLK
PA20, PA1020	Tough drive setting	*TDS
PA21, PA1021	Function selection A-3	*AOP3
PA22, PA1022	For manufacturer setting	—
PA23, PA1023	Drive recorder arbitrary alarm trigger setting	DRAT
PA24, PA1024	Function selection A-4	*AOP4
PA25, PA1025	One-touch tuning - Overshoot permissible level	OTHOV
PA26, PA1026	Function selection A-5	*AOP5
PA27, PA1027	For manufacturer setting	—
PA28, PA1028	Function selection A-6	*AOP6
PA29 to PA32, PA1029 to PA1032	For manufacturer setting	—

Gain filter parameter ([MELSERVO-JE-*C])

Use an appropriate device according to the write destination of the servo amplifier.

- PB1 to PB64: Writing data to the RAM of a servo amplifier
- PB1001 to PB1064: Writing data to the EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

Device name	Name	Symbol
PB1, PB1001	Adaptive tuning mode (Adaptive filter II)	FILT
PB2, PB1002	Vibration suppression control tuning mode (advanced vibration suppression control II)	VRFT
PB3, PB1003	Position command acceleration/deceleration time constant (position smoothing)	PST
PB4, PB1004	Feed forward gain	FFC
PB5, PB1005	For manufacturer setting	—
PB6, PB1006	Load inertia moment ratio	GD2
PB7, PB1007	Model control gain	PG1

Device name	Name	Symbol
PB8, PB1008	Position control gain	PG2
PB9, PB1009	Speed control gain	VG2
PB10, PB1010	Speed integral compensation	VIC
PB11, PB1011	Speed differential compensation	VDC
PB12, PB1012	Overshoot amount compensation	OVA
PB13, PB1013	Machine resonance suppression filter 1	NH1
PB14, PB1014	Notch shape selection 1	NHQ1
PB15, PB1015	Machine resonance suppression filter 2	NH2
PB16, PB1016	Notch shape selection 2	NHQ2
PB17, PB1017	Shaft resonance suppression filter	NHF
PB18, PB1018	Low-pass filter setting	LPF
PB19, PB1019	Vibration suppression control 1 - Vibration frequency	VRF11
PB20, PB1020	Vibration suppression control 1 - Resonance frequency	VRF12
PB21, PB1021	Vibration suppression control 1 - Vibration frequency damping	VRF13
PB22, PB1022	Vibration suppression control 1 - Resonance frequency damping	VRF14
PB23, PB1023	Low-pass filter setting	VFBF
PB24, PB1024	Slight vibration suppression control	*MVS
PB25, PB1025	Function selection B-1	*BOP1
PB26, PB1026	Gain switching function	*CDP
PB27, PB1027	Gain switching condition	CDL
PB28, PB1028	Gain switching time constant	CDT
PB29, PB1029	Load to motor inertia ratio after gain switching	GD2B
PB30, PB1030	Position loop gain after gain switching	PG2B
PB31, PB1031	Speed loop gain after gain switching	VG2B
PB32, PB1032	Speed integral compensation after gain switching	VICB
PB33, PB1033	Vibration suppression control 1 - Vibration frequency after gain switching	VRF1B
PB34, PB1034	Vibration suppression control 1 - Resonance frequency after gain switching	VRF2B
PB35, PB1035	Vibration suppression control 1 - Vibration frequency damping after gain switching	VRF3B
PB36, PB1036	Vibration suppression control 1 - Resonance frequency damping after gain switching	VRF4B
PB37 to PB44, PB1037 to PB1044	For manufacturer setting	—
PB45, PB1045	Command notch filter	CNHF
PB46, PB1046	Machine resonance suppression filter 3	NH3
PB47, PB1047	Notch shape selection 3	NHQ3
PB48, PB1048	Machine resonance suppression filter 4	NH4
PB49, PB1049	Notch shape selection 4	NHQ4
PB50, PB1050	Machine resonance suppression filter 5	NH5
PB51, PB1051	Notch shape selection 5	NHQ5
PB52, PB1052	Vibration suppression control 2 - Vibration frequency	VRF21
PB53, PB1053	Vibration suppression control 2 - Resonance frequency	VRF22
PB54, PB1054	Vibration suppression control 2 - Vibration frequency damping	VRF23
PB55, PB1055	Vibration suppression control 2 - Resonance frequency damping	VRF24
PB56, PB1056	Vibration suppression control 2 - Vibration frequency after gain switching	VRF21B
PB57, PB1057	Vibration suppression control 2 - Resonance frequency after gain switching	VRF22B
PB58, PB1058	Vibration suppression control 2 - Vibration frequency damping after gain switching	VRF23B
PB59, PB1059	Vibration suppression control 2 - Resonance frequency damping after gain switching	VRF24B
PB60, PB1060	Model loop gain after gain switching	PG1B
PB61 to PB64, PB1061 to PB1064	For manufacturer setting	—

Extension setting parameter ([MELSERVO-JE-*C])

Use an appropriate device according to the write destination of the servo amplifier.

- PC1 to PC80: Writing data to the RAM of a servo amplifier
- PC1001 to PC1080: Writing data to the EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

Device name	Name	Symbol
PC1, PC1001	Acceleration time constant	STA
PC2, PC1002	Deceleration time constant	STB
PC3, PC1003	S-pattern acceleration/deceleration time constant	STC
PC4, PC1004	Torque command time constant	TQC
PC5, PC1005	Internal speed command 1	SC1
PC6, PC1006	Internal speed command 2	SC2
PC7, PC1007	Internal speed command 3	SC3
PC8, PC1008	Internal speed command 4	SC4
PC9, PC1009	Internal speed command 5	SC5
PC10, PC1010	Internal speed command 6	SC6
PC11, PC1011	Internal speed command 7	SC7
PC12, PC1012	Analog speed command maximum speed	VCM
PC13, PC1013	Analog torque command maximum output	TLC
PC14 to PC15, PC1014 to PC1015	For manufacturer setting	—
PC16, PC1016	Electromagnetic brake sequence output	MBR
PC17, PC1017	Zero speed	ZSP
PC18, PC1018	Alarm history clear	*BPS
PC19, PC1019	Encoder output pulse selection	*ENRS
PC20 to PC21, PC1020 to PC1021	For manufacturer setting	—
PC22, PC1022	Function selection C-1	*COP1
PC23, PC1023	Function selection C-2	*COP2
PC24, PC1024	Function selection C-3	*COP3
PC25, PC1025	Function selection C-4	*COP4
PC26, PC1026	Function selection C-5	*COP5
PC27, PC1027	Function selection C-6	*COP6
PC28, PC1028	For manufacturer setting	—
PC29, PC1029	Function selection C-8	*COP8
PC30, PC1030	Acceleration time constant 2	STA2
PC31, PC1031	Deceleration time constant 2	STB2
PC32, PC1032	Command input pulse multiplication numerator 2	CMX2
PC33, PC1033	Command input pulse multiplication numerator 3	CMX3
PC34, PC1034	Command input pulse multiplication numerator 4	CMX4
PC35, PC1035	Internal torque limit 2	TL2
PC36, PC1036	For manufacturer setting	—
PC37, PC1037	Analog speed command offset	VCO
PC38, PC1038	Analog torque command offset	TPO
PC39 to PC42, PC1039 to PC1042	For manufacturer setting	—
PC43, PC1043	Error excessive alarm detection level	ERZ
PC44 to PC45, PC1044 to PC1045	For manufacturer setting	—
PC46, PC1046	Torque limit time constant	TLFT
PC47 to PC50, PC1047 to PC1050	For manufacturer setting	—
PC51, PC1051	Forced stop deceleration time constant	RSBR

Device name	Name	Symbol
PC52 to PC53, PC1052 to PC1053	For manufacturer setting	—
PC54, PC1054	Vertical axis freefall prevention compensation amount	RSUP1
PC55 to PC59, PC1055 to PC1059	For manufacturer setting	—
PC60, PC1060	Function selection C-D	*COPD
PC61 to PC72, PC1061 to PC1072	For manufacturer setting	—
PC73, PC1073	Error excessive warning level	ERW
PC74, PC1074	For manufacturer setting	—
PC75, PC1075	Following error output level	FEWL
PC76, PC1076	Following error output level	FEWH
PC77, PC1077	Following error output filtering time	FEWF
PC78 to PC80, PC1078 to PC1080	For manufacturer setting	—

I/O setting parameter ([MELSERVO-JE-*C])

Use an appropriate device according to the write destination of the servo amplifier.

- PD1 to PD48: Writing data to the RAM of a servo amplifier
- PD1001 to PD1048: Writing data to the EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

Device name	Name	Symbol
PD1, PD1001	Input signal automatic on selection 1	*DIA1
PD2 to PD4, PD1002 to PD1004	For manufacturer setting	—
PD5, PD1005	Input device selection 1L	*DI1L
PD6, PD1006	Input device selection 1M	*DI1M
PD7, PD1007	Input device selection 1H	*DI1H
PD8, PD1008	Input device selection 2L	*DI2L
PD9, PD1009	Input device selection 2M	*DI2M
PD10, PD1010	Input device selection 2H	*DI2H
PD11, PD1011	Input device selection 3L	*DI3L
PD12, PD1012	Input device selection 3M	*DI3M
PD13, PD1013	Input device selection 3H	*DI3H
PD14, PD1014	Input device selection 4L	*DI4L
PD15, PD1015	Input device selection 4M	*DI4M
PD16, PD1016	Input device selection 4H	*DI4H
PD17, PD1017	Input device selection 5L	*DI5L
PD18, PD1018	Input device selection 5M	*DI5M
PD19, PD1019	Input device selection 5H	*DI5H
PD20 to 22, PD1020 to PD1022	For manufacturer setting	—
PD23, PD1023	Input device selection 7L	*DI7L
PD24, PD1024	Input device selection 7M	*DI7M
PD25, PD1025	Input device selection 7H	*DI7H
PD26, PD1026	Input device selection 8L	*DI8L
PD27, PD1027	Input device selection 8M	*DI8M
PD28, PD1028	Input device selection 8H	*DI8H
PD29, PD1029	Output device selection 1	*DO1
PD30, PD1030	Output device selection 2	*DO2
PD31, PD1031	Output device selection 3	*DO3
PD32, PD1032	Output device selection 4	*DO4
PD33, PD1033	For manufacturer setting	—
PD34, PD1034	Input filter setting	*DIF
PD35, PD1035	Function selection D-1	*DOP1
PD36, PD1036	For manufacturer setting	—
PD37, PD1037	Function selection D-3	*DOP3
PD38, PD1038	Function selection D-4	*DOP4
PD39, PD1039	Function selection D-5	*DOP5
PD40 to PD48, PD1040 to PD1048	For manufacturer setting	—

Positioning control parameter ([MELSERVO-JE-*C])

Use an appropriate device according to the write destination of the servo amplifier.

- PT1 to PT80: Writing data to the RAM of a servo amplifier
- PT1001 to PT1080: Writing data to the EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

Device name	Name	Symbol
PT1, PT1001	Command mode selection	*CTY
PT2, PT1002	For manufacturer setting	—
PT3, PT1003	Feeding function selection	*FTY
PT4, PT1004	For manufacturer setting	—
PT5, PT1005	Home position return speed	ZRF
PT6, PT1006	Creep speed	CRF
PT7, PT1007	Home position shift distance	ZST
PT8, PT1008	For manufacturer setting	—
PT9, PT1009	Moving distance after proximity dog	DCT
PT10, PT1010	Stopper type home position return stopper time	ZTM
PT11, PT1011	Stopper type home position return torque limit value	ZTT
PT12 to PT14, PT1012 to PT1014	For manufacturer setting	—
PT15, PT1015	Software limit +	LMPL
PT16, PT1016	Software limit +	LMPH
PT17, PT1017	Software limit -	LMNL
PT18, PT1018	Software limit -	LMNH
PT19 to 25, PT1019 to PT1025	For manufacturer setting	—
PT26, PT1026	Function selection T-2	*TOP2
PT27 to 28, PT1027 to PT1028	For manufacturer setting	—
PT29, PT1029	Function selection T-3	*TOP3
PT30 to PT40, PT1030 to PT1040	For manufacturer setting	—
PT41, PT1041	Home position return inhibit function selection	ORP
PT42 to PT44, PT1042 to PT1044	For manufacturer setting	—
PT45, PT1045	Home position return method	HMM
PT46 to PT48, PT1046 to PT1048	For manufacturer setting	—
PT49, PT1049	Torque slope	TQS
PT50, PT1050	Profile speed command	PVC
PT51, PT1051	Maximum profile speed	MPVC
PT52, PT1052	Speed limit	VLMT
PT53 to 56, PT1053 to PT1056	For manufacturer setting	—
PT57, PT1057	Home position shift distance (extension parameter)	ZSTH
PT58, PT1058	Home position return position data (extension parameter)	*ZPSH
PT59, PT1059	Travel distance after proximity dog (extension parameter)	DCTH
PT60, PT1060	Function selection T-8	*TOP8
PT61, PT1061	Home position return acceleration time constant	HMA
PT62, PT1062	Home position return deceleration time constant	HMB
PT63, PT1063	Zero speed 2 level	ZSP2L
PT64, PT1064	Zero speed 2 filter time	ZSP2F
PT65, PT1065	In-position 2 output range	INP2R
PT66, PT1066	In-position 2 output filter time	INP2F
PT67, PT1067	Speed reached 2 output range	SA2R
PT68, PT1068	Speed reached 2 output filter time	SA2F
PT69 to 80, PT1069 to PT1080	For manufacturer setting	—

Network setting parameter ([MELSERVO-JE-*C])

Use an appropriate device according to the write destination of the servo amplifier.

- PN1 to PN48: Writing data to the RAM of a servo amplifier
- PN1001 to PN1048: Writing data to the EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

Device name	Name	Symbol
PN1, PN1001	For manufacturer setting	—
PN2, PN1002	Communication error detection time	CERT
PN3 to PN5, PN1003 to PN1005	For manufacturer setting	—
PN6, PN1006	Function selection N-1	NOP1
PN7, PN1007	For manufacturer setting	—
PN8, PN1008	Function selection N-2	NOP2
PN9, PN1009	For manufacturer setting	—
PN10, PN1010	Ethernet communication time-out selection	EIC
PN11, PN1011	IP address setting 1	*IPAD1
PN12, PN1012	IP address setting 2	*IPAD2
PN13, PN1013	IP address setting 3	*IPAD3
PN14, PN1014	IP address setting 4	*IPAD4
PN15, PN1015	Subnet mask setting 1	*SNMK1
PN16, PN1016	Subnet mask setting 2	*SNMK2
PN17, PN1017	Subnet mask setting 3	*SNMK3
PN18, PN1018	Subnet mask setting 4	*SNMK4
PN19, PN1019	Default gateway setting 1	*DGW1
PN20, PN1020	Default gateway setting 2	*DGW2
PN21, PN1021	Default gateway setting 3	*DGW3
PN22, PN1022	Default gateway setting 4	*DGW4
PN23, PN1023	Keepalive time	*KAA
PN24, PN1024	IP address filter 1	*IPAF1
PN25, PN1025	IP address filter 2	*IPAF2
PN26, PN1026	IP address filter 3	*IPAF3
PN27, PN1027	IP address filter 4	*IPAF4
PN28, PN1028	IP address filter 2 range specification	*IPFR2
PN29, PN1029	IP address filter 3 range specification	*IPFR3
PN30, PN1030	IP address filter 4 range specification	*IPFR4
PN31, PN1031	Operation specification IP address 1	*IPOA1
PN32, PN1032	Operation specification IP address 2	*IPOA2
PN33, PN1033	Operation specification IP address 3	*IPOA3
PN34, PN1034	Operation specification IP address 4	*IPOA4
PN35, PN1035	Operation specification IP address 3 range spec.	*IPOR3
PN36, PN1036	Operation specification IP address 4 range spec.	*IPOR4
PN37 to PN48, PN1037 to PN1048	For manufacturer setting	—

Status display ([MELSERVO-JE-*C])

Device name	Name	Symbol
ST0	Cumulative feedback pulses	—
ST1	Servo motor speed	—
ST2	Droop pulses	—
ST3	Cumulative command pulses	—
ST4	Command pulse frequency	—
ST5	Analog speed command voltage	—
ST6	Analog torque command voltage	—
ST7	Regenerative load ratio	—
ST8	Effective load ratio	—
ST9	Peak load ratio	—
ST10	Instantaneous torque	—
ST11	Within one-revolution position	—
ST12	ABS counter	—
ST13	Load inertia moment ratio	—
ST14	Bus voltage	—
ST15 to ST31	For manufacturer setting	—
ST32	Encoder inside temperature	—
ST33	Settling time	—
ST34	Oscillation detection frequency	—
ST35	Number of tough drive operations	—
ST36 to ST39	For manufacturer setting	—
ST40	Unit power consumption	—
ST41	Unit total power consumption	—
ST42	Current position	—
ST43	Command position	—
ST44	Command remaining distance	—
ST45 to ST48	For manufacturer setting	—

Extension setting No.2 parameter ([MELSERVO-JE-*C])

Use an appropriate device according to the write destination of the servo amplifier.

- PE1 to PE64: Writing data to the RAM of a servo amplifier
- PE1001 to PE1064: Writing data to the EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

Device name	Name	Symbol
PE1 to PE40, PE1001 to PE1040	For manufacturer setting	—
PE41, PE1041	Function selection E-3	EOP3
PE42 to PE43, PE1042 to PE1043	For manufacturer setting	—
PE44, PE1044	Lost motion compensation positive-side compensation value selection	LMCP
PE45, PE1045	Lost motion compensation negative-side compensation value selection	LMCN
PE46, PE1046	Lost motion filter setting	LMFLT
PE47, PE1047	Torque offset	TOF
PE48, PE1048	Lost motion compensation function selection	*LMOP
PE49, PE1049	Lost motion compensation timing	LMCD
PE50, PE1050	Lost motion compensation non-sensitive band	LMCT
PE51 to PE64, PE1051 to PE1064	For manufacturer setting	—

Extension setting No.3 parameter ([MELSERVO-JE-*C])

Use an appropriate device according to the write destination of the servo amplifier.

- PF1 to PF48: Writing data to the RAM of a servo amplifier
- PF1001 to PF1048: Writing data to the EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

Device name	Name	Symbol
PF1 to PF8, PF1001 to PF1008	For manufacturer setting	—
PF9, PF1009	Function selection F-5	*FOP5
PF10 to PF14, PF1010 to PF1014	For manufacturer setting	—
PF15, PF1015	Electronic dynamic brake operating time	DBT
PF16 to PF20, PF1016 to PF1020	For manufacturer setting	—
PF21, PF1021	Drive recorder switching time setting	DRT
PF22, PF1022	For manufacturer setting	—
PF23, PF1023	Vibration tough drive - Oscillation detection level	OSCL1
PF24, PF1024	Vibration tough drive function selection	OSCL2
PF25, PF1025	Instantaneous power failure tough drive - Detection time	CVAT
PF26 to PF30, PF1026 to PF1030	For manufacturer setting	—
PF31, PF1031	Machine diagnosis function - Friction judgment speed	FRIC
PF32 to PF48, PF1032 to PF1048	For manufacturer setting	—

Alarm (MELSERVO-J4-*A extended) ([MELSERVO-JE-*C])

Device name	Name	Symbol
ALM0	Current alarm number	—
ALM1	Detailed data of current alarms	—
ALM11	Servo status(alarm) Cumulative feedback pulses	—
ALM12	Servo status(alarm) Servo motor speed	—
ALM13	Servo status(alarm) Droop pulses	—
ALM14	Servo status(alarm) Cumulative command pulses	—
ALM15	Servo status(alarm) Command pulse frequency	—
ALM16	Servo status(alarm) Analog speed command voltage	—
ALM17	Servo status(alarm) Analog torque command voltage	—
ALM18	Servo status(alarm) Regenerative load ratio	—
ALM19	Servo status(alarm) Effective load ratio	—
ALM20	Servo status(alarm) Peak load ratio	—
ALM21	Servo status(alarm) Instantaneous torque	—
ALM22	Servo status(alarm) Within one-revolution position	—
ALM23	Servo status(alarm) ABS counter	—
ALM24	Servo status(alarm) Load inertia moment ratio	—
ALM25	Servo status(alarm) Bus voltage	—
ALM26 to ALM42	For manufacturer setting	—
ALM43	Servo status(alarm) Encoder inside temperature	—
ALM44	Servo status(alarm) Settling time	—
ALM45	Servo status(alarm) Oscillation detection frequency	—
ALM46	Servo status(alarm) Number of tough drive operations	—
ALM47 to ALM50	For manufacturer setting	—
ALM51	Servo status(alarm) Unit power consumption	—
ALM52	Servo status(alarm) Unit total power consumption	—
ALM53	Servo status(alarm) Current position	—

Device name	Name	Symbol
ALM54	Servo status(alarm) Command position	—
ALM55	Servo status(alarm) Command remaining distance	—
ALM56 to ALM59	For manufacturer setting	—
ALM200	Alarm number from Alarm History most recent alarm	—
ALM201	Alarm number from Alarm History 1st alarm in past	—
ALM202	Alarm number from Alarm History 2nd alarm in past	—
ALM203	Alarm number from Alarm History 3rd alarm in past	—
ALM204	Alarm number from Alarm History 4th alarm in past	—
ALM205	Alarm number from Alarm History 5th alarm in past	—
ALM206	Alarm number from Alarm History 6th alarm in past	—
ALM207	Alarm number from Alarm History 7th alarm in past	—
ALM208	Alarm number from Alarm History 8th alarm in past	—
ALM209	Alarm number from Alarm History 9th alarm in past	—
ALM210	Alarm number from Alarm History 10th alarm in past	—
ALM211	Alarm number from Alarm History 11th alarm in past	—
ALM212	Alarm number from Alarm History 12th alarm in past	—
ALM213	Alarm number from Alarm History 13th alarm in past	—
ALM214	Alarm number from Alarm History 14th alarm in past	—
ALM215	Alarm number from Alarm History 15th alarm in past	—
ALM220	Alarm occurrence time in alarm history most recent alarm	—
ALM221	Alarm occurrence time in alarm history 1st alarm in past	—
ALM222	Alarm occurrence time in alarm history 2nd alarm in past	—
ALM223	Alarm occurrence time in alarm history 3rd alarm in past	—
ALM224	Alarm occurrence time in alarm history 4th alarm in past	—
ALM225	Alarm occurrence time in alarm history 5th alarm in past	—
ALM226	Alarm occurrence time in alarm history 6th alarm in past	—
ALM227	Alarm occurrence time in alarm history 7th alarm in past	—
ALM228	Alarm occurrence time in alarm history 8th alarm in past	—
ALM229	Alarm occurrence time in alarm history 9th alarm in past	—
ALM230	Alarm occurrence time in alarm history 10th alarm in past	—
ALM231	Alarm occurrence time in alarm history 11th alarm in past	—
ALM232	Alarm occurrence time in alarm history 12th alarm in past	—
ALM233	Alarm occurrence time in alarm history 13th alarm in past	—
ALM234	Alarm occurrence time in alarm history 14th alarm in past	—
ALM235	Alarm occurrence time in alarm history 15th alarm in past	—
ALM240	Detailed alarm from Alarm History most recent alarm	—
ALM241	Detailed alarm from Alarm History 1st alarm in past	—
ALM242	Detailed alarm from Alarm History 2nd alarm in past	—
ALM243	Detailed alarm from Alarm History 3rd alarm in past	—
ALM244	Detailed alarm from Alarm History 4th alarm in past	—
ALM245	Detailed alarm from Alarm History 5th alarm in past	—
ALM246	Detailed alarm from Alarm History 6th alarm in past	—
ALM247	Detailed alarm from Alarm History 7th alarm in past	—
ALM248	Detailed alarm from Alarm History 8th alarm in past	—
ALM249	Detailed alarm from Alarm History 9th alarm in past	—
ALM250	Detailed alarm from Alarm History 10th alarm in past	—
ALM251	Detailed alarm from Alarm History 11th alarm in past	—
ALM252	Detailed alarm from Alarm History 12th alarm in past	—
ALM253	Detailed alarm from Alarm History 13th alarm in past	—
ALM254	Detailed alarm from Alarm History 14th alarm in past	—
ALM255	Detailed alarm from Alarm History 15th alarm in past	—

Machine diagnosis data ([MELSERVO-JE-*C])

Virtual device name	Name	Symbol
MD0	Machine diagnosis data parameter number	—
MD1	Machine diagnosis data shift judgment (test mode)	—
MD2*1	Machine diagnosis data status	—
MD3*2	Machine diagnosis data coulomb friction torque in positive direction	—
MD4*2	Machine diagnosis data friction torque at rated speed in positive direction	—
MD5*2	Machine diagnosis data coulomb friction torque in negative direction	—
MD6*2	Machine diagnosis data friction torque at rated speed in negative direction	—
MD7*2	Machine diagnosis data oscillation frequency (motor is stopped)	—
MD8*2	Machine diagnosis data vibration level (motor is stopped)	—
MD9*2	Machine diagnosis data oscillation frequency (motor is operating)	—
MD10*2	Machine diagnosis data vibration level (motor is operating)	—
MD11	Machine diagnosis data, rated speed at forward or reverse rotation torque	—

*1 While the servo amplifier is estimating the corresponding machine status in the machine diagnosis, do not write data to the parameters of the servo amplifier from another GOT.
Doing so may cause the servo amplifier to malfunction.

*2 When MD2 indicates that the servo amplifier does not complete the machine diagnosis (is estimating or warning of the machine status), do not monitor MD3 to MD6 (friction states) and MD7 to MD10 (vibration/oscillation states).
To start monitoring those devices upon the estimation completion, set [Trigger] in the applicable object settings.

One-touch tuning data ([MELSERVO-JE-*C])

Virtual device name	Name	Symbol
OTS0	One-touch tuning status confirmation	—
OTS1	Error code list	—
OTS2	Settling time	—
OTS3	Overshoot amount	—

External input signal ([MELSERVO-JE-*C])

Virtual device name	Name	Symbol	Data to be read from the servo amplifier
DI0	Input device statuses	—	System information
DI1	Input device statuses	—	
DI2	Input device statuses	—	
DI3	External input pin statuses	—	The statuses of the listed input devices are assigned to the bits in order from bit 0 and read. For details on the input devices, refer to the following. MR-JE-_C Servo Amplifier Instruction Manual
DI4	Statuses of input devices switched on through communication	—	System information
DI5	Statuses of input devices switched on through communication	—	
DI6	Statuses of input devices switched on through communication	—	

External output signal ([MELSERVO-JE-*C])

Virtual device name	Name	Symbol	Data to be read from the servo amplifier
DO0	Output device statuses	—	System information
DO1	Output device statuses	—	
DO2	Output device statuses	—	
DO4	External output pin statuses	—	The statuses of the listed output devices are assigned to the bits in order from bit 0 and read. For details on the output devices, refer to the following. MR-JE-_C Servo Amplifier Instruction Manual

Current position latch data ([MELSERVO-JE-*C])

Virtual device name	Name	Symbol
LD0	Position data unit	—
LD1	Current position latch data	—

Value of the general-purpose register (Rx) ([MELSERVO-JE-*C])

Use an appropriate device according to the write destination of the servo amplifier.

- RR1 to RR4: Writing data to the RAM of a servo amplifier
- RR1001 to RR1004: Writing data to the EEPROM of a servo amplifier

Virtual device name	Name	Symbol
RR1, RR1001	Value of the general-purpose register (R1)	—
RR2, RR1002	Value of the general-purpose register (R2)	—
RR3, RR1003	Value of the general-purpose register (R3)	—
RR4, RR1004	Value of the general-purpose register (R4)	—

Value of the general-purpose register (Dx) ([MELSERVO-JE-*C])

Virtual device name	Name	Symbol
RD1	Value of the general-purpose register (D1)	—
RD2	Value of the general-purpose register (D2)	—
RD3	Value of the general-purpose register (D3)	—
RD4	Value of the general-purpose register (D4)	—

Life diagnosis ([MELSERVO-JE-*C])

Virtual device name	Name	Symbol
ALD0	Cumulative power-on time	—
ALD1	Number of inrush current switching times	—

Input signal for test operation (for test operation) ([MELSERVO-JE-*C])

Virtual device name	Name	Symbol
TMI0	Input signal for test operation 1	—
TMI1	Input signal for test operation 2	—
TMI2	Input signal for test operation 3	—

When using the input signal for test operation (for test operation), note the following.

Precautions	Description
Writing a value to a virtual device using an object	Numerical input cannot be used. Use a word switch for writing.

Forced output of signal pin (for test operation) ([MELSERVO-JE-*C])

Virtual device name	Name	Symbol
TMO0	Forced output of signal pin	—

When using the forced output of signal pin (for test operation), note the following.

Precautions	Description
Writing a value to a virtual device using an object	Numerical input cannot be used. Use a word switch for writing.

Set data (for test operation) ([MELSERVO-JE-*C])

Virtual device name	Name	Symbol
TMD0	Writes the speed (test mode)	—
TMD1	Writes the acceleration/deceleration time constant (test mode)	—
TMD3	Writes the moving distance (test mode)	—

When using the set data (for test operation), note the following.

Precautions	Description
Writing a value to a virtual device using an object	Numerical input cannot be used. Use a word switch for writing.

97.15.8 Precautions for virtual servo amplifier devices ([MELSERVO-JE-*C])

For the precautions for virtual servo amplifier devices, refer to the following.

☞ Page 3241 Precautions for virtual servo amplifier devices ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

97.16 [MELSERVO-J5(W)-*G(-RJ), -JET-*G]

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Item	Reference
Specifications of bit devices	☞ Page 3418 Monitoring-supported bit devices ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
	☞ Page 3420 Availability of writing/reading data to/from bit devices ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
Specifications of word devices	☞ Page 3421 Monitoring-supported word devices ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
	☞ Page 3424 Availability of writing/reading data to/from word devices ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
Specifications of double-word devices	☞ Page 3425 Monitoring-supported double-word devices ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
	☞ Page 3425 Availability of writing/reading data to/from double-word devices ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
Specifications of virtual servo amplifier devices	☞ Page 3426 Virtual servo amplifier devices ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
	☞ Page 3456 Precautions for virtual servo amplifier devices ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

97.16.1 Monitoring-supported bit devices ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

The following table shows monitoring-supported virtual bit devices for servo amplifiers.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3420 Availability of writing/reading data to/from bit devices ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

For details on virtual servo amplifier devices, refer to the following.

☞ Page 3426 Virtual servo amplifier devices ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

○: Available

×: Not available

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
SP	Servo amplifier request	Decimal	AA(Axis designation)-SP(Device) Notation example: AA3-SP0 • Axis designation: 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 6	×	×
OM	Operation mode selection	Decimal	AA(Axis designation)-OM(Device) Notation example: AA3-OM0 • Axis designation: 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 2, 4 to 5	×	×
TMB	Instruction demand (for test operation)	Decimal	AA(Axis designation)-TMB(Device) Notation example: AA3-TMB1 • Axis designation: 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 6	×	×
OTI	One-touch tuning instruction	Decimal	AA(Axis designation)-OTI(Device) Notation example: AA3-OTI0 • Axis designation: 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5	×	×
GFDI	Gear failure diagnosis instruction	Decimal	AA(Axis designation)-GFDI(Device) Notation example: AA3-GFDI0 • Axis designation: 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1	×	×
ECCDI	Encoder communication circuit diagnosis instruction	Decimal	AA(Axis designation)-ECCDI(Device) Notation example: AA3-ECCDI0 • Axis designation: 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
☞ Page 2868 Monitoring a controller through the GOT (server/client function)

For indirect specification of an axis designation, refer to the following.

☞ Page 3172 Indirect specification of an axis number or axis designation ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

97.16.2 Availability of writing/reading data to/from bit devices ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

The following shows the availability of writing/reading data to/from bit devices by device type.

When the device type is other than the bit type, set the device No. in multiples of 16.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type				
	Bit	Byte (8 bits)	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)
SP	-/W	-/-	-/-	-/-	-/-
OM	-/W	-/-	-/-	-/-	-/-
TMB	-/W	-/-	-/-	-/-	-/-
OTI	-/W	-/-	-/-	-/-	-/-
GFDI	-/W	-/-	-/-	-/-	-/-
ECCDI	-/W	-/-	-/-	-/-	-/-

97.16.3 Monitoring-supported word devices ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

The following table shows monitoring-supported virtual word devices for servo amplifiers.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3424 Availability of writing/reading data to/from word devices ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

For details on virtual servo amplifier devices, refer to the following.

☞ Page 3426 Virtual servo amplifier devices ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

○: Available

×: Not available

Device name		Device No. representation	Setting range	EG device specifications[*1]	
				Assignment to EG devices	Access using a client
PA	Basic parameter	Decimal	AA(Axis designation)-PA(Device) Notation example: AA3-PA1 • Axis designation: 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 44, 1001 to 1044	×	×
PB	Gain filter parameter	Decimal	AA(Axis designation)-PB(Device) Notation example: AA3-PB1 • Axis designation: 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 92, 1001 to 1092	×	×
PC	Extension setting parameter	Decimal	AA(Axis designation)-PC(Device) Notation example: AA3-PC1 • Axis designation: 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 90, 1001 to 1090	×	×
PD	I/O setting parameter	Decimal	AA(Axis designation)-PD(Device) Notation example: AA3-PD1 • Axis designation: 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 72, 1001 to 1072	×	×
PT	Positioning control parameter	Decimal	AA(Axis designation)-PT(Device) Notation example: AA3-PT1 • Axis designation: 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 90, 1001 to 1090	×	×
PN	Network setting parameter	Decimal	AA(Axis designation)-PN(Device) Notation example: AA3-PN1 • Axis designation: 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 32, 1001 to 1032	×	×
ST	Status display	Decimal	AA(Axis designation)-ST(Device) Notation example: AA3-ST0 • Axis designation: 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 48	×	×
PE	Extension setting No.2 parameter	Decimal	AA(Axis designation)-PE(Device) Notation example: AA3-PE1 • Axis designation: 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 88, 1001 to 1088	×	×
PF	Extension setting No.3 parameter	Decimal	AA(Axis designation)-PF(Device) Notation example: AA3-PF1 • Axis designation: 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 99, 1001 to 1099	×	×
ALM	Alarm (Current alarm)	Decimal	AA(Axis designation)-ALM(Device) Notation example: AA3-ALM0 • Axis designation: 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 2, 11 to 59	×	×

Device name		Device No. representation	Setting range	EG device specifications[*1]	
				Assignment to EG devices	Access using a client
ALM	Alarm (Alarm history)	Decimal	AA(Axis designation)-ALM(Device) Notation example: AA3-ALM200 • Axis designation: 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 200 to 215, 220 to 235, 240 to 255, 260 to 275, 280 to 295, 300 to 315	×	×
POS	Point table (position)	Decimal	AA(Axis designation)-POS(Device) Notation example: AA3-POS1 • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 255, 1001 to 1255	×	×
SPD	Point table (speed)	Decimal	AA(Axis designation)-SPD(Device) Notation example: AA3-SPD1 • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 255, 1001 to 1255	×	×
ACT	Point table (acceleration time constant)	Decimal	AA(Axis designation)-ACT(Device) Notation example: AA3-ACT1 • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 255, 1001 to 1255	×	×
DCT	Point table (deceleration time constant)	Decimal	AA(Axis designation)-DCT(Device) Notation example: AA3-DCT1 • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 255, 1001 to 1255	×	×
DWL	Point table (dwell)	Decimal	AA(Axis designation)-DWL(Device) Notation example: AA3-DWL1 • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 255, 1001 to 1255	×	×
AUX	Point table (auxiliary function)	Decimal	AA(Axis designation)-AUX(Device) Notation example: AA3-AUX1 • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 255, 1001 to 1255	×	×
MCD	Point table (M code)	Decimal	AA(Axis designation)-MCD(Device) Notation example: AA3-MCD1 • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 255, 1001 to 1255	×	×
MD	Machine diagnosis data	Decimal	AA(Axis designation)-MD(Device) Notation example: AA3-MD0 • Axis designation: 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 21	×	×
OTS	One-touch tuning data	Decimal	AA(Axis designation)-OTS(Device) Notation example: AA3-OTS0 • Axis designation: 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5, 3000	×	×
DI	External input signal	Decimal	AA(Axis designation)-DI(Device) Notation example: AA3-DI0 • Axis designation: 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 6	×	×
DO	External output signal	Decimal	AA(Axis designation)-DO(Device) Notation example: AA3-DO0 • Axis designation: 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 4	×	×

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
PO	Option unit parameter	Decimal	AA(Axis designation)-PO(Device) Notation example: AA3-PO1 • Axis designation: 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 2, 1001 to 1002	×	×
PS	Special parameter	Decimal	AA(Axis designation)-PS(Device) Notation example: AA3-PS1 • Axis designation: 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 99, 1001 to 1099	×	×
PL*2	Motor extension parameter	Decimal	AA(Axis designation)-PL(Device) Notation example: AA3-PL1 • Axis designation: 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 72, 1001 to 1072	×	×
	Linear servo motor/DD motor setting parameter			×	×
PU	Multi encoder parameter	Decimal	AA(Axis designation)-PU(Device) Notation example: AA3-PU1 • Axis designation: 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 44, 1001 to 1044	×	×
PVS	Positioning extension parameter	Decimal	AA(Axis designation)-PVS(Device) Notation example: AA3-PVS1 • Axis designation: 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 32, 1001 to 1032	×	×
NPA	Network basic parameter	Decimal	1 to 12 2001 to 2032	×	×
GFDS	Gear failure diagnosis data	Decimal	AA(Axis designation)-GFDS(Device) Notation example: AA3-GFDS0 • Axis designation: 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5	×	×
ECCDS	Encoder communication circuit diagnosis data	Decimal	AA(Axis designation)-ECCDS(Device) Notation example: AA3-ECCDS0 • Axis designation: 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
☞ Page 2868 Monitoring a controller through the GOT (server/client function)

*2 The device name depends on the servo amplifier.
MR-J5-G(-RJ) or MR-J5W□-G: Motor extension setting parameter
Other than MR-J5-G(-RJ) or MR-J5W□-G: Linear servo motor/DD motor setting parameter

For indirect specification of an axis designation, refer to the following.

☞ Page 3172 Indirect specification of an axis number or axis designation ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

97.16.4 Availability of writing/reading data to/from word devices ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

The following shows the availability of writing/reading data to/from word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data
PA	R/W	R/W	-/-	-/-
PB	R/W	R/W	-/-	-/-
PC	R/W	R/W	-/-	-/-
PD	R/W	R/W	-/-	-/-
PT	R/W	R/W	-/-	-/-
PN	R/W	R/W	-/-	-/-
ST	R/-	R/-	-/-	-/-
PE	R/W	R/W	-/-	-/-
PF	R/W	R/W	-/-	-/-
ALM	R/-	R/-	-/-	-/-
POS	R/W	R/W	-/-	-/-
SPD	R/W	R/W	-/-	-/-
ACT	R/W	R/W	-/-	-/-
DCT	R/W	R/W	-/-	-/-
DWL	R/W	R/W	-/-	-/-
AUX	R/W	R/W	-/-	-/-
MCD	R/W	R/W	-/-	-/-
MD	R/-	R/-	-/-	-/-
OTS*1	R/W	R/W	-/-	-/-
DI*2	R/-	R/W	-/-	-/-
DO	R/-	R/-	-/-	-/-
PO	R/W	R/W	-/-	-/-
PS	R/W	R/W	-/-	-/-
PL	R/W	R/W	-/-	-/-
PU	R/W	R/W	-/-	-/-
PVS	R/W	R/W	-/-	-/-
NPA*3	R/W	R/W	-/-	-/-
GFDS	R/-	R/-	-/-	-/-
ECCDS	R/-	R/-	-/-	-/-

*1 Only reading is available for OTS0 to OTS5.

*2 Only reading is available for DI0 to DI3.

*3 Only reading is available for NPA1, NPA8, and NPA2001 to NPA2032.

97.16.5 Monitoring-supported double-word devices ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

The following table shows monitoring-supported virtual double-word devices for servo amplifiers.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3425 Availability of writing/reading data to/from double-word devices ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

For details on virtual servo amplifier devices, refer to the following.

☞ Page 3426 Virtual servo amplifier devices ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

○: Available

×: Not available

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
ALD	Life diagnosis	Decimal	AA(Axis designation)-ALD(Device) Notation example: AA3-ALD0 • Axis designation: 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1	×	×
TMI	Input signal for test operation (for test operation)	Decimal	AA(Axis designation)-TMI(Device) Notation example: AA3-TMI0 • Axis designation: 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 2	×	×
TMO	Forced output of signal pin (for test operation)	Decimal	AA(Axis designation)-TMO(Device) Notation example: AA3-TMO0 • Axis designation: 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0	×	×
TMD	Set data (for test operation)	Decimal	AA(Axis designation)-TMD(Device) Notation example: AA3-TMD0 • Axis designation: 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1, 3	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.

☞ Page 2868 Monitoring a controller through the GOT (server/client function)

For indirect specification of an axis designation, refer to the following.

☞ Page 3172 Indirect specification of an axis number or axis designation ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

97.16.6 Availability of writing/reading data to/from double-word devices ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

The following shows the availability of writing/reading data to/from double-word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data
ALD	-/-	R/-	-/-	-/-
TMI	-/-	-/W	-/-	-/-
TMO	-/-	-/W	-/-	-/-
TMD	-/-	-/W	-/-	-/-

97.16.7 Virtual servo amplifier devices ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

The following shows the correspondence between the virtual devices used in the GOT and the servo amplifier data.

Virtual device name	Reference
SP	☞ Page 3427 Servo amplifier request ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
OM	☞ Page 3427 Operation mode selection ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
TMB	☞ Page 3427 Instruction demand (for test operation) ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
OTI	☞ Page 3428 One-touch tuning instruction ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
GFDI	☞ Page 3428 Gear failure diagnosis instruction ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
ECCDI	☞ Page 3428 Encoder communication circuit diagnosis instruction ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
PA	☞ Page 3429 Basic setting parameter ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
PB	☞ Page 3430 Gain filter parameter ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
PC	☞ Page 3432 Extension setting parameter ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
PD	☞ Page 3433 I/O setting parameter ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
PT	☞ Page 3435 Positioning control parameters ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
PN	☞ Page 3437 Network setting parameters ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
ST	☞ Page 3438 Status display ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
PE	☞ Page 3439 Extension setting No.2 parameter ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
PF	☞ Page 3440 Extension setting No.3 parameter ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
ALM	☞ Page 3442 Alarm ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
	☞ Page 3446 Specifications of ALM260 to ALM275, ALM280 to ALM295, and ALM300 to ALM315 ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
POS	☞ Page 3446 Point table (position) ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
SPD	☞ Page 3446 Point table (speed) ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
ACT	☞ Page 3447 Point table (acceleration time constant) ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
DCT	☞ Page 3447 Point table (deceleration time constant) ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
DWL	☞ Page 3447 Point table (dwell) ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
AUX	☞ Page 3447 Point table (auxiliary function) ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
MCD	☞ Page 3448 Point table (M code) ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
MD	☞ Page 3448 Machine diagnosis data ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
OTS	☞ Page 3449 One-touch tuning data ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
DI	☞ Page 3449 External input signal in MR-J5-G(-RJ) and MR-J5W□-G ([MELSERVO-J5(W)-*G(-RJ), -JET-*G]) ☞ Page 3450 External input signal in MR-J5D□-G ([MELSERVO-J5(W)-*G(-RJ), -JET-*G]) ☞ Page 3450 External input signal in MR-JET-G ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
DO	☞ Page 3450 External output signal in MR-J5-G(-RJ) and MR-J5W□-G ([MELSERVO-J5(W)-*G(-RJ), -JET-*G]) ☞ Page 3451 External output signal in MR-J5D□-G ([MELSERVO-J5(W)-*G(-RJ), -JET-*G]) ☞ Page 3451 External output signal in MR-JET-G ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
PO	☞ Page 3451 Option unit parameter ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
PS	☞ Page 3451 Special parameter ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
PL	☞ Page 3452 Linear servo motor/DD motor setting parameters ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
PU	☞ Page 3452 Multi encoder parameter ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
PVS	☞ Page 3453 Positioning control parameters ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
NPA	☞ Page 3454 Network basic parameter ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
GFDS	☞ Page 3454 Gear failure diagnosis data ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
ECCDS	☞ Page 3454 Encoder communication circuit diagnosis data ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
ALD	☞ Page 3455 Life Diagnosis ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
TMI	☞ Page 3455 Input signal for test operation (for test operation) ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
TMO	☞ Page 3455 Forced output of signal pin (for test operation) ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
TMD	☞ Page 3455 Set data (for test operation) ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

Servo amplifier request ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
SP0	Status display data clear	—	○	○	○
SP1	Current alarm clear	—	○	○	○
SP2	Alarm history clear	—	○	○	○
SP3	External input signal prohibited	—	○	○	○
SP4	External output signal prohibited	—	○	○	○
SP5	External input signal resumed	—	○	○	○
SP6	External output signal resumed	—	○	○	○

When using the servo amplifier request, note the following.

Precautions	Description
When setting a device for a bit switch	Do not select [Alternate] for [Switch Action] of the bit switch.

Operation mode selection ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
OM0	Cancel test operation mode	—	○	○	○
OM1	JOG operation	—	○	○	○
OM2	Positioning operation	—	○	○	○
OM4	Output signal (DO) forced output	—	○	○	○
OM5	Single-step feed operation	—	○	○	○

When using the operation mode selection, note the following.

Precautions	Description
When setting a device for a bit switch	Do not select [Alternate] for [Switch Action] of the bit switch.

Instruction demand (for test operation) ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
TMB1	Pause	—	○	○	○
TMB2	Test operation (positioning operation) start command	—	○	○	○
TMB3	Forward rotation direction	—	○	○	○
TMB4	Reverse rotation direction	—	○	○	○
TMB5	Restart for remaining distance	—	○	○	○
TMB6	Remaining distance clear	—	○	○	○

When using the instruction demand (for test operation), note the following.

Precautions	Description
When setting a device for a bit switch	Do not select [Alternate] for [Switch Action] of the bit switch.

One-touch tuning instruction ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
OTI0	One-touch tuning start command (Basic mode)	—	○	○	○
OTI1	One-touch tuning start command (High mode)	—	○	○	○
OTI2	One-touch tuning start command (Low mode)	—	○	○	○
OTI3	One-touch tuning stop command	—	○	○	○
OTI4	Return to initial value	—	○	○	○
OTI5	Return to value before adjustment	—	○	○	○

When using the one-touch tuning instruction, note the following.

Precautions	Description
When setting a device for a bit switch	Do not select [Alternate] for [Switch Action] of the bit switch.

Gear failure diagnosis instruction ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
GFDI0	Backlash estimation start command	—	○	—	○
GFDI1	Backlash estimation stop command	—	○	—	○

When using the gear failure diagnosis instruction, note the following.

Precautions	Description
When setting a device for a bit switch	Do not select [Alternate] for [Switch Action] of the bit switch.

Encoder communication circuit diagnosis instruction ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
ECCDI0	CN2 encoder communication circuit diagnosis start command	—	○	○	○
ECCDI1	CN2L encoder communication circuit diagnosis start command	—	○	○	○

When using the encoder communication circuit diagnosis instruction, note the following.

Precautions	Description
When setting a device for a bit switch	Do not select [Alternate] for [Switch Action] of the bit switch.

Basic setting parameter ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

Use an appropriate device according to the write destination of the servo amplifier.

- PA1 to PA44: Writing data to the RAM of a servo amplifier
- PA1001 to PA1044: Writing data to the FlashROM or EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
PA1, PA1001	Operation mode	**STY	○	—	○
PA2, PA1002	Regenerative brake option	**REG	○	○	○
PA3, PA1003	Absolute position detection system	*ABS	○	○	○
PA4, PA1004	Function selection A-1	*AOP1	○	○	○
PA5, PA1005	For manufacturer setting	—	—	—	—
PA6, PA1006	Electronic gear numerator	*CMX	○	○	○
PA7, PA1007	Electronic gear denominator	*CDV	○	○	○
PA8, PA1008	Auto tuning mode	ATU	○	○	○
PA9, PA1009	Auto tuning response	RSP	○	○	○
PA10, PA1010	In-position range	INP	○	○	○
PA11, PA1011	Forward rotation torque limit/positive direction thrust limit	TLP	○	○	○
PA12, PA1012	Reverse rotation torque limit/negative direction thrust limit	TLN	○	○	○
PA13, PA1013	For manufacturer setting	—	—	—	—
PA14, PA1014	Rotation direction selection/travel direction selection	*POL	○	○	○
PA15, PA1015	Encoder output pulses	*ENR	○	—	○
PA16, PA1016	Encoder output pulses 2	*ENR2	○	—	○
PA17, PA1017	Servo motor series setting	**MSR	○	—	○
PA18, PA1018	Servo motor type setting	**MTY	○	—	○
PA19, PA1019	Parameter block	*BLK	○	○	○
PA20, PA1020	Tough drive setting	*TDS	○	○	○
PA21, PA1021	Function selection A-3	*AOP3	○	○	○
PA22, PA1022	Position control composition selection	**PCS	○	○	○
PA23, PA1023	Drive recorder arbitrary alarm trigger setting	DRAT	○	○	○
PA24, PA1024	Function selection A-4	AOP4	○	○	○
PA25, PA1025	One-touch tuning - Overshoot permissible level	OTHOV	○	○	○
PA26, PA1026	Function selection A-5	*AOP5	○	○	○
PA27, PA1027	For manufacturer setting	—	—	—	—
PA28, PA1028	Function selection A-6	**AOP6	○	○	○
PA29 to PA33, PA1029 to PA1033	For manufacturer setting	—	—	—	—
PA34, PA1034	Quick tuning permissible travel distance	QDIS	○	○	○
PA35 to PA44, PA1035 to PA1044	For manufacturer setting	—	—	—	—

Gain filter parameter ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

Use an appropriate device according to the write destination of the servo amplifier.

- PB1 to PB92: Writing data to the RAM of a servo amplifier
- PB1001 to PB1092: Writing data to the FlashROM or EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
PB1, PB1001	Adaptive tuning mode (Adaptive filter II)	FILT	○	○	○
PB2, PB1002	Vib. supp. ctrl tuning mode (Adv. vib. supp. ctrl II)	VRFT	○	○	○
PB3, PB1003	Torque feedback loop gain	TFBGN	○	—	○
PB4, PB1004	Feed forward gain	FFC	○	○	○
PB5, PB1005	For manufacturer setting	—	—	—	—
PB6, PB1006	Load to motor inertia ratio/load to motor mass ratio	GD2	○	○	○
PB7, PB1007	Model control gain	PG1	○	○	○
PB8, PB1008	Position control gain	PG2	○	○	○
PB9, PB1009	Speed control gain	VG2	○	○	○
PB10, PB1010	Speed integral compensation	VIC	○	○	○
PB11, PB1011	Speed differential compensation	VDC	○	○	○
PB12, PB1012	Overshoot amount compensation	OVA	○	○	○
PB13, PB1013	Machine resonance suppression filter 1	NH1	○	○	○
PB14, PB1014	Notch shape selection 1	NHQ1	○	○	○
PB15, PB1015	Machine resonance suppression filter 2	NH2	○	○	○
PB16, PB1016	Notch shape selection 2	NHQ2	○	○	○
PB17, PB1017	Shaft resonance suppression filter	NHF	○	○	○
PB18, PB1018	Low-pass filter setting	LPF	○	○	○
PB19, PB1019	Vibration suppression control 1 - Vibration frequency	VRF11	○	○	○
PB20, PB1020	Vibration suppression control 1 - Resonance frequency	VRF12	○	○	○
PB21, PB1021	Vibration suppression control 1 - Vibration frequency damping	VRF13	○	○	○
PB22, PB1022	Vibration suppression control 1 - Resonance frequency damping	VRF14	○	○	○
PB23, PB1023	Low-pass filter setting	VFBF	○	○	○
PB24, PB1024	Slight vibration suppression control	*MVS	○	○	○
PB25, PB1025	Function selection B-1	*BOP1	○	○	○
PB26, PB1026	Gain switching function	*CDP	○	○	○
PB27, PB1027	Gain switching condition	CDL	○	○	○
PB28, PB1028	Gain switching time constant	CDT	○	○	○
PB29, PB1029	Gain changing - Load in. mom. rat./Load mass rat.	GD2B	○	○	○
PB30, PB1030	Position loop gain after gain switching	PG2B	○	○	○
PB31, PB1031	Speed loop gain after gain switching	VG2B	○	○	○
PB32, PB1032	Speed integral compensation after gain switching	VICB	○	○	○
PB33, PB1033	Vibration suppression control 1 - Vibration frequency after gain switching	VRF11B	○	○	○
PB34, PB1034	Vibration suppression control 1 - Resonance frequency after gain switching	VRF12B	○	○	○
PB35, PB1035	Vibration suppression control 1 - Vibration frequency damping after gain switching	VRF13B	○	○	○

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
PB36, PB1036	Vibration suppression control 1 - Resonance frequency damping after gain switching	VRF14B	○	○	○
PB37 to PB44, PB1037 to PB1044	For manufacturer setting	—	—	—	—
PB45, PB1045	Command notch filter	CNHF	○	○	○
PB46, PB1046	Machine resonance suppression filter 3	NH3	○	○	○
PB47, PB1047	Notch shape selection 3	NHQ3	○	○	○
PB48, PB1048	Machine resonance suppression filter 4	NH4	○	○	○
PB49, PB1049	Notch shape selection 4	NHQ4	○	○	○
PB50, PB1050	Machine resonance suppression filter 5	NH5	○	○	○
PB51, PB1051	Notch shape selection 5	NHQ5	○	○	○
PB52, PB1052	Vibration suppression control 2 - Vibration frequency	VRF21	○	○	○
PB53, PB1053	Vibration suppression control 2 - Resonance frequency	VRF22	○	○	○
PB54, PB1054	Vibration suppression control 2 - Vibration frequency damping	VRF23	○	○	○
PB55, PB1055	Vibration suppression control 2 - Resonance frequency damping	VRF24	○	○	○
PB56, PB1056	Vibration suppression control 2 - Vibration frequency after gain switching	VRF21B	○	○	○
PB57, PB1057	Vibration suppression control 2 - Resonance frequency after gain switching	VRF22B	○	○	○
PB58, PB1058	Vibration suppression control 2 - Vibration frequency damping after gain switching	VRF23B	○	○	○
PB59, PB1059	Vibration suppression control 2 - Resonance frequency damping after gain switching	VRF24B	○	○	○
PB60, PB1060	Model loop gain after gain switching	PG1B	○	○	○
PB61 to PB64, PB1061 to PB1064	For manufacturer setting	—	—	—	—
PB65, PB1065	Gain changing 2 condition	CDL2	○	○	○
PB66, PB1066	Gain changing 2 time constant	CDT2	○	○	○
PB67, PB1067	Gain changing 2 - Load in. mom. rat./Load mass rat.	GD2C	○	○	○
PB68, PB1068	Gain changing 2 position loop gain	PG2C	○	○	○
PB69, PB1069	Gain changing 2 speed loop gain	VG2C	○	○	○
PB70, PB1070	Gain changing 2 speed integral compensation	VICC	○	○	○
PB71, PB1071	Vib. supp. ctrl. 1 - Vib. frq. after gain changing 2	VRF11C	○	○	○
PB72, PB1072	Vib. supp. ctrl. 1 - Res. frq. after gain changing 2	VRF12C	○	○	○
PB73, PB1073	Vib. supp. ctrl. 1 - Vib. frq. damping aft. gain chng2	VRF13C	○	○	○
PB74, PB1074	Vib. supp. ctrl. 1 - Res. frq. damping aft. gain chng2	VRF14C	○	○	○
PB75, PB1075	Vib. supp. ctrl. 2 - Vib. frq. after gain changing 2	VRF21C	○	○	○
PB76, PB1076	Vib. supp. ctrl. 2 - Res. frq. after gain changing 2	VRF22C	○	○	○
PB77, PB1077	Vib. supp. ctrl. 2 - Vib. frq. damping aft. gain chng2	VRF23C	○	○	○
PB78, PB1078	Vib. supp. ctrl. 2 - Res. frq. damping aft. gain chng2	VRF24C	○	○	○
PB79, PB1079	Gain changing 2 model loop gain	PG1C	○	○	○
PB80, PB1080	For manufacturer setting	—	—	—	—
PB81, PB1081	Command filter	*CFIL	○	○	○
PB82, PB1082	Position command smoothing filter time constant	PFT	○	○	○
PB83 to PB92, PB1083 to PB1092	For manufacturer setting	—	—	—	—

Extension setting parameter ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

Use an appropriate device according to the write destination of the servo amplifier.

- PC1 to PC90: Writing data to the RAM of a servo amplifier
- PC1001 to PC1090: Writing data to the FlashROM or EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
PC1, PC1001	Error excessive alarm level	ERZ	○	○	○
PC2, PC1002	Electromagnetic brake sequence output	MBR	○	○	○
PC3, PC1003	Encoder output pulse selection	*ENRS	○	—	○
PC4, PC1004	Function selection C-1	**COP1	○	○	○
PC5, PC1005	Function selection C-2	**COP2	○	○	○
PC6, PC1006	Function selection C-3	*COP3	○	○	○
PC7, PC1007	Zero speed	ZSP	○	○	○
PC8, PC1008	Overspeed alarm detection level	OSL	○	○	○
PC9, PC1009	Analog monitor 1 output	MOD1	○	—	○
PC10, PC1010	Analog monitor 2 output	MOD2	○	—	○
PC11, PC1011	Analog monitor 1 offset	MO1	○	—	○
PC12, PC1012	Analog monitor 2 offset	MO2	○	—	○
PC13 to PC15, PC1013 to PC1015	For manufacturer setting	—	—	—	—
PC16, PC1016	Function selection C-3A	*COP3A	○	—	○
PC17, PC1017	Function selection C-4	**COP4	○	—	○
PC18, PC1018	Function selection C-5	*COP5	○	—	—
PC19, PC1019	Function selection C-6	*COP6	○	○	○
PC20, PC1020	Function selection C-7	*COP7	○	○	○
PC21, PC1021	Alarm history clear	*BPS	○	○	○
PC22 to PC23, PC1022 to PC1023	For manufacturer setting	—	—	—	—
PC24, PC1024	Forced stop deceleration time constant	RSBR	○	○	○
PC25, PC1025	For manufacturer setting	—	—	—	—
PC26, PC1026	Function selection C-8	**COP8	○	—	○
PC27, PC1027	Function selection C-9	**COP9	○	○	○
PC28, PC1028	For manufacturer setting	—	—	—	—
PC29, PC1029	Function selection C-B	*COPB	○	○	○
PC30, PC1030	For manufacturer setting	—	—	—	—
PC31, PC1031	Vertical ax.freefall prevention compensation amount	RSUP1	○	○	○
PC32 to PC37, PC1032 to PC1037	For manufacturer setting	—	—	—	—
PC38, PC1038	Error excessive warning level	ERW	○	○	○
PC39 to PC40, PC1039 to PC1040	For manufacturer setting	—	—	—	—
PC41,PC1041	Function selection C-J	*COPJ	—	—	○
PC42 to PC45, PC1042 to PC1045	For manufacturer setting	—	—	—	—
PC46, PC1046	Drive unit function selection 2	*DUOP2	—	—	○
PC47 to PC64, PC1047 to PC1064	For manufacturer setting	—	—	—	—
PC65, PC1065	Zero speed 2 level	ZSP2L	○	—	○
PC66, PC1066	Zero speed 2 filter time	ZSP2F	○	—	○

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
PC67, PC1067	Following error output level	FEW	○	○	○
PC68, PC1068	For manufacturer setting	—	—	—	—
PC69, PC1069	Following error output filter time	FEWF	○	○	○
PC70, PC1070	In-position 2 output range	INP2R	○	—	○
PC71, PC1071	In-position 2 output filter time	INP2F	○	—	○
PC72, PC1072	Speed reached 2 output range	SA2R	○	—	○
PC73, PC1073	Speed reached 2 output filter time	SA2F	○	—	○
PC74 to PC75, PC1074 to PC1075	For manufacturer setting	—	—	—	—
PC76, PC1076	Function selection C-E	*COPE	○	○	○
PC77, PC1077	For manufacturer setting	—	—	—	—
PC78, PC1078	Function selection C-F	*COPF	○	○	○
PC79, PC1079	Function selection C-G	*COPG	○	○	○
PC80, PC1080	For manufacturer setting	—	—	—	—
PC81, PC1081	Function selection C-H	**COPH	○	—	—
PC82 to PC90, PC1082 to PC1090	For manufacturer setting	—	—	—	—

I/O setting parameter ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

Use an appropriate device according to the write destination of the servo amplifier.

- PD1 to PD72: Writing data to the RAM of a servo amplifier
- PD1001 to PD1072: Writing data to the FlashROM or EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
PD1, PD1001	Input signal automatic on selection 1	*DIA1	○	○	○
PD2, PD1002	For manufacturer setting	—	—	—	—
PD3, PD1003	Input device selection 1	*DI1	○	○	○
PD4, PD1004	Input device selection 2	*DI2	○	○	○
PD5, PD1005	Input device selection 3	*DI3	○	○	○
PD6, PD1006	For manufacturer setting	—	—	—	—
PD7, PD1007	Output device selection 1	*DO1	○	○	○
PD8, PD1008	Output device selection 2	*DO2	○	○	○
PD9, PD1009	Output device selection 3	*DO3	○	○	○
PD10, PD1010	For manufacturer setting	—	—	—	—
PD11, PD1011	Input filter setting	*DIF	○	○	○
PD12, PD1012	Function selection D-1	*DOP1	○	○	○
PD13, PD1013	Function selection D-2	*DOP2	○	○	○
PD14, PD1014	Function selection D-3	*DOP3	○	○	○
PD15 to PD36, PD1015 to PD1036	For manufacturer setting	—	—	—	—
PD37, PD1037	Touch probe function selection	*TPOP	○	—	—
PD38, PD1038	Input device selection 4	*DI4	○	—	○
PD39, PD1039	Input device selection 5	*DI5	○	—	○
PD40, PD1040	For manufacturer setting	—	—	—	—
PD41, PD1041	Function selection D-4	*DOP4	○	○	○
PD42 to PD50, PD1042 to PD1050	For manufacturer setting	—	—	—	—
PD51, PD1051	Input device selection 3-2	*DI3W2	○	—	○

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
PD52 to PD59, PD1052 to PD1059	For manufacturer setting	—	—	—	—
PD60, PD1060	DI pin polarity selection	*DIP	○	○	○
PD61 to PD72, PD1061 to PD1072	For manufacturer setting	—	—	—	—

Positioning control parameters ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

Use an appropriate device according to the write destination of the servo amplifier.

- PT1 to PT90: Writing data to the RAM of a servo amplifier
- PT1001 to PT1090: Writing data to the FlashROM or EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
PT1, PT1001	Command mode selection	**CTY	○	○	○
PT2, PT1002	Function selection T-1	*TOP1	—	—	○
PT3, PT1003	Feeding function selection	*FTY	○	—	—
PT4, PT1004	For manufacturer setting	—	—	—	—
PT5, PT1005	Home position return speed	ZRF	○	○	○
PT6, PT1006	Creep speed	CRF	○	○	○
PT7, PT1007	Home position shift distance	ZST	○	○	○
PT8, PT1008	Home position return position data	ZPS	○	○	○
PT9, PT1009	Moving distance after proximity dog	DCT	○	○	○
PT10, PT1010	Stopper type home position return stopper time	ZTM	○	○	○
PT11, PT1011	Stopper type home position return torque limit value	ZTT	○	○	○
PT12, PT1012	Rough match output range	CRP	○	—	○
PT13 to PT14, PT1013 to PT1014	For manufacturer setting	—	—	—	—
PT15, PT1015	Software limit +	LMPL	○	—	—
	Software position limit+	LMP	—	○	○
PT16, PT1016	For manufacturer setting	—	—	—	—
PT17, PT1017	Software limit -	LMNL	○	—	—
	Software position limit-	LMN	—	○	○
PT18, PT1018	For manufacturer setting	—	—	—	—
PT19, PT1019	Position range output address +	*LPPL	○	—	—
	Position range output 1 address+	*LPP1	—	—	○
PT20, PT1020	For manufacturer setting	—	—	—	—
PT21, PT1021	Position range output address -	*LNPL	○	—	—
	Position range output 1 address-	*LNP1	—	—	○
PT22 to PT28, PT1022 to PT1028	For manufacturer setting	—	—	—	—
PT29, PT1029	Function selection T-3	*TOP3	○	○	○
PT30 to PT33, PT1030 to PT1033	For manufacturer setting	—	—	—	—
PT34, PT1034	Point table default	*PDEF	○	—	—
	Positioning operation data default	*PDEF	—	—	○
PT35 to PT37, PT1035 to PT1037	For manufacturer setting	—	—	—	—
PT38, PT1038	Function selection T-7	**TOP7	—	—	○
PT39 to PT40, PT1039 to PT1040	For manufacturer setting	—	—	—	—
PT41, PT1041	Home position return inhibit selection	ORP	○	—	—
	Function selection T-8	TOP8	—	○	○
PT42 to PT44, PT1042 to PT1044	For manufacturer setting	—	—	—	—
PT45, PT1045	Home position return method	HMM	○	○	○
PT46 to PT48, PT1046 to PT1048	For manufacturer setting	—	—	—	—

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
PT49, PT1049	Acceleration time constant	STA	○	—	○
PT50, PT1050	Deceleration time constant	STB	○	—	○
PT51, PT1051	S-pattern acceleration/deceleration time constant	STC	○	—	○
PT52, PT1052	For manufacturer setting	—	—	—	—
PT53, PT1053	Torque slope	TQS	○	—	○
PT54, PT1054	For manufacturer setting	—	—	—	—
PT55, PT1055	Function selection T-8	*TOP8	○	—	—
	Function selection T-10	*TOP10	—	○	○
PT56, PT1056	Home position return acceleration time constant	HMA	○	○	○
PT57, PT1057	Home position return deceleration time constant	HMB	○	○	○
PT58 to PT61, PT1058 to PT1061	For manufacturer setting	—	—	—	—
PT62, PT1062	Remote register-based position/speed specifying method selection	*DSS	○	—	—
PT62 to PT64, PT1062 to PT1064	For manufacturer setting	—	—	—	—
PT65, PT1065	Jog speed command	PVC	○	—	—
	Profile speed command		—	—	○
PT66, PT1066	Maximum profile speed	MPVC	○	—	○
PT67, PT1067	Speed limit	VLMT	○	○	○
PT68, PT1068	Function selection T-11	TOP11	—	○	○
PT69, PT1069	Home position shift distance (extension parameter)	ZSTH	○	—	—
PT70, PT1070	For manufacturer setting	—	—	—	—
PT71, PT1071	Travel distance after proximity dog (extension parameter)	DCTH	○	—	—
PT72 to PT90, PT1072 to PT1090	For manufacturer setting	—	—	—	—

Network setting parameters ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

Use an appropriate device according to the write destination of the servo amplifier.

- PN1 to PN32: Writing data to the RAM of a servo amplifier
- PN1001 to PN1032: Writing data to the FlashROM or EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
PN1, PN1001	For manufacturer setting	—	—	—	—
PN2, PN1002	Communication error detection time	CERT	○	○	○
PN3, PN1003	For manufacturer setting	—	—	—	—
PN4, PN1004	CC-Link IE communication network number	**NENO	○	—	—
PN5, PN1005	Communication error detection frequency setting	CERI	○	○	○
PN6, PN1006	Function selection N-1	NOP1	○	—	—
PN7 to PN12, PN1007 to PN1012	For manufacturer setting	—	—	—	—
PN13, PN1013	Network protocol setup	**NPS	—	—	○
PN14 to PN19, PN1014 to PN1019	For manufacturer setting	—	—	—	—
PN20, PN1020	Automatic parameter backup update interval	**PABI	—	○	○
PN21, PN1021	For manufacturer setting	—	—	—	—
PN22, PN1022	Function selection N-5	**NOP5	—	—	○
PN23 to PN32, PN1023 to PN1032	For manufacturer setting	—	—	—	—

Status display ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
ST0	Cumulative feedback pulses	—	○	○	○
ST1	Servo motor speed	—	○	○	○
ST2	Droop pulses	—	○	○	○
ST3	Cumulative command pulses	—	○	○	○
ST4	Command pulse frequency	—	○	○	○
ST5 to ST6	For manufacturer setting	—	—	—	—
ST7	Regenerative load ratio	—	○	○	○
ST8	Effective load ratio	—	○	○	○
ST9	Peak load ratio	—	○	○	○
ST10	Torque/Instantaneous torque	—	○	○	○
ST11	Within one-revolution position	—	○	○	○
ST12	ABS counter	—	○	○	○
ST13	Load inertia moment ratio	—	○	○	○
ST14	Bus voltage	—	○	○	○
ST15	Load-side cumulative feedback pulses	—	○	—	○
ST16	Load-side droop pulses	—	○	—	○
ST17	Load-side encoder information 1	—	○	—	○
ST18	Load-side encoder information 2	—	○	—	○
ST19 to ST21	For manufacturer setting	—	—	—	—
ST22	Temperature of servo motor thermistor	—	○	○	○
ST23	Cumulative feedback pulses (Motor unit)	—	○	○	○
ST24	Electrical angle	—	○	—	○
ST25 to ST29	For manufacturer setting	—	—	—	—
ST30	Servo motor-side/load-side position deviation	—	○	—	○
ST31	Servo motor-side/load-side speed deviation	—	○	—	○
ST32	Encoder inside temperature	—	○	○	○
ST33	Settling time	—	○	○	○
ST34	Oscillation detection frequency	—	○	○	○
ST35	Number of tough drive operations	—	○	○	○
ST36 to ST39	For manufacturer setting	—	—	—	—
ST40	Unit power consumption	—	○	○	○
ST41	Unit total power consumption	—	○	○	○
ST42 to ST48	For manufacturer setting	—	—	—	—

Extension setting No.2 parameter ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

Use an appropriate device according to the write destination of the servo amplifier.

- PE1 to PE88: Writing data to the RAM of a servo amplifier
- PE1001 to PE1088: Writing data to the FlashROM or EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
PE1, PE1001	Fully closed loop function selection 1	**FCT1	○	—	○
PE2, PE1002	For manufacturer setting	—	—	—	—
PE3, PE1003	Fully closed loop function selection 2	*FCT2	○	—	○
PE4, PE1004	Fully closed loop ctrl. - F/B pls. elec. gear 1 nmrtr.	**FBN	○	—	○
PE5, PE1005	Fully closed loop ctrl. - F/B pls. elec. gear 1 dnmntr.	**FBD	○	—	○
PE6, PE1006	Fully closed loop control - Speed deviation error detection level	BC1	○	—	○
PE7, PE1007	Fully closed loop control - Position deviation error detection level	BC2	○	—	○
PE8, PE1008	Fully closed loop dual feedback filter	DUF	○	—	○
PE9, PE1009	For manufacturer setting	—	—	—	—
PE10, PE1010	Fully closed loop function selection 3	FCT3	○	—	○
PE11 to PE33, PE1011 to PE1033	For manufacturer setting	—	—	—	—
PE34, PE1034	Fully closed loop control - Feedback pulse electronic gear 2 - Numerator	**FBN2	○	—	—
PE35, PE1035	Fully closed loop control - Feedback pulse electronic gear 2 - Denominator	**FBD2	○	—	—
PE36 to PE40, PE1036 to PE1040	For manufacturer setting	—	—	—	—
PE41, PE1041	Function selection E-3	EOP3	○	○	○
PE42 to PE43, PE1042 to PE1043	For manufacturer setting	—	—	—	—
PE44, PE1044	Lost motion compensation positive-side compensation value selection	LMCP	○	○	○
PE45, PE1045	Lost motion compensation negative-side compensation value selection	LMCN	○	○	○
PE46, PE1046	Lost motion filter setting	LMFLT	○	○	○
PE47, PE1047	Torque offset	TOF	○	—	○
	Unbalanced torque offset		—	○	—
PE48, PE1048	Lost motion compensation function selection	*LMOP	○	○	○
PE49, PE1049	Lost motion compensation timing	LMCD	○	○	○
PE50, PE1050	Lost motion compensation non-sensitive band	LMCT	○	○	○
PE51, PE1051	Load-side encoder resolution setting	**EDV2	—	—	○
PE52, PE1052	For manufacturer setting	—	—	—	—
PE53, PE1053	Maximum torque limit 1	TLMX1	○	○	○
PE54 to PE88, PE1054 to PE1088	For manufacturer setting	—	—	—	—

Extension setting No.3 parameter ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

Use an appropriate device according to the write destination of the servo amplifier.

- PF1 to PF99: Writing data to the RAM of a servo amplifier
- PF1001 to PF1099: Writing data to the FlashROM or EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
PF1, PF1001	For manufacturer setting	—	—	—	—
PF2, PF1002	Function selection F-2	*FOP2	○	○	○
PF3 to PF5, PF1003 to PF1005	For manufacturer setting	—	—	—	—
PF6, PF1006	Function selection F-5	*FOP5	○	○	○
PF7 to PF11, PF1007 to PF1011	For manufacturer setting	—	—	—	—
PF12, PF1012	Electronic dynamic brake operating time	DBT	○	○	○
PF13 to PF17, PF1013 to PF1017	For manufacturer setting	—	—	—	—
PF18, PF1018	STO diagnosis error detection time	**STOD	○	—	○
PF19, PF1019	Friction failure prediction compen. coefficient 1	TSL	○	—	○
PF20, PF1020	Friction failure prediction compen. coefficient 2	TIC	○	—	○
PF21, PF1021	Drive recorder switching time setting	DRT	○	○	○
PF22, PF1022	For manufacturer setting	—	—	—	—
PF23, PF1023	Vibration tough drive - Oscillation detection level	OSCL1	○	○	○
PF24, PF1024	Vibration tough drive function selection	*OSCL2	○	—	○
	Function selection F-9	*FOP9	—	○	—
PF25, PF1025	SEMI-F47 Inst pwr.fail.det.t. (Inst pwr.fail.tuf.drv.)	CVAT	○	—	○
	Instantaneous power failure tough drive - Detection time	CVAT	—	○	—
PF26 to PF28, PF1026 to PF1028	For manufacturer setting	—	—	—	—
PF29, PF1029	Function selection F-10	*FOP10	—	—	○
PF30, PF1030	For manufacturer setting	—	—	—	—
PF31, PF1031	Machine diagnosis function - Friction judgment speed	FRIC	○	○	○
PF32, PF1032	Oscillation detection alarm time	*VIBT	○	○	○
PF33, PF1033	For manufacturer setting	—	—	—	—
PF34, PF1034	Machine diagnosis function selection	*MFP	○	○	○
PF35 to PF39, PF1035 to PF1039	For manufacturer setting	—	—	—	—
PF40, PF1040	Machine failure prediction parameter	MFPP	○	—	○
PF41, PF1041	Failure prediction - Servo motor total move distance	FPMT	○	—	○
PF42, PF1042	Friction failure prediction average characteristic	PAV	○	—	○
PF43, PF1043	Friction failure prediction standard deviation	PSD	○	—	○
PF44, PF1044	For manufacturer setting	—	—	—	—
PF45, PF1045	Vibration failure prediction average characteristic	VAV	○	—	○
PF46, PF1046	Vibration failure prediction standard deviation	VSC	○	—	○
PF47, PF1047	Servo motor total move distance offset	TMO	○	—	○
PF48 to PF65, PF1048 to PF1065	For manufacturer setting	—	—	—	—
PF66, PF1066	Gear ratio setting for backlash estimation	BLG	○	—	○
PF67, PF1067	Backlash nominal value	BLN	○	—	○

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
PF68, PF1068	Backlash threshold magnification	BLTT	○	—	○
PF69, PF1069	Static friction failure prediction avg. characteristic	SPAV2	○	—	○
PF70, PF1070	Static friction failure prediction standard deviation	SPSD2	○	—	○
PF71, PF1071	Belt failure prediction function selection	BFP	○	—	○
PF72, PF1072	Belt tension at installation	SBT	○	—	○
PF73, PF1073	Belt tension at extension	ABT	○	—	○
PF74, PF1074	Static friction at installation	SSF	○	—	○
PF75, PF1075	Static friction at extension	ASF	○	—	○
PF76, PF1076	Belt tension error threshold	BTS	○	—	○
PF77 to PF79, PF1077 to PF1079	For manufacturer setting	—	—	—	—
PF80, PF1080	Drive recorder Operation condition selection	DRMC	○	○	○
PF81, PF1081	Drive recorder Sampling operation selection	DRMS	○	○	○
PF82, PF1082	Drive recorder Trigger operation selection	DRTM	○	○	○
PF83, PF1083	Drive recorder Trigger operation axis common sel.	**DRTAX	○	—	○
PF84, PF1084	Drive recorder Trigger channel selection	DRTC	○	○	○
PF85, PF1085	Drive recorder Trigger level setting 1	DRTL1	○	○	○
PF86, PF1086	Drive recorder Trigger level setting 2	DRTL2	○	○	○
PF87, PF1087	Drive recorder Analog channel setting 1	DRAC1	○	○	○
PF88, PF1088	Drive recorder Analog channel setting 2	DRAC2	○	○	○
PF89, PF1089	Drive recorder Analog channel setting 3	DRAC3	○	○	○
PF90, PF1090	Drive recorder Analog channel setting 4	DRAC4	○	○	○
PF91, PF1091	Drive recorder Digital channel setting 1	DRDC1	○	○	○
PF92, PF1092	Drive recorder Digital channel setting 2	DRDC2	○	○	○
PF93, PF1093	Drive recorder Digital channel setting 3	DRDC3	○	○	○
PF94, PF1094	Drive recorder Digital channel setting 4	DRDC4	○	○	○
PF95, PF1095	Drive recorder History clear	**DRCLR	○	○	○
PF96 to PF99, PF1096 to PF1099	For manufacturer setting	—	—	—	—

Alarm ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
ALM0	Current alarm number	—	○	○	○
ALM1	Detailed data of current alarms	—	○	○	○
ALM2[*1]	Currently occurring alarm number and detail number	—	○	○	○
ALM11	Servo status(alarm) Cumulative feedback pulses	—	○	○	○
ALM12	Servo status(alarm) Servo motor speed	—	○	○	○
ALM13	Servo status(alarm) Droop pulses	—	○	○	○
ALM14	Servo status(alarm) Cumulative command pulses	—	○	○	○
ALM15	Servo status(alarm) Command pulse frequency	—	○	○	○
ALM16 to ALM17	For manufacturer setting	—	—	—	—
ALM18	Servo status(alarm) Regenerative load ratio	—	○	○	○
ALM19	Servo status(alarm) Effective load ratio	—	○	○	○
ALM20	Servo status(alarm) Peak load ratio	—	○	○	○
ALM21	Servo status(alarm) Torque/Instantaneous torque	—	○	○	○
ALM22	Servo status(alarm) Within one-revolution position	—	○	○	○
ALM23	Servo status(alarm) ABS counter	—	○	○	○
ALM24	Servo status(alarm) Load inertia moment ratio	—	○	○	○
ALM25	Servo status(alarm) Bus voltage	—	○	○	○
ALM26	Servo status(alarm) Load-side cumulative feedback pulses	—	○	—	○
ALM27	Servo status(alarm) Load-side droop pulses	—	○	—	○
ALM28	Servo status(alarm) Load-side encoder information 1	—	○	—	○
ALM29	Servo status(alarm) Load-side encoder information 2	—	○	—	○
ALM30 to ALM32	For manufacturer setting	—	—	—	—
ALM33	Servo status(alarm) Temperature of servo motor thermistor	—	○	○	○
ALM34	Servo status(alarm) Cumulative feedback pulses (Motor unit)	—	○	○	○
ALM35	Servo status(alarm) Electrical angle	—	○	—	○
ALM36 to ALM40	For manufacturer setting	—	—	—	—
ALM41	Servo status(alarm) Servo motor-side/load-side position deviation	—	○	—	○
ALM42	Servo status(alarm) Servo motor-side/load-side speed deviation	—	○	—	○
ALM43	Servo status(alarm) Encoder inside temperature	—	○	○	○
ALM44	Servo status(alarm) Settling time	—	○	○	○
ALM45	Servo status(alarm) Oscillation detection frequency	—	○	○	○
ALM46	Servo status(alarm) Number of tough drive operations	—	○	○	○
ALM47 to ALM50	For manufacturer setting	—	—	—	—
ALM51	Servo status(alarm) Unit power consumption	—	○	○	○
ALM52	Servo status(alarm) Unit total power consumption	—	○	○	○
ALM53 to ALM59	For manufacturer setting	—	—	—	—
ALM200	Alarm number in alarm history: most recent alarm	—	○	○	○

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
ALM201	Alarm number in alarm history: 1st alarm in past	—	○	○	○
ALM202	Alarm number in alarm history: 2nd alarm in past	—	○	○	○
ALM203	Alarm number in alarm history: 3rd alarm in past	—	○	○	○
ALM204	Alarm number in alarm history: 4th alarm in past	—	○	○	○
ALM205	Alarm number in alarm history: 5th alarm in past	—	○	○	○
ALM206	Alarm number in alarm history: 6th alarm in past	—	○	○	○
ALM207	Alarm number in alarm history: 7th alarm in past	—	○	○	○
ALM208	Alarm number in alarm history: 8th alarm in past	—	○	○	○
ALM209	Alarm number in alarm history: 9th alarm in past	—	○	○	○
ALM210	Alarm number in alarm history: 10th alarm in past	—	○	○	○
ALM211	Alarm number in alarm history: 11th alarm in past	—	○	○	○
ALM212	Alarm number in alarm history: 12th alarm in past	—	○	○	○
ALM213	Alarm number in alarm history: 13th alarm in past	—	○	○	○
ALM214	Alarm number in alarm history: 14th alarm in past	—	○	○	○
ALM215	Alarm number in alarm history: 15th alarm in past	—	○	○	○
ALM220	Alarm occurrence time (cumulative power-on time) in alarm history: most recent alarm	—	○	○	○
ALM221	Alarm occurrence time (cumulative power-on time) in alarm history: 1st alarm in past	—	○	○	○
ALM222	Alarm occurrence time (cumulative power-on time) in alarm history: 2nd alarm in past	—	○	○	○
ALM223	Alarm occurrence time (cumulative power-on time) in alarm history: 3rd alarm in past	—	○	○	○
ALM224	Alarm occurrence time (cumulative power-on time) in alarm history: 4th alarm in past	—	○	○	○
ALM225	Alarm occurrence time (cumulative power-on time) in alarm history: 5th alarm in past	—	○	○	○
ALM226	Alarm occurrence time (cumulative power-on time) in alarm history: 6th alarm in past	—	○	○	○
ALM227	Alarm occurrence time (cumulative power-on time) in alarm history: 7th alarm in past	—	○	○	○
ALM228	Alarm occurrence time (cumulative power-on time) in alarm history: 8th alarm in past	—	○	○	○
ALM229	Alarm occurrence time (cumulative power-on time) in alarm history: 9th alarm in past	—	○	○	○
ALM230	Alarm occurrence time (cumulative power-on time) in alarm history: 10th alarm in past	—	○	○	○
ALM231	Alarm occurrence time (cumulative power-on time) in alarm history: 11th alarm in past	—	○	○	○
ALM232	Alarm occurrence time (cumulative power-on time) in alarm history: 12th alarm in past	—	○	○	○
ALM233	Alarm occurrence time (cumulative power-on time) in alarm history: 13th alarm in past	—	○	○	○
ALM234	Alarm occurrence time (cumulative power-on time) in alarm history: 14th alarm in past	—	○	○	○
ALM235	Alarm occurrence time (cumulative power-on time) in alarm history: 15th alarm in past	—	○	○	○
ALM240	Alarm detail number in alarm history: most recent alarm	—	○	○	○
ALM241	Alarm detail number in alarm history: 1st alarm in past	—	○	○	○
ALM242	Alarm detail number in alarm history: 2nd alarm in past	—	○	○	○

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
ALM243	Alarm detail number in alarm history: 3rd alarm in past	—	○	○	○
ALM244	Alarm detail number in alarm history: 4th alarm in past	—	○	○	○
ALM245	Alarm detail number in alarm history: 5th alarm in past	—	○	○	○
ALM246	Alarm detail number in alarm history: 6th alarm in past	—	○	○	○
ALM247	Alarm detail number in alarm history: 7th alarm in past	—	○	○	○
ALM248	Alarm detail number in alarm history: 8th alarm in past	—	○	○	○
ALM249	Alarm detail number in alarm history: 9th alarm in past	—	○	○	○
ALM250	Alarm detail number in alarm history: 10th alarm in past	—	○	○	○
ALM251	Alarm detail number in alarm history: 11th alarm in past	—	○	○	○
ALM252	Alarm detail number in alarm history: 12th alarm in past	—	○	○	○
ALM253	Alarm detail number in alarm history: 13th alarm in past	—	○	○	○
ALM254	Alarm detail number in alarm history: 14th alarm in past	—	○	○	○
ALM255	Alarm detail number in alarm history: 15th alarm in past	—	○	○	○
ALM260	Alarm occurrence time (year, month) in alarm history: most recent alarm	—	○	○	○
ALM261	Alarm occurrence time (year, month) in alarm history: 1st alarm in past	—	○	○	○
ALM262	Alarm occurrence time (year, month) in alarm history: 2nd alarm in past	—	○	○	○
ALM263	Alarm occurrence time (year, month) in alarm history: 3rd alarm in past	—	○	○	○
ALM264	Alarm occurrence time (year, month) in alarm history: 4th alarm in past	—	○	○	○
ALM265	Alarm occurrence time (year, month) in alarm history: 5th alarm in past	—	○	○	○
ALM266	Alarm occurrence time (year, month) in alarm history: 6th alarm in past	—	○	○	○
ALM267	Alarm occurrence time (year, month) in alarm history: 7th alarm in past	—	○	○	○
ALM268	Alarm occurrence time (year, month) in alarm history: 8th alarm in past	—	○	○	○
ALM269	Alarm occurrence time (year, month) in alarm history: 9th alarm in past	—	○	○	○
ALM270	Alarm occurrence time (year, month) in alarm history: 10th alarm in past	—	○	○	○
ALM271	Alarm occurrence time (year, month) in alarm history: 11th alarm in past	—	○	○	○
ALM272	Alarm occurrence time (year, month) in alarm history: 12th alarm in past	—	○	○	○
ALM273	Alarm occurrence time (year, month) in alarm history: 13th alarm in past	—	○	○	○
ALM274	Alarm occurrence time (year, month) in alarm history: 14th alarm in past	—	○	○	○
ALM275	Alarm occurrence time (year, month) in alarm history: 15th alarm in past	—	○	○	○
ALM280	Alarm occurrence time (date, hour) in alarm history: most recent alarm	—	○	○	○

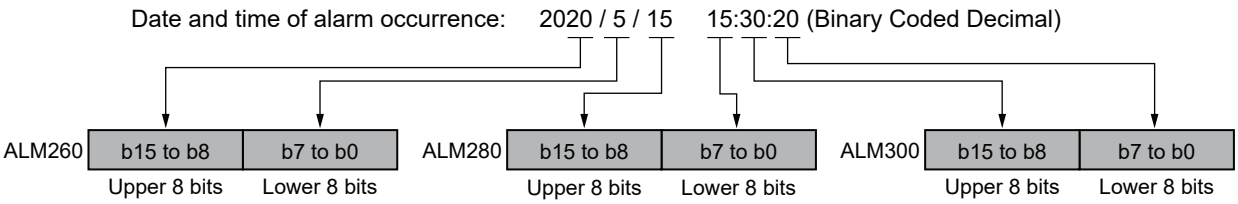
Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
ALM281	Alarm occurrence time (date, hour) in alarm history: 1st alarm in past	—	○	○	○
ALM282	Alarm occurrence time (date, hour) in alarm history: 2nd alarm in past	—	○	○	○
ALM283	Alarm occurrence time (date, hour) in alarm history: 3rd alarm in past	—	○	○	○
ALM284	Alarm occurrence time (date, hour) in alarm history: 4th alarm in past	—	○	○	○
ALM285	Alarm occurrence time (date, hour) in alarm history: 5th alarm in past	—	○	○	○
ALM286	Alarm occurrence time (date, hour) in alarm history: 6th alarm in past	—	○	○	○
ALM287	Alarm occurrence time (date, hour) in alarm history: 7th alarm in past	—	○	○	○
ALM288	Alarm occurrence time (date, hour) in alarm history: 8th alarm in past	—	○	○	○
ALM289	Alarm occurrence time (date, hour) in alarm history: 9th alarm in past	—	○	○	○
ALM290	Alarm occurrence time (date, hour) in alarm history: 10th alarm in past	—	○	○	○
ALM291	Alarm occurrence time (date, hour) in alarm history: 11th alarm in past	—	○	○	○
ALM292	Alarm occurrence time (date, hour) in alarm history: 12th alarm in past	—	○	○	○
ALM293	Alarm occurrence time (date, hour) in alarm history: 13th alarm in past	—	○	○	○
ALM294	Alarm occurrence time (date, hour) in alarm history: 14th alarm in past	—	○	○	○
ALM295	Alarm occurrence time (date, hour) in alarm history: 15th alarm in past	—	○	○	○
ALM300	Alarm occurrence time (minute, second) in alarm history: most recent alarm	—	○	○	○
ALM301	Alarm occurrence time (minute, second) in alarm history: 1st alarm in past	—	○	○	○
ALM302	Alarm occurrence time (minute, second) in alarm history: 2nd alarm in past	—	○	○	○
ALM303	Alarm occurrence time (minute, second) in alarm history: 3rd alarm in past	—	○	○	○
ALM304	Alarm occurrence time (minute, second) in alarm history: 4th alarm in past	—	○	○	○
ALM305	Alarm occurrence time (minute, second) in alarm history: 5th alarm in past	—	○	○	○
ALM306	Alarm occurrence time (minute, second) in alarm history: 6th alarm in past	—	○	○	○
ALM307	Alarm occurrence time (minute, second) in alarm history: 7th alarm in past	—	○	○	○
ALM308	Alarm occurrence time (minute, second) in alarm history: 8th alarm in past	—	○	○	○
ALM309	Alarm occurrence time (minute, second) in alarm history: 9th alarm in past	—	○	○	○
ALM310	Alarm occurrence time (minute, second) in alarm history: 10th alarm in past	—	○	○	○
ALM311	Alarm occurrence time (minute, second) in alarm history: 11th alarm in past	—	○	○	○
ALM312	Alarm occurrence time (minute, second) in alarm history: 12th alarm in past	—	○	○	○
ALM313	Alarm occurrence time (minute, second) in alarm history: 13th alarm in past	—	○	○	○
ALM314	Alarm occurrence time (minute, second) in alarm history: 14th alarm in past	—	○	○	○

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
ALM315	Alarm occurrence time (minute, second) in alarm history: 15th alarm in past	—	○	○	○

*1 Set [Data Type] and [Format] as shown below for the objects for which this device is set.
[Data Type]: [Unsigned BIN32]
[Format]: [Hexadecimal]

Specifications of ALM260 to ALM275, ALM280 to ALM295, and ALM300 to ALM315 ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

The date and time of alarm occurrence are stored in BCD code in the upper eight bits and lower eight bits of each device.
The time zone setting of the controller is applied to the date and time to be acquired.
Example) When the date and time of the most recent alarm occurrence is 15:30:20 May 15, 2020



When the date and time of alarm occurrence are those of 1999 or earlier, 0 is displayed.

Point table (position) ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

Use an appropriate device according to the write destination of the servo amplifier.

- POS1 to POS255: Writing data to the RAM of a servo amplifier
- POS1001 to POS1255: Writing data to the FlashROM or EEPROM of a servo amplifier

○: Available
—: Not available

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
POS1 to POS255, POS1001 to POS1255	Point table/position data No. 1 to No. 255	—	○	○	○

Point table (speed) ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

Use an appropriate device according to the write destination of the servo amplifier.

- SPD1 to SPD255: Writing data to the RAM of a servo amplifier
- SPD1001 to SPD1255: Writing data to the FlashROM or EEPROM of a servo amplifier

○: Available
—: Not available

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
SPD1 to SPD255, SPD1001 to SPD1255	Point table/speed data No. 1 to No. 255	—	○	○	○

Point table (acceleration time constant) ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

Use an appropriate device according to the write destination of the servo amplifier.

- ACT1 to ACT255: Writing data to the RAM of a servo amplifier
- ACT1001 to ACT1255: Writing data to the FlashROM or EEPROM of a servo amplifier

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
ACT1 to ACT255, ACT1001 to ACT1255	Point table/acceleration time constant No. 1 to No. 255	—	○	○	○

Point table (deceleration time constant) ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

Use an appropriate device according to the write destination of the servo amplifier.

- DCT1 to DCT255: Writing data to the RAM of a servo amplifier
- DCT1001 to DCT1255: Writing data to the FlashROM or EEPROM of a servo amplifier

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
DCT1 to DCT255, DCT1001 to DCT1255	Point table/deceleration time constant No. 1 to No. 255	—	○	○	○

Point table (dwell) ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

Use an appropriate device according to the write destination of the servo amplifier.

- DWL1 to DWL255: Writing data to the RAM of a servo amplifier
- DWL1001 to DWL1255: Writing data to the FlashROM or EEPROM of a servo amplifier

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
DWL1 to DWL255, DWL1001 to DWL1255	Point table/dwell No. 1 to No. 255	—	○	○	○

Point table (auxiliary function) ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

Use an appropriate device according to the write destination of the servo amplifier.

- AUX1 to AUX255: Writing data to the RAM of a servo amplifier
- AUX1001 to AUX1255: Writing data to the FlashROM or EEPROM of a servo amplifier

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
AUX1 to AUX255, AUX1001 to AUX1255	Point table/auxiliary function No. 1 to No. 255	—	○	○	○

Point table (M code) ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

Use an appropriate device according to the write destination of the servo amplifier.

- MCD1 to MCD255: Writing data to the RAM of a servo amplifier
- MCD1001 to MCD1255: Writing data to the FlashROM or EEPROM of a servo amplifier

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
MCD1 to MCD255, MCD1001 to MCD1255	Point table/M code No.1 to No.255	—	○	○	○

Machine diagnosis data ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
MD0	Machine diagnosis data: Station number	—	○	○	○
MD1	Machine diagnosis data shift judgment(test mode)	—	○	○	○
MD2[*1]	Machine diagnosis data status	—	○	○	○
MD3[*2]	Machine diagnosis data coulomb friction torque in positive direction	—	○	○	○
MD4[*2]	Machine diagnosis data friction torque at rated speed in positive direction	—	○	○	○
MD5[*2]	Machine diagnosis data coulomb friction torque in negative direction	—	○	○	○
MD6[*2]	Machine diagnosis data friction torque at rated speed in negative direction	—	○	○	○
MD7[*2]	Machine diagnosis data oscillation frequency(motor is stopped)	—	○	○	○
MD8[*2]	Machine diagnosis data vibration level(motor is stopped)	—	○	○	○
MD9[*2]	Machine diagnosis data oscillation frequency(motor is operating)	—	○	○	○
MD10[*2]	Machine diagnosis data vibration level(motor is operating)	—	○	○	○
MD11	Machine diagnosis data, rated speed at forward or reverse rotation torque	—	○	○	○
MD12	Machine diagnosis data: friction failure prediction - threshold creation progress	—	○	○[*3]	○
MD13	Machine diagnosis data: vibration failure prediction - threshold creation progress	—	○	○[*3]	○
MD14	Machine diagnosis data motor total move distance	—	○	○[*3]	○
MD15	Machine diagnosis data, friction failure prediction, upper threshold at forward rotation torque, lower threshold at reverse rotation torque	—	○	○[*3]	○
MD16	Machine diagnosis data, friction failure prediction, lower threshold at forward rotation torque, upper threshold at reverse rotation torque	—	○	○[*3]	○
MD17	Machine diagnosis data: vibration failure prediction - threshold acquisition	—	○	○[*3]	○
MD18	Machine diagnosis data trouble prediction status	—	○	○[*3]	○
MD19	Machine diagnosis data: Belt tension estimation value	—	○	○[*3]	○

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
MD20	Machine diagnosis data: static friction used in failure prediction	—	○	○*3	○
MD21	Machine diagnosis data: Belt tension threshold estimation	—	○	○*3	○

*1 While the servo amplifier is estimating the corresponding machine status in the machine diagnosis, do not write data to the parameters of the servo amplifier from another GOT.
Doing so may cause the servo amplifier to malfunction.

*2 When MD2 indicates that the servo amplifier does not complete the machine diagnosis (is estimating or warning of the machine status), do not monitor MD3 to MD6 (friction states) and MD7 to MD10 (vibration/oscillation states).
To start monitoring those devices upon the estimation completion, set [Trigger] in the applicable object settings.

*3 The commands assigned to MD12 to MD21 are not supported by MR-JET-G.
When the commands are used, the read values will be indefinite.

One-touch tuning data ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
OTS0	One-touch tuning status confirmation	—	○	○	○
OTS1	Error code list	—	○	○	○
OTS2	Setting time	—	○	○	○
OTS3	Overshoot amount	—	○	○	○
OTS4	One-touch tuning command mode	—	○	○	○
OTS5	Load inertia moment ratio	—	○	○	○
OTS3000*1	Read/write permissible move distance	—	○	○	○

*1 Writing is not available when a negative value is set for the device value.

External input signal in MR-J5-G(-RJ) and MR-J5W□-G ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

Virtual device name	Name	Symbol	Data to be read from the servo amplifier
DI0	Input device statuses	—	The input device statuses corresponding to the setting values 0000 to 001F of the following are read. Pr. PF91_Drive recorder Digital channel setting 1 (DRDC1)
DI1	Input device statuses	—	The input device statuses corresponding to the setting values 0020 to 003F of the following are read. Pr. PF91_Drive recorder Digital channel setting 1 (DRDC1)
DI2	Input device statuses	—	The input device statuses corresponding to the setting values 0040 to 005F of the following are read. Pr. PF91_Drive recorder Digital channel setting 1 (DRDC1)
DI3	External input pin statuses	—	The statuses of the listed input devices are assigned to the bits in order from bit 0 and read. For details on the input devices, refer to the following. MR-J5 User's Manual (Hardware)
DI4	Statuses of input devices switched on through communication	—	The statuses of the input devices switched on through communication (input device statuses corresponding to the setting values 0000 to 001F of the following) are read. Pr. PF91_Drive recorder Digital channel setting 1 (DRDC1)
DI5	Statuses of input devices switched on through communication	—	The statuses of input devices switched on through communication (input device statuses corresponding to the setting values 0020 to 003F of the following) are read. Pr. PF91_Drive recorder Digital channel setting 1 (DRDC1)
DI6	Statuses of input devices switched on through communication	—	The statuses of the input devices switched on through communication (input device statuses corresponding to the setting values 0040 to 005F of the following) are read. Pr. PF91_Drive recorder Digital channel setting 1 (DRDC1)

External input signal in MR-J5D□-G ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

Virtual device name	Name	Symbol	Data to be read from the servo amplifier
DI0	Input device statuses	—	The input device statuses corresponding to the setting values 0000 to 001F of the following are read. Pr. PF91_Drive recorder Digital channel setting 1 (DRDC1)
DI1	Input device statuses	—	The input device statuses corresponding to the setting values 0020 to 003F of the following are read. Pr. PF91_Drive recorder Digital channel setting 1 (DRDC1)
DI2	Input device statuses	—	The input device statuses corresponding to the setting values 0040 to 005F of the following are read. Pr. PF91_Drive recorder Digital channel setting 1 (DRDC1)
DI3	External input pin statuses	—	The statuses of the listed input devices are assigned to the bits in order from bit 0 and read. For details on the input devices, refer to the following. MR-J5 User's Manual (Hardware)
DI4	Statuses of input devices switched on through communication	—	The statuses of the input devices switched on through communication (input device statuses corresponding to the setting values 0000 to 001F of the following) are read. Pr. PF91_Drive recorder Digital channel setting 1 (DRDC1)
DI5	Statuses of input devices switched on through communication	—	The statuses of input devices switched on through communication (input device statuses corresponding to the setting values 0020 to 003F of the following) are read. Pr. PF91_Drive recorder Digital channel setting 1 (DRDC1)
DI6	Statuses of input devices switched on through communication	—	The statuses of the input devices switched on through communication (input device statuses corresponding to the setting values 0040 to 005F of the following) are read. Pr. PF91_Drive recorder Digital channel setting 1 (DRDC1)

External input signal in MR-JET-G ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

Virtual device name	Name	Symbol
DI0	Input device statuses	—
DI1	Input device statuses	—
DI2	Input device statuses	—
DI3	External input pin statuses	—
DI4	Statuses of input devices switched on through communication	—
DI5	Statuses of input devices switched on through communication	—
DI6	Statuses of input devices switched on through communication	—

External output signal in MR-J5-G(-RJ) and MR-J5W□-G ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

Virtual device name	Name	Symbol	Data to be read from the servo amplifier
DO0	Output device statuses	—	The output device statuses corresponding to the setting values 8000 to 801F of the following are read. Pr. PF91_Drive recorder Digital channel setting 1 (DRDC1)
DO1	Output device statuses	—	The output device statuses corresponding to the setting values 8020 to 803F of the following are read. Pr. PF91_Drive recorder Digital channel setting 1 (DRDC1)
DO2	Output device statuses	—	The output device statuses corresponding to the setting values 8040 to 805F of the following are read. Pr. PF91_Drive recorder Digital channel setting 1 (DRDC1)
DO4	External output pin statuses	—	The statuses of the listed output devices are assigned to the bits in order from bit 0 and read. For details on the output devices, refer to the following. MR-J5 User's Manual (Hardware)

External output signal in MR-J5D□-G ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

Virtual device name	Name	Symbol	Data to be read from the servo amplifier
DO0	Output device statuses	—	The output device statuses corresponding to the setting values 8000 to 801F of the following are read. Pr. PF91_Drive recorder Digital channel setting 1 (DRDC1)
DO1	Output device statuses	—	The output device statuses corresponding to the setting values 8020 to 803F of the following are read. Pr. PF91_Drive recorder Digital channel setting 1 (DRDC1)
DO2	Output device statuses	—	The output device statuses corresponding to the setting values 8040 to 805F of the following are read. Pr. PF91_Drive recorder Digital channel setting 1 (DRDC1)
DO4	External output pin statuses	—	The statuses of the listed output devices are assigned to the bits in order from bit 0 and read. For details on the output devices, refer to the following. MR-J5 User's Manual (Hardware)

External output signal in MR-JET-G ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

Virtual device name	Name	Symbol
DO0	Output device statuses	—
DO1	Output device statuses	—
DO2	Output device statuses	—
DO4	External output pin statuses	—

Option unit parameter ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

Use an appropriate device according to the write destination of the servo amplifier.

- PO1 to PO2: Writing data to the RAM of a servo amplifier
- PO1001 to PO1002: Writing data to the FlashROM or EEPROM of a servo amplifier

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
PO1 to PO2, PO1001 to P1002	For manufacturer setting	—	—	—	—

Special parameter ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

Use an appropriate device according to the write destination of the servo amplifier.

- PS1 to PS99: Writing data to the RAM of a servo amplifier
- PS1001 to PS1099: Writing data to the FlashROM or EEPROM of a servo amplifier

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
PS1 to PS99, PS1001 to PS1099	For manufacturer setting	—	—	—	—

Linear servo motor/DD motor setting parameters ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

Use an appropriate device according to the write destination of the servo amplifier.

- PL1 to PL72: Writing data to the RAM of a servo amplifier
- PL1001 to PL1072: Writing data to the FlashROM or EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
PL1, PL1001	Linear servo motor/DD motor function selection 1	**LIT1	○	—	—
	Function selection L-1		—	—	○
PL2, PL1002	Linear encoder resolution - Numerator	**LIM	○	—	○
PL3, PL1003	Linear encoder resolution - Denominator	**LID	○	—	○
PL4, PL1004	Linear servo motor/DD motor function selection 2	*LIT2	○	—	—
	Function selection L-2		—	—	○
PL5, PL1005	Position deviation error detection level	LB1	○	—	○
PL6, PL1006	Speed deviation error detection level	LB2	○	—	○
PL7, PL1007	Torque/thrust deviation error detection level	LB3	○	—	—
	Torque deviation error detection level		—	—	○
PL8, PL1008	Linear servo motor/DD motor function selection 3	*LIT3	○	—	—
	Function selection L-3		—	—	○
PL9, PL1009	Magnetic pole detection voltage level	LPWM	○	—	○
PL10 to PL16, PL1010 to PL1016	For manufacturer setting	—	—	—	—
PL17, PL1017	Magnetic pole detection - Minute position detection method - Function selection	LTSTS	○	—	○
PL18, PL1018	Mag.pole detn.-Min.pos.detn.meth.-Ident.sig.amp.	IDLV	○	—	○
PL19 to PL72, PL1019 to PL1072	For manufacturer setting	—	—	—	—

Multi encoder parameter ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

Use an appropriate device according to the write destination of the servo amplifier.

- PU1 to PU44: Writing data to the RAM of a servo amplifier
- PU1001 to PU1044: Writing data to the FlashROM or EEPROM of a servo amplifier

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
PU1 to PU44, PU1001 to PU1044	For manufacturer setting	—	—	—	—

Positioning control parameters ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

Use an appropriate device according to the write destination of the servo amplifier.

- PVS1 to PVS32: Writing data to the RAM of a servo amplifier
- PVS1001 to PVS1032: Writing data to the FlashROM or EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
PVS1, PVS1001	Profile speed command extension setting	PVC2	○	—	○
PVS2, PVS1002	For manufacturer setting	—	—	—	—
PVS3, PVS1003	Maximum profile speed extension setting	MPVCE	○	—	○
PVS4, PVS1004	For manufacturer setting	—	—	—	—
PVS5, PVS1005	Profile acceleration	PACC	○	—	○
PVS6, PVS1006	For manufacturer setting	—	—	—	—
PVS7, PVS1007	Profile deceleration	PDEC	○	—	○
PVS8, PVS1008	For manufacturer setting	—	—	—	—
PVS9, PVS1009	Forced stop deceleration	RSBDEC	○	○	○
PVS10, PVS1010	For manufacturer setting	—	—	—	—
PVS11, PVS1011	Home position return speed extension setting	ZRFE	○	○	○
PVS12, PVS1012	For manufacturer setting	—	—	—	—
PVS13, PVS1013	Creep speed extension setting	CRFE	○	○	○
PVS14, PVS1014	For manufacturer setting	—	—	—	—
PVS15, PVS1015	Home position return acceleration	HMACC	○	○	○
PVS16, PVS1016	For manufacturer setting	—	—	—	—
PVS17, PVS1017	Home position return deceleration	HMDEC	○	○	○
PVS18, PVS1018	For manufacturer setting	—	—	—	—
PVS19, PVS1019	Speed reached 2 output range extension setting	SA2RE	○	—	○
PVS20, PVS1020	Zero speed 2 level extension setting	ZSP2LE	○	—	○
PVS21, PVS1021	Speed limit extension setting	VLMTE	○	○	○
PVS22, PVS1022	For manufacturer setting	—	—	—	—
PVS23, PVS1023	Speed unit conversion electronic gear numerator	*VCMX	○	○	○
PVS24, PVS1024	Speed unit conversion electronic gear denominator	*VCDV	○	○	○
PVS25, PVS1025	Acceleration unit conversion electronic gear nmrtr.	*ACMX	○	○	○
PVS26, PVS1026	Acceleration unit conversion electronic gear dnmntr.	*ACDV	○	○	○
PVS27 to PVS28, PVS1027 to PVS1028	For manufacturer setting	—	—	—	—
PVS29, PVS1029	Acceleration limit	ACCLMT	—	—	○
PVS30, PVS1030	For manufacturer setting	—	—	—	—
PVS31, PVS1031	Deceleration limit	DECLMT	—	—	○
PVS32, PVS1032	For manufacturer setting	—	—	—	—

Network basic parameter ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

Set [Data Type] and [Format] as shown below for the objects for which this device is set.

- [Data Type]: [Unsigned BIN32]
- [Format]: [Hexadecimal]

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
NPA1	IP address setting	—	○	○	○
NPA2	IP address	—	○	○	○
NPA3	For manufacturer setting	—	—	—	—
NPA4	Subnet mask	—	○	○	○
NPA5 to NPA7	For manufacturer setting	—	—	—	—
NPA8	Host name	—	○	○	○
NPA9 to NPA11	For manufacturer setting	—	—	—	—
NPA12	Communication speed	—	—	—	○
NPA2001 to NPA2032	Host name expansion area	—	○	○	○

Gear failure diagnosis data ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
GFDS0	Backlash estimation (threshold)	—	○	—	○
GFDS1	Backlash estimation (estimation value)	—	○	—	○
GFDS2	Backlash estimation (estimation progress)	—	○	—	○
GFDS3	Backlash estimation (status)	—	○	—	○
GFDS4	Backlash error number	—	○	—	○
GFDS5	Backlash estimation move distance	—	○	—	○

Encoder communication circuit diagnosis data ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
ECCDS0	CN2 encoder communication circuit diagnosis possibility	—	○	○	○
ECCDS1	CN2L encoder communication circuit diagnosis possibility	—	○	○	○
ECCDS2	CN2 encoder communication circuit diagnosis status	—	○	○	○
ECCDS3	CN2L encoder communication circuit diagnosis status	—	○	○	○
ECCDS4	CN2 encoder communication circuit diagnosis result	—	○	○	○
ECCDS5	CN2L encoder communication circuit diagnosis result	—	○	○	○

Life Diagnosis ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
ALD0	Cumulative power-on time	—	○	○	○
ALD1	Number of inrush current switching times	—	○	○	○

Input signal for test operation (for test operation) ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
TMI0	Input signal for test operation	—	○	○	○
TMI1	Input signal for test operation	—	○	○	○
TMI2	For manufacturer setting	—	—	—	—

When using the input signal for test operation (for test operation), note the following.

Precautions	Description
Writing a value to a virtual device using an object	Numerical input cannot be used. Use a word switch for writing.

Forced output of signal pin (for test operation) ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
TMO0	Forced output of signal pin	—	○	○	○

When using the forced output of signal pin (for test operation), note the following.

Precautions	Description
Writing a value to a virtual device using an object	Numerical input cannot be used. Use a word switch for writing.

Set data (for test operation) ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
TMD0	Motor speed	—	○	○	○
TMD1	Write acceleration/deceleration time constant	—	○	○	○
TMD3	Move distance	—	○	○	○

97.16.8 Precautions for virtual servo amplifier devices ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

For the precautions for virtual servo amplifier devices, refer to the following.

☞ Page 3241 Precautions for virtual servo amplifier devices ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

97.17 [FREQROL 700/800, Sensorless Servo]

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Item	Reference
Specifications of bit devices	☞ Page 3457 Monitoring-supported bit devices ([FREQROL 700/800, Sensorless Servo])
	☞ Page 3457 Availability of writing/reading data to/from bit devices ([FREQROL 700/800, Sensorless Servo])
Specifications of word devices	☞ Page 3458 Monitoring-supported word devices ([FREQROL 700/800, Sensorless Servo])
	☞ Page 3458 Availability of writing/reading data to/from word devices ([FREQROL 700/800, Sensorless Servo])
Specifications of virtual inverter devices	☞ Page 3459 Virtual inverter devices ([FREQROL 700/800, Sensorless Servo])

97.17.1 Monitoring-supported bit devices ([FREQROL 700/800, Sensorless Servo])

The following table shows monitoring-supported virtual bit devices for inverters.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3457 Availability of writing/reading data to/from bit devices ([FREQROL 700/800, Sensorless Servo])

For details on virtual inverter devices, refer to the following.

☞ Page 3459 Virtual inverter devices ([FREQROL 700/800, Sensorless Servo])

○: Available

×: Not available

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
RS	Inverter status monitor	Decimal	0 to 15	×	×
WS	Operation command	Decimal	0 to 15	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
☞ Page 2868 Monitoring a controller through the GOT (server/client function)

97.17.2 Availability of writing/reading data to/from bit devices ([FREQROL 700/800, Sensorless Servo])

The following shows the availability of writing/reading data to/from bit devices by device type.

When the device type is other than the bit type, set the device No. in multiples of 16.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type				
	Bit	Byte (8 bits)	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)
RS	R/-	-/-	-/-	-/-	-/-
WS	-/W	-/-	-/-	-/-	-/-

97.17.3 Monitoring-supported word devices ([FREQROL 700/800, Sensorless Servo])

The following table shows monitoring-supported virtual word devices for inverters.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3458 Availability of writing/reading data to/from word devices ([FREQROL 700/800, Sensorless Servo])

For details on virtual inverter devices, refer to the following.

☞ Page 3459 Virtual inverter devices ([FREQROL 700/800, Sensorless Servo])

○: Available

×: Not available

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
A	Alarm definition	Decimal	0 to 7	○	×
Pr	Parameter	Decimal	0 to 1500	○	×
SP	Special parameter	Decimal	108 to 127	○	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
☞ Page 2868 Monitoring a controller through the GOT (server/client function)

97.17.4 Availability of writing/reading data to/from word devices ([FREQROL 700/800, Sensorless Servo])

The following shows the availability of writing/reading data to/from word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data
A	R/-	-/-	-/-	-/-
Pr	R/W	-/-	-/-	-/-
SP*1	R/W	-/-	-/-	-/-

*1 Only reading is available for SP111 to SP114.
Only writing is available for SP124 and SP125.

97.17.5 Virtual inverter devices ([FREQROL 700/800, Sensorless Servo])

The following shows the correspondence between the virtual devices used in the GOT and the inverter data.

For details on the inverter parameters, refer to the following.

☞ Manual of the inverter used

Virtual device name	Reference
RS	☞ Page 3459 Inverter status monitor ([FREQROL 700/800, Sensorless Servo])
WS	☞ Page 3460 Operation command ([FREQROL 700/800, Sensorless Servo])
	☞ Page 3461 When activating WS devices ([FREQROL 700/800, Sensorless Servo])
A	☞ Page 3462 Alarm definition ([FREQROL 700/800, Sensorless Servo])
Pr	☞ Page 3462 Parameter ([FREQROL 700/800, Sensorless Servo])
SP	☞ Page 3463 Special parameter ([FREQROL 700/800, Sensorless Servo])
	☞ Page 3464 Specifications of SP122 and SP121 ([FREQROL 700/800, Sensorless Servo])

Inverter status monitor ([FREQROL 700/800, Sensorless Servo])

The settable devices vary by inverter model.

For the settable devices of each inverter, refer to the following.

📖Manual of the inverter used

Parameter settings may have been changed in the inverter.

To use the devices, check the parameters and set the parameters as required.

Ex.

Example) When using the FR-A800 series

Virtual device name	Name
RS0	RUN (Inverter running)
RS1	During forward rotation
RS2	During reverse rotation
RS3	SU (Up to frequency)
RS4	OL (Overload warning)
RS5	IPF (Instantaneous power failure/undervoltage)
RS6	FU (Output frequency detection)
RS7	ABC1 (Fault)
RS8	ABC2
RS9	Safety monitor output
RS15	Fault occurrence

Operation command ([FREQROL 700/800, Sensorless Servo])

The settable devices vary by inverter model.

For the settable devices of each inverter, refer to the following.

📖Manual of the inverter used

Parameter settings may have been changed in the inverter.

To use the devices, check the parameters and set the parameters as required.

Ex.

Example) When using the FR-A800 series

Virtual device name	Name
WS0*1*2	AU (Terminal 4 input selection)
WS1	Forward rotation command
WS2	Reverse rotation command
WS3*1*2	RL (Low-speed operation command)
WS4*1*2	RM (Middle-speed operation command)
WS5*1*2	RH (High-speed operation command)
WS6*1*2	RT (Second function selection)
WS7*1*2	MRS (Output stop)
WS8*1*2*3	JOG (Jog operation selection)
WS9*1*2*3	CS (Selection of automatic restart after instantaneous power failure, flying start)
WS10*1*2*3	STOP (Start self-holding selection)
WS11*1*2*3	RES (Inverter reset)

*1 When the GOT is connected to the PU connector and the operation mode is set to the PU operation mode, the device cannot be used.

*2 The monitor data can be changed by the settings of Pr.178 to Pr.189 (input terminal function selection).
For the relationship between the parameters and terminals, refer to the following.
📖Manual of the inverter used

*3 The device is invalid for the initial state of the inverter in which a function that cannot be controlled by the GOT is set or no function is set.
Change the relevant setting in Pr.178 to Pr.189 (input terminal function selection).

When using the operation command, note the following.

Precautions	Description
When setting a device for a bit switch	Do not select [Alternate] for [Switch Action] of the bit switch.
When activating WS devices	☞ Page 3461 When activating WS devices ([FREQROL 700/800, Sensorless Servo])

When activating WS devices ([FREQROL 700/800, Sensorless Servo])

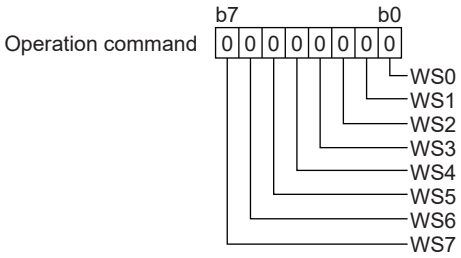
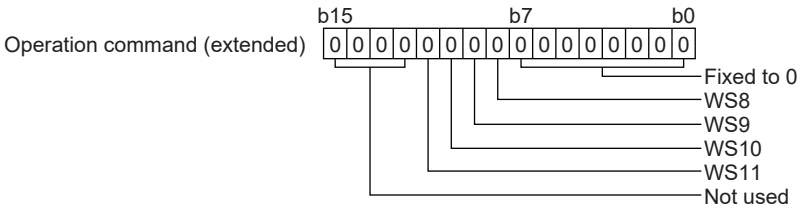
More than one WS device cannot turn on at once.

Turning on one WS device turns off the other WS devices.

Use SP122 or SP121 to turn on multiple WS devices simultaneously.

☞ Page 3464 Specifications of SP122 and SP121 ([FREQROL 700/800, Sensorless Servo])

The following shows the specifications of WS devices.

WS device	Specifications
WS0 to WS7	GOT's virtual devices corresponding to the inverter's operation commands (instruction code: HFA, bit length: 8 bits)  The function of each bit differs depending on the inverter. Example) A800 series inverter • WS0: AU (Terminal 4 input selection) • WS1: Forward rotation command • WS2: Reverse rotation command • WS3: RL (Low-speed operation command) • WS4: RM (Middle-speed operation command) • WS5: RH (High-speed operation command) • WS6: RT (Second function selection) • WS7: MRS (Output stop) When you turn on one of the WS0 to WS7 devices, the rest of these devices are turned off. Example) When you turn on WS1 WS0 and WS2 to WS7 are turned off.
WS8 to WS15	WS8 to WS11 are GOT's virtual devices corresponding to the inverter's operation commands (extended) (instruction code: HF9, bit length: 16 bits).  The function of each bit differs depending on the inverter. Example) A800 series inverter • WS8: JOG (Jog operation selection) • WS9: CS (Selection of automatic restart after instantaneous power failure, flying start) • WS10: STOP (Start self-holding selection) • WS11: RES (Inverter reset) Turning on a device out of WS8 to WS11 turns off WS0 to WS15 except the one that is turned on. Example) When you turn on WS9 WS0 to WS8 and WS10 to WS15 are turned off.

Alarm definition ([FREQROL 700/800, Sensorless Servo])

The settable devices vary by inverter model.

For the settable devices of each inverter, refer to the following.

Manual of the inverter used

Ex.

Example) When using the FR-A800 series

Virtual device name	Name
A0	Second fault in past
A1	Latest fault
A2	Fourth fault in past
A3	Third fault in past
A4	Sixth fault in past
A5	Fifth fault in past
A6	Eighth fault in past
A7	Seventh fault in past

Parameter ([FREQROL 700/800, Sensorless Servo])

The virtual device numbers (Pr) used in the GOT correspond to the inverter parameter numbers.

For the inverter parameters, refer to the following.

Manual of the inverter used

When using a parameter, note the following.

Precautions	Description
When setting 8888 or 9999 to a parameter (Pr) of an inverter	Values 8888 and 9999 are used for particular purposes. To set these values to inverter parameters, write the following values to the GOT virtual device. • To set 8888: 65520 • To set 9999: 65535
When setting calibration parameters Pr900 to Pr905	Write one of the following values to SP108 (second parameter changing) as required. • H00: Offset/gain • H01: Analog • H02: Analog value at terminal

Special parameter ([FREQROL 700/800, Sensorless Servo])

If the GOT reads or writes data from or to a virtual device (SP), the inverter's instruction code corresponding to the SP device is used for communication.

For instruction details, and values to be read and written, refer to the following.

📖Manual of the inverter used

Ex.

Example) When using the FR-A800 series

Virtual device name	Name	Instruction code (hexadecimal)	
		Read	Writing
SP108	Second parameter changing	—	—
SP109	Set frequency (RAM)	0502	8502
SP110	Set frequency (RAM, EEPROM)	0503	8503
SP111	Output frequency/speed	0800	—
SP112	Output current	0800	—
SP113	Output voltage	0800	—
SP114	Special monitor	0800	—
SP115	Special monitor selection No.	—	—
SP116	Faults history batch clear / Latest fault, Second fault in past	0631 0632	8628
SP117	Third fault in past, Fourth fault in past	0633 0634	—
SP118	Fifth fault in past, Sixth fault in past	0635 0636	—
SP119	Seventh fault in past, Eighth fault in past	0637 0638	—
SP121*1*2	Inverter status monitor (extended) / Operation command (extended)	0504 0624	8504
SP122*1*2	Inverter status monitor / Operation command	0504	8504
SP123	Operation mode	0510	8510 8511 8514
SP124	All parameter clear	—	84F0: Parameter clear 84F8: Parameter clear (excluding communication parameters) 84F1: All parameter clear 84F9: All parameter clear (excluding communication parameters)
SP125	Inverter reset	—	84E0: Inverter reset (no response) 84E1: Inverter reset (after acknowledgement)
SP127	Link parameter extended setting	—	—

*1 When the GOT is connected to the PU connector and the operation mode is set to the PU operation mode, the multispeed operation (WS3 to WS7, SP121, SP122) cannot be used.
For using the multi-speed operation, follow either of the operations below.
Connect the GOT to the RS-485 terminal and set the operation mode to the NET operation mode (Computer link operation mode), and then operate the inverter.
Change the motor speed with the set frequency (SP109, SP110), and then operate the inverter with the forward or reverse rotation (WS1, WS2, SP121, SP122).

*2 For the specifications of SP122 and SP121, refer to the following.
☞ Page 3464 Specifications of SP122 and SP121 ([FREQROL 700/800, Sensorless Servo])

Specifications of SP122 and SP121 ([FREQROL 700/800, Sensorless Servo])

SP122 and SP121 are the GOT's virtual devices corresponding to the inverter's ordinary and extended operation commands. The following shows the specifications of SP122 and SP121.

SP device	Specifications
SP122	GOT's virtual device corresponding to the inverter's operation command (instruction code: HFA, bit length: 8 bits) The function of each bit differs depending on the inverter. Example) A800 series inverter • SP122.b0: AU (Terminal 4 input selection) • SP122.b1: Forward rotation command • SP122.b2: Reverse rotation command • SP122.b3: RL (Low-speed operation command) • SP122.b4: RM (Middle-speed operation command) • SP122.b5: RH (High-speed operation command) • SP122.b6: RT (Second function selection) • SP122.b7: MRS (Output stop) To send more than one command simultaneously, convert the binary value of the bits to be turned on to a decimal value, and write the decimal value to SP122. Example) Sending forward rotation command and RL (Low-speed operation command) simultaneously Binary: 00001010 Decimal: 10 Write 10 to SP122.
SP121	GOT's virtual device corresponding to the inverter's operation commands (instruction code: HF9, bit length: 16 bits) The function of each bit differs depending on the inverter. Example) A800 series inverter • SP121.b0: AU (Terminal 4 input selection) • SP121.b1: Forward rotation command • SP121.b2: Reverse rotation command • SP121.b3: RL (Low-speed operation command) • SP121.b4: RM (Middle-speed operation command) • SP121.b5: RH (High-speed operation command) • SP121.b6: RT (Second function selection) • SP121.b7: MRS (Output stop) • SP121.b8: JOG (Jog operation selection) • SP121.b9: CS (Selection of automatic restart after instantaneous power failure, flying start) • SP121.b10: STOP (Start self-holding selection) • SP121.b11: RES (Inverter reset) • SP121.b12 to SP122.b15: Not used To send more than one command simultaneously, convert the binary value of the device (with applicable bits on) to a decimal value, and write the decimal value to SP121. Example) Sending forward rotation command, RL (Low-speed operation command), and JOG (Jog operation selection) simultaneously Binary: 0000000100001010 Decimal: 266 Write 266 to SP121.

97.18 [FREQROL 800/E700NE(Batch monitor)]

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Item	Reference
Specifications of bit devices	☞ Page 3465 Monitoring-supported bit devices ([FREQROL 800/E700NE(Batch monitor)])
	☞ Page 3467 Availability of writing/reading data to/from bit devices ([FREQROL 800/E700NE(Batch monitor)])
Specifications of word devices	☞ Page 3468 Monitoring-supported word devices ([FREQROL 800/E700NE(Batch monitor)])
	☞ Page 3468 Availability of writing/reading data to/from word devices ([FREQROL 800/E700NE(Batch monitor)])
Specifications of double-word devices	☞ Page 3469 Monitoring-supported double-word devices ([FREQROL 800/E700NE(Batch monitor)])
	☞ Page 3469 Availability of writing/reading data to/from double-word devices ([FREQROL 800/E700NE(Batch monitor)])
Specifications of virtual inverter devices	☞ Page 3470 Virtual inverter devices ([FREQROL 800/E700NE(Batch monitor)])

97.18.1 Monitoring-supported bit devices ([FREQROL 800/E700NE(Batch monitor)])

The following table shows monitoring-supported virtual bit devices for inverters.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3467 Availability of writing/reading data to/from bit devices ([FREQROL 800/E700NE(Batch monitor)])

For details on virtual inverter devices, refer to the following.

☞ Page 3470 Virtual inverter devices ([FREQROL 800/E700NE(Batch monitor)])

○: Available

×: Not available

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
RS	Inverter status monitor	Decimal	0 to 15	×	×
WS	Operation command	Decimal	0 to 15	×	×
IOST	I/O terminal monitor	Decimal	0 to 127	×	×
CMD	Operation command	Decimal	0 to 63	×	×
X*2	Input relay	Hexadecimal	00 to 7F	○	○
Y*2	Output relay	Hexadecimal	00 to 7F	○	○
M*2	Internal relay	Decimal	0 to 127	○	○
TC*2	Timer coil	Decimal	0 to 15	○	○ Not usable as word data
TT*2	Timer contact	Decimal	0 to 15	○	○ Not usable as word data
CC*2	Counter coil	Decimal	0 to 15	○	○ Not usable as word data
CT*2	Counter contact	Decimal	0 to 15	○	○ Not usable as word data
SC*2	Retentive timer coil	Decimal	0 to 15	○	○ Not usable as word data
SS*2	Retentive timer contact	Decimal	0 to 15	○	○ Not usable as word data
SM*2*3	Special relay	Decimal	0 to 2047	○	○

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
☞ Page 2868 Monitoring a controller through the GOT (server/client function)
*2 Not available for FR-E7□0-NE.
*3 Functions are assigned to the SM devices by using the PLC function.
Do not write data from the GOT.

97.18.2 Availability of writing/reading data to/from bit devices ([FREQROL 800/E700NE(Batch monitor)])

The following shows the availability of writing/reading data to/from bit devices by device type.

When the device type is other than the bit type, set the device No. in multiples of 16.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type				
	Bit	Byte (8 bits)	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)
RS	R/-	-/-	-/-	-/-	-/-
WS	-/W	-/-	-/-	-/-	-/-
IOST	R/-	-/-	-/-	-/-	-/-
CMD	-/W	-/-	-/-	-/-	-/-
X	R/W	-/-	R/W	R/W	-/-
Y	R/W	-/-	R/W	R/W	-/-
M	R/W	-/-	R/W	R/W	-/-
TC	R/W	-/-	-/-	-/-	-/-
TT	R/W	-/-	-/-	-/-	-/-
CC	R/W	-/-	-/-	-/-	-/-
CT	R/W	-/-	-/-	-/-	-/-
SC	R/W	-/-	-/-	-/-	-/-
SS	R/W	-/-	-/-	-/-	-/-
SM	R/W	-/-	R/W	R/W	-/-

97.18.3 Monitoring-supported word devices ([FREQROL 800/E700NE(Batch monitor)])

The following table shows monitoring-supported virtual word devices for inverters.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3468 Availability of writing/reading data to/from word devices ([FREQROL 800/E700NE(Batch monitor)])

For details on virtual inverter devices, refer to the following.

☞ Page 3470 Virtual inverter devices ([FREQROL 800/E700NE(Batch monitor)])

○: Available

×: Not available

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
A	Alarm definition	Decimal	0 to 7	○	○
Pr	Parameter	Decimal	0 to 1500	○	○
SP	Special parameter	Decimal	108 to 127	○	○
TN*2	Timer current value	Decimal	0 to 15	○	○
CN*2	Counter current value	Decimal	0 to 15	○	○
SN*2	Retentive timer current value	Decimal	0 to 15	○	○
D*2	Data register	Decimal	0 to 255	○	○
SD*2	Special register	Decimal	0 to 2047	○	○

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
☞ Page 2868 Monitoring a controller through the GOT (server/client function)

*2 Not available for FR-E7□0-NE.

97.18.4 Availability of writing/reading data to/from word devices ([FREQROL 800/E700NE(Batch monitor)])

The following shows the availability of writing/reading data to/from word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data
A	R/-	-/-	-/-	-/-
Pr	R/W	-/-	-/-	-/-
SP*1	R/W	-/-	-/-	-/-
TN	R/W	R/W	-/-	-/-
CN	R/W	R/W	-/-	-/-
SN	R/W	R/W	-/-	-/-
D	R/W	R/W	-/-	R/W
SD	R/W	R/W	-/-	R/W

*1 Only reading is available for SP111 to SP114.
Only writing is available for SP124 and SP125.

97.18.5 Monitoring-supported double-word devices ([FREQROL 800/E700NE(Batch monitor)])

The following table shows monitoring-supported virtual double-word devices for inverters.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3469 Availability of writing/reading data to/from double-word devices ([FREQROL 800/E700NE(Batch monitor)])

For details on virtual inverter devices, refer to the following.

☞ Page 3470 Virtual inverter devices ([FREQROL 800/E700NE(Batch monitor)])

○: Available

×: Not available

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
AL	Faults history	Decimal	0 to 899	×	×
LPr*2	Parameter (32-bit)	Decimal	0 to 1500	×	×
OP	Operation parameter	Decimal	0 to 5	×	×
PV	Current value monitor	Decimal	1 to 143	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
☞ Page 2868 Monitoring a controller through the GOT (server/client function)

*2 If you specify LPr900 to LPr935, the following item is displayed in the device setting dialog.
[Setting items (for calibration parameters)]: [Bias/gain value], [Analog input value]
Enclose the device number in parentheses when selecting [Analog input value].
Example 1) Notation when [Bias/gain value] is selected: LPr900
Example 2) Notation when [Analog input value] is selected: LPr(900)
When LPr900 or LPr901 (Calibration parameter) is specified, selecting [Bias/gain value] or [Analog input value] does not affect the monitoring target.

97.18.6 Availability of writing/reading data to/from double-word devices ([FREQROL 800/E700NE(Batch monitor)])

The following shows the availability of writing/reading data to/from double-word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of double-word data
AL	-/-	R/-	-/-	-/-
LPr	-/-	R/W	-/-	-/-
OP*1	-/-	R/W	-/-	-/-
PV	-/-	R/-	-/-	-/-

*1 Only reading is available for OP3.
Only writing is available for OP4 and OP5.

97.18.7 Virtual inverter devices ([FREQROL 800/E700NE(Batch monitor)])

The following shows the correspondence between the virtual devices used in the GOT and the inverter data.

For details on the inverter parameters, refer to the following.

Manual of the inverter used

Virtual device name	Reference
RS*1	☞ Page 3471 Inverter status monitor ([FREQROL 800/E700NE(Batch monitor)])
WS*1	☞ Page 3472 Operation command ([FREQROL 800/E700NE(Batch monitor)])
	☞ Page 3473 Operation when turning on/off the WS devices ([FREQROL 800/E700NE(Batch monitor)])
IOST	☞ Page 3474 I/O terminal monitor ([FREQROL 800/E700NE(Batch monitor)])
CMD	☞ Page 3476 Operation command ([FREQROL 800/E700NE(Batch monitor)])
	☞ Page 3477 Operation when turning on/off one of the CMD3 to CMD12 devices ([FREQROL 800/E700NE(Batch monitor)])
	☞ Page 3477 Operation when turning on/off one of the CMD48 to CMD52 devices ([FREQROL 800/E700NE(Batch monitor)])
A*1	☞ Page 3478 Alarm definition ([FREQROL 800/E700NE(Batch monitor)])
Pr*1	☞ Page 3478 Parameter, parameter (32-bit) ([FREQROL 800/E700NE(Batch monitor)])
SP*1	☞ Page 3479 Special parameter ([FREQROL 800/E700NE(Batch monitor)])
	☞ Page 3480 Specifications of SP122 and SP121 ([FREQROL 800/E700NE(Batch monitor)])
AL	☞ Page 3481 Alarm history ([FREQROL 800/E700NE(Batch monitor)])
LPr	☞ Page 3478 Parameter, parameter (32-bit) ([FREQROL 800/E700NE(Batch monitor)])
OP	☞ Page 3483 Operation parameter ([FREQROL 800/E700NE(Batch monitor)])
PV	☞ Page 3484 Current value monitor ([FREQROL 800/E700NE(Batch monitor)])

*1 The virtual device is also usable for the conventional model.
When you create a project, use a different device.

The lists of virtual devices shown in this section explain some inverter models using the following abbreviations.

Series	Abbreviation	Model
FR-A800 Plus series	CRN	FR-A8□0-CRN FR-A8□2-CRN FR-A8□0-E-CRN FR-A8□2-E-CRN
	R2R	FR-A8□0-R2R FR-A8□2-R2R FR-A8□0-E-R2R FR-A8□2-E-R2R
	AWH	FR-A8□0-AWH FR-A8□0-E-AWH
	LC	FR-A8□0-LC FR-A8□0-E-LC
FR-E800 series	E800	FR-E8□0
	E	FR-E8□0-E
FR-D800 series	D800	FR-D8□0
	E	FR-D8□0-E

Inverter status monitor ([FREQROL 800/E700NE(Batch monitor)])

Parameter settings may have been changed in the inverter.

To use the devices, check the parameters and set the parameters as required.

📖Manual of the inverter used

○: Available

—: Not available

Virtual device name	Name	FR-A800 series FR-A800 Plus series FR-F800 series	FR-E800 series	FR-D800 series	FR-E700 series FR-E7□0-NE
RS0	RUN (Inverter running)	○*1	○*1	○*1	○*1
RS1	During forward rotation	○	○	○	○
RS2	During reverse rotation	○	○	○	○
RS3	SU (Up to frequency)	○*1	○	○	○
RS4	OL (Overload warning)	○*1	○	○	○
RS5	IPF (Instantaneous power failure/ undervoltage)	○*1	—	—	—
RS6	FU (Output frequency detection)	○*1	○*1	○*1	○*1
RS7	ABC1 (Fault)	○*1	○*1	○*1	○*1
RS8	ABC2	○*1	—	—	—
RS9	Safety monitor output	○	○	○	—
RS15	Fault occurrence	○	○	○	○

*1 The monitor data can be changed by the settings of Pr.190 to Pr.196 or Pr.313 to Pr.322 (output terminal function selection).
For the relationship between the parameters and terminals, refer to the following.
📖Manual of the inverter used

Operation command ([FREQROL 800/E700NE(Batch monitor)])

Parameter settings may have been changed in the inverter.

To use the devices, check the parameters and set the parameters as required.

📖Manual of the inverter used

○: Available

—: Not available

Virtual device name	Name	FR-A800 series FR-A800 Plus series FR-F800 series	FR-E800 series	FR-D800 series	FR-E700 series FR-E7□0-NE
WS0*1	AU (Terminal 4 input selection)	○*2	○	○	○
WS1	Forward rotation command	○	○	○	○
WS2	Reverse rotation command	○	○	○	○
WS3*1	RL (Low-speed operation command)	○*2	○*2	○*2	○*2
WS4*1	RM (Middle-speed operation command)	○*2	○*2	○*2	○*2
WS5*1	RH (High-speed operation command)	○*2	○*2	○*2	○*2
WS6*1	RT (Second function selection)	○*2	○	○	○
WS7*1	MRS (Output stop)	○*2	○*2	○	○*2
WS8*1	JOG (Jog operation selection)	○*2*3	○	○	—
WS9*1	CS (Selection of automatic restart after instantaneous power failure, flying start)	○*2*3	—	—	—
WS10*1	STOP (Start self-holding selection)	○*2*3	—	—	—
WS11*1	RES (Inverter reset)	○*2*3	○*2*3	—	○*2

*1 When the GOT is connected to the PU connector and the operation mode is set to the PU operation mode, the device cannot be used.

*2 The monitor data can be changed by the settings of Pr.178 to Pr.189 (input terminal function selection).
For the relationship between the parameters and terminals, refer to the following.
📖Manual of the inverter used

*3 The device is invalid for the initial state of the inverter in which a function that cannot be controlled by the GOT is set or no function is set.
Change the relevant setting in Pr.178 to Pr.189 (input terminal function selection).

When using the operation command, note the following.

Precautions	Description
When setting a device for a bit switch	Do not select [Alternate] for [Switch Action] of the bit switch.
When activating WS devices	☞ Page 3473 Operation when turning on/off the WS devices ([FREQROL 800/E700NE(Batch monitor)])

Operation when turning on/off the WS devices ([FREQROL 800/E700NE(Batch monitor)])

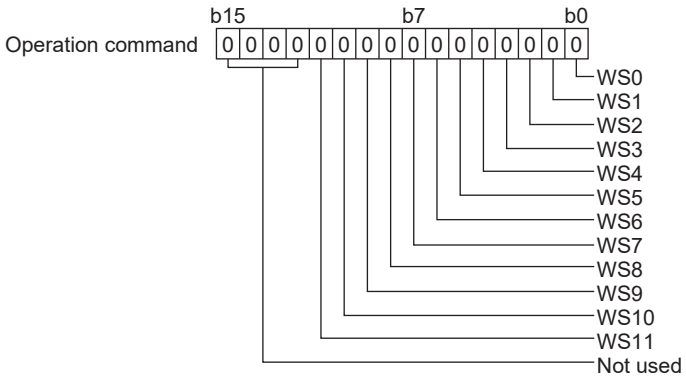
When you turn on/off one of the WS0 to WS15 devices, the rest of these devices are turned off.

Ex.

When you turn on WS9

WS0 to WS8 and WS10 to WS15 are turned off.

The following shows the relationship between the inverter's operation commands and WS devices.



The function of each bit differs depending on the inverter.

Ex.

A800 series inverter

- WS0: AU (Terminal 4 input selection)
- WS1: Forward rotation command
- WS2: Reverse rotation command
- WS3: RL (Low-speed operation command)
- WS4: RM (Middle-speed operation command)
- WS5: RH (High-speed operation command)
- WS6: RT (Second function selection)
- WS7: MRS (Output stop)
- WS8: JOG (Jog operation selection)
- WS9: CS (Selection of automatic restart after instantaneous power failure, flying start)
- WS10: STOP (Start self-holding selection)
- WS11: RES (Inverter reset)

Use SP122 or SP121 to control multiple WS devices simultaneously.

☞ Page 3480 Specifications of SP122 and SP121 ([FREQROL 800/E700NE(Batch monitor)])

I/O terminal monitor ([FREQROL 800/E700NE(Batch monitor)])

○: Available

—: Not available

Virtual device name	Name	FR-A800 series FR-A800 Plus series FR-F800 series	FR-E800 series		FR-D800 series		FR-E700 series
			E800	E	D800	E	FR-E7□0-NE
IOST1	Input terminal STF/DI0	○*1	○*1	○*1	○*1	○*1	○*1
IOST2	Input terminal STR/DI1	○*1	○*1	○*1	○*1	○*1	○*1
IOST3	Input terminal RL	○*1	○*1	—	○*1	○*1	○*1
IOST4	Input terminal RM	○*1	○*1	—	○*1	○*1	○*1
IOST5	Input terminal RH	○*1	○*1	—	○*1	○*1	○*1
IOST6	Input terminal RT	○*1	—	—	—	—	—
IOST7	Input terminal AU	○*1	—	—	—	—	—
IOST8	Input terminal JOG	○*1	—	—	—	—	—
IOST9	Input terminal CS	○*1	—	—	—	—	—
IOST10	Input terminal MRS	○*1	○*1	—	—	—	○*1
IOST11	Input terminal STOP	○*1	—	—	—	—	—
IOST12	Input terminal RES	○*1	○*1	—	—	—	○*1
IOST32	Output terminal RUN	○*1	○*1	—	○*1	○*1	○*1
IOST33	Output terminal SU	○*1	—	—	—	—	—
IOST34	Output terminal IPF	○*1	—	—	—	—	—
IOST35	Output terminal OL	○*1	—	—	—	—	—
IOST36	Output terminal FU	○*1	○*1	—	○*1	—	○*1
IOST37	Output terminal ABC1	○*1	○*1	○*1	○*1	○*1	○*1
IOST38	Output terminal ABC2	○*1	—	—	—	—	—
IOST39	Output terminal SO	○	—	—	—	—	—
IOST48	NET Y1 output	—	○*1*2	○*1*2	○*1	○*1	—
IOST49	NET Y2 output	—	○*1*2	○*1*2	○*1	○*1	—
IOST50	NET Y3 output	—	○*1*2	○*1*2	○*1	○*1	—
IOST51	NET Y4 output	—	○*1*2	○*1*2	○*1	○*1	—
IOST64	Option input terminal X0	○	○	○	—	—	—
IOST65	Option input terminal X1	○	○	○	—	—	—
IOST66	Option input terminal X2	○	○	○	—	—	—
IOST67	Option input terminal X3	○	○	○	—	—	—
IOST68	Option input terminal X4	○	○	○	—	—	—
IOST69	Option input terminal X5	○	○	○	—	—	—
IOST70	Option input terminal X6	○	○	○	—	—	—
IOST71	Option input terminal X7	○	○	○	—	—	—
IOST72	Option input terminal X8	○	○	○	—	—	—
IOST73	Option input terminal X9	○	○	○	—	—	—
IOST74	Option input terminal X10	○	○	○	—	—	—
IOST75	Option input terminal X11	○	○	○	—	—	—
IOST76	Option input terminal X12	○	○	○	—	—	—
IOST77	Option input terminal X13	○	○	○	—	—	—
IOST78	Option input terminal X14	○	○	○	—	—	—
IOST79	Option input terminal X15	○	○	○	—	—	—
IOST80	Option input terminal DY	○	○	○	—	—	—
IOST96	Option output terminal Y0/DO0	○*1	○*1	○*1	—	—	—
IOST97	Option output terminal Y1/DO1	○*1	○*1	○*1	—	—	—
IOST98	Option output terminal Y2/DO2	○*1	○*1	○*1	—	—	—
IOST99	Option output terminal Y3/DO3	○*1	○*1	○*1	—	—	—
IOST100	Option output terminal Y4/DO4	○*1	○*1	○*1	—	—	—
IOST101	Option output terminal Y5/DO5	○*1	○*1	○*1	—	—	—

Virtual device name	Name	FR-A800 series FR-A800 Plus series FR-F800 series	FR-E800 series		FR-D800 series		FR-E700 series
			E800	E	D800	E	FR-E7□0-NE
IOST102	Option output terminal Y6/DO6	○*1	○*1	○*1	—	—	—
IOST103	Option output terminal RA1	○*1	○*1	○*1	—	—	—
IOST104	Option output terminal RA2	○*1	○*1	○*1	—	—	—
IOST105	Option output terminal RA3	○*1	○*1	○*1	—	—	—

*1 The monitor data can be changed by the settings of Pr.178 to Pr.189 (input terminal function selection) or Pr.190 to Pr.196 or Pr.313 to Pr.322 (output terminal function selection).
For the relationship between the parameters and terminals, refer to the following.
Manual of the inverter used

*2 Use an inverter having SERIAL (serial number) "□□211○○○○○○" or later.
SERIAL (serial number) is provided on the rating plate of the inverter.

Operation command ([FREQROL 800/E700NE(Batch monitor)])

○: Available

—: Not available

Virtual device name	Name	FR-A800 series FR-A800 Plus series FR-F800 series	FR-E800 series	FR-D800 series	FR-E700 series FR-E7□0-NE
CMD0	Stop command	○	○	○	○
CMD1	Forward rotation command	○	○	○	○
CMD2	Reverse rotation command	○	○	○	○
CMD3*1	RL terminal	○*2	○*2	○*2	○*2
CMD4*1	RM terminal	○*2	○*2	○*2	○*2
CMD5*1	RH terminal	○*2	○*2	○*2	○*2
CMD6*1	RT terminal	○*2	—	—	○
CMD7*1	AU terminal	○*2	—	—	○
CMD8*1	JOG terminal	○*2*3	—	—	—
CMD9*1	CS terminal	○*2*3	—	—	—
CMD10*1	MRS terminal	○*2	○*2	—	○*2
CMD11*1	STOP terminal	○*2*3	—	—	—
CMD12*1	RES terminal	○*2*3	○*2*3	—	○*2
CMD16	Alarm history clear	○	○	○	○
CMD24	Inverter reset	○	○	○	○
CMD32	Parameter clear	○	○	○	○
CMD33	Parameter clear (communication parameters are not cleared)	○	○	○	○
CMD34	All parameter clear	○	○	○	○
CMD35	All parameter clear (communication parameters are not cleared)	○	○	○	○
CMD48	NET X1 input	—	○*2*3*4	○*2*3	—
CMD49	NET X2 input	—	○*2*3*4	○*2*3	—
CMD50	NET X3 input	—	○*2*3*4	○*2*3	—
CMD51	NET X4 input	—	○*2*3*4	○*2*3	—
CMD52	NET X5 input	—	○*2*3*4	○*2*3	—

*1 When the GOT is connected to the PU connector and the operation mode is set to the PU operation mode, the device cannot be used.

*2 The monitor data can be changed by the settings of Pr.178 to Pr.189 (input terminal function selection).
For the relationship between the parameters and terminals, refer to the following.
Manual of the inverter used

*3 The device is invalid for the initial state of the inverter in which a function that cannot be controlled by the GOT is set or no function is set.
Change the relevant setting in Pr.178 to Pr.189 (input terminal function selection).

*4 Use an inverter having SERIAL (serial number) "□□211○○○○○" or later.
SERIAL (serial number) is provided on the rating plate of the inverter.

When using the operation command, note the following.

Precautions	Description
When setting a device for a bit switch	Do not select [Alternate] for [Switch Action] of the bit switch.
Operation when a CMD device is turned on	☞ Page 3477 Operation when turning on/off one of the CMD3 to CMD12 devices ([FREQROL 800/E700NE(Batch monitor)]) ☞ Page 3477 Operation when turning on/off one of the CMD48 to CMD52 devices ([FREQROL 800/E700NE(Batch monitor)])

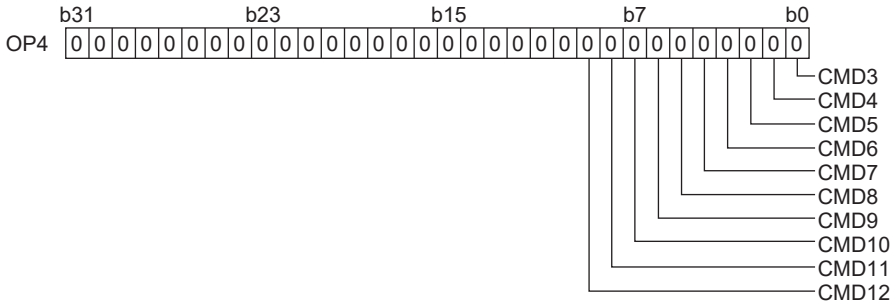
Operation when turning on/off one of the CMD3 to CMD12 devices ([FREQROL 800/E700NE(Batch monitor)])

The CMD3 to CMD12 devices cannot be controlled simultaneously.

When you turn on/off one of the CMD3 to CMD12 devices, the rest of these devices are turned off.

Use OP4 to control multiple devices from CMD3 to CMD12 simultaneously.

The following shows the relationship between CMD3 to CMD12 and OP4.



Ex.

Turning on the CMD3 (RL terminal) and CMD12 (RES terminal) devices

For a hexadecimal value, write 0201.

For a decimal value, write 513.

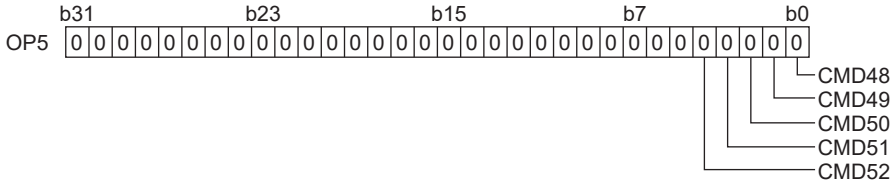
Operation when turning on/off one of the CMD48 to CMD52 devices ([FREQROL 800/E700NE(Batch monitor)])

The CMD48 to CMD52 devices cannot be controlled simultaneously.

When you turn on/off one of the CMD48 to CMD52 devices, the rest of these devices are turned off.

Use OP5 to control multiple devices from CMD48 to CMD52 simultaneously.

The following shows the relationship between CMD48 to CMD52 and OP5.



Ex.

Turning on the CMD48 (NET X1 input) and CMD52 (NET X5 input) devices

For a hexadecimal value, write 0011.

For a decimal value, write 17.

Alarm definition ([FREQROL 800/E700NE(Batch monitor)])

○: Available

—: Not available

Virtual device name	Name	FR-A800 series FR-A800 Plus series FR-F800 series	FR-E800 series	FR-D800 series	FR-E700 series FR-E7□0-NE
A0	Second fault in past	○	○	○	○
A1	Latest fault	○	○	○	○
A2	Fourth fault in past	○	○	○	○
A3	Third fault in past	○	○	○	○
A4	Sixth fault in past	○	○	○	○
A5	Fifth fault in past	○	○	○	○
A6	Eighth fault in past	○	○	○	○
A7	Seventh fault in past	○	○	○	○

Parameter, parameter (32-bit) ([FREQROL 800/E700NE(Batch monitor)])

The virtual device numbers (Pr and LPr) used in the GOT correspond to the inverter parameter numbers.

For the inverter parameters, refer to the following.

Manual of the inverter used

When using a parameter, note the following.

Precautions	Description
When setting 8888 or 9999 to a parameter (Pr) of an inverter	Values 8888 and 9999 are used for particular purposes. To set these values to inverter parameters using the virtual devices, write the following values from the GOT. • To set 8888: 65520 • To set 9999: 65535
When setting 8888 or 9999 to a 32-bit parameter (LPr) of an inverter	Values 8888 and 9999 are used for particular purposes. To set these values to inverter parameters, write the following values to the GOT virtual device. • To set 8888: 8888 • To set 9999: 9999 It is recommended to set the data type to [Real] for a parameter that can accept a value with a fractional part.
When specifying a calibration parameter or PID display	If you specify Pr900 to Pr933 (Calibration parameter), or Pr934 and Pr935 (PID display), whether the value below must be written to SP108 (Second parameter changing) depends on the specified device number and inverter model. • H00: Offset/gain • H01: Analog • H02: Analog value at terminal

Special parameter ([FREQROL 800/E700NE(Batch monitor)])

○: Available

—: Not available

Virtual device name	Name	FR-A800 series FR-A800 Plus series FR-F800 series	FR-E800 series	FR-D800 series	FR-E700 series FR-E7□0-NE
SP108	Second parameter changing	○	○	○	○
SP109	Set frequency (RAM)	○	○	○	○
SP110	Set frequency (RAM, EEPROM)	○	○	○	○
SP111	Output frequency/speed	○	○	○	○
SP112	Output current	○	○	○	○
SP113	Output voltage	○	○	○	○
SP114	Special monitor	○	○	○	○
SP115	Special monitor selection No.	○	○	○	○
SP116	Faults history batch clear / Latest fault, Second fault in past	○	○	○	○
SP117	Third fault in past, Fourth fault in past	○	○	○	○
SP118	Fifth fault in past, Sixth fault in past	○	○	○	○
SP119	Seventh fault in past, Eighth fault in past	○	○	○	○
SP121*1	Inverter status monitor (extended) / Operation command (extended)	○	○	○	○
SP122*1	Inverter status monitor / Operation command	○	○	○	○
SP123	Operation mode	○	○	○	○
SP124	All parameter clear	○	○	○	○
SP125	Inverter reset	○	○	○	○
SP127	Link parameter extended setting	○	○	○	○

*1 When the GOT is connected to the PU connector and the operation mode is set to the PU operation mode, SP121.b1, SP121.b2, SP122.b1, and SP122.b2 can be used.
For the specifications of SP122 and SP121, refer to the following.
☞ Page 3480 Specifications of SP122 and SP121 ([FREQROL 800/E700NE(Batch monitor)])

Specifications of SP122 and SP121 ([FREQROL 800/E700NE(Batch monitor)])

SP122 and SP121 are the GOT's virtual devices corresponding to the inverter's operation commands.

The following shows the specifications of SP122 and SP121.

SP device	Specifications
SP122	The function of each bit differs depending on the inverter. Example) A800 series inverter • SP122.b0: AU (Terminal 4 input selection) • SP122.b1: Forward rotation command • SP122.b2: Reverse rotation command • SP122.b3: RL (Low-speed operation command) • SP122.b4: RM (Middle-speed operation command) • SP122.b5: RH (High-speed operation command) • SP122.b6: RT (Second function selection) • SP122.b7: MRS (Output stop) • SP122.b8 to b15: Fixed to 0 SP122 (virtual device) is used to maintain compatibility with the conventional model. When [FREQROL 800/E700NE(Batch monitor)] is set, writing a value to SP122 clears each bit of SP122.b8 to SP122.b15. To send more than one command simultaneously, convert the binary value of the bits to be turned on to a decimal value, and write the decimal value to SP122. Example) Sending forward rotation command and RL (Low-speed operation command) simultaneously Binary: 0000000000001010 Decimal: 10 Write 10 to SP122.
SP121	The function of each bit differs depending on the inverter. Example) A800 series inverter • SP121.b0: AU (Terminal 4 input selection) • SP121.b1: Forward rotation command • SP121.b2: Reverse rotation command • SP121.b3: RL (Low-speed operation command) • SP121.b4: RM (Middle-speed operation command) • SP121.b5: RH (High-speed operation command) • SP121.b6: RT (Second function selection) • SP121.b7: MRS (Output stop) • SP121.b8: JOG (Jog operation selection) • SP121.b9: CS (Selection of automatic restart after instantaneous power failure, flying start) • SP121.b10: STOP (Start self-holding selection) • SP121.b11: RES (Inverter reset) To send more than one command simultaneously, convert the binary value of the device (with applicable bits on) to a decimal value, and write the decimal value to SP121. Example) Sending forward rotation command, RL (Low-speed operation command), and JOG (Jog operation selection) simultaneously Binary: 0000000100001010 Decimal: 266 Write 266 to SP121.

Alarm history ([FREQROL 800/E700NE(Batch monitor)])

○: Available

—: Not available

Virtual device name	Name	FR-A800 series FR-A800 Plus series FR-F800 series	FR-E800 series	FR-D800 series	FR-E700 series FR-E7□0-NE
AL0	Current fault	○	○	○	○
AL1	Current warning 1	—	○	○	—
AL2	Current warning 2	—	○	○	—
AL100	Faults history 1 (symbol)	○	○	○	○
AL101	Faults history 1 (output frequency)	○	○	○	○
AL102	Faults history 1 (output current)	○	○	○	○
AL103	Faults history 1 (output voltage)	○	○	○	○
AL104	Faults history 1 (energization time)	○	○	○	○
AL105	Faults history 1 (year)	○	○	○	—
AL106	Faults history 1 (month)	○	○	○	—
AL107	Faults history 1 (day)	○	○	○	—
AL108	Faults history 1 (hour)	○	○	○	—
AL109	Faults history 1 (minute)	○	○	○	—
AL200	Faults history 2 (symbol)	○	○	○	○
AL201	Faults history 2 (output frequency)	○	○	○	○
AL202	Faults history 2 (output current)	○	○	○	○
AL203	Faults history 2 (output voltage)	○	○	○	○
AL204	Faults history 2 (energization time)	○	○	○	○
AL205	Faults history 2 (year)	○	○	○	—
AL206	Faults history 2 (month)	○	○	○	—
AL207	Faults history 2 (day)	○	○	○	—
AL208	Faults history 2 (hour)	○	○	○	—
AL209	Faults history 2 (minute)	○	○	○	—
AL300	Faults history 3 (symbol)	○	○	○	○
AL301	Faults history 3 (output frequency)	○	○	○	○
AL302	Faults history 3 (output current)	○	○	○	○
AL303	Faults history 3 (output voltage)	○	○	○	○
AL304	Faults history 3 (energization time)	○	○	○	○
AL305	Faults history 3 (year)	○	○	○	—
AL306	Faults history 3 (month)	○	○	○	—
AL307	Faults history 3 (day)	○	○	○	—
AL308	Faults history 3 (hour)	○	○	○	—
AL309	Faults history 3 (minute)	○	○	○	—
AL400	Faults history 4 (symbol)	○	○	○	○
AL401	Faults history 4 (output frequency)	○	○	○	○
AL402	Faults history 4 (output current)	○	○	○	○
AL403	Faults history 4 (output voltage)	○	○	○	○
AL404	Faults history 4 (energization time)	○	○	○	○
AL405	Faults history 4 (year)	○	○	○	—
AL406	Faults history 4 (month)	○	○	○	—
AL407	Faults history 4 (day)	○	○	○	—
AL408	Faults history 4 (hour)	○	○	○	—
AL409	Faults history 4 (minute)	○	○	○	—
AL500	Faults history 5 (symbol)	○	○	○	○
AL501	Faults history 5 (output frequency)	○	○	○	○
AL502	Faults history 5 (output current)	○	○	○	○
AL503	Faults history 5 (output voltage)	○	○	○	○

Virtual device name	Name	FR-A800 series FR-A800 Plus series FR-F800 series	FR-E800 series	FR-D800 series	FR-E700 series FR-E7□0-NE
AL504	Faults history 5 (energization time)	○	○	○	○
AL505	Faults history 5 (year)	○	○	○	—
AL506	Faults history 5 (month)	○	○	○	—
AL507	Faults history 5 (day)	○	○	○	—
AL508	Faults history 5 (hour)	○	○	○	—
AL509	Faults history 5 (minute)	○	○	○	—
AL600	Faults history 6 (symbol)	○	○	○	○
AL601	Faults history 6 (output frequency)	○	○	○	○
AL602	Faults history 6 (output current)	○	○	○	○
AL603	Faults history 6 (output voltage)	○	○	○	○
AL604	Faults history 6 (energization time)	○	○	○	○
AL605	Faults history 6 (year)	○	○	○	—
AL606	Faults history 6 (month)	○	○	○	—
AL607	Faults history 6 (day)	○	○	○	—
AL608	Faults history 6 (hour)	○	○	○	—
AL609	Faults history 6 (minute)	○	○	○	—
AL700	Faults history 7 (symbol)	○	○	○	○
AL701	Faults history 7 (output frequency)	○	○	○	○
AL702	Faults history 7 (output current)	○	○	○	○
AL703	Faults history 7 (output voltage)	○	○	○	○
AL704	Faults history 7 (energization time)	○	○	○	○
AL705	Faults history 7 (year)	○	○	○	—
AL706	Faults history 7 (month)	○	○	○	—
AL707	Faults history 7 (day)	○	○	○	—
AL708	Faults history 7 (hour)	○	○	○	—
AL709	Faults history 7 (minute)	○	○	○	—
AL800	Faults history 8 (symbol)	○	○	○	○
AL801	Faults history 8 (output frequency)	○	○	○	○
AL802	Faults history 8 (output current)	○	○	○	○
AL803	Faults history 8 (output voltage)	○	○	○	○
AL804	Faults history 8 (energization time)	○	○	○	○
AL805	Faults history 8 (year)	○	○	○	—
AL806	Faults history 8 (month)	○	○	○	—
AL807	Faults history 8 (day)	○	○	○	—
AL808	Faults history 8 (hour)	○	○	○	—
AL809	Faults history 8 (minute)	○	○	○	—

Operation parameter ([FREQROL 800/E700NE(Batch monitor)])

○: Available

—: Not available

Virtual device name		Name	FR-A800 series FR-A800 Plus series FR-F800 series	FR-E800 series	FR-D800 series	FR-E700 series FR-E7□0-NE
OP0		Operation frequency(RAM)	○	○	○	○
OP1		Operation frequency (EEPROM)	○	○	○	○
OP2		Operation mode	○	○	○	○
OP3		Operating status	○	○	○	○
OP4	—	Input terminal command	○	○	○	○*1*2*3
	b0	CMD3: RL terminal				
	b1	CMD4: RM terminal				
	b2	CMD5: RH terminal				
	b3	CMD6: RT terminal				
	b4	CMD7: AU terminal				
	b5	CMD8: JOG terminal				
	b6	CMD9: CS terminal				
	b7	CMD10: MRS terminal				
	b8	CMD11: STOP terminal				
	b9	CMD12: RES terminal				
OP5	—	Input terminal command (extend)	—	○*4	○*2*3	—
	b0	CMD48: NET X1 input				
	b1	CMD49: NET X2 input				
	b2	CMD50: NET X3 input				
	b3	CMD51: NET X4 input				
	b4	CMD52: NET X5 input				

*1 When the GOT is connected to the PU connector and the operation mode is set to the PU operation mode, the device cannot be used.

*2 The monitor data can be changed by the settings of Pr.178 to Pr.189 (input terminal function selection).
For the relationship between the parameters and terminals, refer to the following.
Manual of the inverter used

*3 The device is invalid for the initial state of the inverter in which a function that cannot be controlled by the GOT is set or no function is set.
Change the relevant setting in Pr.178 to Pr.189 (input terminal function selection).

*4 Use an inverter having SERIAL (serial number) "□□211○○○○○○" or later.
SERIAL (serial number) is provided on the rating plate of the inverter.

Current value monitor ([FREQROL 800/E700NE(Batch monitor)])

○: Available

—: Not available

Virtual device name	Name	FR-A800 series	FR-A800 Plus series				FR-F800 series	FR-E800 series		FR-D800 series	FR-E700 series
			CRN	R2R	AWH	LC		E800	E		FR-E7□0-NE
PV1	Output frequency/speed	—	—	—	○	—	—	—	—	—	○
	Output frequency	○	○	○	—	○	○	○	○	○	—
PV2	Output current	○	○	○	○	○	○	○	○	○	○
PV3	Output voltage	○	○	○	○	○	○	○	○	○	○
PV5	Frequency setting value/ speed setting	—	—	—	○	—	—	—	—	—	○
	Frequency setting value	○	○	○	—	○	○	○	○	○	—
PV6	Speed/machine speed	○	○	○	—	○	○	○	○	○	—
	Operation speed	—	—	—	○	—	—	—	—	—	—
PV7	Motor torque	○	○	○	○	○	○	○	○	○	○
PV8	Converter output voltage	○	○	○	○	○	○	○	○	○	○
PV9	Regenerative brake duty	○	○	○	○	○	—	○	○	○	○
PV10	Electronic thermal O/L relay load factor	○	○	○	○	○	○	○	○	○	○
PV11	Output current peak value	○	○	○	○	○	○	○	○	○	○
PV12	Converter output voltage peak value	○	○	○	○	○	○	○	○	○	○
PV13	Input power	○	○	○	○	○	○	—	—	○	—
PV14	Output power	○	○	○	○	○	○	○	○	○	○
PV17	Load meter	○	○	○	○	○	○	○	○	○	—
PV18	Motor excitation current	○	○	○	○	○	○	○	○	○	—
PV19	Position pulse	○	○	—	—	○	—	—	—	—	—
	Analog output signal for dancer tension control	—	—	○	○	—	—	—	—	—	—
PV20	Cumulative energization time	○	○	○	○	○	○	○	○	○	○
PV22	Orientation status	○	○	—	—	○	—	—	—	—	—
	Winding diameter	—	—	○	○	—	—	—	—	—	—
PV23	Actual operation time	○	○	○	○	○	○	○	○	○	○
PV24	Motor load factor	○	○	○	○	○	○	○	○	○	○
PV25	Cumulative power	○	○	○	○	○	○	○	○	○	○
PV26	Line speed command	—	—	○	○	—	—	—	—	—	—
PV27	Actual line speed	—	—	○	○	—	—	—	—	—	—
PV28	Dancer compensation speed	—	—	○	○	—	—	—	—	—	—
PV29	Winding length (upper + lower)	—	—	—	○	—	—	—	—	—	—
PV30	Analog output signal 2 for dancer tension control	—	—	○	○	—	—	—	—	—	—
PV31	Line speed pulse monitor	—	—	○	○	—	—	—	—	—	—
PV32	Torque command	○	○	○	○	○	—	○	○	○	—
PV33	Torque current command	○	○	○	○	○	—	○	○	○	—
PV34	Motor output	○	○	○	○	○	○	—	—	—	—
PV35	Feedback pulse	○	○	○	○	○	—	—	—	—	—
PV36	Torque (positive polarity for driving torque/negative polarity for regenerative braking torque)	○	○	○	○	○	—	—	—	—	—
PV37	Heat sink temperature	—	—	—	—	—	—	—	—	○	—
PV38	Trace status	—	—	—	○	—	—	—	—	—	—

Virtual device name	Name	FR-A800 series	FR-A800 Plus series				FR-F800 series	FR-E800 series		FR-D800 series	FR-E700 series
			CRN	R2R	AWH	LC		E800	E		FR-E7□0-NE
PV39	SSCNET III(/H) communication status	○	○	—	—	○	—	—	—	—	—
PV40	PLC function user monitor 1	○	○	○	○	○	○	○	○	—	—
PV41	PLC function user monitor 2	○	○	○	○	○	○	○	○	—	—
PV42	PLC function user monitor 3	○	○	○	○	○	○	○	○	—	—
PV43	Station number (RS-485 terminals)	—	—	—	○	—	—	—	—	—	—
PV44	Station number (PU)	—	—	—	○	—	—	—	—	—	—
PV45	Station number (CC-Link)	—	—	—	○	—	—	—	—	—	—
PV46	Motor temperature	○	○	○	○	○	—	—	—	—	—
PV50	Energy saving effect	○	○	○	○	○	○	○	○	—	—
	Power saving effect / Energy saving effect	—	—	—	—	—	—	—	—	○	—
PV51	Cumulative energy saving	○	○	○	○	○	○	○	○	—	—
	Cumulative saved energy / Cumulative energy saving	—	—	—	—	—	—	—	—	○	—
PV52	PID set point	○	○	○	○	○	○	○	○	○	○
PV53	PID measured value	○	○	○	○	○	○	○	○	○	○
PV54	PID deviation	○	○	○	○	○	○	○	○	○	○
PV61	Motor thermal load factor	○	○	○	○	○	○	○	○	○	○
PV62	Inverter thermal load factor	○	○	○	○	○	○	○	○	○	○
PV63	Cumulative power 2	—	—	—	—	—	—	—	—	—	○
	Winding length (upper)	—	—	—	○	—	—	—	—	—	—
PV64	PTC thermistor resistance	○	○	○	○	○	○	—	—	○	—
PV67	PID measured value 2	○	○	○	○	○	○	○	○	○	—
PV68	Emergency drive status	—	—	—	—	—	—	—	—	○	—
PV69	PID input pressure value	—	—	—	—	—	○	—	—	—	—
PV71	Cumulative pulse	○	○	○	○	○	—	—	—	—	—
PV72	Cumulative pulse overflow times	○	○	○	○	○	—	—	—	—	—
PV73	Cumulative pulse (control terminal option)	○	○	○	○	○	—	—	—	—	—
PV74	Cumulative pulse overflow times (control terminal option)	○	○	○	○	○	—	—	—	—	—
PV75	Multi-revolution counter	○	○	—	—	○	—	—	—	—	—
PV77	32-bit cumulative energy (lower 16 bits)	—	—	—	○	—	—	—	—	—	—
PV78	32-bit cumulative energy (upper 16 bits)	—	—	—	○	—	—	—	—	—	—
PV79	32-bit cumulative energy (lower 16 bits)	—	—	—	○	—	—	—	—	—	—
PV80	32-bit cumulative energy (upper 16 bits)	—	—	—	○	—	—	—	—	—	—
PV81	BACnet reception status	—	—	—	—	—	○	—	—	—	—
	Tension command after taper compensation	—	—	○	○	—	—	—	—	—	—
PV82	BACnet token pass counter	—	—	—	—	—	○	—	—	—	—
	Winding diameter compensation torque command	—	—	○	○	—	—	—	—	—	—
PV83	BACnet valid APDU counter	—	—	—	—	—	○	—	—	—	—
	Inertia compensation	—	—	○	○	—	—	—	—	—	—

Virtual device name	Name	FR-A800 series	FR-A800 Plus series				FR-F800 series	FR-E800 series		FR-D800 series	FR-E700 series
			CRN	R2R	AWH	LC		E800	E		FR-E7□0-NE
PV84	BACnet communication error counter	—	—	—	—	—	○	—	—	—	—
	Mechanical loss compensation	—	—	○	○	—	—	—	—	—	—
PV85	BACnet terminal FM/CA output level	—	—	—	—	—	○	—	—	—	—
	Terminal 1 input voltage	—	—	○	○	—	—	—	—	—	—
PV86	BACnet terminal AM output level	—	—	—	—	—	○	—	—	—	—
	Terminal 1 input after calibration (%)	—	—	○	○	—	—	—	—	—	—
PV87	Remote output value 1	○	○	○	○	○	○	—	—	—	—
PV88	Remote output value 2	○	○	○	○	○	○	—	—	—	—
PV89	Remote output value 3	○	○	○	○	○	○	—	—	—	—
PV90	Remote output value 4	○	○	○	○	○	○	—	—	—	—
PV91	PID manipulated variable	○	○	○	○	○	○	○	○	○	—
PV92	Second PID set point	○	○	—	—	○	○	—	—	—	—
	PID torque control actual tension	—	—	○	—	—	—	—	—	—	—
PV93	Second PID measured value	○	○	—	—	○	○	—	—	—	—
	PID torque control manipulated tension	—	—	○	—	—	—	—	—	—	—
PV94	Second PID deviation	○	○	—	—	○	○	—	—	—	—
PV95	Second PID measured value 2	○	○	—	—	○	○	—	—	—	—
PV96	Second PID manipulated variable	○	○	—	—	○	○	—	—	—	—
PV97	Dancer main set speed (For FR-E800 and FR-D800, dancer main speed setting)	○	○	—	—	○	—	○	○	○	—
	Winding diameter compensation speed	—	—	○	○	—	—	—	—	—	—
PV98	Control circuit temperature	○	○	○	○	○	○	—	—	○	—

98 Device range and settings of each controller

This chapter describes the range of devices settable in GT Designer3.
The settable range varies with the selection for [Controller Type] in the [Controller Setting] window.
Configure the device setting according to the specifications of the controller to be used.
Device specifications differ depending on the controller model even among the controllers of the same series.
If a nonexistent device or a device number out of the range is set for an object, other objects for which correct devices are set may not be monitored.

☞ Page 3488 AZBIL equipment ([Azbil SDC/DMC])
☞ Page 3490 OMRON equipment ([OMRON SYSMAC])
☞ Page 3494 OMRON equipment ([OMRON NJ/NX])
☞ Page 3495 OMRON equipment ([OMRON Digital Temperature Controller])
☞ Page 3501 KEYENCE equipment ([KEYENCE KV-700/1000/3000/5000/7000/8000])
☞ Page 3507 FUJI equipment ([FUJI MICREX-SX SPH])
☞ Page 3510 YASKAWA equipment ([YASKAWA MP2000])
☞ Page 3513 YASKAWA equipment ([YASKAWA MP3000])
☞ Page 3516 YASKAWA equipment ([YASKAWA Robot Controller])
☞ Page 3523 YOKOGAWA equipment ([YOKOGAWA FA-M3])
☞ Page 3528 ALLEN-BRADLEY equipment ([AB MicroLogix])
☞ Page 3534 ALLEN-BRADLEY equipment ([AB Control/CompactLogix])
☞ Page 3538 ALLEN-BRADLEY equipment ([AB Control/CompactLogix(Tag)])
☞ Page 3539 LS ELECTRIC equipment ([LS ELECTRIC XGK])
☞ Page 3543 SIEMENS equipment ([SIEMENS OP(Ethernet)])
☞ Page 3552 CLPA ([CC-Link IE Field Network Basic])
☞ Page 3556 CLPA ([SLMP])
☞ Page 3562 MODBUS ([MODBUS Server(GOT:Client)])
☞ Page 3569 MODBUS ([MODBUS Client(GOT:Server)])
☞ Page 3573 OPC([OPC UA])
☞ Page 3574 Microcomputer ([Computer])

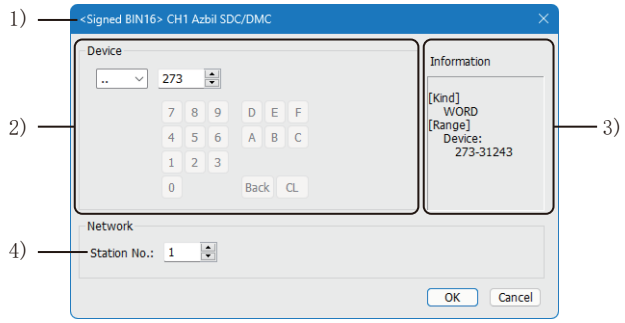
98.1 AZBIL equipment ([Azbil SDC/DMC])

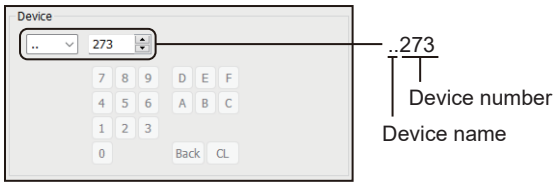
GT37 SoftGOT3000

Item	Reference
Device setting dialog	☞ Page 3488 Device setting dialog ([Azbil SDC/DMC])
Specifications of word devices	☞ Page 3489 Monitoring-supported word devices ([Azbil SDC/DMC])
	☞ Page 3489 Availability of writing/reading data to/from word devices ([Azbil SDC/DMC])

98.1.1 Device setting dialog ([Azbil SDC/DMC])

Set a device to be monitored.



Item		Description
1)	Title	Data type and channel number of the device to be set
2)	[Device]	Set the device name and device number. If a bit number needs to be specified, the setting item is displayed. Example) Setting of ..273 
3)	[Information]	Displays the setting range of each setting item according to the selected device.
4)	[Station No.]	Specify a station number. The setting range is [0] to [127] (direct) or [200] to [215] (indirect). For indirect specification of a station number, refer to the following. ☞ Page 3488 Indirect specification of a station number ([Azbil SDC/DMC])

Indirect specification of a station number ([Azbil SDC/DMC])

When you specify any of 200 to 215 for the station number, the value of the corresponding GOT data register (GD10 to GD25) is used as the station number.

The following shows the correspondence between station number setting values and GOT data registers (GD).

Station No.	GOT data register (GD)	Setting range
200	GD10	[0] to [127] Setting a value outside the above range causes a device range error.
201	GD11	
:	:	
214	GD24	
215	GD25	

98.1.2 Monitoring-supported word devices ([Azbil SDC/DMC])

The following table shows monitoring-supported word devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3489 Availability of writing/reading data to/from word devices ([Azbil SDC/DMC])

For the formats of devices, refer to the following.

☞ Page 849 Formats of devices, labels, and tags

○: Available

× Not available

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
..	Data	Decimal	273 to 31243	○	○

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.

☞ Page 2868 Monitoring a controller through the GOT (server/client function)

98.1.3 Availability of writing/reading data to/from word devices ([Azbil SDC/DMC])

The following shows the availability of writing/reading data to/from word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data
..	R/W	-/-	-/-	R/W

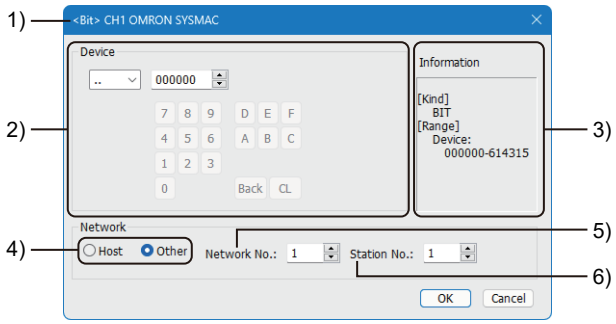
98.2 OMRON equipment ([OMRON SYSMAC])

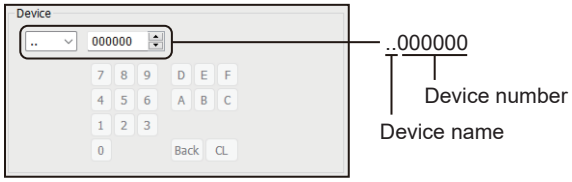
GT37 SoftGOT3000

Item	Reference
Device setting dialog	☞ Page 3490 Device setting dialog ([OMRON SYSMAC])
Specifications of bit devices	☞ Page 3491 Monitoring-supported bit devices ([OMRON SYSMAC])
	☞ Page 3492 Availability of writing/reading data to/from bit devices ([OMRON SYSMAC])
Specifications of word devices	☞ Page 3493 Monitoring-supported word devices ([OMRON SYSMAC])
	☞ Page 3493 Availability of writing/reading data to/from word devices ([OMRON SYSMAC])

98.2.1 Device setting dialog ([OMRON SYSMAC])

Set a device to be monitored.



Item		Description
1)	Title	Data type and channel number of the device to be set
2)	[Device]	Set the device name and device number. If a bit number needs to be specified, the setting item is displayed. Example) Setting of ..000000 
3)	[Information]	Displays the setting range of each setting item according to the selected device.
4)	Station type specification	Select the station type (host or other) for the controller to be monitored.
5)	[Network No.]	This item appears when [Other] is selected for the station type. Set the network number.
6)	[Station No.]	This item appears when [Other] is selected for the station type. Specify a station number.

98.2.2 Monitoring-supported bit devices ([OMRON SYSMAC])

The following table shows monitoring-supported bit devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3492 Availability of writing/reading data to/from bit devices ([OMRON SYSMAC])

For the formats of devices, refer to the following.

☞ Page 849 Formats of devices, labels, and tags

○: Available

× Not available

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
..	I/O relay, Internal auxiliary relay	Decimal	..(Channel No.)(Bit No.) Notation example: ..614300 The two rightmost digits represent a bit number. • Channel No. (decimal): 0000 to 6143 • Bit No.: 00 to 15	○	○
LR	Data link relay	Decimal	LR(Channel No.)(Bit No.) Notation example: LR19900 The two rightmost digits represent a bit number. • Channel No. (decimal): 000 to 199 • Bit No.: 00 to 15	○	○
HR	Holding relay	Decimal	HR(Channel No.)(Bit No.) Notation example: HR51100 The two rightmost digits represent a bit number. • Channel No. (decimal): 000 to 511 • Bit No.: 00 to 15	○	○
WR	Internal auxiliary relay, Work relay	Decimal	WR(Channel No.)(Bit No.) Notation example: WR51100 The two rightmost digits represent a bit number. • Channel No. (decimal): 000 to 511 • Bit No.: 00 to 15	○	○
TIM	Timer contact	Decimal	0 to 4095	○	○
CNT	Counter contact	Decimal	0 to 4095	○	○
AR	Auxiliary memory relay	Decimal	AR(Channel No.)(Bit No.) Notation example: AR1153500 The two rightmost digits represent a bit number. • Channel No. (decimal): 00000 to 11535 • Bit No.: 00 to 15	○	○

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.

☞ Page 2868 Monitoring a controller through the GOT (server/client function)

98.2.3 Availability of writing/reading data to/from bit devices ([OMRON SYSMAC])

The following shows the availability of writing/reading data to/from bit devices by device type.

When the device type is other than the bit type, set the device No. in multiples of 16.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type				
	Bit	Byte (8 bits)	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)
..	R/W	-/-	R/W	R/W	-/-
LR	R/W	-/-	R/W	R/W	-/-
HR	R/W	-/-	R/W	R/W	-/-
WR	R/W	-/-	R/W	R/W	-/-
TIM	R/-	-/-	-/-	-/-	-/-
CNT	R/-	-/-	-/-	-/-	-/-
AR	R/W	-/-	R/W	R/W	-/-

98.2.4 Monitoring-supported word devices ([OMRON SYSMAC])

The following table shows monitoring-supported word devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3493 Availability of writing/reading data to/from word devices ([OMRON SYSMAC])

For the formats of devices, refer to the following.

☞ Page 849 Formats of devices, labels, and tags

○: Available

× Not available

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
TIM*2*3	Timer (current value)	Decimal	0 to 4095	○	○
CNT*2*3	Counter (current value)	Decimal	0 to 4095	○	○
DM	Data memory	Decimal	0 to 32767	○	○
EM*4	Extension data memory, EM current bank	Decimal	0 to 32767	○	○
E*4	Extension data memory	Hexadecimal + decimal	E(Bank No.)-(Device) Notation example: E18-100 • Bank No. (hexadecimal): 0 to 18 • Device (decimal): 0 to 32767	○	○

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
☞ Page 2868 Monitoring a controller through the GOT (server/client function)

*2 A valid value ranges from 0 to 9999. (This applies to the 16 bit/32 bit device data.)

*3 This is handled as a BCD value in the PLC. When serial connection is used between the PLC and the GOT, this is handled as an unsigned 16-bit binary data in the GOT.
For the object for monitoring on the GOT, select [Unsigned BIN16] for [Data Type].

*4 Writing or reading data extending across banks is not possible.

98.2.5 Availability of writing/reading data to/from word devices ([OMRON SYSMAC])

The following shows the availability of writing/reading data to/from word devices by device type.

When executing the touch switch function that has been set during the bit specification of the word device, do not write any data to the word device through the sequence program.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data
TIM	R/W	R/W	-/-	R/W
CNT	R/W	R/W	-/-	R/W
DM	R/W	R/W	-/-	R/W
EM	R/W	R/W	-/-	R/W
E	R/W	R/W	-/-	R/W

98.3 OMRON equipment ([OMRON NJ/NX])

GT37 SoftGOT3000

Item	Reference
Device setting dialog	☞ Page 3494 Device setting dialog ([OMRON NJ/NX])
Device specifications	☞ Page 3494 Monitoring-supported devices ([OMRON NJ/NX])

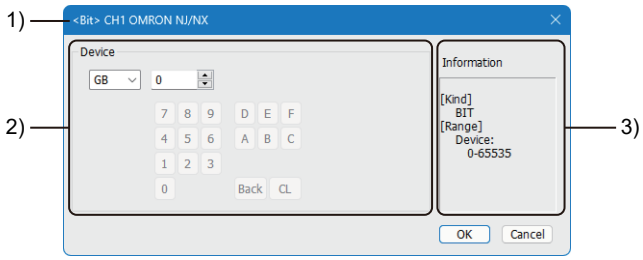
98.3.1 Device setting dialog ([OMRON NJ/NX])

Set a device to be monitored.

In the device setting dialog, only GOT internal devices are settable.

For setting the OMRON NJ/NX tags, refer to the following.

☞ Page 921 How to set OMRON NJ/NX tags



Item		Description
1)	Title	Data type and channel number of the device to be set
2)	[Device]	Set the device name and device number. If a bit number needs to be specified, the setting item is displayed.
3)	[Information]	Displays the setting range of each setting item according to the selected device.

98.3.2 Monitoring-supported devices ([OMRON NJ/NX])

To monitor the OMRON NJ or NX series, use OMRON NJ/NX tags.

For the usable OMRON NJ/NX tags, refer to the following.

☞ Page 922 Usable OMRON NJ/NX tags

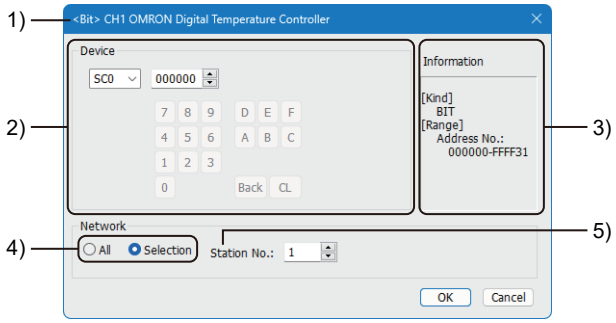
98.4 OMRON equipment ([OMRON Digital Temperature Controller])

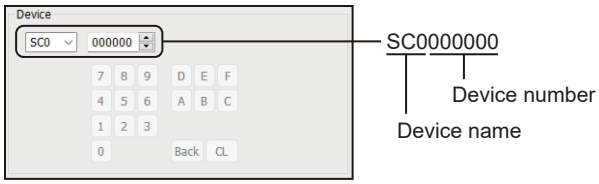
GT37 SoftGOT3000

Item	Reference
Device setting dialog	☞ Page 3496 Device setting dialog ([OMRON Digital Temperature Controller])
Specifications of bit devices	☞ Page 3497 Monitoring-supported bit devices ([OMRON Digital Temperature Controller])
	☞ Page 3497 Availability of writing/reading data to/from bit devices ([OMRON Digital Temperature Controller])
Specifications of word devices	☞ Page 3498 Monitoring-supported word devices ([OMRON Digital Temperature Controller])
	☞ Page 3498 Availability of writing/reading data to/from word devices ([OMRON Digital Temperature Controller])
Specifications of double-word devices	☞ Page 3499 Monitoring-supported double-word devices ([OMRON Digital Temperature Controller])
	☞ Page 3500 Availability of writing/reading data to/from double-word devices ([OMRON Digital Temperature Controller])

98.4.1 Device setting dialog ([OMRON Digital Temperature Controller])

Set a device to be monitored.



Item		Description	
1)	Title	Data type and channel number of the device to be set	
2)	[Device]	Set the device name and device number. If a bit number needs to be specified, the setting item is displayed. Example) Setting of SC0000000 	
3)	[Information]	Displays the setting range of each setting item according to the selected device.	
4)	Monitor target specification	Set the monitoring target of the set device.	
		[All]	Select this item when writing data to all the connected temperature controllers. During monitoring, the temperature controller of station No. 1 is monitored. When writing the data in numerical input, data is written to all connected temperature controllers during input, and the temperature controller of station No. 1 is monitored during other than input (displaying).
		[Selection]	Select this item when monitoring the temperature controller that has the specified station number.
5)	[Station No.]	This item appears when [Selection] is selected for the monitor target specification. The setting range is [0] to [99] (direct) or [100] to [115] (indirect). For indirect specification of a station number, refer to the following. ☞ Page 3496 Indirect specification of a station number ([OMRON Digital Temperature Controller])	

Indirect specification of a station number ([OMRON Digital Temperature Controller])

When you specify any of 100 to 115 for the station number, the value of the corresponding GOT data register (GD10 to GD25) is used as the station number.

The following shows the correspondence between station number setting values and GOT data registers (GD).

Station No.	GOT data register (GD)	Setting range
100	GD10	[0] to [99] Setting a value outside the above range causes a device range error.
101	GD11	
:	:	
114	GD24	
115	GD25	

98.4.2 Monitoring-supported bit devices ([OMRON Digital Temperature Controller])

The following table shows monitoring-supported bit devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3497 Availability of writing/reading data to/from bit devices ([OMRON Digital Temperature Controller])

For the formats of devices, refer to the following.

☞ Page 849 Formats of devices, labels, and tags

○: Available

× Not available

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
SC0	Status(Variable type C0)	Hexadecimal + decimal	SC0(Address No.)(Bit No.) Notation example: SC0FFFF00 • Address number (hexadecimal): 0000 to FFFF • Bit No. (decimal): 00 to 31	○	○ (Not usable as word data)
SC4	Status(Variable type C4)	Hexadecimal + decimal	SC4(Address No.)(Bit No.) Notation example: SC4FFFF00 • Address number (hexadecimal): 0000 to FFFF • Bit No. (decimal): 00 to 31	○	○ (Not usable as word data)

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.

☞ Page 2868 Monitoring a controller through the GOT (server/client function)

98.4.3 Availability of writing/reading data to/from bit devices ([OMRON Digital Temperature Controller])

The following shows the availability of writing/reading data to/from bit devices by device type.

When the device type is other than the bit type, set the device No. in multiples of 16.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type				
	Bit	Byte (8 bits)	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)
SC0	R/-	-/-	-/-	-/-	-/-
SC4	R/-	-/-	-/-	-/-	-/-

98.4.4 Monitoring-supported word devices ([OMRON Digital Temperature Controller])

The following table shows monitoring-supported word devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3498 Availability of writing/reading data to/from word devices ([OMRON Digital Temperature Controller])

For the formats of devices, refer to the following.

☞ Page 849 Formats of devices, labels, and tags

○: Available

× Not available

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
A*2*3	Operation command	Hexadecimal	0000 to 00FF	○	○ (Not usable as bit data)

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
☞ Page 2868 Monitoring a controller through the GOT (server/client function)

*2 Numerical input cannot be used.
Use a word switch for writing.

*3 This device corresponds to the command code in the operation instruction command of CompoWay/F communication.

98.4.5 Availability of writing/reading data to/from word devices ([OMRON Digital Temperature Controller])

The following shows the availability of writing/reading data to/from word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data
A	-/W	-/-	-/-	-/-

98.4.6 Monitoring-supported double-word devices ([OMRON Digital Temperature Controller])

The following table shows monitoring-supported double-word devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3500 Availability of writing/reading data to/from double-word devices ([OMRON Digital Temperature Controller])

For the formats of devices, refer to the following.

☞ Page 849 Formats of devices, labels, and tags

○: Available

× Not available

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
C0	Variable area C0	Hexadecimal	0000 to FFFF	×	×
C1	Variable area C1	Hexadecimal	0000 to FFFF	×	×
C3	Variable area C3	Hexadecimal	0000 to FFFF	×	×
C4	Variable area C4	Hexadecimal	0000 to FFFF	×	×
C5	Variable area C5	Hexadecimal	0000 to FFFF	×	×
C6	Variable area C6	Hexadecimal	0000 to FFFF	×	×
C7	Variable area C7	Hexadecimal	0000 to FFFF	×	×
C8	Variable area C8	Hexadecimal	0000 to FFFF	×	×
C9	Variable area C9	Hexadecimal	0000 to FFFF	×	×
CA	Variable area CA	Hexadecimal	0000 to FFFF	×	×
CB	Variable area CB	Hexadecimal	0000 to FFFF	×	×
CC	Variable area CC	Hexadecimal	0000 to FFFF	×	×
CD	Variable area CD	Hexadecimal	0000 to FFFF	×	×
CE	Variable area CE	Hexadecimal	0000 to FFFF	×	×
CF	Variable area CF	Hexadecimal	0000 to FFFF	×	×
D0	Variable area D0	Hexadecimal	0000 to FFFF	×	×
D1	Variable area D1	Hexadecimal	0000 to FFFF	×	×
D2	Variable area D2	Hexadecimal	0000 to FFFF	×	×
D3	Variable area D3	Hexadecimal	0000 to FFFF	×	×
D8	Variable area D8	Hexadecimal	0000 to FFFF	×	×
D9	Variable area D9	Hexadecimal	0000 to FFFF	×	×
DA	Variable area DA	Hexadecimal	0000 to FFFF	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.

☞ Page 2868 Monitoring a controller through the GOT (server/client function)

98.4.7 Availability of writing/reading data to/from double-word devices ([OMRON Digital Temperature Controller])

The following shows the availability of writing/reading data to/from double-word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of double-word data
C0	-/-	R/-	-/-	-/-
C1	-/-	R/W	-/-	-/-
C3	-/-	R/W	-/-	-/-
C4	-/-	R/W	-/-	-/-
C5	-/-	R/W	-/-	-/-
C6	-/-	R/W	-/-	-/-
C7	-/-	R/W	-/-	-/-
C8	-/-	R/W	-/-	-/-
C9	-/-	R/W	-/-	-/-
CA	-/-	R/W	-/-	-/-
CB	-/-	R/W	-/-	-/-
CC	-/-	R/W	-/-	-/-
CD	-/-	R/W	-/-	-/-
CE	-/-	R/W	-/-	-/-
CF	-/-	R/W	-/-	-/-
D0	-/-	R/W	-/-	-/-
D1	-/-	R/W	-/-	-/-
D2	-/-	R/W	-/-	-/-
D3	-/-	R/W	-/-	-/-
D8	-/-	R/W	-/-	-/-
D9	-/-	R/W	-/-	-/-
DA	-/-	R/W	-/-	-/-

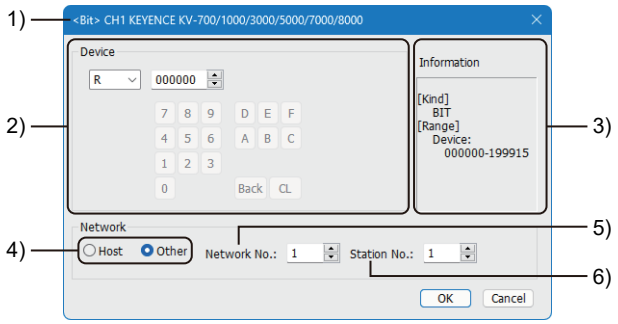
98.5 KEYENCE equipment ([KEYENCE KV-700/1000/3000/5000/7000/8000])

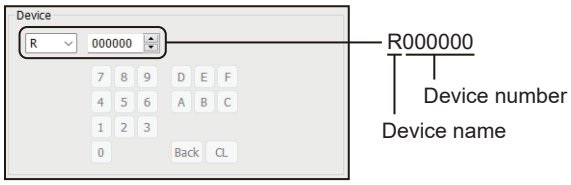
GT37 SoftGOT3000

Item	Reference
Device setting dialog	☞ Page 3501 Device setting dialog ([KEYENCE KV-700/1000/3000/5000/7000/8000])
Specifications of bit devices	☞ Page 3502 Monitoring-supported bit devices ([KEYENCE KV-700/1000/3000/5000/7000/8000])
	☞ Page 3503 Availability of writing/reading data to/from bit devices ([KEYENCE KV-700/1000/3000/5000/7000/8000])
Specifications of word devices	☞ Page 3504 Monitoring-supported word devices ([KEYENCE KV-700/1000/3000/5000/7000/8000])
	☞ Page 3505 Availability of writing/reading data to/from word devices ([KEYENCE KV-700/1000/3000/5000/7000/8000])
Specifications of double-word devices	☞ Page 3505 Monitoring-supported double-word devices ([KEYENCE KV-700/1000/3000/5000/7000/8000])
	☞ Page 3506 Availability of writing/reading data to/from double-word devices ([KEYENCE KV-700/1000/3000/5000/7000/8000])
Precautions	☞ Page 3506 Precautions ([KEYENCE KV-700/1000/3000/5000/7000/8000])

98.5.1 Device setting dialog ([KEYENCE KV-700/1000/3000/5000/7000/8000])

Set a device to be monitored.



Item		Description
1)	Title	Data type and channel number of the device to be set
2)	[Device]	Set the device name and device number. If a bit number needs to be specified, the setting item is displayed. Example) Setting of R000000 
3)	[Information]	Displays the setting range of each setting item according to the selected device.
4)	Station type specification	Select the station type (host or other) for the controller to be monitored.
5)	[Network No.]	This item appears when [Other] is selected for the station type. Set the network number.
6)	[Station No.]	This item appears when [Other] is selected for the station type. Specify a station number.

98.5.2 Monitoring-supported bit devices ([KEYENCE KV-700/1000/3000/5000/7000/8000])

The following table shows monitoring-supported bit devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3503 Availability of writing/reading data to/from bit devices ([KEYENCE KV-700/1000/3000/5000/7000/8000])

For the formats of devices, refer to the following.

☞ Page 849 Formats of devices, labels, and tags

○: Available

× Not available

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
R*2	Relay	Decimal	R(Channel No.)(Bit No.) Notation example: R199900 • Channel No. (decimal): 0000 to 1999 • Bit No. (decimal): 00 to 15	○	×
B*3	Link relay	Hexadecimal	0000 to 7FFF	○	×
MR*2	Internal auxiliary relay	Decimal	MR(Channel No.)(Bit No.) Notation example: MR399900 • Channel No. (decimal): 0000 to 3999 • Bit No. (decimal): 00 to 15	○	×
LR	Latch relay	Decimal	LR(Channel No.)(Bit No.) Notation example: LR99900 • Channel No. (decimal): 000 to 999 • Bit No. (decimal): 00 to 15	○	×
T*3	Timer (contact)	Decimal	0000 to 3999	○	×
C*3	Counter (contact)	Decimal	0000 to 3999	○	×
CR	Control relay	Decimal	CR(Channel No.)(Bit No.) Notation example: CR8900 • Channel No. (decimal): 00 to 89 • Bit No. (decimal): 00 to 15	○	×
CTC*3*4	High-speed counter comparators (contact)	Decimal	0 to 7	×	×
VB	Work relay	Hexadecimal	0000 to F9FF	○	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
☞ Page 2868 Monitoring a controller through the GOT (server/client function)

*2 When communication is performed through the following extension unit, the readable/writable device range is 00000 to 99915.
KV-L2□V
KV-LE2□V
KV-EP21V

*3 Monitoring by GOT is possible only when a device is used in the sequence program.

*4 In writing, only resetting of a contact is possible.

98.5.3 Availability of writing/reading data to/from bit devices ([KEYENCE KV-700/1000/3000/5000/7000/8000])

The following shows the availability of writing/reading data to/from bit devices by device type.

When the device type is other than the bit type, set the device No. in multiples of 16.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type				
	Bit	Byte (8 bits)	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)
R	R/W	-/-	R/W	R/W	-/-
B	R/W	-/-	R/W	R/W	-/-
MR	R/W	-/-	R/W	R/W	-/-
LR	R/W	-/-	R/W	R/W	-/-
T	R/W	-/-	-/-	-/-	-/-
C	R/W	-/-	-/-	-/-	-/-
CR	R/W	-/-	R/W	R/W	-/-
CTC	R/W	-/-	-/-	-/-	-/-
VB	R/W	-/-	R/W	R/W	-/-

98.5.4 Monitoring-supported word devices ([KEYENCE KV-700/1000/3000/5000/7000/8000])

The following table shows monitoring-supported word devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3505 Availability of writing/reading data to/from word devices ([KEYENCE KV-700/1000/3000/5000/7000/8000])

For the formats of devices, refer to the following.

☞ Page 849 Formats of devices, labels, and tags

○: Available

× Not available

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
DM	Data memory	Decimal	00000 to 65534	○	○
CM	Control memory	Decimal	00000 to 11998	○	○ (Not usable as bit data)
W	Link register	Hexadecimal	0000 to 7FFF	○	○
EM	Extension data memory	Decimal	00000 to 65534	○	○
Z	Index register	Decimal	01 to 12	○	○ (Not usable as bit data)
FM	Extension data memory 2	Decimal	00000 to 32767	○	○
ZF	File register	Decimal	000000 to 032767 032768 to 065535 065536 to 098303 098304 to 131071 131072 to 163839 163840 to 196607 196608 to 229375 229376 to 262143 262144 to 294911 294912 to 327679 327680 to 360447 360448 to 393215 393216 to 425983 425984 to 458751 458752 to 491519 491520 to 524287	○	○
TM	Temporary data memory	Decimal	000 to 511	○	○ (Not usable as bit data)
VM	Work memory	Decimal	00000 to 63999	○	○

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.

☞ Page 2868 Monitoring a controller through the GOT (server/client function)

98.5.5 Availability of writing/reading data to/from word devices ([KEYENCE KV-700/1000/3000/5000/7000/8000])

The following shows the availability of writing/reading data to/from word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data
A	-/W	-/-	-/-	-/-
DM	R/W	R/W	-/-	R/W
CM	R/W	R/W	-/-	-/-
W	R/W	R/W	-/-	R/W
EM	R/W	R/W	-/-	R/W
Z*1	R/W	R/W	-/-	-/-
FM	R/W	R/W	-/-	R/W
ZF	R/W	R/W	-/-	R/W
TM	R/W	R/W	-/-	-/-
VM	R/W	R/W	-/-	-/-

*1 With KV-3000, KV-5000, KV-5500, KV-7300, KV-7500, KV-8000, or KV Nano, Z devices cannot be specified as double-word (32-bit) data.
Use DZ devices.

98.5.6 Monitoring-supported double-word devices ([KEYENCE KV-700/1000/3000/5000/7000/8000])

The following table shows monitoring-supported double-word devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3506 Availability of writing/reading data to/from double-word devices ([KEYENCE KV-700/1000/3000/5000/7000/8000])

For the formats of devices, refer to the following.

☞ Page 849 Formats of devices, labels, and tags

○: Available

× Not available

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
TC*2	Timer (current value)	Decimal	0000 to 3999	×	×
CC*2	Counter (current value)	Decimal	0000 to 3999	×	×
TS*2	Timer (set value)	Decimal	0000 to 3999	×	×
CS*2	Counter (set value)	Decimal	0000 to 3999	×	×
CTH*2	High-speed counter (current value)	Decimal	0 to 3	×	×
CTC*2	High-speed counter comparators (set value)	Decimal	0 to 7	×	×
DZ	Index register	Decimal	01 to 12	×	×
TRM	Digital trimmer	Decimal	0 to 7	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
☞ Page 2868 Monitoring a controller through the GOT (server/client function)

*2 Monitoring by GOT is possible only when a device is used in the sequence program.

98.5.7 Availability of writing/reading data to/from double-word devices ([KEYENCE KV-700/1000/3000/5000/7000/8000])

The following shows the availability of writing/reading data to/from double-word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of double-word data
TC	-/-	R/W	-/-	-/-
CC	-/-	R/W	-/-	-/-
TS*1	-/-	R/W	-/-	-/-
CS*1	-/-	R/W	-/-	-/-
CTH	-/-	R/W	-/-	-/-
CTC	-/-	R/W	-/-	-/-
DZ	-/-	R/W	-/-	-/-
TRM	-/-	R/-	-/-	-/-

*1 Only reading is available for the KV-X series.

98.5.8 Precautions ([KEYENCE KV-700/1000/3000/5000/7000/8000])

Notation of KEYENCE equipment devices

The KEYENCE notation and XYM notation are available for the devices of KEYENCE PLCs.

The KEYENCE notation is used in GT Designer3.

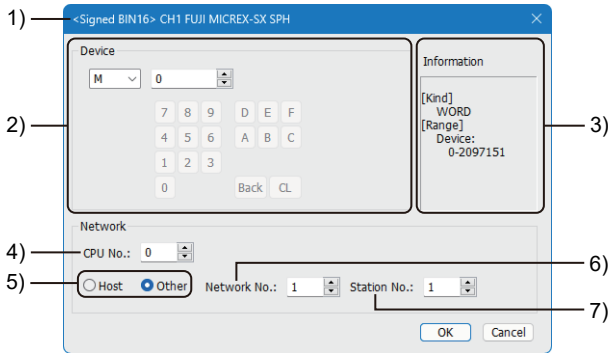
98.6 FUJI equipment ([FUJI MICREX-SX SPH])

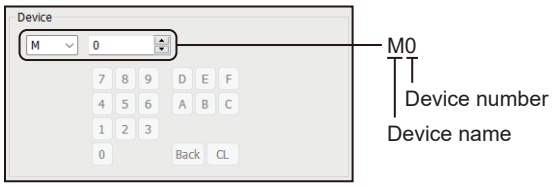
GT37 SoftGOT3000

Item	Reference
Device setting dialog	☞ Page 3507 Device setting dialog ([FUJI MICREX-SX SPH])
Specifications of word devices	☞ Page 3508 Monitoring-supported word devices ([FUJI MICREX-SX SPH])
	☞ Page 3508 Availability of writing/reading data to/from word devices ([FUJI MICREX-SX SPH])
Notation of devices	☞ Page 3509 Notation of devices ([FUJI MICREX-SX SPH])

98.6.1 Device setting dialog ([FUJI MICREX-SX SPH])

Set a device to be monitored.



Item		Description
1)	Title	Data type and channel number of the device to be set
2)	[Device]	Set the device name and device number. If a bit number needs to be specified, the setting item is displayed. Example) Setting of M0 
3)	[Information]	Displays the setting range of each setting item according to the selected device.
4)	[CPU No.]	Set the CPU number of the controller.
5)	Station type specification	Select the station type (host or other) for the controller to be monitored.
6)	[Network No.]	This item appears when [Other] is selected for the station type. Set the network number.
7)	[Station No.]	This item appears when [Other] is selected for the station type. Specify a station number.

98.6.2 Monitoring-supported word devices ([FUJI MICREX-SX SPH])

The following table shows monitoring-supported word devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3508 Availability of writing/reading data to/from word devices ([FUJI MICREX-SX SPH])

For the formats of devices, refer to the following.

☞ Page 849 Formats of devices, labels, and tags

○: Available

× Not available

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
M	Non-retain memory	Decimal	0 to 2097151	○	○
L	Retain memory	Decimal	0 to 2097151	○	○
SM	System memory	Decimal	0 to 511	○	○

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
☞ Page 2868 Monitoring a controller through the GOT (server/client function)

98.6.3 Availability of writing/reading data to/from word devices ([FUJI MICREX-SX SPH])

The following shows the availability of writing/reading data to/from word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data*1
M	R/W	R/W	-/-	R/W
L	R/W	R/W	-/-	R/W
SM	R/W	R/W	-/-	R/W

*1 The GOT reads the value from a device and then write a value to the device.
Do not change the device value with a sequence program until the GOT completes writing a value to the device.

98.6.4 Notation of devices ([FUJI MICREX-SX SPH])

The notation of devices differs between the FUJI PLC programming software and GT Designer3.
The notation also differs according to the type of FUJI PLC programming software.

Notation of devices in the single CPU system ([FUJI MICREX-SX SPH])

n: Device number

Device		Notation of devices in GT Designer3	Notation of devices in the PLC programming software	
			SX-Programmer Expert(D300win)	SX-Programmer Standard
Non-retain memory	Word device	Mn	%MW1.n	WMn
	Double-word device		%MD1.n	DMn
	Bit-specified word device	Mn.b0 to Mn.b15	%MX1.n.00 to %MX1.n.15	Mn0 to MnF*1
Retain memory	Word device	Ln	%MW3.n	WLn
	Double-word device		%MD3.n	DLn
	Bit-specified word device	Ln.b0 to Ln.b15	%MX3.n.00 to %MX3.n.15	Ln0 to LnF*1
System memory	Word device	SMn	%MW10.n	WSMn
	Double-word device		%MD10.n	DSMn
	Bit-specified word device	SMn.b0 to SMn.b15	%MX10.n.00 to %MX10.n.15	SMn0 to SMnF*1

*1 The device number is not displayed when it is 0.

Notation of devices in the multiple CPU system ([FUJI MICREX-SX SPH])

n: Device number

p: CPU number

Device		Notation of devices in GT Designer3	Notation of devices in the PLC programming software	
			SX-Programmer Expert(D300win)	SX-Programmer Standard
Non-retain memory	Word device	0-FF/p Mn	%MWp.1.n	WMp.n
	Double-word device		%MDp.1.n	DMp.n
	Bit-specified word device	0-FF/p Mn.b0 to 0-FF/p Mn.b15	%MXp.1.n.00 to %MXp.1.n.15	Mp.n0 to Mp.nF*1
Retain memory	Word device	0-FF/p Ln	%MWp.3.n	WLp.n
	Double-word device		%MDp.3.n	DLp.n
	Bit-specified word device	0-FF/p Ln.b0 to 0-FF/p Ln.b15	%MXp.3.n.00 to %MXp.3.n.15	Lp.n0 to Lp.nF*1
System memory	Word device	0-FF/p SMn	%MWp.10.n	WSMp.n
	Double-word device		%MDp.10.n	DSMp.n
	Bit-specified word device	%MXp.10.n.01 to %MXp.10.n.15	%MX10.n.00 to %MX10.n.15	SMp.n0 to SMp.nF*1

*1 The device number is not displayed when it is 0.

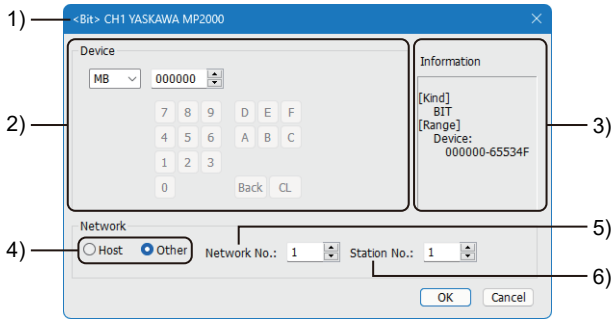
98.7 YASKAWA equipment ([YASKAWA MP2000])

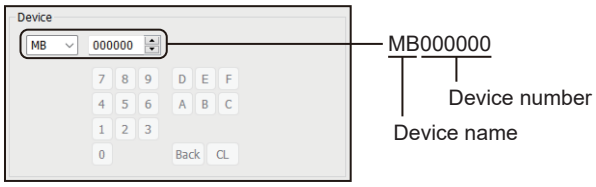
GT37 SoftGOT3000

Item	Reference
Device setting dialog	☞ Page 3510 Device setting dialog ([YASKAWA MP2000])
Specifications of bit devices	☞ Page 3511 Monitoring-supported bit devices ([YASKAWA MP2000])
	☞ Page 3511 Availability of writing/reading data to/from bit devices ([YASKAWA MP2000])
Specifications of word devices	☞ Page 3512 Monitoring-supported word devices ([YASKAWA MP2000])
	☞ Page 3512 Availability of writing/reading data to/from word devices ([YASKAWA MP2000])

98.7.1 Device setting dialog ([YASKAWA MP2000])

Set a device to be monitored.



Item		Description
1)	Title	Data type and channel number of the device to be set
2)	[Device]	Set the device name and device number. If a bit number needs to be specified, the setting item is displayed. Example) Setting of MB000000 
3)	[Information]	Displays the setting range of each setting item according to the selected device.
4)	[CPU No.]	Set the CPU number of the controller.
5)	Station type specification	Select the station type (host or other) for the controller to be monitored.
6)	[Network No.]	This item appears when [Other] is selected for the station type. Set the network number.
7)	[Station No.]	This item appears when [Other] is selected for the station type. Specify a station number.

98.7.2 Monitoring-supported bit devices ([YASKAWA MP2000])

The following table shows monitoring-supported bit devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3511 Availability of writing/reading data to/from bit devices ([YASKAWA MP2000])

For the formats of devices, refer to the following.

☞ Page 849 Formats of devices, labels, and tags

○: Available

× Not available

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
IB	Input relay	Hexadecimal	00000 to 7FFFF	○	○
MB	Coil	Decimal + hexadecimal	MB(Word address)(Bit No.) Notation example: MB655340 The rightmost digit is a bit address. • Channel No. (decimal): 00000 to 65534 • Bit No. (hexadecimal): 0 to F	○	○

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.

☞ Page 2868 Monitoring a controller through the GOT (server/client function)

98.7.3 Availability of writing/reading data to/from bit devices ([YASKAWA MP2000])

The following shows the availability of writing/reading data to/from bit devices by device type.

When the device type is other than the bit type, set the device No. in multiples of 16.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type				
	Bit	Byte (8 bits)	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)
IB	R/-	-/-	R/-	R/-	-/-
MB	R/W	-/-	R/W	R/W	-/-

98.7.4 Monitoring-supported word devices ([YASKAWA MP2000])

The following table shows monitoring-supported word devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3512 Availability of writing/reading data to/from word devices ([YASKAWA MP2000])

For the formats of devices, refer to the following.

☞ Page 849 Formats of devices, labels, and tags

○: Available

× Not available

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
IW	Input register	Hexadecimal	0000 to 7FFF	○	○
MW	Holding register	Decimal	0 to 65534	○	○

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.

☞ Page 2868 Monitoring a controller through the GOT (server/client function)

98.7.5 Availability of writing/reading data to/from word devices ([YASKAWA MP2000])

The following shows the availability of writing/reading data to/from word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data
IW	R/-	R/-	-/-	R/-
MW	R/W	R/W	-/-	R/W

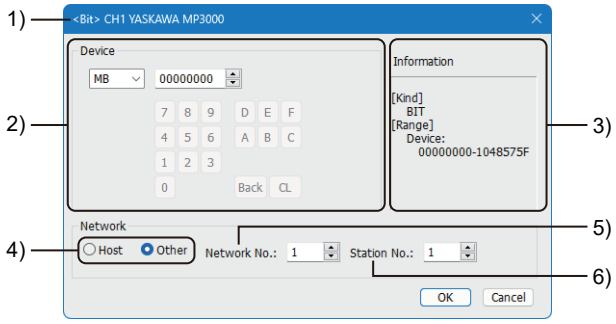
98.8 YASKAWA equipment ([YASKAWA MP3000])

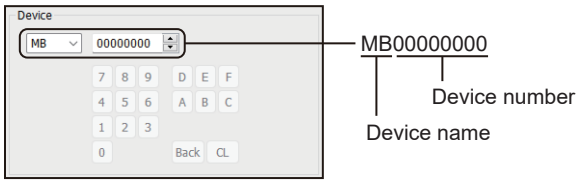
GT37 SoftGOT3000

Item	Reference
Device setting dialog	☞ Page 3513 Device setting dialog ([YASKAWA MP3000])
Specifications of bit devices	☞ Page 3514 Monitoring-supported bit devices ([YASKAWA MP3000])
	☞ Page 3514 Availability of writing/reading data to/from bit devices ([YASKAWA MP3000])
Specifications of word devices	☞ Page 3515 Monitoring-supported word devices ([YASKAWA MP3000])
	☞ Page 3515 Availability of writing/reading data to/from word devices ([YASKAWA MP3000])

98.8.1 Device setting dialog ([YASKAWA MP3000])

Set a device to be monitored.



Item		Description
1)	Title	Data type and channel number of the device to be set
2)	[Device]	Set the device name and device number. If a bit number needs to be specified, the setting item is displayed. Example) Setting of MB00000000 
3)	[Information]	Displays the setting range of each setting item according to the selected device.
4)	[CPU No.]	Set the CPU number of the controller.
5)	Station type specification	Select the station type (host or other) for the controller to be monitored.
6)	[Network No.]	This item appears when [Other] is selected for the station type. Set the network number.
7)	[Station No.]	This item appears when [Other] is selected for the station type. Specify a station number.

98.8.2 Monitoring-supported bit devices ([YASKAWA MP3000])

The following table shows monitoring-supported bit devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3514 Availability of writing/reading data to/from bit devices ([YASKAWA MP3000])

For the formats of devices, refer to the following.

☞ Page 849 Formats of devices, labels, and tags

○: Available

× Not available

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
IB	Input register	Hexadecimal	000000 to 21FFFF	○	○
OB	Output register	Hexadecimal	000000 to 21FFFF	○	○
MB	Data register	Decimal + hexadecimal	MB(Word address)(Bit No.) Notation example: MB10485750 The rightmost digit is a bit address. • Channel No. (decimal): 0000000 to 1048575 • Bit No. (hexadecimal): 0 to F	○	○
YGB*2	G register	Decimal + hexadecimal	YGB(Word address)(Bit No.) Notation example: YGB20971510 The rightmost digit is a bit address. • Channel No. (decimal): 0000000 to 2097151 • Bit No. (hexadecimal): 0 to F	○	○
SB	System register	Decimal + hexadecimal	SB(Word address)(Bit No.) Notation example: SB655340 The rightmost digit is a bit address. • Channel No. (decimal): 00000 to 65534 • Bit No. (hexadecimal): 0 to F	○	○ (Not usable as word data)

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.

☞ Page 2868 Monitoring a controller through the GOT (server/client function)

*2 This device is displayed as GB in the peripherals of the YASKAWA PLC.

98.8.3 Availability of writing/reading data to/from bit devices ([YASKAWA MP3000])

The following shows the availability of writing/reading data to/from bit devices by device type.

When the device type is other than the bit type, set the device No. in multiples of 16.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type				
	Bit	Byte (8 bits)	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)
IB	R/-	-/-	R/-	R/-	-/-
OB	R/W	-/-	R/W	R/W	-/-
MB	R/W	-/-	R/W	R/W	-/-
YGB	R/W	-/-	R/W	R/W	-/-
SB	R/W	-/-	R/W	R/W	-/-

98.8.4 Monitoring-supported word devices ([YASKAWA MP3000])

The following table shows monitoring-supported word devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3515 Availability of writing/reading data to/from word devices ([YASKAWA MP3000])

For the formats of devices, refer to the following.

☞ Page 849 Formats of devices, labels, and tags

○: Available

× Not available

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
IW	Input register	Hexadecimal	00000 to 21FFF	○	○
OW	Output register	Hexadecimal	00000 to 21FFF	○	○
MW	Data register	Decimal	0 to 1048575	○	○
YGW*2	G register	Decimal	0 to 2097151	○	○
SW	System register	Decimal	0 to 65534	○	○

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
☞ Page 2868 Monitoring a controller through the GOT (server/client function)

*2 This device is displayed as GW in the peripherals of the YASKAWA PLC.

98.8.5 Availability of writing/reading data to/from word devices ([YASKAWA MP3000])

The following shows the availability of writing/reading data to/from word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data
IW	R/-	R/-	-/-	R/-
OW	R/W	R/W	-/-	R/W
MW	R/W	R/W	-/-	R/W
YGW	R/W	R/W	-/-	R/W
SW	R/W	R/W	-/-	R/W

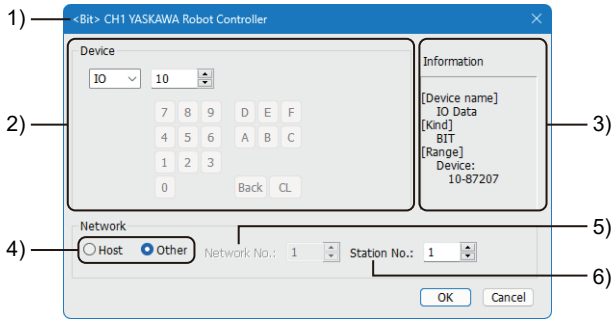
98.9 YASKAWA equipment ([YASKAWA Robot Controller])

GT37 SoftGOT3000

Item	Reference
Device setting dialog	☞ Page 3517 Device setting dialog ([YASKAWA Robot Controller])
Specifications of bit devices	☞ Page 3518 Monitoring-supported bit devices ([YASKAWA Robot Controller])
	☞ Page 3518 IO Data device details ([YASKAWA Robot Controller])
	☞ Page 3519 Availability of writing/reading data to/from bit devices ([YASKAWA Robot Controller])
Specifications of byte devices	☞ Page 3519 Monitoring-supported byte devices ([YASKAWA Robot Controller])
	☞ Page 3519 Availability of writing/reading data to/from byte devices ([YASKAWA Robot Controller])
Specifications of word devices	☞ Page 3520 Monitoring-supported word devices ([YASKAWA Robot Controller])
	☞ Page 3521 Robot Control device details ([YASKAWA Robot Controller])
	☞ Page 3521 Availability of writing/reading data to/from word devices ([YASKAWA Robot Controller])
Specifications of double-word devices	☞ Page 3522 Monitoring-supported double-word devices ([YASKAWA Robot Controller])
	☞ Page 3522 Availability of writing/reading data to/from double-word devices ([YASKAWA Robot Controller])
Precautions	☞ Page 3522 Precautions ([YASKAWA Robot Controller])

98.9.1 Device setting dialog ([YASKAWA Robot Controller])

Set a device to be monitored.



Item		Description
1)	Title	Data type and channel number of the device to be set
2)	[Device]	Set the device name and device number. If a bit number needs to be specified, the setting item is displayed. Example) Setting of IO10
3)	[Information]	Displays the setting range of each setting item according to the selected device.
4)	Station type specification	Select the station type (host or other) for the controller to be monitored.
5)	[Network No.]	This item appears when [Other] is selected for the station type. Set the network number. The setting range is [1] (fixed).
6)	[Station No.]	This item appears when [Other] is selected for the station type. Specify a station number. The setting range is [1] to [120].

98.9.2 Monitoring-supported bit devices ([YASKAWA Robot Controller])

The following table shows monitoring-supported bit devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3519 Availability of writing/reading data to/from bit devices ([YASKAWA Robot Controller])

For the formats of devices, refer to the following.

☞ Page 849 Formats of devices, labels, and tags

○: Available

× Not available

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
IO	IO Data	Decimal + octal	IO(Byte address)(Bit address) Notation example: IO87200 The rightmost digit is a bit address. • Byte address (decimal): 1 to 8720 • Bit address (octal): 0 to 7 For the relationship between the data and device range of the robot controller, refer to the following. ☞ Page 3518 IO Data device details ([YASKAWA Robot Controller])	○	○

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
☞ Page 2868 Monitoring a controller through the GOT (server/client function)

98.9.3 IO Data device details ([YASKAWA Robot Controller])

The following shows the relationship between the data and device range of the robot controller.

The rightmost digit of each device number is a bit address.

Device range	Virtual device name
10 to 5127	Robot general-purpose input
10010 to 15127	Robot general-purpose output
20010 to 25127	External input
27010 to 29567	Network input
30010 to 35127	External output
37010 to 39567	Network output
40010 to 42567	Robot-dedicated input
50010 to 55127	Robot-dedicated output
60010 to 60647	Interface panel input
70010 to 79997	Auxiliary relay
80010 to 85127	Robot control status
87010 to 87207	Pseudo input

98.9.4 Availability of writing/reading data to/from bit devices ([YASKAWA Robot Controller])

The following shows the availability of writing/reading data to/from bit devices by device type.

When the device type is other than the bit type, set the device No. in multiples of 16.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type				
	Bit	Byte (8 bits)	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)
IO*1	R/W	-/-	R/W	-/-	-/-

*1 Availability of reading/writing depends on the device number.

☞ Page 3518 IO Data device details ([YASKAWA Robot Controller])

98.9.5 Monitoring-supported byte devices ([YASKAWA Robot Controller])

The following table shows monitoring-supported byte devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3519 Availability of writing/reading data to/from byte devices ([YASKAWA Robot Controller])

For the formats of devices, refer to the following.

☞ Page 849 Formats of devices, labels, and tags

○: Available

× Not available

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
B	Byte Variable	Decimal	0 to 1999	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.

☞ Page 2868 Monitoring a controller through the GOT (server/client function)

98.9.6 Availability of writing/reading data to/from byte devices ([YASKAWA Robot Controller])

The following shows whether writing/reading data to/from byte devices is available by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type				
	Bit	Byte (8 bits)	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)
B	-/-	R/W	-/-	-/-	-/-

98.9.7 Monitoring-supported word devices ([YASKAWA Robot Controller])

The following table shows monitoring-supported word devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3521 Availability of writing/reading data to/from word devices ([YASKAWA Robot Controller])

For the formats of devices, refer to the following.

☞ Page 849 Formats of devices, labels, and tags

○: Available

× Not available

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
I	Integer Variable	Decimal	0 to 1999	○	○
M	Resister Data	Decimal	0 to 999	○	○
RC*2	Robot Control	Hexadecimal + decimal + decimal	RC(Command No.)-(Instance)((Attribute)) Notation example: RC70-8720(13) • Command No. (hexadecimal): 70 to 8C, 300 to 30C • Instance (decimal): 0 to 8720 • Attribute (decimal): 0 to 13 For the relationship between data that can be acquired using Robot Control and the virtual GOT devices, refer to the following. ☞ Page 3521 Robot Control device details ([YASKAWA Robot Controller])	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
☞ Page 2868 Monitoring a controller through the GOT (server/client function)

*2 Not available for a text display or text input object.

98.9.8 Robot Control device details ([YASKAWA Robot Controller])

Data that can be acquired using the Robot Control is assigned to the GOT virtual device (RC device).
Specify the Command No., Instance, and Attribute for the RC device to enable monitoring of the corresponding data.
Note the following when using the RC device.

Precautions	Description
Basic use of the RC device	Read all the elements to a GOT internal device in a batch using the script function or device data transfer function to monitor the data stored in the device. Setting the RC device to an object or others to monitor each element individually will decrease the monitoring speed.
Setting of the device data type and number of devices	Check the size of each data corresponding to the Command No., Instance, and Attribute to be specified. Set the data type and number of devices in the device settings so that the corresponding data can be stored.
Objects for which the RC device cannot be used	Do not specify the RC device directly in the following object settings for which consecutive devices are used. • Text display: Monitor device • Text input: Monitor device • Parts movement: [Device] (When [Specified coordinates] is selected for [Move Way]) • Simple alarm display: Monitor device (When [Continuous] is selected for [Device No.]) • Recipe display (record list): [Control target record name], [Narrow down record names], or [Cursor row record name] • Trend graph: Monitor device (When [Continuous] is selected for [Device Setting]) • Document display: [Keyword Device] As described in the column for Basic use of the RC device, read all the elements to a GOT internal device in a batch to monitor the data stored in the device.

For details on each command, refer to the following.
📖Manual of the YASKAWA robot controller
The GOT supports the following commands.

Command No. (hexadecimal)	Command name
72	Status information read command
73	Execution job information read command
74	Axis configuration information read command
75	Robot position data read command
76	Position deviation read command
77	Torque data read command
7F	Robot position variable (P) read/write command
82	Alarm reset/error cancel command
88	Control time acquisition command
307	Robot position variable (P) multi-read/-write command
30A	Alarm data read command (subcode character string supported)
30B	Alarm history read command (subcode character string supported)

98.9.9 Availability of writing/reading data to/from word devices ([YASKAWA Robot Controller])

The following shows the availability of writing/reading data to/from word devices by device type.
R/W: Both read and write
R/-: Read only
-/W: Write only
-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data
I	R/W	-/-	-/-	-/-
M	R/W	-/-	-/-	-/-
RC	R/W	R/W	-/-	R/-

98.9.10 Monitoring-supported double-word devices ([YASKAWA Robot Controller])

The following table shows monitoring-supported double-word devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3522 Availability of writing/reading data to/from double-word devices ([YASKAWA Robot Controller])

For the formats of devices, refer to the following.

☞ Page 849 Formats of devices, labels, and tags

○: Available

× Not available

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
D	Double Int Variable	Decimal	0 to 1999	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.

☞ Page 2868 Monitoring a controller through the GOT (server/client function)

98.9.11 Availability of writing/reading data to/from double-word devices ([YASKAWA Robot Controller])

The following shows the availability of writing/reading data to/from double-word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of double-word data
D	-/-	R/W	-/-	-/-

98.9.12 Precautions ([YASKAWA Robot Controller])

Precautions when writing devices in a batch ([YASKAWA Robot Controller])

When many devices are written in a batch using the recipe function or device data transfer function, system alarm 402 (communication timeout error) may occur.

Take either of the following corrective actions.

- Specifying a longer communication timeout period
- Reducing the number of devices written in a batch

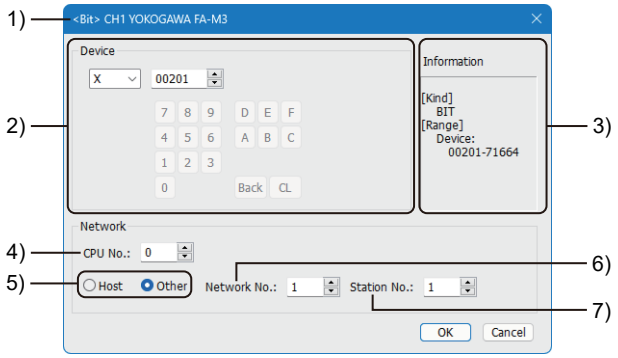
98.10 YOKOGAWA equipment ([YOKOGAWA FA-M3])

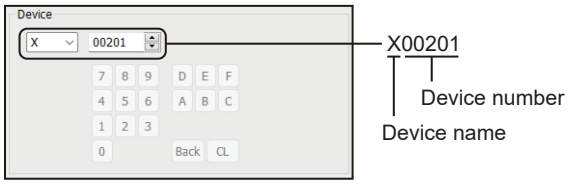
GT37 SoftGOT3000

Item	Reference
Device setting dialog	☞ Page 3523 Device setting dialog ([YOKOGAWA FA-M3])
Specifications of bit devices	☞ Page 3524 Monitoring-supported bit devices ([YOKOGAWA FA-M3])
	☞ Page 3525 Availability of writing/reading data to/from bit devices ([YOKOGAWA FA-M3])
Specifications of word devices	☞ Page 3526 Monitoring-supported word devices ([YOKOGAWA FA-M3])
	☞ Page 3527 Availability of writing/reading data to/from word devices ([YOKOGAWA FA-M3])
Precautions	☞ Page 3527 Precautions ([YOKOGAWA FA-M3])

98.10.1 Device setting dialog ([YOKOGAWA FA-M3])

Set a device to be monitored.



Item		Description
1)	Title	Data type and channel number of the device to be set
2)	[Device]	Set the device name and device number. If a bit number needs to be specified, the setting item is displayed. Example) Setting of X00201 
3)	[Information]	Displays the setting range of each setting item according to the selected device.
4)	[CPU No.]	Set the CPU number of the controller. When monitoring a single CPU system, set the CPU No. to [0]. When monitoring a multiple CPU system, set the CPU No. to any of [0] to [4]. When [0] is set, the GOT monitors CPU No. 1.
5)	Station type specification	Select the station type (host or other) for the controller to be monitored.
6)	[Network No.]	This item appears when [Other] is selected for the station type. Set the network number.
7)	[Station No.]	This item appears when [Other] is selected for the station type. Specify a station number.

98.10.2 Monitoring-supported bit devices ([YOKOGAWA FA-M3])

The following table shows monitoring-supported bit devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3525 Availability of writing/reading data to/from bit devices ([YOKOGAWA FA-M3])

For the formats of devices, refer to the following.

☞ Page 849 Formats of devices, labels, and tags

○: Available

× Not available

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
X	Input relay	Decimal + decimal	X(Slot No.)(Terminal No.) Notation example: X71601 • Slot No. (decimal): 002 to 716 • Terminal No. (decimal): 01 to 64	○	○
Y	Output relay	Decimal + decimal	Y(Slot No.)(Terminal No.) Notation example: Y71601 • Slot No. (decimal): 002 to 716 • Terminal No. (decimal): 01 to 64	○	○
I	Internal relay	Decimal	1 to 65535	○	○
TU	Timer	Decimal	1 to 3072	○	○ (Not usable as word data)
CU	Counter	Decimal	1 to 3072	○	○ (Not usable as word data)
M	Special relay	Decimal	1 to 9984	○	○
L	Link relay	Decimal + decimal	L(FA link relay No. - 1)(Link relay No.) Notation example: L70001 • FA link module No. - 1 (decimal): 0 to 7 (Set the link module No. minus 1.) • Link relay No. (decimal): 0001 to 8192	○	○
E	Shared relay	Decimal	1 to 4096	○	○

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.

☞ Page 2868 Monitoring a controller through the GOT (server/client function)

98.10.3 Availability of writing/reading data to/from bit devices ([YOKOGAWA FA-M3])

The following shows the availability of writing/reading data to/from bit devices by device type.
When the device type is other than the bit type, set the device No. in multiples of 16.
R/W: Both read and write
R/-: Read only
-/W: Write only
-/-: No read/write access

Device name	Device type				
	Bit	Byte (8 bits)	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)
X	R/-	-/-	R/-	R/-	-/-
Y	R/W	-/-	R/W	R/W	-/-
I	R/W	-/-	R/W	R/W	-/-
TU	R/W	-/-	-/-	-/-	-/-
CU	R/W	-/-	-/-	-/-	-/-
M	R/W	-/-	R/W	R/W	-/-
L	R/W	-/-	R/W	R/W	-/-
E	R/W	-/-	R/W	R/W	-/-

98.10.4 Monitoring-supported word devices ([YOKOGAWA FA-M3])

The following table shows monitoring-supported word devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3527 Availability of writing/reading data to/from word devices ([YOKOGAWA FA-M3])

For the formats of devices, refer to the following.

☞ Page 849 Formats of devices, labels, and tags

○: Available

× Not available

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
TP	Timer	Decimal	1 to 3072	○	○ (Not usable as bit data)
CP	Counter	Decimal	1 to 3072	○	○ (Not usable as bit data)
D	Data register	Decimal	1 to 65535	○	○
Z	Special register	Decimal	1 to 1024	○	×
B	File register	Decimal	1 to 262144	○	○
V	Index register	Decimal	1 to 256	○	○
TS	Timer	Decimal	1 to 3072	○	○ (Not usable as bit data)
CS	Counter	Decimal	1 to 3072	○	○ (Not usable as bit data)
R	Shared register	Decimal	1 to 4096	○	○
W	Link register	Decimal + decimal	W(FA link module No. - 1)(Link register No.) Notation example: W70001 • FA link module No. - 1 (decimal): 0 to 7 (Set the link module No. minus 1.) • Link register No. (decimal): 0001 to 8192	○	×
F	Cache register	Decimal	000001 to 524288	○	○

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.

☞ Page 2868 Monitoring a controller through the GOT (server/client function)

98.10.5 Availability of writing/reading data to/from word devices ([YOKOGAWA FA-M3])

The following shows the availability of writing/reading data to/from word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data
TP	R/W	R/W	-/-	-/-
CP	R/W	R/W	-/-	-/-
D	R/W	R/W	-/-	R/W
Z	R/W	R/W	-/-	R/W
B	R/W	R/W	-/-	R/W
V	R/W	R/W	-/-	R/W
TS	R/-	R/-	-/-	-/-
CS	R/-	R/-	-/-	-/-
R	R/W	R/W	-/-	R/W
W	R/W	R/W	-/-	R/W
F	R/W	R/W	-/-	R/W

98.10.6 Precautions ([YOKOGAWA FA-M3])

Behavior when setting a device outside the device range ([YOKOGAWA FA-M3])

If a device outside the setting range is set for an object, the value display at the object is indefinite.

However, no error is displayed for system alarm.

A device to be set for an object must be in the device range of YOKOGAWA PLC.

For the device range of YOKOGAWA PLC, refer to the manual below.

📖Manual of YOKOGAWA PLC

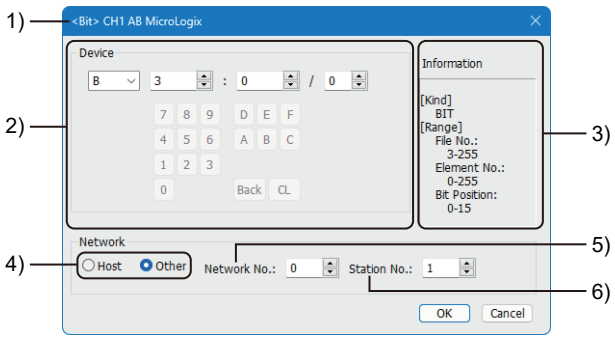
98.11 ALLEN-BRADLEY equipment ([AB MicroLogix])

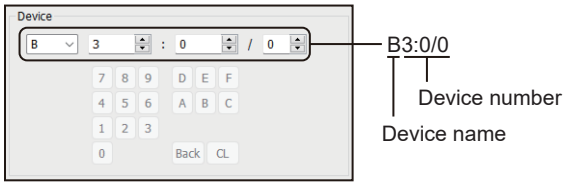
GT37 SoftGOT3000

Item	Reference
Device setting dialog	☞ Page 3528 Device setting dialog ([AB MicroLogix])
Specifications of bit devices	☞ Page 3529 Monitoring-supported bit devices ([AB MicroLogix])
	☞ Page 3530 Availability of writing/reading data to/from bit devices ([AB MicroLogix])
Specifications of word devices	☞ Page 3531 Monitoring-supported word devices ([AB MicroLogix])
	☞ Page 3532 Availability of writing/reading data to/from word devices ([AB MicroLogix])
Specifications of double-word devices	☞ Page 3533 Monitoring-supported double-word devices ([AB MicroLogix])
	☞ Page 3533 Availability of writing/reading data to/from double-word devices ([AB MicroLogix])

98.11.1 Device setting dialog ([AB MicroLogix])

Set a device to be monitored.



Item		Description
1)	Title	Data type and channel number of the device to be set
2)	[Device]	Set the device name and device number. If a bit number needs to be specified, the setting item is displayed. Example) Setting of B3:0/0 
3)	[Information]	Displays the setting range of each setting item according to the selected device.
4)	Station type specification	Select the station type (host or other) for the controller to be monitored.
5)	[Network No.]	This item appears when [Other] is selected for the station type. Set the network number.
6)	[Station No.]	This item appears when [Other] is selected for the station type. Specify a station number.

98.11.2 Monitoring-supported bit devices ([AB MicroLogix])

The following table shows monitoring-supported bit devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3530 Availability of writing/reading data to/from bit devices ([AB MicroLogix])

For the formats of devices, refer to the following.

☞ Page 849 Formats of devices, labels, and tags

The GOT reads the value from a device and then write a value to the device.

Do not change the device value with a sequence program until the GOT completes writing a value to the device.

○: Available

× Not available

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
I	Input	Decimal	I:(Slot No.).(Element No.)/(Bit position) Notation example: I:16.7/0 • Slot No. (decimal): 0 to 16 • Element No. (decimal): 0 to 7 • Bit position (decimal): 0 to 15	○	○
O	Output	Decimal	O:(Slot No.).(Element No.)/(Bit position) Notation example: O:16.7/0 • Slot No. (decimal): 0 to 16 • Element No. (decimal): 0 to 7 • Bit position (decimal): 0 to 15	○	○
B	Bit	Decimal	B(File No.):(Element No.)/(Bit position) Notation example: B3:255/0 • File No. (decimal): 3 to 255 • Element No. (decimal): 0 to 255 • Bit position (decimal): 0 to 15	○	○
T	Timer (completion bit)	Decimal	T(File No.):(Element No.)/13(DN) Notation example: T3:255/13(DN) • File No. (decimal): 3 to 255 • Element No. (decimal): 0 to 255	○	×
	Timer (timing bit)		T(File No.):(Element No.)/14(TT) Notation example: T3:255/14(TT) • File No. (decimal): 3 to 255 • Element No. (decimal): 0 to 255		
C	Counter (completion bit)	Decimal	C(File No.):(Element No.)/13(DN) Notation example: C3:255/13(DN) • File No. (decimal): 3 to 255 • Element No. (decimal): 0 to 255	○	×
	Counter (down counter)		C(File No.):(Element No.)/14(CD) Notation example: C3:255/14(CD) • File No. (decimal): 3 to 255 • Element No. (decimal): 0 to 255		
	Counter (up counter)		C(File No.):(Element No.)/15(CU) Notation example: C3:255/15(CU) • File No. (decimal): 3 to 255 • Element No. (decimal): 0 to 255		

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
☞ Page 2868 Monitoring a controller through the GOT (server/client function)

98.11.3 Availability of writing/reading data to/from bit devices ([AB MicroLogix])

The following shows the availability of writing/reading data to/from bit devices by device type.

When the device type is other than the bit type, set the device No. in multiples of 16.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type				
	Bit	Byte (8 bits)	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)
I	R/W	-/-	-/-	-/-	-/-
O	R/W	-/-	-/-	-/-	-/-
B	R/W	-/-	-/-	-/-	-/-
T	R/W	-/-	-/-	-/-	-/-
C	R/W	-/-	-/-	-/-	-/-

98.11.4 Monitoring-supported word devices ([AB MicroLogix])

The following table shows monitoring-supported word devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3532 Availability of writing/reading data to/from word devices ([AB MicroLogix])

For the formats of devices, refer to the following.

☞ Page 849 Formats of devices, labels, and tags

○: Available

× Not available

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
I	Input	Decimal	I:(Slot No.).(Element No.) Notation example: I:16.0 • Slot No. (decimal): 0 to 16 • Element No. (decimal): 0 to 7	○	○
O	Output	Decimal	O:(Slot No.).(Element No.) Notation example: O:16.0 • Slot No. (decimal): 0 to 16 • Element No. (decimal): 0 to 7	○	○
T	Timer (set value)	Decimal	T(File No.):(Element No.).1(PRE) Notation example: T3:255.1(PRE) • File No. (decimal): 3 to 255 • Element No. (decimal): 0 to 255	○	×
	Timer (current value)		T(File No.):(Element No.).2(ACC) Notation example: T3:255.2(ACC) • File No. (decimal): 3 to 255 • Element No. (decimal): 0 to 255		
C	Counter (set value)	Decimal	C(File No.):(Element No.).1(PRE) Notation example: C3:255.1(PRE) • File No. (decimal): 3 to 255 • Element No. (decimal): 0 to 255	○	×
	Counter (current value)		C(File No.):(Element No.).2(ACC) Notation example: C3:255.2(ACC) • File No. (decimal): 3 to 255 • Element No. (decimal): 0 to 255		
N	Integer	Decimal	N(File No.):(Element No.) Notation example: N7:0 • File No. (decimal): 3 to 255 • Element No. (decimal): 0 to 255	○	○
B	Bit	Decimal	B(File No.):(Element No.) Notation example: B3:0 • File No. (decimal): 3 to 255 • Element No. (decimal): 0 to 255	○	○
S	Status	Decimal	S(File No.):(Device) Notation example: S2:163 • File No. (decimal): 2 • Device (decimal): 0 to 163	○	○

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
☞ Page 2868 Monitoring a controller through the GOT (server/client function)

98.11.5 Availability of writing/reading data to/from word devices ([AB MicroLogix])

The following shows the availability of writing/reading data to/from word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data*1
I	R/W	R/W	-/-	-/-
O	R/W	R/W	-/-	-/-
T	R/W	R/-	-/-	R/W
C	R/W	R/-	-/-	R/W
N	R/W	R/W	-/-	R/W
B	R/W	R/W	-/-	-/-
S	R/W	R/W	-/-	R/W

*1 The GOT reads the value from a device and then write a value to the device.
Do not change the device value with a sequence program until the GOT completes writing a value to the device.

98.11.6 Monitoring-supported double-word devices ([AB MicroLogix])

The following table shows monitoring-supported double-word devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3533 Availability of writing/reading data to/from double-word devices ([AB MicroLogix])

For the formats of devices, refer to the following.

☞ Page 849 Formats of devices, labels, and tags

○: Available

× Not available

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
L	32bit integer	Decimal	L(File No.):(Element No.) Notation example: L3:0 • File No. (decimal): 3 to 255 • Element No. (decimal): 0 to 255	×	×
F	32bit float	Decimal	F(File No.):(Element No.) Notation example: F3:0 • File No. (decimal): 3 to 255 • Element No. (decimal): 0 to 255	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
☞ Page 2868 Monitoring a controller through the GOT (server/client function)

98.11.7 Availability of writing/reading data to/from double-word devices ([AB MicroLogix])

The following shows the availability of writing/reading data to/from double-word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of double-word data
L	-/-	R/W	-/-	-/-
F	-/-	R/W	-/-	-/-

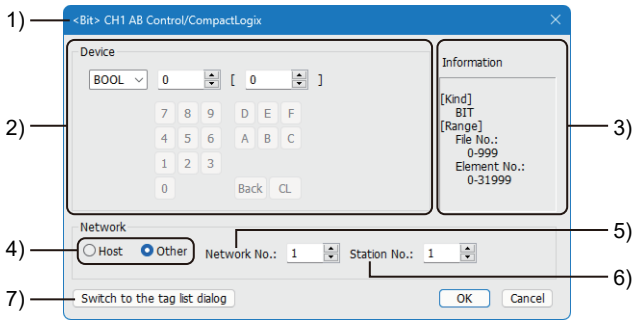
98.12 ALLEN-BRADLEY equipment ([AB Control/CompactLogix])

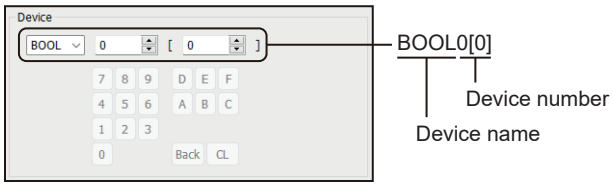
GT37 SoftGOT3000

Item	Reference
Device setting dialog	☞ Page 3534 Device setting dialog ([AB Control/CompactLogix])
Specifications of bit devices	☞ Page 3535 Monitoring-supported bit devices ([AB Control/CompactLogix])
	☞ Page 3535 Availability of writing/reading data to/from bit devices ([AB Control/CompactLogix])
Specifications of word devices	☞ Page 3536 Monitoring-supported word devices ([AB Control/CompactLogix])
	☞ Page 3536 Availability of writing/reading data to/from word devices ([AB Control/CompactLogix])
Specifications of double-word devices	☞ Page 3537 Monitoring-supported double-word devices ([AB Control/CompactLogix])
	☞ Page 3537 Availability of writing/reading data to/from double-word devices ([AB Control/CompactLogix])

98.12.1 Device setting dialog ([AB Control/CompactLogix])

Set a device to be monitored.



Item		Description
1)	Title	Data type and channel number of the device to be set
2)	[Device]	Set the device name and device number. If a bit number needs to be specified, the setting item is displayed. Example) Setting of BOOL0[0] 
3)	[Information]	Displays the setting range of each setting item according to the selected device.
4)	Station type specification	Select the station type (host or other) for the controller to be monitored.
5)	[Network No.]	This item appears when [Other] is selected for the station type. Set the network number.
6)	[Station No.]	This item appears when [Other] is selected for the station type. Specify a station number.
7)	[Switch to the tag list dialog] button	You can open the tag list dialog to check the tags imported to GT Designer3. ☞ Page 935 Tag list dialog (RSLogix 5000 tag)

98.12.2 Monitoring-supported bit devices ([AB Control/CompactLogix])

The following table shows monitoring-supported bit devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3535 Availability of writing/reading data to/from bit devices ([AB Control/CompactLogix])

For the formats of devices, refer to the following.

☞ Page 849 Formats of devices, labels, and tags

○: Available

× Not available

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
BOOL	Bit data	Decimal	BOOL(File No.):[(Element No.)] Notation example: BOOL999[0] • File No. (decimal): 0 to 999 • Element No. (decimal): 0 to 31999	○	○

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.

☞ Page 2868 Monitoring a controller through the GOT (server/client function)

98.12.3 Availability of writing/reading data to/from bit devices ([AB Control/CompactLogix])

The following shows the availability of writing/reading data to/from bit devices by device type.

When the device type is other than the bit type, set the device No. in multiples of 16.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type				
	Bit	Byte (8 bits)	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)
BOOL	R/W	-/-	-/-	-/-	-/-

98.12.4 Monitoring-supported word devices ([AB Control/CompactLogix])

The following table shows monitoring-supported word devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3536 Availability of writing/reading data to/from word devices ([AB Control/CompactLogix])

For the formats of devices, refer to the following.

☞ Page 849 Formats of devices, labels, and tags

○: Available

× Not available

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
INT	Word data	Decimal	INT(File No.):[(Element No.)] Notation example: INT999[0] • File No. (decimal): 0 to 999 • Element No. (decimal): 0 to 999	○	○

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.

☞ Page 2868 Monitoring a controller through the GOT (server/client function)

98.12.5 Availability of writing/reading data to/from word devices ([AB Control/CompactLogix])

The following shows the availability of writing/reading data to/from word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data
INT	R/W	R/W	-/-	R/W

98.12.6 Monitoring-supported double-word devices ([AB Control/CompactLogix])

The following table shows monitoring-supported double-word devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3537 Availability of writing/reading data to/from double-word devices ([AB Control/CompactLogix])

For the formats of devices, refer to the following.

☞ Page 849 Formats of devices, labels, and tags

○: Available

× Not available

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
DINT	Double-word data	Decimal	DINT(File No.):[(Element No.)] Notation example: DINT999[0] • File No. (decimal): 0 to 999 • Element No. (hexadecimal): 0 to 999	×	×
REAL	Floating point data	Decimal	REAL(File No.):[(Element No.)] Notation example: REAL999[0] • File No. (decimal): 0 to 999 • Element No. (hexadecimal): 0 to 999	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.

☞ Page 2868 Monitoring a controller through the GOT (server/client function)

98.12.7 Availability of writing/reading data to/from double-word devices ([AB Control/CompactLogix])

The following shows the availability of writing/reading data to/from double-word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of double-word data
DINT	-/-	R/W	-/-	-/-
REAL	-/-	R/W	-/-	-/-

98.13 ALLEN-BRADLEY equipment ([AB Control/CompactLogix(Tag)])

GT37 SoftGOT3000

Item	Reference
Device setting dialog	☞ Page 3538 Device setting dialog ([AB Control/CompactLogix(Tag)])
Device specifications	☞ Page 3538 Monitoring-supported devices ([AB Control/CompactLogix(Tag)])

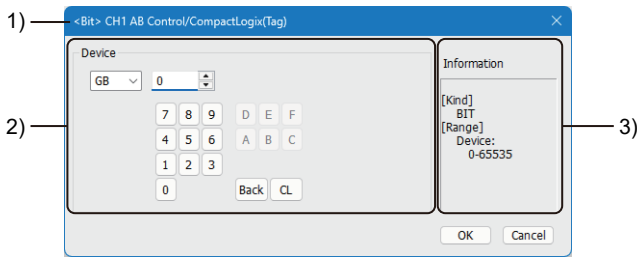
98.13.1 Device setting dialog ([AB Control/CompactLogix(Tag)])

Set a device to be monitored.

In the device setting dialog, only GOT internal devices are settable.

For how to set AB native tags, refer to the following.

☞ Page 936 How to set AB native tags



Item		Description
1)	Title	Data type and channel number of the device to be set
2)	[Device]	Set the device name and device number. If a bit number needs to be specified, the setting item is displayed.
3)	[Information]	Displays the setting range of each setting item according to the selected device.

98.13.2 Monitoring-supported devices ([AB Control/CompactLogix(Tag)])

When this communication driver is used, the AB native tags are usable in the device setting.

For details on usable AB native tags, refer to the following.

☞ Page 936 How to set AB native tags

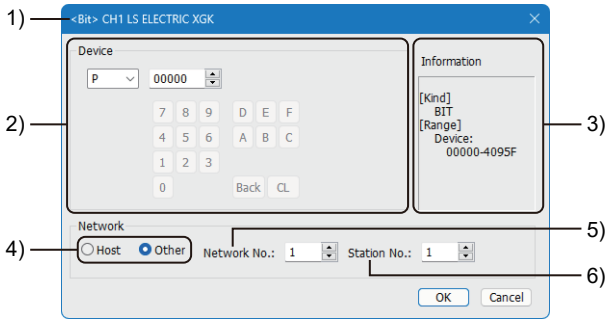
98.14 LS ELECTRIC equipment ([LS ELECTRIC XGK])

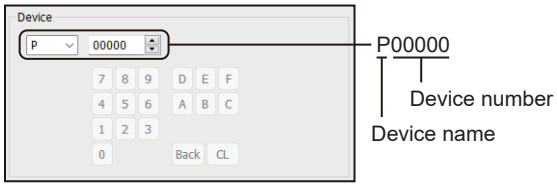
GT37 SoftGOT3000

Item	Reference
Device setting dialog	☞ Page 3539 Device setting dialog ([LS ELECTRIC XGK])
Specifications of bit devices	☞ Page 3540 Monitoring-supported bit devices ([LS ELECTRIC XGK])
	☞ Page 3541 Availability of writing/reading data to/from bit devices ([LS ELECTRIC XGK])
Specifications of word devices	☞ Page 3542 Monitoring-supported word devices ([LS ELECTRIC XGK])
	☞ Page 3542 Availability of writing/reading data to/from word devices ([LS ELECTRIC XGK])

98.14.1 Device setting dialog ([LS ELECTRIC XGK])

Set a device to be monitored.



Item		Description
1)	Title	Data type and channel number of the device to be set
2)	[Device]	Set the device name and device number. If a bit number needs to be specified, the setting item is displayed. Example) Setting of P00000 
3)	[Information]	Displays the setting range of each setting item according to the selected device.
4)	Station type specification	Select the station type (host or other) for the controller to be monitored.
5)	[Network No.]	This item appears when [Other] is selected for the station type. Set the network number.
6)	[Station No.]	This item appears when [Other] is selected for the station type. Specify a station number.

98.14.2 Monitoring-supported bit devices ([LS ELECTRIC XGK])

The following table shows monitoring-supported bit devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3541 Availability of writing/reading data to/from bit devices ([LS ELECTRIC XGK])

For the formats of devices, refer to the following.

☞ Page 849 Formats of devices, labels, and tags

○: Available

× Not available

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
P	I/O Relay	Decimal + hexadecimal	P(Device)(Bit No.) Notation example: P40950 The rightmost digit is a bit address. • Device (decimal): 0 to 4095 • Bit No. (hexadecimal): 0 to F	○	○
L	Link relay	Decimal + hexadecimal	L(Device)(Bit No.) Notation example: L112630 The rightmost digit is a bit address. • Device (decimal): 0 to 11263 • Bit No. (hexadecimal): 0 to F	○	○
M	Auxiliary relay	Decimal + hexadecimal	M(Device)(Bit No.) Notation example: M40950 The rightmost digit is a bit address. • Device (decimal): 0 to 4095 • Bit No. (hexadecimal): 0 to F	○	○
K	Keep Relay	Decimal + hexadecimal	K(Device)(Bit No.) Notation example: K40950 The rightmost digit is a bit address. • Device (decimal): 0 to 4095 • Bit No. (hexadecimal): 0 to F	○	○
T	Timer	Decimal	0000 to 8191	○	○ (Not usable as word data)
C	Counter	Decimal	0000 to 4095	○	○ (Not usable as word data)
F	Special relay	Decimal + hexadecimal	F(Device)(Bit No.) Notation example: F40950 The rightmost digit is a bit address. • Device (decimal): 0 to 4095 • Bit No. (hexadecimal): 0 to F	○	○

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.

☞ Page 2868 Monitoring a controller through the GOT (server/client function)

98.14.3 Availability of writing/reading data to/from bit devices ([LS ELECTRIC XGK])

The following shows the availability of writing/reading data to/from bit devices by device type.

When the device type is other than the bit type, set the device No. in multiples of 16.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type				
	Bit	Byte (8 bits)	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)
P	R/W	-/-	R/W	-/-	-/-
L	R/W	-/-	R/W	-/-	-/-
M	R/W	-/-	R/W	-/-	-/-
K	R/W	-/-	R/W	-/-	-/-
T	R/W	-/-	-/-	-/-	-/-
C	R/W	-/-	-/-	-/-	-/-
F*1	R/W	-/-	R/W	-/-	-/-

*1 Data cannot be written to F00000 to F1023F.

98.14.4 Monitoring-supported word devices ([LS ELECTRIC XGK])

The following table shows monitoring-supported word devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3542 Availability of writing/reading data to/from word devices ([LS ELECTRIC XGK])

For the formats of devices, refer to the following.

☞ Page 849 Formats of devices, labels, and tags

○: Available

× Not available

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
D	Data Register	Decimal	000000 to 524287	○	○
R	File Register	Decimal	00000 to 32767	○	○
ZR	File Register	Decimal	000000 to 524287	○	○
U*2	Analog Data Register	Hexadecimal + decimal	U(BaseNo.)(SlotNo.).(Special module No.) Notation example: U7F.00 • BaseNo. (hexadecimal): 0 to 7 • SlotNo. (hexadecimal): 0 to F • Special module No. (decimal): 00 to 31	○	○
N	Comm. Data Register	Decimal	00000 to 21503	○	○
Z	Index register	Decimal	000 to 255	○	○
T	Timer current value	Decimal	0000 to 8191	○	○ (Not usable as bit data)
C	Counter current value	Decimal	0000 to 4095	○	○ (Not usable as bit data)

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
☞ Page 2868 Monitoring a controller through the GOT (server/client function)

*2 When the device type is the double-word (32 bits) type, set an even number for the special module number only.

98.14.5 Availability of writing/reading data to/from word devices ([LS ELECTRIC XGK])

The following shows the availability of writing/reading data to/from word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data
D	R/W	R/W	-/-	R/W
R	R/W	R/W	-/-	R/W
ZR	R/W	R/W	-/-	R/W
U	R/W	R/W	-/-	R/W
N	R/W	R/W	-/-	R/W
Z	R/W	R/W	-/-	R/W
T	R/W	R/W	-/-	-/-
C	R/W	R/W	-/-	-/-

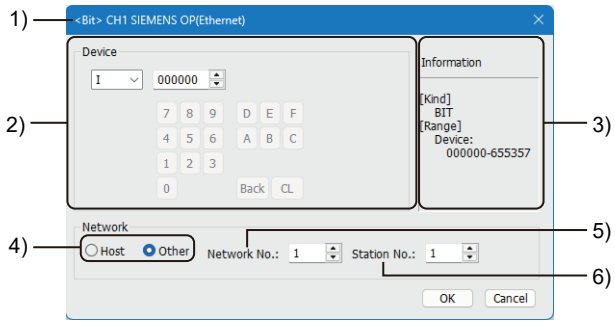
98.15 SIEMENS equipment ([SIEMENS OP(Ethernet)])

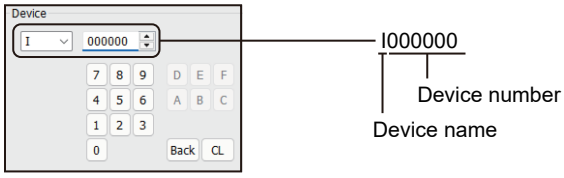
GT37 SoftGOT3000

Item	Reference
Device setting dialog	☞ Page 3543 Device setting dialog ([SIEMENS OP(Ethernet)])
Specifications of bit devices	☞ Page 3544 Monitoring-supported bit devices ([SIEMENS OP(Ethernet)])
	☞ Page 3545 Availability of writing/reading data to/from bit devices ([SIEMENS OP(Ethernet)])
Specifications of byte devices	☞ Page 3546 Monitoring-supported byte devices ([SIEMENS OP(Ethernet)])
	☞ Page 3546 Availability of writing/reading data to/from byte devices ([SIEMENS OP(Ethernet)])
Specifications of word devices	☞ Page 3547 Monitoring-supported word devices ([SIEMENS OP(Ethernet)])
	☞ Page 3548 Availability of writing/reading data to/from word devices ([SIEMENS OP(Ethernet)])
Specifications of double-word devices	☞ Page 3549 Monitoring-supported double-word devices ([SIEMENS OP(Ethernet)])
	☞ Page 3549 Availability of writing/reading data to/from double-word devices ([SIEMENS OP(Ethernet)])
Offset specifications	☞ Page 3550 Offset specifications ([SIEMENS OP(Ethernet)])
Notation of devices	☞ Page 3551 Notation of devices

98.15.1 Device setting dialog ([SIEMENS OP(Ethernet)])

Set a device to be monitored.



Item		Description
1)	Title	Data type and channel number of the device to be set
2)	[Device]	Set the device name and device number. If a bit number needs to be specified, the setting item is displayed. Example) Setting of I000000 
3)	[Information]	Displays the setting range of each setting item according to the selected device.
4)	Station type specification	Select the station type (host or other) for the controller to be monitored. • [Host]: The controller set for [Host Address] of the [Controller Setting] window is monitored. • [Other]: The controller having the specified station number is monitored.
5)	[Network No.]	This item appears when [Other] is selected for the station type. Set the network number.
6)	[Station No.]	This item appears when [Other] is selected for the station type. Specify a station number.

98.15.2 Monitoring-supported bit devices ([SIEMENS OP(Ethernet)])

The following table shows monitoring-supported bit devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3545 Availability of writing/reading data to/from bit devices ([SIEMENS OP(Ethernet)])

For the formats of devices, refer to the following.

☞ Page 849 Formats of devices, labels, and tags

The notation of device setting is different between the SIEMENS PLC peripheral software and GOT.

For the notation of devices, refer to the following.

☞ Page 3551 Notation of devices

○: Available

× Not available

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
I	Input relay	Decimal + octal	I(Byte address)(Bit address) Notation example: I655350 • Byte address (decimal): 00000 to 65535 • Bit address (octal): 0 to 7	○	○ (Not usable as word data)
Q*2	Output relay	Decimal + octal	Q(Byte address)(Bit address) Notation example: Q655350 • Byte address (decimal): 00000 to 65535 • Bit address (octal): 0 to 7	○	○ (Not usable as word data)
V	Variable memory	Decimal + octal	V(Byte address)(Bit address) Notation example: V204790 • Byte address (decimal): 00000 to 20479 • Bit address (octal): 0 to 7	○	○ (Not usable as word data)
M	Bit memory	Decimal + octal	M(Byte address)(Bit address) Notation example: M655350 • Byte address (decimal): 00000 to 65535 • Bit address (octal): 0 to 7	○	○ (Not usable as word data)
S	Sequence control relay	Decimal + octal	S(Byte address)(Bit address) Notation example: S310 • Byte address (decimal): 00 to 31 • Bit address (octal): 0 to 7	○	○
T	Timer	Decimal	0 to 255	○	×
C	Counter	Decimal	0 to 255	○	×
SM	Special memory	Decimal + octal	SM(Byte address)(Bit address) Notation example: SM20470 • Byte address (decimal): 0000 to 2047 • Bit address (octal): 0 to 7	○	○ (Not usable as word data)

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
☞ Page 2868 Monitoring a controller through the GOT (server/client function)

*2 Writing is possible only while the programmable controller is running.

98.15.3 Availability of writing/reading data to/from bit devices ([SIEMENS OP(Ethernet)])

The following shows the availability of writing/reading data to/from bit devices by device type.

When the device type is other than the bit type, set the device No. in multiples of 16.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type				
	Bit	Byte (8 bits)	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)
I*1	R/W	-/-	-/-	-/-	-/-
Q*1	R/W	-/-	-/-	-/-	-/-
V*1	R/W	-/-	-/-	-/-	-/-
M*1	R/W	-/-	-/-	-/-	-/-
S*1	R/W	-/-	-/-	-/-	-/-
T	R/-	-/-	-/-	-/-	-/-
C	R/-	-/-	-/-	-/-	-/-
SM*1	R/W	-/-	-/-	-/-	-/-

*1 To use the device as word data, use the word device that has the same device name appended with "W".
Example) Use IW for I.

98.15.4 Monitoring-supported byte devices ([SIEMENS OP(Ethernet)])

The following table shows monitoring-supported byte devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3546 Availability of writing/reading data to/from byte devices ([SIEMENS OP(Ethernet)])

For the formats of devices, refer to the following.

☞ Page 849 Formats of devices, labels, and tags

○: Available

× Not available

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
IB	Input relay	Decimal	0 to 65535	×	×
QB	Output relay	Decimal	0 to 65535	×	×
MB	Bit memory	Decimal	0 to 65535	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.

☞ Page 2868 Monitoring a controller through the GOT (server/client function)

98.15.5 Availability of writing/reading data to/from byte devices ([SIEMENS OP(Ethernet)])

The following shows whether writing/reading data to/from byte devices is available by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type				
	Byte (8 bits)	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of byte data
IB	R/W	-/-	-/-	-/-	-/-
QB	R/W	-/-	-/-	-/-	-/-
MB	R/W	-/-	-/-	-/-	-/-

98.15.6 Monitoring-supported word devices ([SIEMENS OP(Ethernet)])

The following table shows monitoring-supported word devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3548 Availability of writing/reading data to/from word devices ([SIEMENS OP(Ethernet)])

For the formats of devices, refer to the following.

☞ Page 849 Formats of devices, labels, and tags

○: Available

× Not available

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
T*2	Timer	Decimal	0 to 65535	○	○ (Not usable as bit data)
C	Counter	Decimal	0 to 65535	○	○ (Not usable as bit data)
DB*3*4*5	Data register	Decimal	DB(Data block No.).DBW(Device) Notation example: DB65535.DBW0 • Data block No. (decimal): 1 to 65535 • Device (Data word No.) (decimal): 0 to 65534 (Set an even number.)	○	○
VW*5	Variable memory	Decimal	0 to 20478	○	○ (Not usable as bit data)
IW*5	Input relay	Decimal	0 to 65534	○	○ (Not usable as bit data)
QW*5*6	Output relay	Decimal	0 to 65534	○	○ (Not usable as bit data)
MW*5	Bit memory	Decimal	0 to 65534	○	○ (Not usable as bit data)
AIW*5	Analog input	Decimal	0 to 110	○	×
AQW*5*6	Analog output	Decimal	0 to 110	○	○ (Not usable as bit data)
SMW*5	Special memory	Decimal	0 to 2046	○	○ (Not usable as bit data)
SW*5	Sequence control relay	Decimal	0 to 30	○	○ (Not usable as bit data)

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
☞ Page 2868 Monitoring a controller through the GOT (server/client function)

*2 Only one device can be set as the write destination.
Do not set this device as the write destination for a function to write data to consecutive devices such as the recipe function.

*3 It is necessary to define the data block using a peripheral software or sequence program, before using this device.

*4 Continuous access across data blocks is not possible.

*5 When the device type is the word (16 bits) type, set an even number for the device number.
When the device type is the double-word (32 bits) type, set the device number in multiples of 4.

*6 Writing is possible only while the programmable controller is running.

98.15.7 Availability of writing/reading data to/from word devices ([SIEMENS OP(Ethernet)])

The following shows the availability of writing/reading data to/from word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data
T	R/W	R/W	-/-	-/-
C	R/W	R/W	-/-	-/-
DB	R/W	R/W	-/-	R/W
VW*1	R/W	R/W	-/-	-/-
IW*1	R/W	R/W	-/-	-/-
QW*1	R/W	R/W	-/-	-/-
MW*1	R/W	R/W	-/-	-/-
AIW	R/-	R/-	-/-	-/-
AQW	R/W	R/W	-/-	-/-
SMW*1	R/W	R/W	-/-	-/-
SW*1	R/W	R/W	-/-	-/-

*1 To use the device as bit data, use the bit device that has the same device name without "W".
Example) Use I for IW.

98.15.8 Monitoring-supported double-word devices ([SIEMENS OP(Ethernet)])

The following table shows monitoring-supported double-word devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3549 Availability of writing/reading data to/from double-word devices ([SIEMENS OP(Ethernet)])

For the formats of devices, refer to the following.

☞ Page 849 Formats of devices, labels, and tags

○: Available

× Not available

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
ID	Input relay	Decimal	0 to 65532 (Set the number in multiples of 4.)	×	×
QD	Output relay	Decimal	0 to 65532 (Set the number in multiples of 4.)	×	×
MD	Bit memory	Decimal	0 to 65532 (Set the number in multiples of 4.)	×	×
HC	High-speed counter	Decimal	0 to 3	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.

☞ Page 2868 Monitoring a controller through the GOT (server/client function)

98.15.9 Availability of writing/reading data to/from double-word devices ([SIEMENS OP(Ethernet)])

The following shows the availability of writing/reading data to/from double-word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of double-word data
ID	-/-	R/W	-/-	-/-
QD	-/-	R/W	-/-	-/-
MD	-/-	R/W	-/-	-/-
HC	-/-	R/-	-/-	-/-

98.15.10 Offset specifications ([SIEMENS OP(Ethernet)])

The following shows the offset specifications of each device when using the offset function.

For the notation and range of devices, refer to the following.

☞ Page 3544 Monitoring-supported bit devices ([SIEMENS OP(Ethernet)])
☞ Page 3546 Monitoring-supported byte devices ([SIEMENS OP(Ethernet)])
☞ Page 3547 Monitoring-supported word devices ([SIEMENS OP(Ethernet)])
☞ Page 3549 Monitoring-supported double-word devices ([SIEMENS OP(Ethernet)])

Device		Offset specifications
Bit device	I	When the bit address is increased by 8 bits, the byte address is increased by 1 byte. Example) Offset for I000000 When offset value is 10, I000012 is monitored.
	Q	
	V	
	M	
	S	
	SM	
	T	Example) Offset for T0 When offset value is 10, T10 is monitored.
	C	
Byte device	IB	Example) Offset for IB0 When offset value is 10, IB10 is monitored.
	QB	
	MB	
Word device	T	Example) Offset for T0 When offset value is 10, T10 is monitored.
	C	
	DB	The offset target is device number (data word number). When a bit is specified, the bit is not supported for the bit number offset.
		Example) Offset for DB1.DBW0 When offset value is 10, DB1.DBW10 is monitored.
	VW	Example) Offset for VW0 When offset value is 10, VW10 is monitored.
	IW	
	QW	
	MW	
	AIW	
	AQW	
	SMW	
	SW	
Double-word device	ID	Example) Offset for ID0 When offset value is 10, ID10 is monitored.
	QD	
	MD	
	HC	Example) Offset for HC0 When offset value is 1, HC1 is monitored.

98.15.11 Notation of devices

The notation of device setting is different between the SIEMENS PLC peripheral software and GOT.

Notation of bit devices

Notation in the GOT	Notation in the PLC
Q0007	Q0.7

Notation of bit-specified data register

Notation in the GOT	Notation in the PLC
DB1.DBW0.b0	DB1.DBX1.0
DB1.DBW0.b1	DB1.DBX1.1
:	:
DB1.DBW0.b7	DB1.DBX1.7
DB1.DBW0.b8	DB1.DBX0.0
:	:
DB1.DBW0.b15	DB1.DBX0.7
DB1.DBW2.b0	DB1.DBX3.0
:	:
DB1.DBW2.b7	DB1.DBX3.7
DB1.DBW2.b8	DB1.DBX2.0
:	:
DB1.DBW2.b15	DB1.DBX2.7
:	:

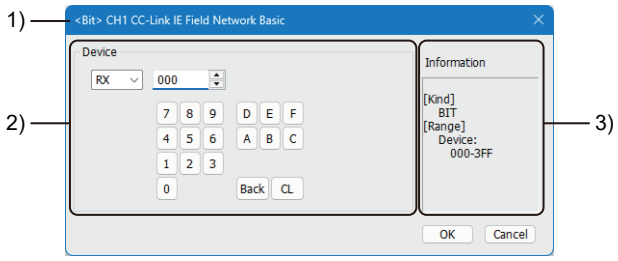
98.16 CLPA ([CC-Link IE Field Network Basic])

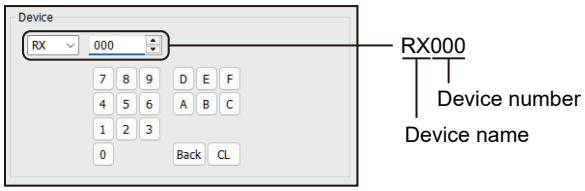
GT37 SoftGOT3000

Item	Reference
Device setting dialog	☞ Page 3552 Device setting dialog ([CC-Link IE Field Network Basic])
Specifications of bit devices	☞ Page 3553 Monitoring-supported bit devices ([CC-Link IE Field Network Basic])
	☞ Page 3553 Availability of writing/reading data to/from bit devices ([CC-Link IE Field Network Basic])
Specifications of word devices	☞ Page 3554 Monitoring-supported word devices ([CC-Link IE Field Network Basic])
	☞ Page 3554 Availability of writing/reading data to/from word devices ([CC-Link IE Field Network Basic])
Remote device setting of the GOT (remote station)	☞ Page 3555 Remote device setting of the GOT (remote station) ([CC-Link IE Field Network Basic])

98.16.1 Device setting dialog ([CC-Link IE Field Network Basic])

Set a device to be monitored.



Item		Description
1)	Title	Data type and channel number of the device to be set
2)	[Device]	Set the device name and device number. If a bit number needs to be specified, the setting item is displayed. Example) Setting of RX000 
3)	[Information]	Displays the setting range of each setting item according to the selected device.

98.16.2 Monitoring-supported bit devices ([CC-Link IE Field Network Basic])

The following table shows monitoring-supported bit devices.
The device range shown in this section indicates the maximum settable values in GT Designer3.
The range of devices that can actually be monitored depends on the number of stations occupied by remote stations that are set in the master station.
Before setting the device range, check the number of occupied stations that are assigned to the GOT.
If a nonexistent device or a device number out of the range is set for an object, other objects for which correct devices are set may not be monitored.
To check whether writing/reading data to/from each device is available, refer to the following.
☞ Page 3553 Availability of writing/reading data to/from bit devices ([CC-Link IE Field Network Basic])
For the formats of devices, refer to the following.
☞ Page 849 Formats of devices, labels, and tags
○: Available
× Not available

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
RX	Remote input	Hexadecimal	000 to 3FF	○	○
RY	Remote output	Hexadecimal	000 to 3FF	○	○

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
☞ Page 2868 Monitoring a controller through the GOT (server/client function)

98.16.3 Availability of writing/reading data to/from bit devices ([CC-Link IE Field Network Basic])

The following shows the availability of writing/reading data to/from bit devices by device type.
When the device type is other than the bit type, set the device No. in multiples of 16.
R/W: Both read and write
R/-: Read only
-/W: Write only
-/-: No read/write access

Device name	Device type				
	Bit	Byte (8 bits)	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)
RX	R/W	-/-	R/W	R/W	-/-
RY	R/W	-/-	R/W	R/W	-/-

98.16.4 Monitoring-supported word devices ([CC-Link IE Field Network Basic])

The following table shows monitoring-supported word devices.
The device range shown in this section indicates the maximum settable values in GT Designer3.
The range of devices that can actually be monitored depends on the number of stations occupied by remote stations that are set in the master station.
Before setting the device range, check the number of occupied stations that are assigned to the GOT.
If a nonexistent device or a device number out of the range is set for an object, other objects for which correct devices are set may not be monitored.
To check whether writing/reading data to/from each device is available, refer to the following.
☞ Page 3554 Availability of writing/reading data to/from word devices ([CC-Link IE Field Network Basic])
For the formats of devices, refer to the following.
☞ Page 849 Formats of devices, labels, and tags
○: Available
× Not available

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
Ww	Remote register	Hexadecimal	000 to 1FF	○	○
Wr	Remote register	Hexadecimal	000 to 1FF	○	○

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
☞ Page 2868 Monitoring a controller through the GOT (server/client function)

98.16.5 Availability of writing/reading data to/from word devices ([CC-Link IE Field Network Basic])

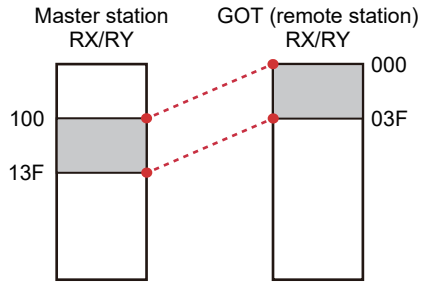
The following shows the availability of writing/reading data to/from word devices by device type.
R/W: Both read and write
R/-: Read only
-/W: Write only
-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data
Ww	R/W	R/W	-/-	R/W
Wr	R/W	R/W	-/-	R/W

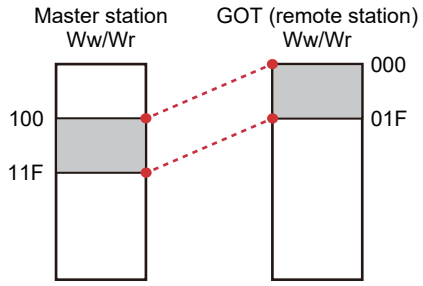
98.16.6 Remote device setting of the GOT (remote station) ([CC-Link IE Field Network Basic])

The devices assigned to the GOT in the master station are allocated in the range starting from the first number in the GOT.
The following shows the examples of device assignment in the master station and in the GOT (remote station).
In the example of remote device assignment (RX/RY 1 station occupied), the remote devices assigned to the GOT (remote station) are RX100 to RX13F and RY100 to RY13F in the master station. Note that the corresponding remote devices in the GOT are RX000 to RX03F and RY000 to RY03F.

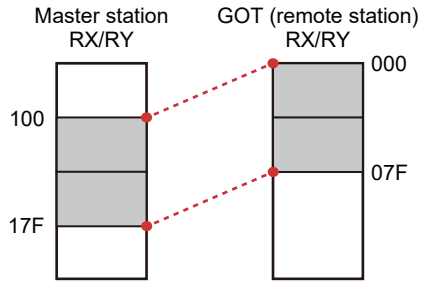
Example of remote device assignment
RX/RY 1 station occupied



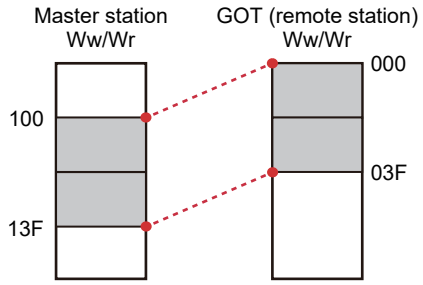
Example of remote device assignment
Ww/Wr 1 station occupied



Example of remote device assignment
RX/RY 2 station occupied



Example of remote device assignment
Ww/Wr 2 station occupied



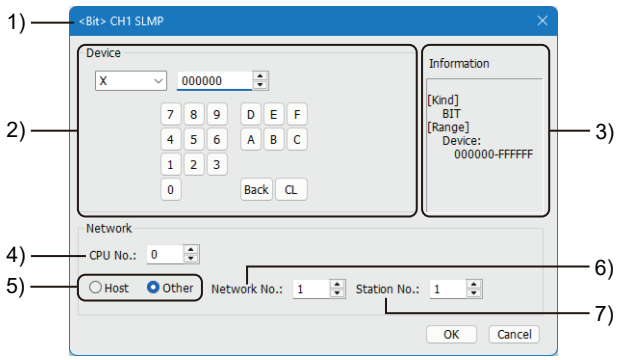
98.17 CLPA ([SLMP])

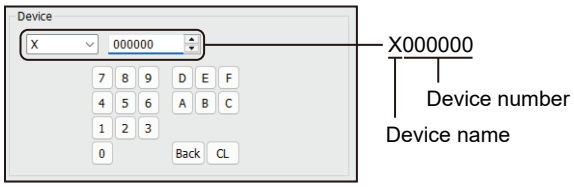
GT37 SoftGOT3000

Item	Reference
Device setting dialog	☞ Page 3556 Device setting dialog ([SLMP])
Specifications of bit devices	☞ Page 3557 Monitoring-supported bit devices ([SLMP])
	☞ Page 3559 Availability of writing/reading data to/from bit devices ([SLMP])
Specifications of word devices	☞ Page 3560 Monitoring-supported word devices ([SLMP])
	☞ Page 3561 Availability of writing/reading data to/from word devices ([SLMP])

98.17.1 Device setting dialog ([SLMP])

Set a device to be monitored.



Item		Description
1)	Title	Data type and channel number of the device to be set
2)	[Device]	Set the device name and device number. If a bit number needs to be specified, the setting item is displayed. Example) Setting of X000000 
3)	[Information]	Displays the setting range of each setting item according to the selected device.
4)	[CPU No.]	Set the CPU number of the controller.
5)	Station type specification	Select the station type (host or other) for the controller to be monitored. • [Host]: The controller to be monitored is the host station. • [Other]: The controller to be monitored is not the host station.
6)	[Network No.]	This item appears when [Other] is selected for the station type. Set the network number.
7)	[Station No.]	This item appears when [Other] is selected for the station type. Specify a station number.

98.17.2 Monitoring-supported bit devices ([SLMP])

The following table shows monitoring-supported bit devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3559 Availability of writing/reading data to/from bit devices ([SLMP])

For the formats of devices, refer to the following.

☞ Page 849 Formats of devices, labels, and tags

○: Available

× Not available

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
X	Input	Hexadecimal	000000 to FFFFFF	○	○
Y	Output	Hexadecimal	000000 to FFFFFF	○	○
B	Link relay	Hexadecimal	000000 to FFFFFF	○	○
M	Internal relay	Decimal	0 to 16777215	○	○
L	Latch relay	Decimal	0 to 16777215	○	○
F	Annunciator	Decimal	0 to 16777215	○	○
V	Edge relay	Decimal	0 to 16777215	○	○
TC	Timer Coil	Decimal	0 to 16777215	○	○ (Not usable as word data)
TS	Timer contact	Decimal	0 to 16777215	○	○ (Not usable as word data)
CC	Counter Coil	Decimal	0 to 16777215	○	○ (Not usable as word data)
CS	Counter contact	Decimal	0 to 16777215	○	○ (Not usable as word data)
STC	Retentive timer Coil	Decimal	0 to 16777215	○	○ (Not usable as word data)
STS	Retentive timer Contact	Decimal	0 to 16777215	○	○ (Not usable as word data)
SB	Link special relay	Hexadecimal	000000 to FFFFFF	○	○
SM	Special relay	Decimal	0 to 16777215	○	○
DX	Direct access input	Hexadecimal	000000 to FFFFFF	○	○
DY	Direct access output	Hexadecimal	000000 to FFFFFF	○	○
JnX	Link input (link direct device)	Hexadecimal	J(Network No.)-X(Device) Notation example: J1-X000000 • Network No. (decimal): 1 to 239 • Device (hexadecimal): 000000 to FFFFFF	○	○
JnY	Link output (link direct device)	Hexadecimal	J(Network No.)-Y(Device) Notation example: J1-Y000000 • Network No. (decimal): 1 to 239 • Device (hexadecimal): 000000 to FFFFFF	○	○
JnB	Link relay (link direct device)	Hexadecimal	J(Network No.)-B(Device) Notation example: J1-B000000 • Network No. (decimal): 1 to 239 • Device (hexadecimal): 000000 to FFFFFF	○	○

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
JnSB	Link special relay (link direct device)	Hexadecimal	J(Network No.)-SB(Device) Notation example: J1-SB000000 • Network No. (decimal): 1 to 239 • Device (hexadecimal): 000000 to FFFFFF	○	○

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
☞ Page 2868 Monitoring a controller through the GOT (server/client function)

98.17.3 Availability of writing/reading data to/from bit devices ([SLMP])

The following shows the availability of writing/reading data to/from bit devices by device type.

When the device type is other than the bit type, set the device No. in multiples of 16.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type				
	Bit	Byte (8 bits)	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)
X	R/W	-/-	R/W	R/W	-/-
Y	R/W	-/-	R/W	R/W	-/-
B	R/W	-/-	R/W	R/W	-/-
M	R/W	-/-	R/W	R/W	-/-
L	R/W	-/-	R/W	R/W	-/-
F	R/W	-/-	R/W	R/W	-/-
V	R/W	-/-	R/W	R/W	-/-
TC	R/W	-/-	-/-	-/-	-/-
TS	R/W	-/-	-/-	-/-	-/-
CC	R/W	-/-	-/-	-/-	-/-
CS	R/W	-/-	-/-	-/-	-/-
STC	R/W	-/-	-/-	-/-	-/-
STS	R/W	-/-	-/-	-/-	-/-
SB	R/W	-/-	R/W	R/W	-/-
SM	R/W	-/-	R/W	R/W	-/-
DX	R/W	-/-	R/W	R/W	-/-
DY	R/W	-/-	R/W	R/W	-/-
JnX	R/W	-/-	R/W	R/W	-/-
JnY	R/W	-/-	R/W	R/W	-/-
JnB	R/W	-/-	R/W	R/W	-/-
JnSB	R/W	-/-	R/W	R/W	-/-

98.17.4 Monitoring-supported word devices ([SLMP])

The following table shows monitoring-supported word devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3561 Availability of writing/reading data to/from word devices ([SLMP])

For the formats of devices, refer to the following.

☞ Page 849 Formats of devices, labels, and tags

○: Available

× Not available

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
TN	Timer (current value)	Decimal	0 to 16777215	○	○ (Not usable as bit data)
CN	Counter (current value)	Decimal	0 to 16777215	○	○ (Not usable as bit data)
STN	Retentive timer (current value)	Decimal	0 to 16777215	○	○ (Not usable as bit data)
D	Data register	Decimal	0 to 16777215	○	○
SD	Special register	Decimal	0 to 16777215	○	○
W	Link register	Hexadecimal	000000 to FFFFFF	○	○
SW	Link special register	Hexadecimal	000000 to FFFFFF	○	○
R	File register (Block switching method)	Decimal	0 to 16777215	○	○
ZR	File register (Serial number access method)	Hexadecimal	000000 to FFFFFF	○	○
Z	Index register	Decimal	0 to 16777215	○	○
G	Module access device (buffer memory)	Decimal	U(Unit No.)-G(Device) Notation example: UFF-G0 • Unit No.(hexadecimal): 00 to FF • Device (decimal): 0 to 16777215	○	○
U3E0G	CPU buffer memory	Decimal	U3E0-G(Device) Notation example: U3E0-G0 • Device (decimal): 0 to 16777215	○	○
U3E1G	CPU buffer memory	Decimal	U3E1-G(Device) Notation example: U3E1-G0 • Device (decimal): 0 to 16777215	○	○
U3E2G	CPU buffer memory	Decimal	U3E2-G(Device) Notation example: U3E2-G0 • Device (decimal): 0 to 16777215	○	○
U3E3G	CPU buffer memory	Decimal	U3E3-G(Device) Notation example: U3E3-G0 • Device (decimal): 0 to 16777215	○	○
U3E0HG	Fixed-cycle area of the CPU buffer memory (multiple CPU high speed transmission memory)	Decimal	U3E0-HG(Device) Notation example: U3E0-HG0 • Device (decimal): 0 to 16777215	○	○
U3E1HG	Fixed-cycle area of the CPU buffer memory (multiple CPU high speed transmission memory)	Decimal	U3E1-HG(Device) Notation example: U3E1-HG0 • Device (decimal): 0 to 16777215	○	○
U3E2HG	Fixed-cycle area of the CPU buffer memory (multiple CPU high speed transmission memory)	Decimal	U3E2-HG(Device) Notation example: U3E2-HG0 • Device (decimal): 0 to 16777215	○	○
U3E3HG	Fixed-cycle area of the CPU buffer memory (multiple CPU high speed transmission memory)	Decimal	U3E3-HG(Device) Notation example: U3E3-HG0 • Device (decimal): 0 to 16777215	○	○

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
JnW	Link register (link direct device)	Hexadecimal	J(Network No.)-W(Device) Notation example: J1-W000000 • Network No. (decimal): 1 to 239 • Device (hexadecimal): 000000 to FFFFFF	○	○
JnSW	Link special register (link direct device)	Hexadecimal	J(Network No.)-SW(Device) Notation example: J1-SW000000 • Network No. (decimal): 1 to 239 • Device (hexadecimal): 000000 to FFFFFF	○	○
RD	Refresh data register	Decimal	0 to 4294967295	○	○

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
☞ Page 2868 Monitoring a controller through the GOT (server/client function)

98.17.5 Availability of writing/reading data to/from word devices ([SLMP])

The following shows the availability of writing/reading data to/from word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data
TN	R/W	R/W	-/-	-/-
CN	R/W	R/W	-/-	-/-
STN	R/W	R/W	-/-	-/-
D*1	R/W	R/W	-/-	R/W
SD*1	R/W	R/W	-/-	R/W
W*1	R/W	R/W	-/-	R/W
SW*1	R/W	R/W	-/-	R/W
R*1	R/W	R/W	-/-	R/W
ZR*1	R/W	R/W	-/-	R/W
Z	R/W	R/W	-/-	-/-
G	R/W	R/W	-/-	R/W
U3E0G	R/W	R/W	-/-	R/W
U3E1G	R/W	R/W	-/-	R/W
U3E2G	R/W	R/W	-/-	R/W
U3E3G	R/W	R/W	-/-	R/W
U3E0HG	R/W	R/W	-/-	R/W
U3E1HG	R/W	R/W	-/-	R/W
U3E2HG	R/W	R/W	-/-	R/W
U3E3HG	R/W	R/W	-/-	R/W
JnW	R/W	R/W	-/-	R/W
JnSW	R/W	R/W	-/-	R/W
RD	R/W	R/W	-/-	R/W

*1 When bit specification of word device is performed, the GOT reads the value from a device and then write a value to the device. Do not change the device value with a sequence program until the GOT completes writing a value to the device.

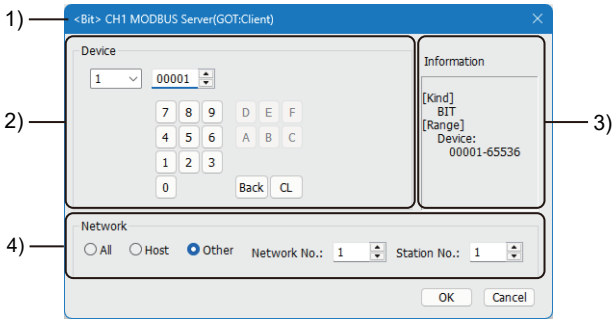
98.18 MODBUS ([MODBUS Server(GOT:Client)])

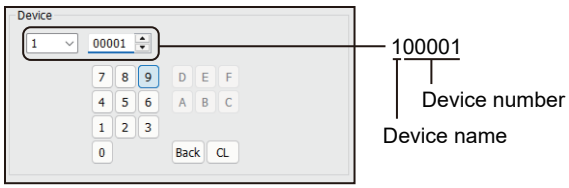
GT37 SoftGOT3000

Item	Reference
Device setting dialog	☞ Page 3562 Device setting dialog ([MODBUS Server(GOT:Client)])
Specifications of bit devices	☞ Page 3565 Monitoring-supported bit devices ([MODBUS Server(GOT:Client)])
	☞ Page 3565 Availability of writing/reading data to/from bit devices ([MODBUS Server(GOT:Client)])
Specifications of word devices	☞ Page 3566 Monitoring-supported word devices ([MODBUS Server(GOT:Client)])
	☞ Page 3566 Availability of writing/reading data to/from word devices ([MODBUS Server(GOT:Client)])
Notation of devices	☞ Page 3567 Notation of devices ([MODBUS Server(GOT:Client)])
Function code	☞ Page 3568 Function code ([MODBUS Server(GOT:Client)])

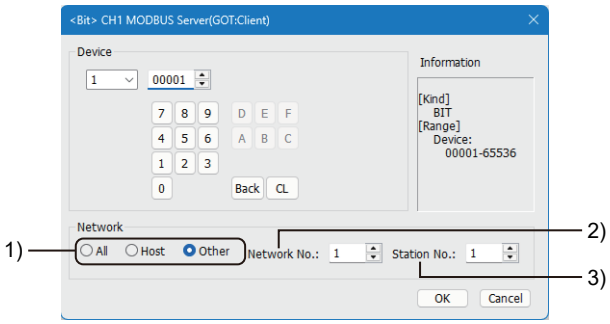
98.18.1 Device setting dialog ([MODBUS Server(GOT:Client)])

Set a device to be monitored.



Item		Description
1)	Title	Data type and channel number of the device to be set
2)	[Device]	Set the device name and device number. If a bit number needs to be specified, the setting item is displayed. Example) Setting of 100001 
3)	[Information]	Displays the setting range of each setting item according to the selected device.
4)	[Network]	The setting depends on the connection type. The setting items depend on the controller setting. ☞ Page 3563 Network setting for the MODBUS/RTU connection ([MODBUS Server(GOT:Client)]) ☞ Page 3564 Network setting for the MODBUS/TCP connection ([MODBUS Server(GOT:Client)])

Network setting for the MODBUS/RTU connection ([MODBUS Server(GOT:Client)])



Item			Description
1)	Monitor target specification	—	Set the monitoring target of the set device.
		[All]	Select this item when writing data to all the connected controllers. During monitoring, the controller set for [Host Address] of the [Controller Setting] window is monitored. When data is input from a numerical input object, the data is written to all the connected controllers. When no data is input, the controller set for [Host Address] is monitored.
		[Host]	Select this item when monitoring the controller set as the host station.
		[Other]	Select this item when monitoring the controller that has the specified station number.
2)	[Network No.]		This item appears when [Other] is selected for the station type. For the MODBUS/RTU connection, set 1.
3)	[Station No.]		This item appears when [Other] is selected for the station type. Specify a station number. The setting range is [1] to [247] (direct) or [248] to [254] (indirect). For indirect specification of a station number, refer to the following. ☞ Page 3563 Indirect specification of a station number for the MODBUS/RTU master connection ([MODBUS Server(GOT:Client)])

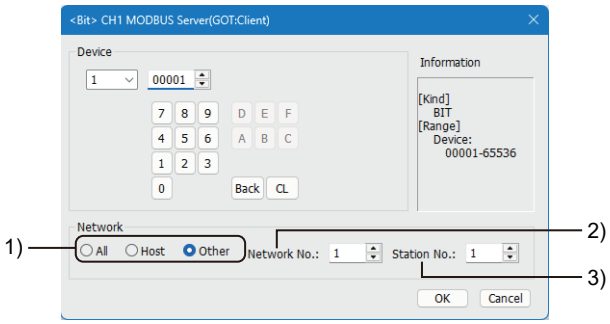
Indirect specification of a station number for the MODBUS/RTU master connection ([MODBUS Server(GOT:Client)])

When you specify any of 248 to 254 for the station number, the value of the corresponding GOT data register (GD10 to GD16) is used as the station number.

The following shows the correspondence between station number setting values and GOT data registers (GD).

Station No.	GOT data register (GD)	Setting range
248	GD10	[0] to [255] Setting a value outside the above range causes a device range error. When "0" is set, "All station specification (broadcast)" is specified. When "255" is set, the host station is specified.
249	GD11	
:	:	
253	GD15	
254	GD16	

Network setting for the MODBUS/TCP connection ([MODBUS Server(GOT:Client)])



Item			Description
1)	Monitor target specification	—	Set the monitoring target of the set device.
		[All]	Not available to the MODBUS/TCP connection.
		[Host]	Select this item when monitoring the controller set as the host station.
		[Other]	Select this item when monitoring the controller that has the specified station number.
2)	[Network No.]		This item appears when [Other] is selected for the station type. Set the network number. The setting range is [1] to [239].
3)	[Station No.]		This item appears when [Other] is selected for the station type. Specify a station number. The setting range is [1] to [247].

98.18.2 Monitoring-supported bit devices ([MODBUS Server(GOT:Client)])

The following table shows monitoring-supported bit devices.
The device range of MODBUS equipment varies by model.
When a model whose device range is not a specified using a multiple of 16 is used, monitoring to the maximum within the range may not be possible.
In this case, the device range is up to the number divisible by 16.

Ex.
For a model whose coil device range is from 0 to 9999
The range that can be actually monitored is from 0 to 9984.

To check whether writing/reading data to/from each device is available, refer to the following.
☞ Page 3565 Availability of writing/reading data to/from bit devices ([MODBUS Server(GOT:Client)])
For the formats of devices, refer to the following.
☞ Page 849 Formats of devices, labels, and tags
○: Available
× Not available

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
1	Input relay	Decimal	00001 to 65536	○	○ (Not usable as word data)
0	Coils	Decimal	00001 to 65536	○	○ (Not usable as word data)

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
☞ Page 2868 Monitoring a controller through the GOT (server/client function)

98.18.3 Availability of writing/reading data to/from bit devices ([MODBUS Server(GOT:Client)])

The following shows the availability of writing/reading data to/from bit devices by device type.
When the device type is other than the bit type, set the device No. in multiples of 16.
R/W: Both read and write
R/-: Read only
-/W: Write only
-/-: No read/write access

Device name	Device type				
	Bit	Byte (8 bits)	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)
1	R/-	-/-	-/-	-/-	-/-
0	R/W	-/-	-/-	-/-	-/-

98.18.4 Monitoring-supported word devices ([MODBUS Server(GOT:Client)])

The following table shows monitoring-supported word devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3566 Availability of writing/reading data to/from word devices ([MODBUS Server(GOT:Client)])

For the formats of devices, refer to the following.

☞ Page 849 Formats of devices, labels, and tags

○: Available

× Not available

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
4	Holding register	Decimal	00001 to 65536	○	○ (Not usable as bit data)
3	Input register	Decimal	00001 to 65536	○	○ (Not usable as bit data)
6	Extension file register	Decimal	(File No.)-6(Device) Notation example: 418-600000 • File No. (decimal): 0 to 418 • Device (decimal): 00000 to 09999	○	○ (Not usable as bit data)

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
☞ Page 2868 Monitoring a controller through the GOT (server/client function)

98.18.5 Availability of writing/reading data to/from word devices ([MODBUS Server(GOT:Client)])

The following shows the availability of writing/reading data to/from word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data
4	R/W	R/W	-/-	R/W
3	R/-	R/-	-/-	R/-
6	R/W	R/W	-/-	R/W

98.18.6 Notation of devices ([MODBUS Server(GOT:Client)])

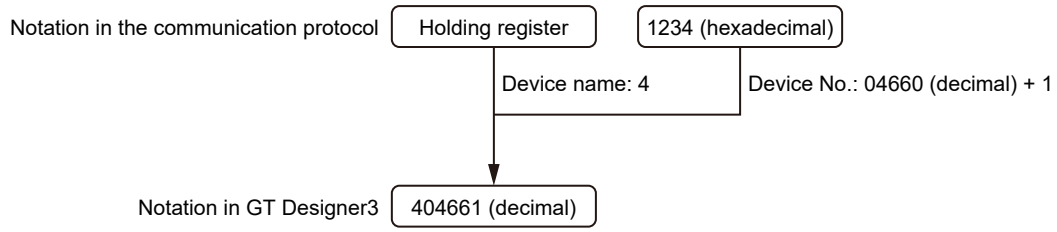
The notation of addresses and that of devices differ between the MODBUS/RTU communication protocol and GT Designer3. Set the devices using the notation used in GT Designer3.

Notation in the communication protocol		Notation in GT Designer3	
Device name	**Address (hexadecimal)**	**Device name**	**Device No. (decimal)**
Coils	0000 to FFFF	0	00001 to 65536
Input relay	0000 to FFFF	1	00001 to 65536
Input register	0000 to FFFF	3	00001 to 65536
Holding register	0000 to FFFF	4	00001 to 65536
Extension file register	0000 to 270F	6	00000 to 09999

Ex.

Monitoring the holding register 1234 (hexadecimal)

Set 404661 in GT Designer3.



98.18.7 Function code ([MODBUS Server(GOT:Client)])

The GOT supports the following function codes.

Function code	Function	Number of devices that are accessible with one message [Unit: point(s)]	
		MODBUS/RTU	MODBUS/TCP
0x01	Read Coils	1 to 2000	1 to 1000
0x02	Read Discrete Inputs	1 to 2000	1 to 1000
0x03	Read Holding Registers	1 to 125	1 to 125
0x04	Read Input Registers	1 to 125	1 to 125
0x05	Write Single Coil	1	1
0x06	Write Single Register	1	1
0x0F	Write Multiple Coils	1 to 1968	1 to 800
0x10	Write Multiple Register	1 to 123	1 to 123
0x14	Read File Record	1 to 124	1 to 124
0x15	Write File Record	1 to 122	1 to 122

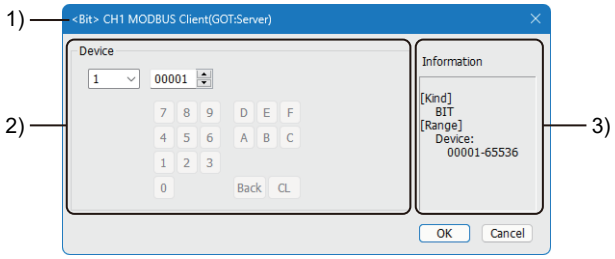
98.19 MODBUS ([MODBUS Client(GOT:Server)])

GT37 SoftGOT3000

Item	Reference
Device setting dialog	☞ Page 3569 Device setting dialog ([MODBUS Client(GOT:Server)])
Specifications of bit devices	☞ Page 3570 Monitoring-supported bit devices ([MODBUS Client(GOT:Server)])
	☞ Page 3570 Availability of writing/reading data to/from bit devices ([MODBUS Client(GOT:Server)])
Specifications of word devices	☞ Page 3571 Monitoring-supported word devices ([MODBUS Client(GOT:Server)])
	☞ Page 3571 Availability of writing/reading data to/from word devices ([MODBUS Client(GOT:Server)])
Notation of devices	☞ Page 3567 Notation of devices ([MODBUS Server(GOT:Client)])
Function code	☞ Page 3568 Function code ([MODBUS Server(GOT:Client)])

98.19.1 Device setting dialog ([MODBUS Client(GOT:Server)])

Set a device to be monitored.



Item		Description
1)	Title	Data type and channel number of the device to be set
2)	[Device]	Set the device name and device number. If a bit number needs to be specified, the setting item is displayed. Example) Setting of 100001
3)	[Information]	Displays the setting range of each setting item according to the selected device.

98.19.2 Monitoring-supported bit devices ([MODBUS Client(GOT:Server)])

The following table shows monitoring-supported bit devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3570 Availability of writing/reading data to/from bit devices ([MODBUS Client(GOT:Server)])

For the formats of devices, refer to the following.

☞ Page 849 Formats of devices, labels, and tags

○: Available

× Not available

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
1	Input relay	Decimal	00001 to 65536	○	○
0	Coils	Decimal	00001 to 65536	○	○

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.

☞ Page 2868 Monitoring a controller through the GOT (server/client function)

98.19.3 Availability of writing/reading data to/from bit devices ([MODBUS Client(GOT:Server)])

The following shows the availability of writing/reading data to/from bit devices by device type.

When the device type is other than the bit type, set the device No. in multiples of 16.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type				
	Bit	Byte (8 bits)	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)
1	R/W	-/-	R/W	R/W	-/-
0	R/W	-/-	R/W	R/W	-/-

98.19.4 Monitoring-supported word devices ([MODBUS Client(GOT:Server)])

The following table shows monitoring-supported word devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3542 Availability of writing/reading data to/from word devices ([LS ELECTRIC XGK])

For the formats of devices, refer to the following.

☞ Page 849 Formats of devices, labels, and tags

○: Available

× Not available

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
4	Holding register	Decimal	00001 to 65536	○	○
3	Input register	Decimal	00001 to 65536	○	○

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.

☞ Page 2868 Monitoring a controller through the GOT (server/client function)

98.19.5 Availability of writing/reading data to/from word devices ([MODBUS Client(GOT:Server)])

The following shows the availability of writing/reading data to/from word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data
4	R/W	R/W	-/-	R/W
3	R/W	R/W	-/-	R/W

98.19.6 Function code ([MODBUS Client(GOT:Server)])

The GOT supports the following function codes.

Function code	Function	Number of devices that are accessible with one message [Unit: point(s)]	
		MODBUS/RTU	MODBUS/TCP
0x01	Read Coils	1 to 2000	1 to 2000
0x02	Read Discrete Inputs	1 to 2000	1 to 2000
0x03	Read Holding Registers	1 to 125	1 to 125
0x04	Read Input Registers	1 to 125	1 to 125
0x05	Write Single Coil	1	1
0x06	Write Single Register	1	1
0x08*1	Diagnostics	—	—
0x0F	Write Multiple Coils	1 to 1968	1 to 1968
0x10	Write Multiple Register	1 to 123	1 to 123

*1 Only available for the loopback (sub function code 0x0000).

98.20 OPC([OPC UA])

GT37 SoftGOT3000

Item	Reference
Device setting dialog	☞ Page 3573 Device setting dialog ([OPC UA])
Device specifications	☞ Page 3573 Monitoring-supported devices ([OPC UA])

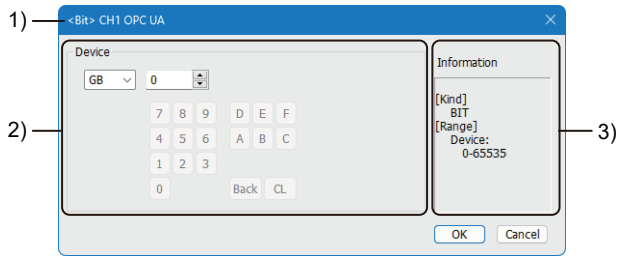
98.20.1 Device setting dialog ([OPC UA])

Set a device to be monitored.

In the device setting dialog, only GOT internal devices are settable.

For information on setting OPC UA tags, refer to the following.

☞ Page 944 How to set OPC UA tags



Item		Description
1)	Title	Data type and channel number of the device to be set
2)	[Device]	Set the device name and device number. If a bit number needs to be specified, the setting item is displayed.
3)	[Information]	Displays the setting range of each setting item according to the selected device.

98.20.2 Monitoring-supported devices ([OPC UA])

To monitor an OPC UA server, use OPC UA tags.

For the usable OPC UA tags, refer to the following.

☞ Page 945 Usable OPC UA tags

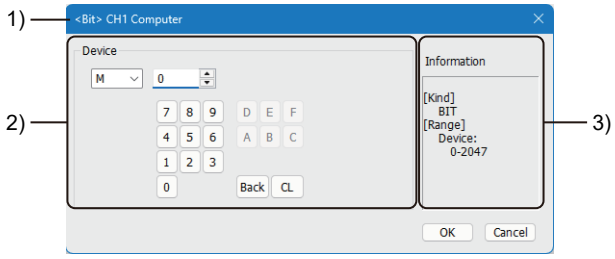
98.21 Microcomputer ([Computer])

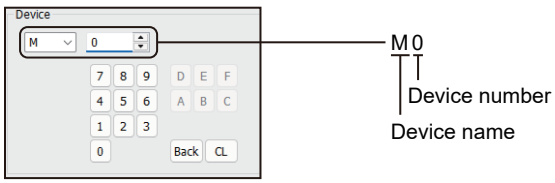
GT37 SoftGOT3000

Item	Reference
Device setting dialog	☞ Page 3574 Device setting dialog ([Computer])
Specifications of bit devices	☞ Page 3575 Monitoring-supported bit devices ([Computer])
	☞ Page 3575 Availability of writing/reading data to/from bit devices ([Computer])
Specifications of word devices	☞ Page 3576 Monitoring-supported word devices ([Computer])
	☞ Page 3576 Availability of writing/reading data to/from word devices ([Computer])

98.21.1 Device setting dialog ([Computer])

Set a device to be monitored.



Item		Description
1)	Title	Data type and channel number of the device to be set
2)	[Device]	Set the device name and device number. If a bit number needs to be specified, the setting item is displayed. Example) Setting of M0 
3)	[Information]	Displays the setting range of each setting item according to the selected device.

98.21.2 Monitoring-supported bit devices ([Computer])

The following table shows monitoring-supported bit devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3575 Availability of writing/reading data to/from bit devices ([Computer])

For the formats of devices, refer to the following.

☞ Page 849 Formats of devices, labels, and tags

○: Available

× Not available

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
M	Internal relay	Decimal	0 to 2047	○	○
L	Latch relay	Decimal	0 to 2047	○	○
SM	Special relay	Decimal	0 to 63	○	○

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.

☞ Page 2868 Monitoring a controller through the GOT (server/client function)

98.21.3 Availability of writing/reading data to/from bit devices ([Computer])

The following shows the availability of writing/reading data to/from bit devices by device type.

When the device type is other than the bit type, set the device No. in multiples of 16.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type				
	Bit	Byte (8 bits)	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)
M	R/W	-/-	R/W	R/W	-/-
L	R/W	-/-	R/W	R/W	-/-
SM	R/W	-/-	R/W	R/W	-/-

98.21.4 Monitoring-supported word devices ([Computer])

The following table shows monitoring-supported word devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 3576 Availability of writing/reading data to/from word devices ([Computer])

For the formats of devices, refer to the following.

☞ Page 849 Formats of devices, labels, and tags

○: Available

× Not available

Device name		Device No. representation	Setting range	EG device specifications*1	
				Assignment to EG devices	Access using a client
D	Data register	Decimal	0 to 4095	○	○
SD	Special register	Decimal	0 to 15	○	○
R	File register	Decimal	0 to 4095	○	○

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.

☞ Page 2868 Monitoring a controller through the GOT (server/client function)

98.21.5 Availability of writing/reading data to/from word devices ([Computer])

The following shows the availability of writing/reading data to/from word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data
D	R/W	R/W	-/-	R/W
SD	R/W	R/W	-/-	R/W
R	R/W	R/W	-/-	R/W

Appendices

Appendix 1 GOT internal devices

GT37 SoftGOT3000

☞ Page 3577 GOT bit register (GB)
☞ Page 3579 GOT data register (GD)
☞ Page 3581 GOT special register (GS)

Appendix 1.1 GOT bit register (GB)

GT37 SoftGOT3000

Device	Function	Model
GB0 to GB9	Use prohibited	-
GB10 to GB25	External output (Y0 to YF) when GB device is on	GT37 SoftGOT3000
GB26 to GB29	Use prohibited	-
GB30 to GB37	Turning on when external input (X0 to X7) is on	GT37 SoftGOT3000
GB38	Turning on without the power supply	
GB39	Use prohibited	-
GB40	Always ON	GT37 SoftGOT3000
GB41	Always OFF	
GB42	Turning on when a screen switching occurs	
GB43 to GB49	Use prohibited	-
GB50 to GB57	Turning on when external input (X8 to XF) is on	GT37 SoftGOT3000
GB58 to GB63	Use prohibited	-
GB64 to GB65535	User area	GT37 SoftGOT3000

External output for Y0 to YF (GB10 to GB25)

When the external I/O function is used, if one of these GB devices turns on, the corresponding signal is output to the external I/O device.

The following shows the correspondence between the GB devices and the signals.

GB device	Signal name	GB device	Signal name	GB device	Signal name	GB device	Signal name
GB10	Y0 output	GB14	Y4 output	GB18	Y8 output	GB22	YC output
GB11	Y1 output	GB15	Y5 output	GB19	Y9 output	GB23	YD output
GB12	Y2 output	GB16	Y6 output	GB20	YA output	GB24	YE output
GB13	Y3 output	GB17	Y7 output	GB21	YB output	GB25	YF output

External input for X0 to X7 and X8 to XF (GB30 to GB37, GB50 to GB57)

When the external I/O function is used, if a signal is input from the external I/O device, the corresponding GB device turns on.
The following shows the correspondence between the GB devices and the signals.

GB device	Signal name	GB device	Signal name	GB device	Signal name	GB device	Signal name
GB30	X0 input	GB34	X4 input	GB50	X8 input	GB54	XC input
GB31	X1 input	GB35	X5 input	GB51	X9 input	GB55	XD input
GB32	X2 input	GB36	X6 input	GB52	XA input	GB56	XE input
GB33	X3 input	GB37	X7 input	GB53	XB input	GB57	XF input

Without power supply (GB38)

When the external I/O function is used, if no power is supplied to the external device, this device turns on.

Always ON (GB40)

Always on.
The action is the same as b4 of Common Information 1 (GS0).

Always OFF (GB41)

Always off.
The action is the same as b5 of Common Information 1 (GS0).

Turning on when a screen switching occurs (GB42)

Turns on when switching the following screens occurs.

- Base screen
- Overlap window 1, 2, 3, 4, 5
- Superimpose window 1, 2
- When an overlap window is closed

You need to turn off this device.

Appendix 1.2 GOT data register (GD)

GT37 SoftGOT3000

GD devices are listed as follows.

Device	Function	Model
GD0 to GD65535	User area	GT37 SoftGOT3000

A

Designation of a station number using GD (only for the temperature controller connection, inverter connection and servo amplifier connection)

If 100 to 115 is set for a station number. in the setting of device, a station number can be designated by the value of GD10 to GD25.

You can change the station number to be monitored by simply changing the device value.

For information on the device settings, refer to the following.

☞ Page 835 Setting a device in the device setting dialog

■When used together with the station number switching device

The station number switching device has higher priority.

■When objects that monitor different channel numbers are arranged on the same screen

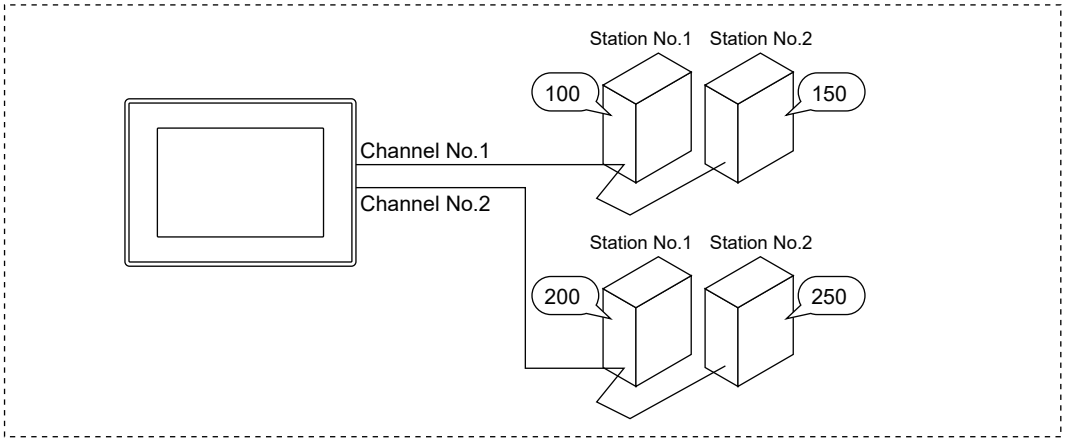
To monitor different station numbers by individual objects, use GD10 to GD25.

If a station number switching device is used, the monitored station number of an unintended object may change. (Especially when multiple channel numbers are set as targets for switching)

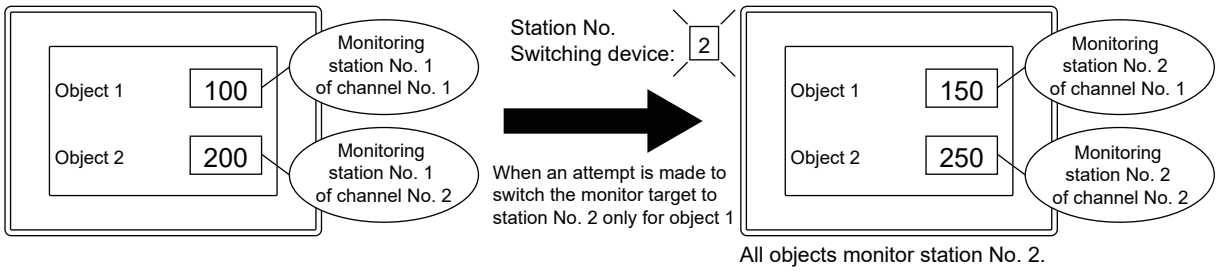
Ex.

When channel No. 1 and No. 2 are the monitoring targets for the station number switching device

The monitoring target station numbers are switched when the values of GD10 to GD25 are changed.

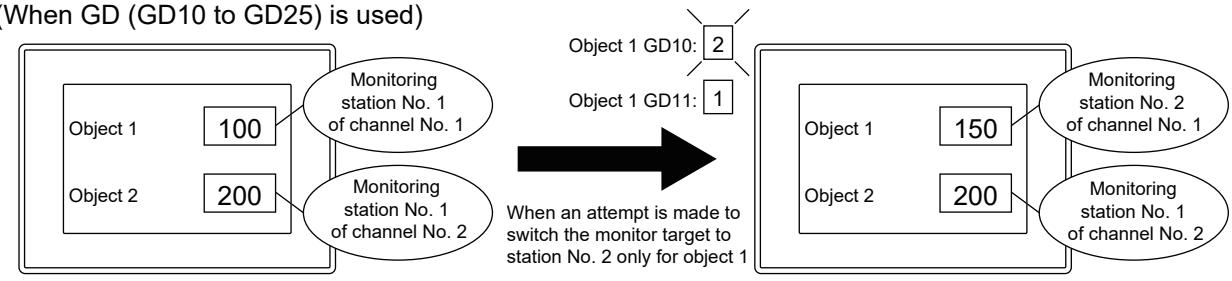


(When using the Station No.Switching device)



All objects monitor station No. 2.

(When GD (GD10 to GD25) is used)



Only object 1 monitors station No. 2.

Appendix 1.3 GOT special register (GS)

GT37 SoftGOT3000

The GOT special register includes the following two types.

Type	Range	Description
Write device	GS0 to GS383 GS640 to GS2559	Writing values by the GOT notifies a user of the status of GOT. ☞ Page 3581 Write device list
Read device	GS384 to GS639 GS1792 to GS3072	Writing values by a user controls the behavior of GOT. ☞ Page 3623 List of read devices

Point

Functions affected by GOT special register

Some GOT special registers affect multiple functions on the GOT.

For the relation between each GOT special register and GOT functions, refer to the following.

☞ Relevant settings for each function

Write device list

Device	Function	Reference	Model
GS0	Common Information 1	☞ Page 3591 Common Information 1 (GS0)	GT37 SoftGOT3000
GS1	Base Screen Information	☞ Page 3591 Base Screen Information (GS1)	
GS2	Use prohibited	—	—
GS3	GOT ID	☞ Page 3591 GOT ID (GS3)	GT37 SoftGOT3000
GS4 to GS6	Use prohibited	—	—
GS7	1 Second Binary Counter	☞ Page 3592 1 Second Binary Counter (GS7)	GT37 SoftGOT3000
GS8	Scan Time of Monitor	☞ Page 3592 Scan Time of Monitor (GS8)	
GS9	Use prohibited	—	—
GS10	Scan Counter of Monitor	☞ Page 3592 Scan Counter of Monitor (GS10)	GT37 SoftGOT3000
GS11 to GS13	Use prohibited	—	—

Device	Function	Reference	Model
GS14	Script Common Information	☞ Page 3592 Script Common Information (GS14)	GT37 SoftGOT3000
GS15	Script Error Pointer	☞ Page 3592 Script Error Pointer (GS15)	
GS16	Script No.	☞ Page 3592 Script error data (GS16 to GS47)	
GS17	Error Code		
:	:		
GS46	Script No.		
GS47	Error Code		
GS48	Script Execute Pointer	☞ Page 3592 Script Execute Pointer (GS48)	
GS49 to GS79	Script Execute No.	☞ Page 3593 Script Execute No. (GS49 to GS79)	
GS80	Object Script Common Information	☞ Page 3593 Object Script Common Information (GS80)	
GS81	Object Script Error Pointer	☞ Page 3593 Object Script Error Pointer (GS81)	
GS82	Object Script User ID	☞ Page 3593 Object script error data (GS82 to GS113)	
GS83	Error Code		
:	:		
GS112	Object Script User ID		
GS113	Error Code		
GS114	Object Script Execute Pointer	☞ Page 3593 Object Script Execute Pointer (GS114)	
GS115 to GS145	Object Script Execute ID	☞ Page 3593 Object script execute No. (GS115 to GS145)	
GS146 to GS153	Use prohibited	—	—
GS154	File Operation Function Information	☞ Page 3593 File Operation Function Information (GS154)	GT37 SoftGOT3000
GS155 GS156	Use prohibited	—	—
GS157	Latest Script Error Info Pointer	☞ Page 3594 Latest Script Error Info Pointer (GS157)	GT37 SoftGOT3000
GS158	Latest Executed Script Pointer	☞ Page 3594 Latest Executed Script Pointer (GS158)	
GS159	Latest Object Script Error Info Pointer	☞ Page 3594 Latest Object Script Error Info Pointer (GS159)	
GS160	Latest Executed Object Script Pointer	☞ Page 3594 Latest Executed Object Script Pointer (GS160)	
GS161 to GS193	Use prohibited	—	—
GS194 GS195	Ethernet Port 2 GOT IP Address	☞ Page 3594 Ethernet Port 2 GOT IP Address (GS194, GS195), Ethernet Port 1 GOT IP Address (GS198, GS199)	GT37 SoftGOT3000
GS196 to GS197	Use prohibited	—	—
GS198 GS199	Ethernet Port 1 GOT IP Address	☞ Page 3594 Ethernet Port 2 GOT IP Address (GS194, GS195), Ethernet Port 1 GOT IP Address (GS198, GS199)	GT37 SoftGOT3000
GS200	Gateway Common Information	☞ Page 3595 Gateway Common Information (GS200)	GT37 SoftGOT3000
GS201	Mail Send Function Error Counter	☞ Page 3595 Mail Send Function Error Counter (GS201)	
GS202	Mail Send Function Error Code	☞ Page 3595 Mail Send Function Error Code (GS202)	
GS203	Mail Send Function Error Occurrence Date And Time(Year/Month)	☞ Page 3595 Mail Send Function Error Occurrence Date And Time (GS203 to GS205)	
GS204	Mail Send Function Error Occurrence Date And Time(Day/Hour)		
GS205	Mail Send Function Error Occurrence Date And Time(Minute/Second)		
GS206	Mail Send Function Send Source	☞ Page 3595 Mail Send Function Send Source (GS206)	
GS207	Use prohibited	—	—

Device	Function	Reference	Model
GS208	Number of Connected FTP Clients	☞ Page 3595 Number of Connected FTP Clients (GS208)	GT37 SoftGOT3000
GS209	Use prohibited	—	—
GS210	Server Function Error Counter	☞ Page 3595 Server Function Error Counter (GS210)	GT37 SoftGOT3000
GS211	Server Function Error Code	☞ Page 3596 Server Function Error Code (GS211)	
GS212	Server Function Error Occurrence Date And Time(Year/Month)	☞ Page 3596 Server Function Error Occurrence Date And Time (GS212 to GS214)	
GS213	Server Function Error Occurrence Date And Time(Day/Hour)		
GS214	Server Function Error Occurrence Date And Time(Minute/Second)		
GS215	Server Function Error Client(Lower)	☞ Page 3596 Server Function Error Client (GS215, GS216)	
GS216	Server Function Error Client(Upper)		
GS217 to GS219	Use prohibited	—	—
GS220	Client Function Error Counter	☞ Page 3596 Client Function Error Counter (GS220)	GT37 SoftGOT3000
GS221	Client Function Error Code	☞ Page 3597 Client Function Error Code (GS221)	
GS222	Client Function Error Occurrence Date And Time(Year/Month)	☞ Page 3597 Client Function Error Occurrence Date And Time (GS222 to GS224)	
GS223	Client Function Error Occurrence Date And Time(Day/Hour)		
GS224	Client Function Error Occurrence Date And Time(Minute/Second)		
GS225	Client Function Error Server(Lower)	☞ Page 3597 Client Function Error Server (GS225, GS226)	
GS226	Client Function Error Server(Upper)		
GS227 to GS229	Use prohibited	—	—
GS230	No. Of Faulty Stations	☞ Page 3598 No. Of Faulty Stations (GS230)	GT37 SoftGOT3000
GS231 to GS238	Ethernet Faulty Station Information	☞ Page 3598 Ethernet Faulty Station Information (GS231 to GS238)	
GS239	Use prohibited	—	—
GS240	External Authentication Status Notification	☞ Page 3599 External Authentication Status Notification (GS240)	GT37 SoftGOT3000
GS241	Insufficient Security Level Notification	☞ Page 3599 Insufficient Security Level Notification (GS241)	GT37 SoftGOT3000
GS242	Unauthorized Log-in Operation Notification	☞ Page 3600 Unauthorized Log-in Operation Notification (GS242)	GT37 SoftGOT3000
GS243	Object Direct Input Reception Notification	☞ Page 3600 Object Direct Input Reception Notification (GS243)	GT37 SoftGOT3000
GS244	SoftGOT-GOT Link Status Control/Notification	☞ Page 3600 SoftGOT-GOT Link Status Control/Notification (GS244)	GT37 SoftGOT3000
GS245 to GS250	Use prohibited	—	—

Device	Function	Reference	Model
GS251	Drive Accessibility	☞ Page 3600 Drive Accessibility (GS251)	GT37 SoftGOT3000
GS252	Error Detection Common Information	☞ Page 3601 Error Detection Common Information (GS252)	GT37 SoftGOT3000
GS253	Use prohibited	—	—
GS254	Invalid Access from Ethernet Port 1, Invalid Access from Ethernet Port 2	☞ Page 3601 Invalid Access from Ethernet Port 1, Invalid Access from Ethernet Port 2 (GS254)	GT37 SoftGOT3000
GS255	Intensity Notification	☞ Page 3601 Intensity Notification (GS255)	
GS256	FA Transparent Status	☞ Page 3602 FA Transparent Status (GS256)	
GS257 to GS259	Use prohibited	—	—
GS260	Integer <- -> Real Number Conversion Status	☞ Page 3602 Integer <- -> Real Number Conversion Status (GS260)	GT37 SoftGOT3000
GS261	Integer <- -> Real Number Conversion Error Code	☞ Page 3602 Integer ←→ Real Number Conversion Error Code (GS261)	
GS262	System Alarm GOT Error Channel No.	☞ Page 3603 System Alarm GOT Error Channel No. (GS262)	
GS263	System Alarm CPU Error Channel No.	☞ Page 3603 System Alarm CPU Error Channel No. (GS263)	
GS264	System Alarm Network Error Channel No.	☞ Page 3603 System Alarm Network Error Channel No. (GS264)	
GS265	SNTP Time Synchronization Setting Status	☞ Page 3603 SNTP Time Synchronization Setting Status (GS265)	GT37 SoftGOT3000
GS266 to GS272	SNTP Time Query Result	☞ Page 3603 SNTP Time Query Result (GS266 to GS272)	
GS273 to GS275	Use prohibited	—	—
GS276	Document Display Status	☞ Page 3603 Document Display Status (GS276)	GT37 SoftGOT3000
GS277	Notify Automatic Connection Status	☞ Page 3603 Notify Automatic Connection Status (GS277)	GT37 SoftGOT3000
GS278	Use prohibited	—	—
GS279	Standard SD Card Information	☞ Page 3604 Standard SD Card Information (GS279)	GT37 SoftGOT3000
GS280	Faulty Monitor Station signal (CH1)	☞ Page 3604 Faulty Monitor Station signal (CH1 to CH4) (GS280, GS300, GS320, GS340)	GT37 SoftGOT3000
GS281 to GS288	Faulty Station Information (CH1)	☞ Page 3604 Faulty Station Information (CH1 to CH4) (GS281 to GS288, GS301 to GS308, GS321 to GS328, GS341 to GS348)	
GS289 to GS298	Use prohibited	—	—
GS299	Channel Observation Notification Information Signal (CH1)	☞ Page 3606 Channel Observation Notification Information Signal (CH1) (GS299, GS319, GS339, GS359)	GT37 SoftGOT3000
GS300	Faulty Monitor Station Signal (CH2)	☞ Page 3604 Faulty Monitor Station signal (CH1 to CH4) (GS280, GS300, GS320, GS340)	
GS301 to GS308	Faulty Station Information (CH2)	☞ Page 3604 Faulty Station Information (CH1 to CH4) (GS281 to GS288, GS301 to GS308, GS321 to GS328, GS341 to GS348)	

Device	Function	Reference	Model
GS309 to GS318	Use prohibited	—	—
GS319	Channel Observation Notification Information Signal (CH2)	☞ Page 3606 Channel Observation Notification Information Signal (CH1) (GS299, GS319, GS339, GS359)	GT37 SoftGOT3000
GS320	Faulty Monitor Station signal (CH3)	☞ Page 3604 Faulty Monitor Station signal (CH1 to CH4) (GS280, GS300, GS320, GS340)	
GS321 to GS328	Faulty Station Information (CH3)	☞ Page 3604 Faulty Station Information (CH1 to CH4) (GS281 to GS288, GS301 to GS308, GS321 to GS328, GS341 to GS348)	
GS329 to GS338	Use prohibited	—	—
GS339	Channel Observation Notification Information Signal (CH3)	☞ Page 3606 Channel Observation Notification Information Signal (CH1) (GS299, GS319, GS339, GS359)	GT37 SoftGOT3000
GS340	Faulty Monitor Station Signal (CH4)	☞ Page 3604 Faulty Monitor Station signal (CH1 to CH4) (GS280, GS300, GS320, GS340)	
GS341 to GS348	Faulty Station Information (CH4)	☞ Page 3604 Faulty Station Information (CH1 to CH4) (GS281 to GS288, GS301 to GS308, GS321 to GS328, GS341 to GS348)	
GS349 to GS358	Use prohibited	—	—
GS359	Channel Observation Notification Information Signal (CH4)	☞ Page 3606 Channel Observation Notification Information Signal (CH1) (GS299, GS319, GS339, GS359)	GT37 SoftGOT3000
GS360 to GS375	Use prohibited	—	—
GS376 GS377	GOT Network No./Station No. Notification (CH1)	☞ Page 3606 GOT Network No./Station No. Notification (CH1 to CH4) (GS376 to GS383)	GT37 SoftGOT3000
GS378 GS379	GOT Network No./Station No. Notification (CH2)		
GS380 GS381	GOT Network No./Station No. Notification (CH3)		
GS382 GS383	GOT Network No./Station No. Notification (CH4)		
GS640 GS641	Use prohibited	—	—
GS642	Error Device Data Transfer ID	☞ Page 3607 Error Device Data Transfer ID (GS642)	GT37 SoftGOT3000
GS643	Device Data Transfer Error Count	☞ Page 3607 Device Data Transfer Error Count (GS643)	
GS644	Device Data Transfer Processing Time	☞ Page 3607 Device Data Transfer Processing Time (GS644)	
GS645	Device Data Transfer ID	☞ Page 3607 Device Data Transfer ID (GS645)	
GS646	Device Data Transfer Min. Processing Time	☞ Page 3607 Device Data Transfer Min. Processing Time (GS646)	
GS647	Device Data Transfer ID (Min. Processing Time)	☞ Page 3607 Device Data Transfer ID (Min. Processing Time) (GS647)	
GS648	Device Data Transfer Max. Processing Time	☞ Page 3607 Device Data Transfer Max. Processing Time (GS648)	
GS649	Device Data Transfer ID (Max. Processing Time)	☞ Page 3607 Device Data Transfer ID (Max. Processing Time) (GS649)	
GS650 to GS653	Present Time	☞ Page 3607 Present Time (GS650 to GS653)	
GS654	Touch Status External Notification (X-coordinate)	☞ Page 3607 Touch Status External Notification (X-coordinate) (GS654)	
GS655	Touch Status External Notification (Y-coordinate)	☞ Page 3607 Touch Status External Notification (Y-coordinate) (GS655)	
GS656	Touch Status External Notification (Touch Status)	☞ Page 3608 Touch Status External Notification (Touch Status) (GS656)	
GS657	Trigger Backup Processing Setting No. Notification Signal	☞ Page 3608 Trigger Backup Processing Setting No. Notification Signal (GS657)	GT37 SoftGOT3000

Device	Function	Reference	Model
GS658 to GS665	Extended External Input Status Notification Signal	☞ Page 3608 Extended External Input Status Notification Signal (GS658 to GS665)	GT37 SoftGOT3000
GS666 to GS667	Use prohibited	—	—
GS668	Sound Status Information	☞ Page 3609 Sound Status Information (GS668)	GT37 SoftGOT3000
GS669	Sound File Number During Play	☞ Page 3609 Sound File Number During Play (GS669)	GT37 SoftGOT3000
GS670 to GS692	Use prohibited	—	—
GS693	Notify Number of Hard Copy Output Screens signal	☞ Page 3609 Notify Number of Hard Copy Output Screens signal (GS693)	GT37 SoftGOT3000
GS694	Object Position upon Cursor Display (X Coordinate)	☞ Page 3609 Object Position upon Cursor Display (GS694, GS695)	GT37 SoftGOT3000
GS695	Object Position upon Cursor Display (Y Coordinate)		
GS696	Expanded Base Screen Position (X Coordinate)	☞ Page 3609 Expanded Base Screen Position (GS696, GS697)	
GS697	Expanded Base Screen Position (Y Coordinate)		
GS698 to GS979	Use prohibited	—	—
GS980	Touch Position Color Acquisition Complete Signal	☞ Page 3609 Touch Position Color Acquisition Complete signal (GS980)	GT37 SoftGOT3000
GS981 to GS983	Touch Position Color	☞ Page 3609 Touch Position Color Information (GS981 to GS983)	
GS984	Authorization Guarantee Status Notification Signal	☞ Page 3609 Authorization Guarantee Status Notification signal (GS984)	
GS985, GS986	Use prohibited	—	—
GS987	Executing File Transfer ID Notification	☞ Page 3609 Executing File Transfer ID Notification (GS987)	GT37 SoftGOT3000
GS988	Communicating FTP Server ID Notification	☞ Page 3609 Communicating FTP Server ID Notification (GS988)	
GS989	File Transfer Error No.	☞ Page 3610 File Transfer Error No. (GS989)	
GS990	File Transfer Status	☞ Page 3611 File Transfer Status (GS990)	
GS991	Number of Transfer Target Files	☞ Page 3611 Number of Transfer Target Files (GS991)	
GS992	Number of Transferred Files	☞ Page 3611 Number of Transferred Files (GS992)	
GS993	Number of Successfully Transferred Files	☞ Page 3611 Number of Successfully Transferred Files (GS993)	
GS994 to GS1009	Use prohibited	—	—
GS1010	Recipe Status	☞ Page 3612 Recipe Status (GS1010)	GT37 SoftGOT3000
GS1011	Recipe Special Control Result	☞ Page 3612 Recipe Special Control Result (GS1011)	
GS1012	Recipe Special Control No.	☞ Page 3612 Recipe Special Control No. (GS1012)	
GS1013	Recipe Display (Record List) Target Recipe No.	☞ Page 3612 Recipe Display (Record List) Target Recipe No. (GS1013)	
GS1014	Recipe Display (Record List) Selected Record No.	☞ Page 3612 Recipe Display (Record List) Selected Record No. (GS1014)	
GS1015	Recipe Display (Record List) Target Record No.	☞ Page 3613 Recipe Display (Record List) Target Record No. (GS1015)	
GS1016	Recipe Display (Record List) Record Manipulation Result	☞ Page 3613 Recipe Display (Record List) Record Manipulation Result (GS1016)	
GS1017 to GS1021	Use prohibited	—	—

Device	Function	Reference	Model
GS1022	Video File Maintenance Information	☞ Page 3613 Video File Maintenance Information (GS1022)	GT37 SoftGOT3000
GS1023	Use prohibited	—	—
GS1024	USB Drive Common Information	☞ Page 3613 USB Drive Common Information (GS1024)	GT37 SoftGOT3000
GS1025	PC Image Input Status Notification	☞ Page 3614 PC Image Input Status Notification (GS1025)	GT37 SoftGOT3000
GS1026	PC Image Input Resolution (Horizontal)	☞ Page 3614 PC Image Input Resolution (Horizontal) (GS1026)	
GS1027	PC Image Input Resolution (Vertical)	☞ Page 3614 PC Image Input Resolution (Vertical) (GS1027)	
GS1028	PC Image Input Refresh Rate	☞ Page 3614 PC Image Input Refresh Rate (GS1028)	
GS1029	Use prohibited	—	—
GS1030	Digital Image Display (Object) Status Notification (CH1)	☞ Page 3614 Digital Image Display (Object) Status Notification (CH1 to CH2) (GS1030, GS1035)	GT37 SoftGOT3000
GS1031	Digital Image Display (Object) Resolution (Horizontal) (CH1)	☞ Page 3614 Digital Image Display (Object) Resolution (Horizontal) (CH1 to CH2) (GS1031, GS1036)	
GS1032	Digital Image Display (Object) Resolution (Vertical) (CH1)	☞ Page 3614 Digital Image Display (Object) Resolution (Vertical) (CH1 to CH2) (GS1032, GS1037)	
GS1033	Digital Image Display (Object) Refresh Rate (CH1)	☞ Page 3614 Digital Image Display (Object) Refresh Rate (CH1 to CH2) (GS1033, GS1038)	
GS1034	Use prohibited	—	—
GS1035	Digital Image Display (Object) Status Notification (CH2)	☞ Page 3614 Digital Image Display (Object) Status Notification (CH1 to CH2) (GS1030, GS1035)	GT37 SoftGOT3000
GS1036	Digital Image Display (Object) Resolution (Horizontal) (CH2)	☞ Page 3614 Digital Image Display (Object) Resolution (Horizontal) (CH1 to CH2) (GS1031, GS1036)	
GS1037	Digital Image Display (Object) Resolution (Vertical) (CH2)	☞ Page 3614 Digital Image Display (Object) Resolution (Vertical) (CH1 to CH2) (GS1032, GS1037)	
GS1038	Digital Image Display (Object) Refresh Rate (CH2)	☞ Page 3614 Digital Image Display (Object) Refresh Rate (CH1 to CH2) (GS1033, GS1038)	
GS1039 to GS1042	Use prohibited	—	—
GS1043 to GS1044	Ethernet Port 1 Subnet Mask Notification	☞ Page 3615 Ethernet Port 1 Subnet Mask Notification (GS1043, GS1044), Ethernet Port 2 Subnet Mask Notification (GS1045, GS1046)	GT37 SoftGOT3000
GS1045 to GS1046	Ethernet Port 2 Subnet Mask Notification	☞ Page 3615 Ethernet Port 1 Subnet Mask Notification (GS1043, GS1044), Ethernet Port 2 Subnet Mask Notification (GS1045, GS1046)	
GS1047 to GS1048	Use prohibited	—	—
GS1049 to GS1050	Default Gateway Notification	☞ Page 3615 Default Gateway Notification (GS1049 to GS1050)	GT37 SoftGOT3000
GS1051 to GS1079	Use prohibited	—	—
GS1080	Label Name Resolution Status (Common)	☞ Page 3615 Label Name Resolution Status (Common, CH1 to CH4) (GS1080, GS1081 to GS1084)	GT37 SoftGOT3000
GS1081	Label Name Resolution Status (CH1)		
GS1082	Label Name Resolution Status (CH2)		
GS1083	Label Name Resolution Status (CH3)		
GS1084	Label Name Resolution Status (CH4)		
GS1085 to GS1113	Use prohibited	—	—

Device	Function	Reference	Model
GS1114	CC-Link IE TSN Module Communication Test Status	☞ Page 3616 CC-Link IE TSN Module Communication Test Status (GS1114)	GT37 SoftGOT3000
GS1115	CC-Link IE TSN Module Communication Test Error	☞ Page 3616 CC-Link IE TSN Module Communication Test Error (GS1115)	
GS1116 to GS1219	Use prohibited	—	—
GS1220	Special Function Switch Special Control	☞ Page 3616 Special Function Switch Special Control (GS1220)	GT37 SoftGOT3000
GS1221	iQSS Utility Special Control Error Sensor Device No.	☞ Page 3616 iQSS Utility Special Control Error Sensor Device No. (GS1221)	
GS1222 to GS1229	Use prohibited	—	—
GS1230	VNC Server Operation Status Notification	☞ Page 3616 VNC Server Operation Status Notification (GS1230)	GT37 SoftGOT3000
GS1231 GS1232	VNC Client IP Address	☞ Page 3617 VNC Client IP Address (GS1231, GS1232)	
GS1233	VNC Server Authorization Guarantee Status Notification	☞ Page 3617 VNC Server Authorization Guarantee Status Notification (GS1233)	
GS1234 to GS1240	Use prohibited	—	—
GS1241	Insufficient Security Level Notification	☞ Page 3617 Insufficient Security Level Notification (GS1241)	GT37 SoftGOT3000
GS1242 to GS1279	Use prohibited	—	—
GS1280	Faulty Monitor Station signal (CC-Link IE TSN)	☞ Page 3617 Faulty Monitor Station signal (CC-Link IE TSN) (GS1280)	GT37 SoftGOT3000
GS1281 to GS1288	Faulty Station Information (CC-Link IE TSN)	☞ Page 3617 Faulty Station Information (CC-Link IE TSN) (GS1281 to GS1288)	
GS1289 to GS1296	Use prohibited	—	—
GS1297	CC-Link IE TSN Connection Status	☞ Page 3617 CC-Link IE TSN Connection Status (GS1297)	GT37 SoftGOT3000
GS1298 to GS1399	Use prohibited	—	—
GS1400	Number of Connected GOT Mobile Function Clients	☞ Page 3617 Number of Connected GOT Mobile Function Clients (GS1400)	GT37 SoftGOT3000
GS1401	GOT Mobile Function Connection Status	☞ Page 3618 GOT Mobile Function Connection Status (GS1401)	
GS1402 to GS1459	Use prohibited	—	—

Device	Function	Reference	Model
GS1460	Authorization Status Information	☞ Page 3618 Authorization Status Information (GS1460)	GT37 SoftGOT3000
GS1461 and GS1462	Master GOT IP Address	☞ Page 3618 Master GOT IP Address (GS1461 to GS1462)	
GS1463	Time Elapsed from Authorization Acquisition	☞ Page 3618 Time Elapsed from Authorization Acquisition (GS1463)	
GS1464	Authorization Guarantee Time	☞ Page 3618 Authorization Guarantee Time (GS1464)	
GS1465	Authorization Management Information	☞ Page 3619 Authorization Management Information (GS1465)	
GS1466 and GS1467	Authorized Equipment IP Address	☞ Page 3619 Authorized Equipment IP Address (GS1466, GS1467)	
GS1468	Authorized Equipment Type	☞ Page 3619 Authorized Equipment Type (GS1468)	
GS1469	Authorized Equipment ID Information	☞ Page 3619 Authorized Equipment ID Information (GS1469)	
GS1470	Authorization Use Time	☞ Page 3619 Authorization Use Time (GS1470)	
GS1471 to GS1499	Use prohibited	—	—
GS1500	GOT Ethernet Setting Change Status	☞ Page 3620 GOT Ethernet Setting Change Status (GS1500)	GT37 SoftGOT3000
GS1501 to GS1791	Use prohibited	—	—
GS2048 to GS2050	Use prohibited	—	—
GS2051	VPN Connection Function Status Notification	☞ Page 3620 VPN Connection Function Status Notification (GS2051)	GT37 SoftGOT3000
GS2052 to GS2056	Use prohibited	—	—
GS2057	MonitoredItem Cycle Time Current Value	☞ Page 3620 MonitoredItem Cycle Time Current Value (GS2057)	GT37 SoftGOT3000
GS2058	MonitoredItem Cycle Time Minimum Value	☞ Page 3620 MonitoredItem Cycle Time Minimum Value (GS2058)	
GS2059	MonitoredItem Cycle Time Maximum Value	☞ Page 3620 MonitoredItem Cycle Time Maximum Value (GS2059)	
GS2060	OPC Server Function Status Notification	☞ Page 3620 OPC Server Function Status Notification (GS2060)	
GS2061 to GS2064	Use prohibited	—	—
GS2065	Web Browser Function Status Notification	☞ Page 3620 Web Browser Function Status Notification (GS2065)	GT37 SoftGOT3000
GS2066 to GS2069	Use prohibited	—	—

Device	Function	Reference	Model
GS2070	Web Camera/USB Converter Status Notification	☞ Page 3620 Web Camera/USB Converter Status Notification (GS2070)	GT37 SoftGOT3000
GS2071	Video Signal Input Status Notification	☞ Page 3621 Video Signal Input Status Notification (GS2071)	
GS2072	Video Signal Input Object Function Status Notification	☞ Page 3621 Video Signal Input Object Function Status Notification (GS2072)	
GS2073	Network Camera Error Status Notification (Channel 1)	☞ Page 3621 Network Camera Error Status Notification (CH1 to CH4) (GS2073 to GS2076)	
GS2074	Network Camera Error Status Notification (Channel 2)		
GS2075	Network Camera Error Status Notification (Channel 3)		
GS2076	Network Camera Error Status Notification (Channel 4)		
GS2077	Network Camera Video Reception Error (Channel 1)	☞ Page 3621 Network Camera Video Reception Error (CH1 to CH4) (GS2077 to GS2080)	
GS2078	Network Camera Video Reception Error (Channel 2)		
GS2079	Network Camera Video Reception Error (Channel 3)		
GS2080	Network Camera Video Reception Error (Channel 4)		
GS2081 to GS2084	Use prohibited	—	—
GS2085	Combination Invalid Error Status Notification	☞ Page 3621 Combination Invalid Error Status Notification (GS2085)	
GS2086 to GS2199	Use prohibited	—	—
GS2200 to GS2207	Destination Authentication Status Notification CH1	☞ Page 3622 Destination Authentication Status Notification (CH1 to CH4) (GS2200 to GS2231)	GT37 SoftGOT3000
GS2208 to GS2215	Destination Authentication Status Notification CH2		
GS2216 to GS2223	Destination Authentication Status Notification CH3		
GS2224 to GS2231	Destination Authentication Status Notification CH4		
GS2232 to GS2559	Use prohibited	—	—

Write device (GS0 to GS383)

■Common Information 1 (GS0)

• b0: Repeats turning on and off for every communication cycle. (For channel No. 1)

One cycle is the time for the GOT to read the data of the objects on the displayed screen and the data set in the common settings.

• b1: Turns on when the base or window screen is switched and remains on until a cycle of the on-screen setting processing is complete.

This also applies to station number switching, security level change, and language switching.

It is used to check (debug) the screen switch setting processing.

• b2: Turns on when the base or window screen is switched and remains on until a cycle of the trigger action processing for the project and screen display is complete.

This also applies to station number switching, security level change, and language switching.

Use this bit to trigger an action only once when switching the screen.

The initial value is set with the screen trigger action and used as an interlock to execute the process with a screen script.

• b3: Turns on while the initial screen is displayed at power-on.

It turns off when the base screen is switched over.

• b4: Always on

The action is the same as GB40 (Always ON).

• b5: Always off

The action is the same as GB41 (Always OFF).

• b6 to b7: Use prohibited

• b8: Repeats turning on and off for every communication cycle. (For channel No. 2)*1

• b9: Repeats turning on and off for every communication cycle. (For channel No. 3)*1

• b10: Repeats turning on and off for every communication cycle. (For channel No. 4)*1

• b11 to b14: Use prohibited

• b15: Turns on during screen gesture mode and turns off during normal operation mode.

*1 One cycle is the time for the GOT to read the data of the objects on the displayed screen and the data set in the common settings.

■Base Screen Information (GS1)

• b0: Repeats turning on and off for every communication cycle while the base screen is displayed. (For channel No. 1)

• b1: Turns on when the base screen is switched and remains on until a cycle of the on-screen setting processing is complete.

This also applies to station number switching, security level change, and language switching.

It is used to check (debug) the screen switch setting processing.

• b2: Turns on when the base screen is switched and remains on until a cycle of the trigger action processing is complete.

This applies to station number switching, security level change, and language switching.

Use this bit to trigger an action only once when switching the screen.

The initial value is set with the screen trigger action and used as an interlock to execute the process with a screen script.

• b3 to b7: Use prohibited

• b8: Repeats turning on and off for every communication cycle while the base screen is displayed. (For channel No. 2)

• b9: Repeats turning on and off for every communication cycle while the base screen is displayed. (For channel No. 3)

• b10: Repeats turning on and off for every communication cycle while the base screen is displayed. (For channel No. 4)

• b11 to b15: Use prohibited

■GOT ID (GS3)

Notifies the user of the GOT ID.

The notified GOT IDs range from 0 to 32767.

If no GOT ID is used, 0 is notified.

■1 Second Binary Counter (GS7)

Starts counting every second immediately after the power is switched on.

When a value is written by the user, counting starts from the written value.

It is used to check how long the time has elapsed from specific timing (operation and others).

Data type: Unsigned binary

Counting range: 0 to 65535

When counting reaches the maximum value, a new counting starts from 0.

■Scan Time of Monitor (GS8)

Stores the time (ms) of a complete processing cycle set on the display screen as binary data.

Data will be updated when all of the processing set on the display screen is complete.

An error of plus or minus 10 ms may be produced depending on the processing settings.

Also, it does not apply to the objects that have not been processed by the security function.

It is useful for load checking (debug) of the monitor processing.

■Scan Counter of Monitor (GS10)

Counts up the number of cycles every time the processing cycle set on the display screen is complete.

It is used to check (debug) the number of scan of monitor.

Data type: Unsigned binary

Counting range: 0 to 65535

When counting reaches the maximum value, a new counting starts from 0.

■Script Common Information (GS14)

The following script types are supported: project script, screen script, and script part.

Stores error occurrence information.

- b0: Turns on when an error occurs.
- b1 to b6: Use prohibited
- b7: Turns on when a BCD error occurs.
- b8: Turns on when a zero division error occurs.
- b9 to b11: Use prohibited
- b12: Turns on in communication error occurrence (including access to the device out of range).
- b13 to b15: Use prohibited

■Script Error Pointer (GS15)

The following script types are supported: project script and screen script.

Stores a number showing the start device number of the devices where the latest error record is stored.

Each error record is stored in two Script Error Data devices (GS16 to GS47).

The value at GS15 is changed as shown below each time an error occurs.

-1 → 16 → 18 → ⋯ → 46 (The sequence returns to 16 and repeats afterward.)

The following shows the relationship between the value of GS15 and the storage destination of the latest error record.

- When GS15 stores 16, the latest error record is stored in GS16 and GS17.
- When GS15 stores 18, the latest error record is stored in GS18 and GS19.
- When GS15 stores 46, the latest error record is stored in GS46 and GS47.

■Script error data (GS16 to GS47)

The following script types are supported: project script and screen script.

Stores the script numbers and error codes for the error-generated scripts.

Two word devices are used for one error.

If the number of errors is 17 or more, the error records are overwritten starting from the oldest one.

■Script Execute Pointer (GS48)

The following script types are supported: project script and screen script.

Stores the device number of the device where the latest script execution number is stored.

Each script execution number is stored in one Script Execute No. device (GS49 to GS79).

The value at GS48 changes as shown below each time the project script and the screen script are executed.

-1 → 49 → 50 → ⋯ → 79 (The sequence returns to 49 and repeats afterward.)

The following shows the relationship between the value of GS48 and the storage destination of the latest script execution number.

- When GS48 stores 49, the latest script execution number is stored in GS49.
- When GS48 stores 50, the latest script execution number is stored in GS50.
- When GS48 stores 79, the latest script execution number is stored in GS79.

■Script Execute No. (GS49 to GS79)

The following script types are supported: project script and screen script.

Store the script numbers of the executed scripts.

One word device is used for one script.

If the number of the executed scripts is 32 or more, the script execution records are overwritten starting from the oldest one.

■Object Script Common Information (GS80)

Stores error occurrence information.

- b0: Turns on when an error occurs.
- b1 to b6: Use prohibited
- b7: Turns on when a BCD error occurs.
- b8: Turns on when a zero division error occurs.
- b9 to b11: Use prohibited
- b12: Turns on in communication error occurrence (including access to the device out of range).
- b13 to b15: Use prohibited

■Object Script Error Pointer (GS81)

Stores a number showing the start device number of the devices where the latest error record is stored.

Each error record is stored in two object script error data devices (GS82 to GS113).

The value at GS81 changes as shown below each time an error occurs.

-1 → 82 → 84 → ⋯ → 112 (The sequence returns to 82 and repeats afterward.)

The following shows the relationship between the value of GS81 and the storage destination of the error code of the latest error.

- When GS81 stores 82, the latest error record is stored in GS82 to GS83.
- When GS81 stores 84, the latest error record is stored in GS84 to GS85.
- When GS81 stores 112, the latest error record is stored in GS112 to GS113.

■Object script error data (GS82 to GS113)

Store the script user IDs and error codes for the error-generated object scripts.

Two word devices are used for one error.

If the number of errors is 17 or more, the error records are overwritten starting from the oldest one.

■Object Script Execute Pointer (GS114)

Displays the device number of the device in which the latest script user ID is stored.

Each script user ID is stored in one Object Script Execute No. device (GS115 to GS145).

The value in GS114 changes as follows each time an object script is executed.

-1 → 115 → 116 → ⋯ → 145 (The sequence returns to 115 and repeats afterward.)

The following shows the relationship between the value of GS114 and the storage destination of the latest script user ID.

- When GS114 stores 115, the latest script user ID is stored in GS115.
- When GS114 stores 116, the latest script user ID is stored in GS116.
- When GS114 stores 145, the latest script user ID is stored in GS145.

■Object script execute No. (GS115 to GS145)

Stores the script user ID of the executed object script.

One word device is used for one script.

If the number of the executed scripts is 32 or more, the script execution records are overwritten starting from the oldest one.

■File Operation Function Information (GS154)

The following script types are supported: project script, screen script, and script part.

Notifies the execution status of the file operation function.

- b0: Turns on when a file operation function is executed.

Turns off after the execution is complete.

- b1 to b14: Use prohibited
- b15: Turns on when an error occurs with a file operation function.

The bit turns off when the next file operation function is completed normally.

This bit does not turn off even if the Script Error Clear signal (GS384.b0) is turned on.

■Latest Script Error Info Pointer (GS157)

The following script types are supported: project script, screen script, and script part.

Stores a number showing the devices where the latest error record is stored.

Data type: Signed binary

Initial value: -1

Calculate the start device number of the devices storing the latest error record by using the following expression.

- GS392 + (GS157 × 8)

■Latest Executed Script Pointer (GS158)

The following script types are supported: project script, screen script, and script part.

Stores a number showing the devices where the latest script execution record is stored.

Data type: Signed binary

Initial value: -1

Calculate the start device number of the devices storing the latest script execution record by using the following expression.

- GS396 + (GS158 × 8)

■Latest Object Script Error Info Pointer (GS159)

Stores a number showing the area where the latest object script error record is stored.

Data type: Signed binary

Initial value: -1

Calculate the start device number of the devices storing the latest error record by using the following expression.

- GS432 + (GS159 × 8)

■Latest Executed Object Script Pointer (GS160)

Stores a number showing the area where the latest object script execution record is stored.

Data type: Signed binary

Initial value: -1

Calculate the start device number of the devices storing the latest script execution record by using the following expression.

- GS436 + (GS160 × 8)

■Ethernet Port 2 GOT IP Address (GS194, GS195), Ethernet Port 1 GOT IP Address (GS198, GS199)

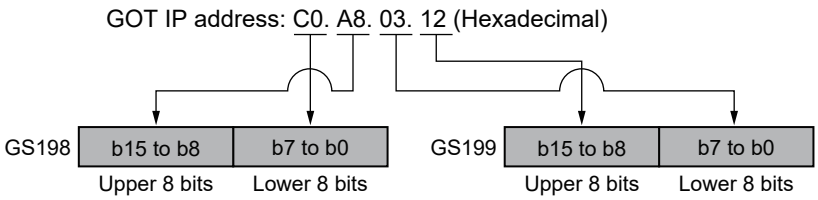
Stores the GOT IP address that is specified for the GOT Ethernet interface in hexadecimal.

The following shows the IP address to be stored to each device.

GOT IP address	Destination device
GOT IP address for Ethernet port 1	GS198, GS199
GOT IP address for Ethernet port 2	GS194, GS195

Ex.

When the GOT IP address for Ethernet port 1 is 192.168.3.18 (decimal)



■Gateway Common Information (GS200)

Notifies the common information of the gateway function.

- b0: Turns on while the mail send function is ready.
- b1: Turns on while the FTP server function is ready.
- b2: Turns on when an FTP client is logged in.
- b3: Notifies that the server function is ready.
- b4: Notifies that the client function is ready.
- b5 to b10: Use prohibited
- b11: Turns on when an error occurs in the mail send function.
- b12 and b13: Use prohibited
- b14: Turns on when an error occurs in the server function.
- b15: Turns on when an error occurs in the client function.

■Mail Send Function Error Counter (GS201)

Counts the number of the errors that have occurred in the mail send function.

The count ranges from 1 to 65535. If the error count is 65535 or more, the counter value is 65535, but the error code, error occurrence date and time, and sender data are updated.

■Mail Send Function Error Code (GS202)

Stores the error codes that occurred in the mail send function.

For information on the stored error codes, refer to the following.

☞ Page 2191 Error code and error message of the mail send function

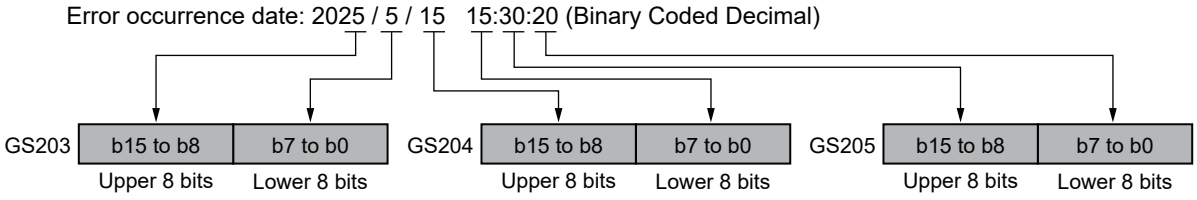
■Mail Send Function Error Occurrence Date And Time (GS203 to GS205)

Stores the error occurrence date and time in BCD code.

- GS203: Stores the year (upper byte, last two digits of the year) and the month (lower byte) of the error occurrence date and time in BCD code when an error occurs in the mail send function.
- GS204: Stores the day (upper byte) and the hour (lower byte) of the error occurrence date and time in BCD code when an error occurs in the mail send function.
- GS205: Stores the minute (upper byte) and the second (lower byte) of the error occurrence date and time in BCD code when an error occurs in the mail send function.

Ex.

When the error occurrence date is 15:30:20 May 15, 2025



■Mail Send Function Send Source (GS206)

Notifies the type of the function that has caused the error in the mail sending process.

- 0: No error
- 1: User alarm observation
- 2 or more: Use prohibited

■Number of Connected FTP Clients (GS208)

Notifies the number of the clients connected to the FTP server.

Clients are counted when the OPEN command (an FTP command) is executed.

■Server Function Error Counter (GS210)

Counts the number of the errors that have occurred in the server function.

The count ranges from 1 to 65535. If the error count is 65535 or more, the counter value is 65535, but the error code and the error occurrence date and time are updated.

■Server Function Error Code (GS211)

Stores the error codes that occurred in the server function.

The following lists the error codes to be stored.

Error code	Description	Corrective action
490	A script was used for monitoring the gate device that executed the script.	• Change the monitor destination GOT specified in the script to another GOT. • Monitor the PLC devices directly without using the script.
491	A station that does not exist was accessed.	Check the network number, the PLC station number, and the Ethernet settings of the monitor destination.
492	A communication timeout error has occurred.	• Specify a longer communication timeout period. ☞ Page 729 [Controller Setting] • Check the network. (Check if a firewall exists, execute ping, or take other actions.) • Check for cable disconnection, and check the module mounting status.
493	A communication error has occurred.	• Check the network (check if a firewall exists, perform a ping test, etc.). • Check for cable disconnection, and check the module mounting status.

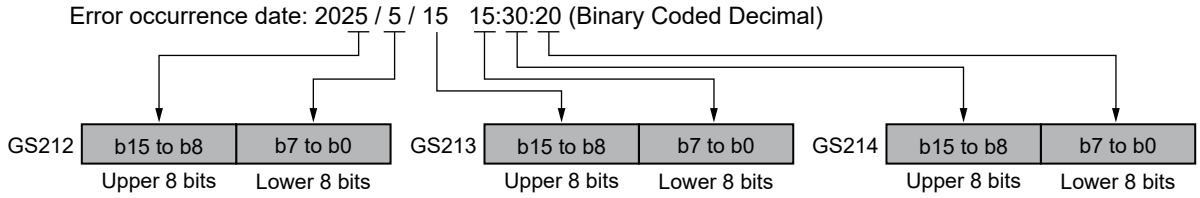
■Server Function Error Occurrence Date And Time (GS212 to GS214)

Stores the error occurrence date and time in BCD code.

- GS212: Stores the year (upper byte, last two digits of the year) and the month (lower byte) of the error occurrence date and time in BCD code when an error occurs in the server function.
- GS213: Stores the year (upper byte) and the hour (lower byte) of the error occurrence date and time in BCD code when an error occurs in the server function.
- GS214: Stores the minute (upper byte) and the second (lower byte) of the error occurrence date and time in BCD code when an error occurs in the server function.

Ex.

When the error occurrence date is 15:30:20 May 15, 2025



■Server Function Error Client (GS215, GS216)

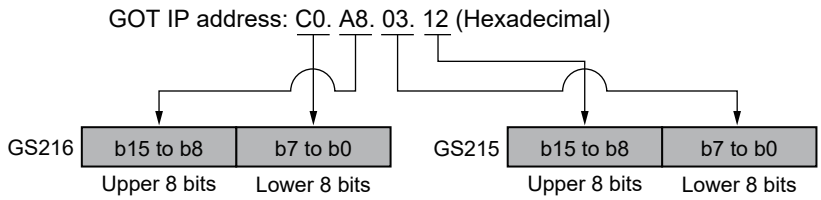
Stores the IP address of the GOT (client) where the error occurred in hexadecimal.

- GS215: Stores the lower part of the IP address of the GOT (client) where a server function error occurred in binary code.
- GS216: Stores the upper part of the IP address of the GOT (client) where a server function error occurred in binary code.

If the IP address of the GOT (client) where the error occurred is unknown, FFFF is displayed as four hexadecimal digits for both GS215 and GS216.

Ex.

When the GOT IP address is 192.168.3.18 (decimal)



■Client Function Error Counter (GS220)

Counts the number of the errors that have occurred in the client function.

The count ranges from 1 to 65535. If the error count is 65535 or more, the counter value is 65535, but the error code and the error occurrence date and time are updated.

■Client Function Error Code (GS221)

Stores the error codes that occurred in the client function.

The following lists the error codes to be stored.

Error code	Details of error and cause	Corrective action
490	A script was used for monitoring the gate device that executed the script.	• Change the monitor destination GOT specified in the script to another GOT. • Monitor the PLC devices directly without using the script.
491	A station that does not exist was accessed.	Check the network number, the PLC station number, and the Ethernet settings of the monitor destination.
492	A communication timeout error has occurred.	• Specify a longer communication timeout period. ☞ Page 729 [Controller Setting] • Check the network. (Check if a firewall exists, execute ping, or take other actions.) • Check for cable disconnection, and check the module mounting status.
493	A communication error has occurred.	• Check the network. (Check if a firewall exists, execute ping, or take other actions.) • Check for cable disconnection, and check the module mounting status.

■Client Function Error Occurrence Date And Time (GS222 to GS224)

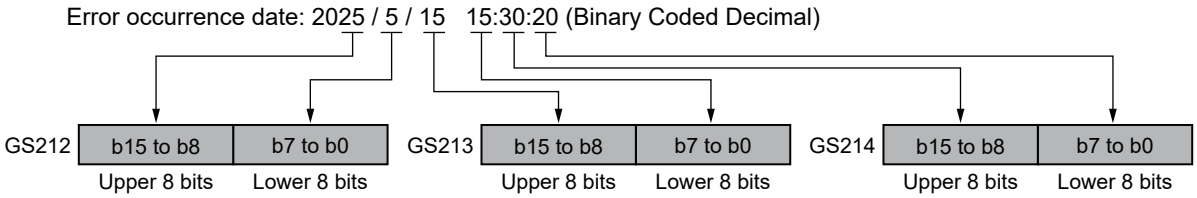
Stores the error occurrence date and time in BCD code.

- GS222: Stores the year (upper byte, last two digits of the year) and the month (lower byte) of the error occurrence date and time in BCD code when an error occurs in the client function.
- GS223: Stores the day (upper byte) and the hour (lower byte) of the error occurrence date and time in BCD code when an error occurs in the client function.
- GS224: Stores the minute (upper byte) and the second (lower byte) of the error occurrence date and time in BCD code when an error occurs in the client function.

If the IP address of the GOT (client) where the error occurred is unknown, FFFF is displayed as four hexadecimal digits for both GS215 and GS216.

Ex.

When the error occurrence date is 15:30:20 May 15, 2025



■Client Function Error Server (GS225, GS226)

Stores the IP address of the GOT (server) where the error occurred in hexadecimal.

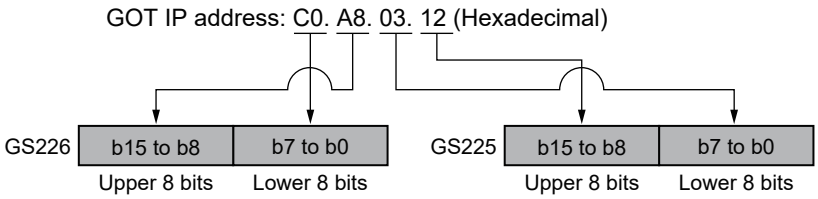
GS225: Stores the lower part of the IP address of the GOT (server) where the error occurred in binary code.

GS226: Stores the upper part of the IP address of the GOT (server) where the error occurred in binary code.

If the IP address of the GOT (server) where the error occurred is unknown, FFFF is displayed as four hexadecimal dig?its for both GS225 and GS226.

Ex.

When the GOT IP address is 192.168.3.18 (decimal)



A

■No. Of Faulty Stations (GS230)

Stores the number of stations where CPU error was detected.

The station where error occurs can be checked with GS231 to GS238.

☞ Page 3598 Ethernet Faulty Station Information (GS231 to GS238)

When the redundant setting is configured, these GS devices do not operate.

- b0 to b7: Stores the number of faulty stations.
- b8 to b15: Use prohibited

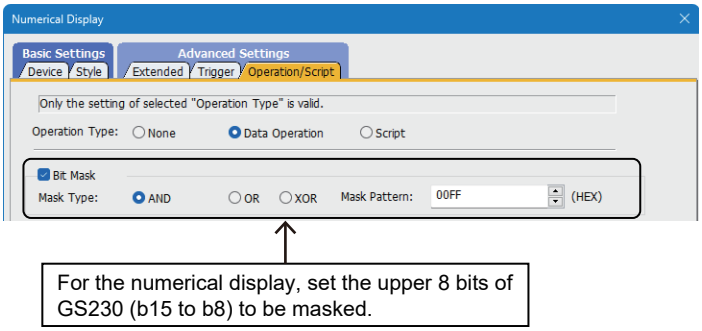
Point

Monitoring GS230 by numerical display

To monitor GS230 by numerical display and others, perform mask processing using data operation function as follows.

☞ Page 1053 How to set the data operation

Example) Setting of numerical display (the [Operation/Script] tab)



■Ethernet Faulty Station Information (GS231 to GS238)

When Ethernet connection is used, the bit corresponding to the station with a communication error turns on.

When multi-channel connection is used, the Ethernet-connected controller with the smallest channel number is monitored.

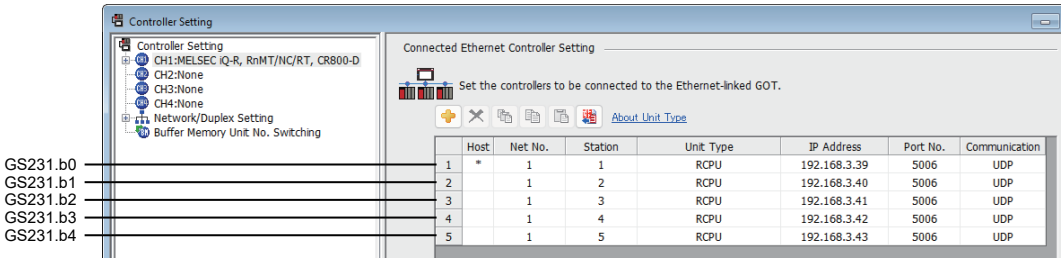
To monitor the faulty station information of multiple channels, use the following GOT special registers (GS).

☞ Page 3604 Faulty Station Information (CH1 to CH4) (GS281 to GS288, GS301 to GS308, GS321 to GS328, GS341 to GS348)

0: No error

1: Error

When the Ethernet module has restored from the error, the bit turns off.



Device	Ethernet setting number															
	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
GS231	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
GS232	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17
GS233	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33
GS234	64	63	62	61	60	59	58	57	56	55	54	53	52	51	50	49
GS235	80	79	78	77	76	75	74	73	72	71	70	69	68	67	66	65
GS236	96	95	94	93	92	91	90	89	88	87	86	85	84	83	82	81
GS237	112	111	110	109	108	107	106	105	104	103	102	101	100	99	98	97
GS238	128	127	126	125	124	123	122	121	120	119	118	117	116	115	114	113

The following shows the compatible communication drivers.

○: Supported, —: Not supported

Communication driver	Supported/ Unsupported		Communication driver	Supported/ Unsupported	
	Host station	Other station		Host station	Other station
[Bus(Q)]	—	—	[Ethernet(MELSERVO), Gateway]	○	○
[Serial (MELSEC)]	—	—	[Ethernet(YASKAWA),Gateway]	○	○
[MELSECNET/H]	—	—	[Ethernet(YASKAWA MP3000),Gateway]	○	○
[CC-Link Ver2(ID)]	—	—	[Ethernet(YASKAWA High Speed Ethernet Server), Gateway]	○	○
[CC-Link IE Controller Network]	—	—	[Ethernet(YOKOGAWA), Gateway]	○	○
[CC-Link IE Field Network]	—	—	[Ethernet(AB), Gateway]	○	○
[CC-Link IE TSN]	—	—	[Ethernet(AB MicroLogix), Gateway]	○	○
[CC-Link IE TSN (Built-in Ethernet)]	—	—	[Ethernet(AB Tag), Gateway]	○	○
[MELSEC-FX]	—	—	[Ethernet(OMRON), Gateway]	○	○
[Serial (MICROCOMPUTER)]	—	—	[Ethernet(OMRON NJ/NX), Gateway]	○	○
[Serial (MELSERVO)]	—	—	[Ethernet(SIEMENS OP), Gateway]	○	○
[FREQROL 700/800, Sensorless Servo]	—	—	[Ethernet(FUJI), Gateway]	○	○
[FREQROL(Batch Monitor Support)]	—	—	[Ethernet(KEYENCE), Gateway]	○	○
[OMRON Temperature Controller/Digital Controller]	—	—	[Ethernet(LS ELECTRIC XGK), Gateway]	○	○
[Azbil SDC/DMC]	—	—	[MODBUS/TCP Client, Gateway]	○	○
[MODBUS/RTU Client]	—	—	[MODBUS/TCP Server, Gateway]	—	—
[MODBUS/RTU Server]	—	—	[Ethernet(Computer)]	—	—
[Ethernet(MITSUBISHI ELECTRIC), Gateway]	○	○	[Ethernet(SLMP), Gateway]	○	○
[Ethernet(FX), Gateway]	○	○	[Ethernet(CC-Link IE Field Network Basic)]	—	—
[Ethernet(FREQROL(Batch Monitor Support)), Gateway]	○	○	[OPC UA Client]	—	—

■External Authentication Status Notification (GS240)

• b0: Turns on when external authentication is successful.

This bit turns off when the login screen is displayed regardless of the authentication method.

• b1: Turns on when external authentication fails.

This bit turns off when the login screen is displayed regardless of the authentication method.

• b2 to b12: Use prohibited

• b13: Notifies the operator authentication reception status.

This bit turns on when the login screen is displayed and turns off when it is hidden, regardless of the authentication method.

• b14: Notifies the external authentication reception status.

This bit turns on when the login screen for external authentication is displayed and turns off when it is hidden, regardless of the authentication method.

• b15: Turns on when the key window for entering the external authentication ID is displayed and turns off when it is hidden.

Depending on the status of b13 and b14, you can check whether the authentication mode is external authentication or password authentication.

This enables the detection of switching to auxiliary authentication (password authentication) during external authentication.

b13	b14	Authentication mode
OFF	OFF	Not in operator authentication reception mode
ON	OFF	Password authentication (operator name + password)
ON	ON	External authentication (serial connection or USB connection)

■Insufficient Security Level Notification (GS241)

Turns on when the screen cannot be displayed because of the insufficient security level.

• b0: Use prohibited

• b1: Turns on when the overlap window 1 cannot be displayed.

• b2: Turns on when the overlap window 2 cannot be displayed.

• b3: Turns on when the superimpose window 1 cannot be displayed.

- b4: Turns on when the superimpose window 2 cannot be displayed.
- b5 to b7: Use prohibited
- b8: Turns on when a called screen on the base screen cannot be displayed.
- b9: Turns on when a called screen on the overlap window 1 cannot be displayed.
- b10: Turns on when a called screen on the overlap window 2 cannot be displayed.
- b11: Turns on when a called screen on the superimpose window 1 cannot be displayed.
- b12: Turns on when a called screen on the superimpose window 2 cannot be displayed.
- b13 to b15: Use prohibited

b1 to b4 turn off when a screen is displayed.

They also turn off when 0 is stored in a screen switching device.

b8 to b12 turn off when a called screen is displayed.

■Unauthorized Log-in Operation Notification (GS242)

- b0: Turns on when an incorrect login is detected.

Turns off upon the lapse of the set login block time or unlocking an operator account by logging in as the administrator.

- b1: Turns on when any operator account is locked.

Turns off when no operator account is locked.

- b2 to b15: Use prohibited

■Object Direct Input Reception Notification (GS243)

- b0 to b14: Use prohibited
- b15: Turns on while the object is accepting direct data entry from the barcode reader or RFID controller.

■SoftGOT-GOT Link Status Control/Notification (GS244)

When the GOT network interaction function is enabled, only GS244.b2 operates.

- b0: Turns on while GT SoftGOT3000 is communicating with the GOT.
- b1: Turns on when the GOT obtains the operation right.
- b2: Notifies whether the GOT or GT SoftGOT3000 is in use.

0: GOT

1: GT SoftGOT3000 (This value changes to 0 if GT SoftGOT3000 is not communicating with the GOT.)

- b3: Turns on when the GOT obtains the exclusive authorization (always off for GT SoftGOT3000).
- b4: Turns on when the dedicated screen for the utility or the extended function is displayed (always off for GT SoftGOT3000).
- b5 to b15: Use prohibited

■Drive Accessibility (GS251)

Notifies whether each drive is accessible.

- b0: Turns on when data can be read and written from and to drive A.
- b1: Turns on when data can be read and written from and to drive B.
- b2: Turns on when data can be read and written from and to drive E.
- b3: Turns on when data can be read and written from and to drive F.
- b4: Turns on when data can be read and written from and to drive G.
- b5 to b7: Use prohibited
- b8: Turns on when data forbids writing to drive A.
- b9: Turns on when data forbids writing to drive B.
- b10: Turns on when data forbids writing to drive E.
- b11: Turns on when data forbids writing to drive F.
- b12: Turns on when data forbids writing to drive G.
- b13 to b15: Use prohibited

For the available drives by GOT model, refer to the following.

☞ Page 81 Drive configuration and capacity of the GOT

■Error Detection Common Information (GS252)

• b0 to b7: Use prohibited

• b8 to b11: Turns on the corresponding bit when no video signal is input to CH1 to CH4.

The corresponding bit is automatically turned off when a video signal is input to CH1 to CH4.

• b12 to b14: Use prohibited

• b15: Turns on when the PC image signal for CH1 is not input.

When the PC image signal for CH1 is input, this bit automatically turns off.

This bit turns off when b15 of the device specified for [Digital Image Input] is turned off (to hide the PC image screen for channel 1).

For details, refer to the following.

☞ Page 2661 Displaying and recording an image from a camera or video device on the GOT (digital image input/recording function)

■Invalid Access from Ethernet Port 1, Invalid Access from Ethernet Port 2 (GS254)

Notifies an invalid write/read request from GT Designer3 while the writing or reading of package data is disabled with the Ethernet Port 1 Access Control or Ethernet Port 2 Access Control device (GS454).

• b0: Available when the Prohibit System Package Write signal (GS454.b0) is on.

Turns on when the GOT receives a package data (system application) write request from GT Designer3 through Ethernet port 1.

When the Prohibit System Package Write signal (GS454.b0) turns off, this bit also turns off.

• b1: Available when the Prohibit Project Data Write signal (GS454.b1) is on.

Turns on when the GOT receives a package data (project data) write request from GT Designer3 through Ethernet port 1.

When the Prohibit Project Data Write signal (GS454.b1) turns off, this bit also turns off.

• b2 to b3: Use prohibited

• b4: Available when the Prohibit System Package Write signal (GS454.b4) is on.

Turns on when the GOT receives a package data (system application) write request from GT Designer3 through Ethernet port 2.

When the Prohibit System Package Write signal (GS454.b4) turns off, this bit also turns off.

• b5: Available when the Prohibit Project Data Write signal (GS454.b5) is on.

Turns on when the GOT receives a package data (project data) write request from GT Designer3 through Ethernet port 2.

When the Prohibit Project Data Write signal (GS454.b5) turns off, this bit also turns off.

• b6 to b7: Use prohibited

• b8: Available when the Prohibit Project Data Read signal (GS454.b8) is on.

Turns on when the GOT receives a package data read request from GT Designer3 through Ethernet port 1.

When the Prohibit Project Data Read signal (GS454.b8) turns off, this bit also turns off.

• b9 to b11: Use prohibited

• b12: Available when the Prohibit Project Data Read signal (GS454.b12) is on.

Turns on when the GOT receives a package data read request from GT Designer3 through Ethernet port 2.

When the Prohibit Project Data Read signal (GS454.b12) turns off, this bit also turns off.

• b13 to b15: Use prohibited

☞ Page 3641 Ethernet Port 1 Access Control, Ethernet Port 2 Access Control (GS454)

■Intensity Notification (GS255)

Stores the current intensity and the brightness adjustment mode of the GOT display section.

• b0 to b14: Store the current intensity.

Notification is provided on a scale from 1 to 100.

Intensity notification is provided by an 8-level scale from 1 to 8 or 32-level scale from 101 to 132 using the intensity control information, or by a 32-level scale from 101 to 132 using the intensity adjustment function of the utility.

When the intensity is set on the 8-level scale from 1 to 8 using the intensity control information, if the actual intensity on the 32-level scale corresponds to a value on the 8-level scale, the value is notified for the lower 15 bits of the intensity notification information (example: 114 on the 32-level scale is notified as 4).

If there is no corresponding value, the value on the 32-level scale is notified (example: 115 is notified as 115).

If the value of the intensity control information does not correspond to a value on the 8-level scale, the value on the 32-level scale is notified.

Intensity	Notified value	Intensity	Notified value	Intensity	Notified value	Intensity	Notified value
1	1	9	109	17	117	25	125
2	102	10	3	18	118	26	126
3	103	11	111	19	5	27	127
4	104	12	112	20	120	28	7
5	2	13	113	21	121	29	129
6	106	14	4	22	122	30	130
7	107	15	115	23	6	31	131
8	108	16	116	24	124	32	8

• b15: Sets the current brightness adjustment mode.

The bit turns on when the brightness adjustment mode is set to the low intensity.

The bit turns off when the brightness adjustment mode is set to normal.

The Intensity Notification is stored when the Intensity Control or the Intensity Control by the intensity adjustment function of the utility is performed.

For details on the Intensity Control, refer to the following.

☞ Page 3642 Intensity Control (GS455)

For the intensity adjustment function of the utility, refer to the following manual.

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

■FA Transparent Status (GS256)

Notifies the status of the FA transparent function.

The values to be stored and their statuses are as follows.

0: Ordinary monitoring

1: In transparent mode

2: In pass-through mode

■Integer <- -> Real Number Conversion Status (GS260)

The following script types are supported: project script, screen script, and script part.

Stores the conversion completion notification and error occurrence status into each bit.

If the Conversion Start Indication (GS460.b15) is turned off (0), each bit becomes 0.

☞ Page 3643 Conversion Start Indication (GS460)

• b0 to b13: Use prohibited

• b14: Turns on when error occurs during conversion processing by GOT.

(Stores an error code in GS261)

☞ Page 3602 Integer ←→ Real Number Conversion Error Code (GS261)

• b15: Turns on when conversion is completed by GOT.

■Integer ←→ Real Number Conversion Error Code (GS261)

The following script types are supported: project script, screen script, and script part.

Stores the error during conversion.

Stores 0 when the conversion is completed normally.

Error codes stored in GS261 are as follows.

Error code	Description	Remarks
1	The Conversion Start Indication is not initialized.	The conversion processing is not executed.
2	The setting of the Conversion Start Indication is incorrectly configured.	
3	The number of devices is out of range.	
4	The device is out of range.	
5	The conversion source and destination are the same.	
6	Not used	—
7	Conversion error (such as an overflow)	The conversion processing continues.

■System Alarm GOT Error Channel No. (GS262)

If a system alarm (GOT error) occurs, the corresponding channel number is stored.

0 is stored when the system alarm is cleared.

With some system alarms, channel numbers are not stored.

For details, refer to the following manuals.

GOT3000 Series User's Manual (Utility & Maintenance Functions)

■System Alarm CPU Error Channel No. (GS263)

If a system alarm (CPU error) occurs, the corresponding channel number is stored.

0 is stored when the system alarm is cleared.

■System Alarm Network Error Channel No. (GS264)

If a system alarm (network error) occurs, the corresponding channel number is stored.

0 is stored when the system alarm is cleared.

■SNTP Time Synchronization Setting Status (GS265)

Notifies the status of the SNTP time synchronization setting.

The values to be stored and their statuses are as follows.

0: No SNTP time synchronization setting or failure

1: Synchronizing with SNTP

■SNTP Time Query Result (GS266 to GS272)

Stores the SNTP Time Query Result.

The following shows the values to be stored.

- GS266: The four-digit year data is stored.
- GS267: The month data, 01 to 12, is stored.
- GS268: The day data, 01 to 31, is stored.
- GS269: The hour data, 00 to 23, is stored.
- GS270: The minute data, 00 to 59, is stored.
- GS271: The second data, 00 to 59, is stored.
- GS272: The day-of-the-week data, 0 to 6, is stored.

(0: Sunday 1: Monday 2: Tuesday 3: Wednesday 4: Thursday 5: Friday 6: Saturday)

■Document Display Status (GS276)

- b0: Turns on when a specified file is not displayable.

Turns off when the file is displayed appropriately.

For the cause of the display failure, refer to the following.

☞ Page 1812 Precautions

- b1: Turns on when a PDF file cannot be cached for display.

Turns off when the cached PDF file is displayed.

For the cause of the cache failure, refer to the following.

☞ Page 1812 Displaying a cached document

- b2: Turns on when a PDF document is displayed in high quality (144 dpi resolution).
- b3: Turns on when the display size of the document is changed by GS523.b3.

Turns off when GS523.b3 is turned off.

☞ Page 3649 Document Display Common Control (GS523)

- b4 to b15: Use prohibited

■Notify Automatic Connection Status (GS277)

Notifies the communication status between the controllers supporting the automatic connection and the GOT.

- b0: Turns on when the automatic connection is enabled in the setting of the controller (CH1).
- b1: Turns on when the automatic connection process is completed between the controller (CH1) and the GOT.
- b2: Turns on when the automatic connection is enabled in the setting of the controller (CH2).
- b3: Turns on when the automatic connection process is completed between the controller (CH2) and the GOT.
- b4: Turns on when the automatic connection is enabled in the setting of the controller (CH3).
- b5: Turns on when the automatic connection process is completed between the controller (CH3) and the GOT.

• b6: Turns on when the automatic connection is enabled in the setting of the controller (CH4).
• b7: Turns on when the automatic connection process is completed between the controller (CH4) and the GOT.
• b8 to b15: Use prohibited

■Standard SD Card Information (GS279)

• b0: Turns on when an SD card is inserted into the standard SD card interface.
Check the Drive Accessibility device (GS251) to see if the SD card is accessible.
☞ Page 3600 Drive Accessibility (GS251)
• b1 to b15: Use prohibited

■Faulty Monitor Station signal (CH1 to CH4) (GS280, GS300, GS320, GS340)

• b0 to b7: Stores the number of stations where a communication error was detected during Ethernet connection (excluding Ethernet connection of the microcomputer).
• b8 to b15: Use prohibited

■Faulty Station Information (CH1 to CH4) (GS281 to GS288, GS301 to GS308, GS321 to GS328, GS341 to GS348)

Turns on the bit corresponding to the station number of the station where a communication error is detected during Ethernet connection, CC-Link IE Field Network connection, inverter connection, or servo amplifier connection.
(For the multi-channel connection, the bit of the device corresponding to each channel number (CH1 to CH4) turns on.)
0: No error
1: Error
When the faulty station is restored from the error, the bit turns off.
The following shows the compatible communication drivers.
○: Supported, —: Not supported

Communication driver	Supported/ Unsupported		Communication driver	Supported/ Unsupported	
	Host station	Other station		Host station	Other station
[Bus(Q)]	—	—	[Ethernet(MELSERVO), Gateway]	○	○
[Serial (MELSEC)]	—	—	[Ethernet(YASKAWA),Gateway]	○	○
[MELSECNET/H]	—	—	[Ethernet(YASKAWA MP3000),Gateway]	○	○
[CC-Link Ver2(ID)]	—	—	[Ethernet(YASKAWA High Speed Ethernet Server), Gateway]	○	○
[CC-Link IE Controller Network]	○	—	[Ethernet(YOKOGAWA), Gateway]	○	○
[CC-Link IE Field Network][*1]	○	—	[Ethernet(AB), Gateway]	○	○
[CC-Link IE TSN][*1][*3]	○	—	[Ethernet(AB MicroLogix), Gateway]	○	○
[CC-Link IE TSN (Built-in Ethernet)][*1][*2]	○	—	[Ethernet(AB Tag), Gateway]	○	○
[MELSEC-FX]	—	—	[Ethernet(OMRON), Gateway]	○	○
[Serial (MICROCOMPUTER)]	—	—	[Ethernet(OMRON NJ/NX), Gateway]	○	○
[Serial (MELSERVO)]	—	—	[Ethernet(SIEMENS OP), Gateway]	○	○
[FREQROL 700/800, Sensorless Servo]	—	—	[Ethernet(FUJI), Gateway]	○	○
[FREQROL(Batch Monitor Support)]	○	○	[Ethernet(KEYENCE), Gateway]	○	○
[OMRON Temperature Controller/Digital Controller]	—	—	[Ethernet(LS ELECTRIC XGK), Gateway]	○	○
[Azbil SDC/DMC]	—	—	[MODBUS/TCP Client, Gateway]	○	○
[MODBUS/RTU Client]	—	—	[MODBUS/TCP Server, Gateway]	—	—
[MODBUS/RTU Server]	—	—	[Ethernet(Computer)]	—	—
[Ethernet(MITSUBISHI ELECTRIC), Gateway]	○	○	[Ethernet(SLMP), Gateway]	○	○
[Ethernet(FX), Gateway]	○	○	[Ethernet(CC-Link IE Field Network Basic)]	—	—
[Ethernet(FREQROL(Batch Monitor Support)), Gateway]	○	○	[OPC UA Client]	—	—

*1 Only the faulty station can be detected in the same network.
*2 The station monitoring function is not supported because communication is disabled when the master station is in multicast mode.
*3 To detect a faulty station in the CC-Link IE TSN connection, use the following GOT special registers (GS).
☞ Page 3617 Faulty Station Information (CC-Link IE TSN) (GS1281 to GS1288)
The following shows the station numbers for each device.

The station corresponding to each device differs according to whether the Ethernet connection is used or not.

• Ethernet connection: 1 to 128

Device				Ethernet setting number															
CH1	CH2	CH3	CH4	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
GS281	GS301	GS321	GS341	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
GS282	GS302	GS322	GS342	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17
GS283	GS303	GS323	GS343	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33
GS284	GS304	GS324	GS344	64	63	62	61	60	59	58	57	56	55	54	53	52	51	50	49
GS285	GS305	GS325	GS345	80	79	78	77	76	75	74	73	72	71	70	69	68	67	66	65
GS286	GS306	GS326	GS346	96	95	94	93	92	91	90	89	88	87	86	85	84	83	82	81
GS287	GS307	GS327	GS347	112	111	110	109	108	107	106	105	104	103	102	101	100	99	98	97
GS288	GS308	GS328	GS348	128	127	126	125	124	123	122	121	120	119	118	117	116	115	114	113

• Other than Ethernet connection: 0 to 127

Device				Station number															
CH1	CH2	CH3	CH4	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
GS281	GS301	GS321	GS341	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0*1
GS282	GS302	GS322	GS342	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16
GS283	GS303	GS323	GS343	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32
GS284	GS304	GS324	GS344	63	62	61	60	59	58	57	56	55	54	53	52	51	50	49	48
GS285	GS305	GS325	GS345	79	78	77	76	75	74	73	72	71	70	69	68	67	66	65	64
GS286	GS306	GS326	GS346	95	94	93	92	91	90	89	88	87	86	85	84	83	82	81	80
GS287	GS307	GS327	GS347	111	110	109	108	107	106	105	104	103	102	101	100	99	98	97	96
GS288	GS308	GS328	GS348	127 *1*2	126 *1*2	125 *1*2	124 *1*2	123 *1*2	122 *1*2	121 *1*2	120	119	118	117	116	115	114	113	112

*1 This station number is not used for the CC-Link IE Controller Network connection.

*2 This station number is not used for the CC-Link IE Field Network connection.

Point

• Range of detectable faulty stations

The GOT cannot detect errors with station No. 128 or later, or station-substation No. 9-0 or later.

• Dealing with a faulty station

◇Automatically stopping monitoring a faulty station

The GOT automatically stops monitoring a connected station where a communication timeout error occurs so as not to retard the monitoring of the other connected stations (no setting is required).

◇Disconnecting the specified station from the GOT with the GOT special register (GS)

You can disconnect the specified controller from the GOT by using the GOT special register (GS).

☞ Page 3650 Monitor Station Disconnection (CH1 to CH4) (GS531 to GS538, GS541 to GS548, GS551 to GS558, GS561 to GS568)

Doing so helps avoid the occurrence of a communication timeout error even if the specified controller is removed for changing a module or other reasons (no system alarm appears on the GOT).

However, depending on the type of connection cables used, the GOT may not monitor the controllers that are connected to the removed one.

■Channel Observation Notification Information Signal (CH1) (GS299, GS319, GS339, GS359)

Notifies the communication status of each channel.

- b0: Turns on if a connection error occurs.
- b1 to b15: Use prohibited

The following shows the compatible communication drivers.

○: Supported, —: Not supported

Communication driver	Supported/ Unsupported	Communication driver	Supported/ Unsupported
[Bus(Q)]	○	[Ethernet(MELSERVO), Gateway]	○
[Serial (MELSEC)]	○	[Ethernet(YASKAWA),Gateway]	○
[MELSECNET/H]	—	[Ethernet(YASKAWA MP3000),Gateway]	○
[CC-Link Ver2(ID)]	—	[Ethernet(YASKAWA High Speed Ethernet Server), Gateway]	○
[CC-Link IE Controller Network]	—	[Ethernet(YOKOGAWA), Gateway]	○
[CC-Link IE Field Network]	—	[Ethernet(AB), Gateway]	○
[CC-Link IE TSN]	—	[Ethernet(AB MicroLogix), Gateway]	○
[CC-Link IE TSN (Built-in Ethernet)]	—	[Ethernet(AB Tag), Gateway]	○
[MELSEC-FX]	○	[Ethernet(OMRON), Gateway]	○
[Serial (MICROCOMPUTER)]	—	[Ethernet(OMRON NJ/NX), Gateway]	○
[Serial (MELSERVO)]	○	[Ethernet(SIEMENS OP), Gateway]	○
[FREQROL 700/800, Sensorless Servo]	○	[Ethernet(FUJI), Gateway]	○
[FREQROL(Batch Monitor Support)]	○	[Ethernet(KEYENCE), Gateway]	○
[OMRON Temperature Controller/Digital Controller]	○	[Ethernet(LS ELECTRIC XGK), Gateway]	○
[Azbil SDC/DMC]	○	[MODBUS/TCP Client, Gateway]	○
[MODBUS/RTU Client]	—	[MODBUS/TCP Server, Gateway]	—
[MODBUS/RTU Server]	○	[Ethernet(Computer)]	—
[Ethernet(MITSUBISHI ELECTRIC), Gateway]	○	[Ethernet(SLMP), Gateway]	○
[Ethernet(FX), Gateway]	○	[Ethernet(CC-Link IE Field Network Basic)]	—
[Ethernet(FREQROL(Batch Monitor Support)), Gateway]	○	[OPC UA Client]	—

■GOT Network No./Station No. Notification (CH1 to CH4) (GS376 to GS383)

When the GOT starts, the devices store a network number and a station number of the GOT connected with the Ethernet connection.

When the GOT is connected with other than the Ethernet connection, the devices store 0.

Device				Description
CH1	CH2	CH3	CH4	
GS376	GS378	GS380	GS382	Network number (1 to 239)
GS377	GS379	GS381	GS383	Station number (1 to 64)

Write devices (GS640 to GS2070)

■Error Device Data Transfer ID (GS642)

Stores the device data transfer ID with the executed device data if an error occurs during device data transfer.

■Device Data Transfer Error Count (GS643)

Stores the number of errors occurred during device data transfer. (Maximum 65535 times)

When errors occur 65535 times or more, the value remains 65535.

The device data transfer ID with the executed device data is stored in the error device data transfer ID.

■Device Data Transfer Processing Time (GS644)

Stores the processing time taken for one device data transfer. (0 to 60000 (×10 ms))

Stores 60000 (×10 ms) when the device data transfer processing time is 600 seconds or more.

■Device Data Transfer ID (GS645)

Stores the device data transfer ID with the executed device data transfer.

■Device Data Transfer Min. Processing Time (GS646)

Stores the minimum processing time in all of the processing times stored in the Device Data Transfer Processing Time (GS644).

(0 to 60000 (×10 ms))

■Device Data Transfer ID (Min. Processing Time) (GS647)

Stores the device data transfer ID with the executed device data transfer when GS646 stores the minimum processing time.

■Device Data Transfer Max. Processing Time (GS648)

Stores the maximum processing time in all of the processing times stored in the Device Data Transfer Processing Time (GS644).

(0 to 60000 (×10 ms))

■Device Data Transfer ID (Max. Processing Time) (GS649)

Stores the device data transfer ID with the executed device data transfer when GS648 stores the maximum processing time.

■Present Time (GS650 to GS653)

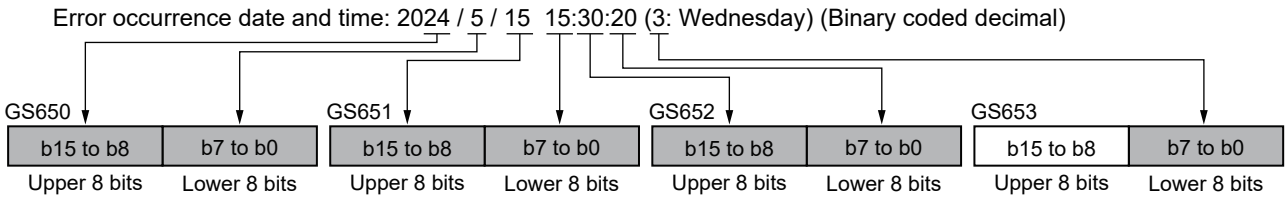
Stores the current time with BCD code.

The day-of-the-week data, 0 to 6, is stored.

(0: Sunday 1: Monday 2: Tuesday 3: Wednesday 4: Thursday 5: Friday 6: Saturday)

Ex.

When the error occurrence date is 15:30:20 May 15, 2024 (Wednesday)



■Touch Status External Notification (X-coordinate) (GS654)

Stores the x-coordinate of touched position when the GOT screen is touched on.

■Touch Status External Notification (Y-coordinate) (GS655)

Stores the Y-coordinate of touched position when the GOT screen is touched on.

■Touch Status External Notification (Touch Status) (GS656)

The following values are stored in the device depending on the touched screen types when the GOT screen is touched on.

0: Without touching

1: Touching the base screen

2: Touching a touchable object on the base screen

11: Touching overlap window 1

12: Touching a touchable object on overlap window 1

21: Touching on the overlap window 2

22: Touching a touchable object on overlap window 2

31: Touching overlap window 3

32: Touching a touchable object on overlap window 3

41: Touching overlap window 4

42: Touching a touchable object on overlap window 4

51: Touching overlap window 5

52: Touching a touchable object on overlap window 5

61: Touching the video window

71: Touching the key window

72: Touching a touchable object on the key window

81: Touching the comment window

91: Touching the popup display

2001: Touching the dialog window

2002: Touching a touchable object in the dialog window

■Trigger Backup Processing Setting No. Notification Signal (GS657)

The GOT notifies users of the trigger backup processing status.

Stores the channel number of the backup trigger setting if a trigger backup is being processed.

Stores 0 when the trigger backup processing is not executed.

■Extended External Input Status Notification Signal (GS658 to GS665)

When the 128-point input is enabled with the external I/O function, the bit corresponding to the detected input signal turns on.

When the 128-point input is disabled, the devices are always off.

To enable the 128-point input, turn on GS517.b0 (External I/O Function Notification/External I/O Control Function).

0: Signal off

1: Signal on

The following shows the devices for each bit.

	Extended External Input Status Notification Signal	External input signal															
		+00	+01	+02	+03	+04	+05	+06	+07	+08	+09	+0A	+0B	+00	+0C	+0D	+0F
X000	GS658	b0	b1	b2	b3	b4	b5	b6	b7	b8	b9	b10	b11	b12	b13	b14	b15
X010	GS659	b0	b1	b2	b3	b4	b5	b6	b7	b8	b9	b10	b11	b12	b13	b14	b15
X020	GS660	b0	b1	b2	b3	b4	b5	b6	b7	b8	b9	b10	b11	b12	b13	b14	b15
X030	GS661	b0	b1	b2	b3	b4	b5	b6	b7	b8	b9	b10	b11	b12	b13	b14	b15
X040	GS662	b0	b1	b2	b3	b4	b5	b6	b7	b8	b9	b10	b11	b12	b13	b14	b15
X050	GS663	b0	b1	b2	b3	b4	b5	b6	b7	b8	b9	b10	b11	b12	b13	b14	b15
X060	GS664	b0	b1	b2	b3	b4	b5	b6	b7	b8	b9	b10	b11	b12	b13	b14	b15
X070	GS665	b0	b1	b2	b3	b4	b5	b6	b7	b8	b9	b10	b11	b12	b13	b14	b15

Point

Controlling a signal with controllers

The above signals can be controlled with controllers when the trigger action and the script function are used.

■Sound Status Information (GS668)

- b0 to b13: Use prohibited
- b14: Turns on when USB audio is connected.

When USB audio is removed, this bit turns off.

- b15: Use prohibited

■Sound File Number During Play (GS669)

Stores the sound file number during the play in the device.

When no sound file exists during the play, 0 is stored in the device.

■Notify Number of Hard Copy Output Screens signal (GS693)

Stores the number of screens for which hard copy output has been completed.

When the start trigger condition is satisfied, 0 is stored. The target screens are counted one by one at completion of output regardless of the output file format or output settings of the target screen.

■Object Position upon Cursor Display (GS694, GS695)

Store the upper-left coordinates of the object (numerical input or text input) on which the cursor is displayed.

- GS694: X coordinate
- GS695: Y coordinate

The devices store 0 if the cursor is not displayed on any object.

■Expanded Base Screen Position (GS696, GS697)

Stores the upper-left coordinates of the area of the expanded base screen currently displayed on the GOT.

- GS696: X coordinate
- GS697: Y coordinate

The devices store 0 when the original size base screen is displayed on the GOT.

■Touch Position Color Acquisition Complete signal (GS980)

- b0: Turns on when the Touch Position Color (GS981 to GS983) stores a value.

Turning on the bit cancels the touch position color acquisition ready status.

Turning off the Touch Position Color Acquisition Ready Signal (GS630.b0) turns off the bit.

- b1 to b15: Use prohibited

■Touch Position Color Information (GS981 to GS983)

Notifies the color information at the touched position.

The GOT acquires the color information with RGB. The following GOT special registers (GS) store the RGB values (0 to 255).

- R: GS981
- G: GS982
- B: GS983

Turning on the Touch Position Color Acquisition Ready Signal (GS630.b0) stores -1 in R, G, and B respectively.

After the signal (GS630.b0) turns on, the GOT acquires the color information at the first touch and release of the screen.

■Authorization Guarantee Status Notification signal (GS984)

This signal is disabled when the GOT network interaction function is used.

Stores the remaining authorization guarantee time (seconds) when the authorization guarantee time is set in GT SoftGOT3000 (Single channel) or the GOT.

■Executing File Transfer ID Notification (GS987)

Stores the file transfer setting ID of the file transfer currently in execution.

■Communicating FTP Server ID Notification (GS988)

Stores the FTP server setting ID of the currently connected destination FTP server setting.

For GOT internal transfer, the device stores 0.

■File Transfer Error No. (GS989)

Stores the error code of an error that occurred in the file transfer.

Turn on GS401.b0 to clear the stored error code.

The following lists the error codes to be stored.

Error code	Description	Corrective action
1	The connection to the FTP server has failed.	• Check the IP address of the FTP server. • Check if a cable is connected. • Check the connection status of the HUB. • Check if the FTP server is working on the target device. • Check if the destination FTP server setting is configured properly.
2	Authentication of the FTP server has failed.	Check if the user name and password are correct.
3	FTP server Busy	The FTP server is not ready to accept client requests (busy state). Wait until it is ready.
4	FTP communication timeout	• Check if the communication line has not been physically interrupted. • Check the communication congestion.
5	Access to the target file to be written has failed.	• Check if the write destination drive is enabled. • Check if the write destination drive has enough available space. • Check if the file is not write-prohibited. • When using the GOT as the FTP server, check if the GOT is in the write enable mode.
6	Access to the target file to be read has failed.	• Check if the target file exists. • Check if the file name specified in the file transfer settings is correct. • Check if data storage has been installed on the GOT. • Check if the SD card cover has been closed. • Check that the SD card access switch is turned on. • Check that the write protection for the SD card is canceled.
7	The file whose size exceeds the file size supported by the GOT was attempted to be transferred.	Check that the size of the transfer file is less than 2 GB.
10	• For the FTP transfer The GOT folder name is invalid. • For the GOT internal transfer The transfer source folder name is invalid.	Check that the GOT folder name or the transfer source folder name does not contain invalid characters, such as two-byte characters, or characters that are not allowed with the character code specified for [Character Code] in the [File Transfer Setting] dialog.
11	The transfer file name is invalid.	Check that the transfer file name does not contain invalid characters, such as two-byte characters, or characters that cannot be used with the character code specified for [Character Code] in the [File Transfer Setting] dialog.
12	The transfer source folder and destination folder have the same path.	Set different paths to the transfer source folder and the transfer destination folder.
13	Drive N is specified for both the transfer source folder and the transfer destination folder.	Specify drive N for only one of the transfer source folder and the transfer destination folder.
50	The drive specification on the PLC side is incorrect.	When a PLC is used as a FTP server, only drive 2 (Memory card (ROM)) is accessible. Check if the setting of [FTP Server Folder] specified in the [File Transfer Setting] dialog is correct.
100	The destination FTP server setting ID which does not exist has been specified.	• Check if the destination FTP server setting ID specified in [File Transfer Setting] is correct. • Add the required destination FTP server setting.
200	Access to the storage device has failed when the file name or folder name is specified indirectly.	Check if the device setting used for the indirect specification is correct.
507	The total number of characters of the folder path and transfer file name exceeds the limit.	Check that the total number of the characters does not exceed the limit as shown below. • <GOT folder path>\<Transfer file name>: 78 characters or less (including backward slash marks) • <FTP server folder path>\<Transfer file name>: 250 characters or less (including backward slash marks) • <Transfer source folder path>\<Transfer file name>: 78 characters or less (including backward slash marks) • <Transfer destination folder path>\<Transfer file name>: 78 characters or less (including backward slash marks)
600 *1	The file transfer has been skipped because the total number of characters of the folder path and transfer file name exceeds the limit (only when the file is specified with a wildcard character).	
601 *1	Since invalid characters had been used for the transfer file name, the transfer processing was skipped. (only when the file is specified with a wildcard character).	Check that the transfer file name does not contain invalid characters, such as two-byte characters, or characters that cannot be used with the character code specified for [Character Code] in the [File Transfer Setting] dialog.

Error code	Description	Corrective action
602 *1	Since the write operation for the file had failed, the transfer processing was skipped. (only when the file is specified with a wildcard character).	• Another function might have been using the transfer file. Transfer the file again. • Check if the write destination drive has enough available space.
603 *1	Since the read operation for the file had failed, the transfer processing was skipped. (only when the file is specified with a wildcard character).	• The file might have been deleted before being transferred. Check if all the files have been transferred to the destination folder. • Check if data storage has been installed on the GOT. • Check if the SD card cover has been closed. • Check that the SD card access switch is turned on. • Check that the write protection for the SD card is canceled.
606 *1	Since the file specified by the wild card did not exist, the file was not transferred (only when the file is specified with a wildcard character).	Check if the specified file name is correct.
607 *1	A file that exceeds the size supported by the GOT was attempted for transfer (only when the file is specified with a wildcard character).	Check that the size of the transfer file is less than 2 GB.
610 *1	Deleting the source file has failed.	Check if the source file is in a state in which it can be deleted.

*1 Even if a warning is given, the file transfer process does not stop.

■File Transfer Status (GS990)

Notifies the file transfer processing status.

• b0: Turns on when the GOT (FTP client) writes files to the FTP server, or the GOT transfers files within itself.

When [Trigger Type] is [Rise] or [Fall], be sure to dissatisfy the trigger condition after the file transfer is started.

When the trigger condition remains satisfied, this bit does not turn off even after the file transfer is completed.

• b1: Turns on when the GOT (FTP client) reads files from the FTP server.

• b2: Notifies the connection mode of the GOT (FTP client) and the FTP server.

ON: PASV mode

OFF: PORT mode

• b3 to b13: Use prohibited

• b14: Turns on when the error with which the processing can be continued occurs during the file transfer.

Turns off when the Clear File Transfer Error signal (GS401.b0) is turned on.

• b15: Turns on when the error with which the processing cannot be continued occurs during the file transfer.

Files cannot be transferred while this signal is on.

Turns off when the Clear File Transfer Error signal (GS401.b0) is turned on.

■Number of Transfer Target Files (GS991)

Stores the total number of files to be transferred.

When the transfer file name is specified with the wild card, the total count includes the files which are not transferred due to an invalid number of characters for the folder name or other causes.

However, only files with invalid names, such as those containing two-byte character, are not counted.

Holds the device value until the processing for the next file transfer ID is started.

■Number of Transferred Files (GS992)

Stores the total number of files which is completely transferred.

The total count includes the files which are not transferred due to the error or other causes.

Holds the device value until the processing for the next file transfer ID is started.

■Number of Successfully Transferred Files (GS993)

Stores the number of files successfully transferred after the file transfer process has started.

Files skipped with errors are not counted.

Holds the device value until the processing for the next file transfer ID is started.

■Recipe Status (GS1010)

Notifies the processing status of recipe data when the recipe data is manipulated using a special function switch ([Switch Action]: [Recipe Data Operation]).

☞ Page 2274 Exporting a recipe file by using a special function switch (Recipe data operation)

- b0: Turns on when the recipe data is imported.
- b1: Turns on when the recipe data is exported.
- b2: Turns on when the recipe special control is executed.

Turns off after the control is complete and the Execute Special Control signal (GS1800.b2) is turned off.

- b3 to b13: Use prohibited
- b14: Turns on after importing or exporting the recipe data is complete.

Turns off when another recipe data manipulation is performed or the Clear Status Information signal (GS1800.b14) is turned on.

☞ Page 3658 Recipe Control (GS1800)

- b15: Turns on when importing or exporting the recipe data fails.

Turns off when another recipe data manipulation is performed or the Clear Status Information signal (GS1800.b14) is turned on.

☞ Page 3658 Recipe Control (GS1800)

■Recipe Special Control Result (GS1011)

Notifies the result of the recipe special control.

Stores 0 if the control is complete.

Stores a value other than 0 if an error occurs.

For the error codes and solutions, refer to the following.

☞ Page 2295 Error code list

This device is reset to 0 upon turn-on of the Execute Special Control signal (GS1800.b2).

■Recipe Special Control No. (GS1012)

Notifies the search result (record No.) of the recipe special control.

This device is reset to 0 upon turn-on of the Execute Special Control signal (GS1800.b2).

■Recipe Display (Record List) Target Recipe No. (GS1013)

Notifies the recipe number for the records displayed on the recipe display (record list).

This device stores 0 in the following cases.

- No recipe display (record list) is placed on the screen.
- A nonexistent recipe setting is specified to be displayed on the recipe display (record list).
- The recipe display (record list) is not displayed because the display condition is unsatisfied or the security level is insufficient.

For information on how to link the recipe function with the recipe display (record list) by using GOT special registers, refer to the following.

☞ Page 2296 Link with the recipe display (record list) by using GOT special registers

■Recipe Display (Record List) Selected Record No. (GS1014)

Stores the record number selected on the recipe display (record list).

This device stores 0 in the following cases.

- No recipe display (record list) is placed on the screen.
- A nonexistent recipe setting is specified to be displayed on the recipe display (record list).
- The recipe display (record list) is not displayed because the display condition is unsatisfied or the security level is insufficient.
- No cursor is displayed on the recipe display (record list).

For information on how to link the recipe function with the recipe display (record list) by using GOT special registers, refer to the following.

☞ Page 2296 Link with the recipe display (record list) by using GOT special registers

■Recipe Display (Record List) Target Record No. (GS1015)

Stores the record number of the record manipulated on the recipe display (record list) while GS1809.b0 is on.
This device stores 0 when the record number is not identified.
☞ Page 3658 Recipe Display (Record List) Control (GS1809)

■Recipe Display (Record List) Record Manipulation Result (GS1016)

Notifies the record manipulation result of the recipe display (record list) while GS1809.b0 is on.
This device turns off when GS1809.b15 is turned on.
☞ Page 3658 Recipe Display (Record List) Control (GS1809)

- b0: Turns on when the device values of a record and those of the PLC match at the record verification.
- b1: Turns on when the device values of a record and those of the PLC do not match at the record verification.
- b2: Turns on when no device value is set in the record at the record verification.
- b3 to b10: Use prohibited
- b11: Turns on when a record verification is unsuccessful.
- b12: Turns on when a record deletion is unsuccessful.
- b13: Turns on when a record writing is unsuccessful.
- b14: Turns on when a record reading is unsuccessful.
- b15: Turns on when a record renaming is unsuccessful.

■Video File Maintenance Information (GS1022)

Notifies the amount of data storage used and the number of video files while the Start Video File Information Notification signal (GS522.b1) is on.
This function is usable only when [Enable the Before-After Event Recording Function] is selected and [Event Trigger Device] is set in the [Digital Image Input/Recording] dialog ([Recording Trigger] tab).
This device turns off upon the turn-off of the Start Video File Information Notification signal (GS522.b1).
☞ Page 3648 Special Control During Specific Function Execution (GS522)

- b0: Turns on when data storage usage reaches 60%.
- b1: Turns on when data storage usage reaches 80%.
- b2: Turns on when the number of video files in the data storage reaches 80.
- b3: Turns on when the number of video files in the data storage reaches 110.
- b4: Turns on when the number of video files in the data storage reaches 150.
- b5: Turns on when the number of video files in the data storage reaches 400.
- b6: Turns on when the number of video files in the data storage reaches 450.
- b7: Turns on when the number of video files in the data storage reaches 500.
- b8 to b15: Use prohibited

■USB Drive Common Information (GS1024)

GT SoftGOT3000 does not support b0 to b7.

- b0: Turns on when the USB memory connected to drive E on the GOT is ready for removal after the USB Drive Common Control (GS1824.b0) turns on.
- b1: Turns on when the USB memory connected to drive F on the GOT is ready for removal after the USB Drive Common Control (GS1824.b1) turns on.
- b2: Turns on when the USB memory connected to drive B on the GOT is ready for removal after the USB Drive Common Control (GS1824.b2) turns on.
- b3: Turns on when the USB memory connected to drive G on the GOT is ready for removal after the USB Drive Common Control (GS1824.b3) turns on.
- b4: Turns on when the USB memory connected to drive E on the GOT is ready for removal after the USB Drive Common Control (GS1824.b4) turns on.
- b5: Turns on when the USB memory connected to drive F on the GOT is ready for removal after the USB Drive Common Control (GS1824.b5) turns on.
- b6: Turns on when the USB memory connected to drive B on the GOT is ready for removal after the USB Drive Common Control (GS1824.b6) turns on.
- b7: Turns on when the USB memory connected to drive G on the GOT is ready for removal after the USB Drive Common Control (GS1824.b7) turns on.

• b8: Turns on when drive E recognizes the USB memory or memory card adapter.
• b9: Turns on when drive F recognizes the USB memory or memory card adapter.
• b10: Turns on when drive B recognizes the USB memory or memory card adapter.
• b11: Turns on when drive G recognizes the USB memory or memory card adapter.
• b12: Turns on when drive E can access the USB memory or memory card.
• b13: Turns on when drive F can access the USB memory or memory card.
• b14: Turns on when drive B can access the USB memory or memory card.
• b15: Turns on when drive G can access the USB memory or memory card.

b8 to b11 turn on also when a memory card is not inserted into the memory card adapter.

b12 to b15 turn off when a memory card is not inserted into the memory card adapter.

When GS1824.b0 to b7 are turned off, b0 to b7 of this device are also turned off.

For the available drives by GOT model, refer to the following.

☞ Page 81 Drive configuration and capacity of the GOT

■PC Image Input Status Notification (GS1025)

Notifies information about the channel set to be displayed.

The value of each bit is all [0] in the initial state (at GOT startup).

The value corresponding to the input signal is stored when the personal computer image is displayed by the digital image input common device.

Thereafter, the value is updated when the input channel for the personal computer image is changed.

• b0: Turns on when a signal is input.
• b1: Turns on when the GOT being used supports the resolution and frequency of the input signal.
• b2: Always on
• b3 to b15: Use prohibited

■PC Image Input Resolution (Horizontal) (GS1026)

When GS1025.b0 turns on, the device stores the horizontal resolution (dots) of the personal computer image input signal.

Stores 0 if no signal is input or the resolution of the signal cannot be identified.

■PC Image Input Resolution (Vertical) (GS1027)

When GS1025.b0 turns on, the device stores the vertical resolution (dots) of the personal computer image input signal.

Stores 0 if no signal is input or the resolution of the signal cannot be identified.

■PC Image Input Refresh Rate (GS1028)

When GS1025.b0 turns on, the device stores the frequency (Hz) of the personal computer image input signal.

Stores 0 if no signal is input or the frequency of the signal cannot be identified.

■Digital Image Display (Object) Status Notification (CH1 to CH2) (GS1030, GS1035)

Notifies information on the digital video input display object.

• b0: Turns on when a signal is input.
• b1: Turns on when the GOT being used supports the resolution and frequency of the input signal.
• b2: Always on
• b3 to b15: Use prohibited

■Digital Image Display (Object) Resolution (Horizontal) (CH1 to CH2) (GS1031, GS1036)

Stores the horizontal resolution (dots) of the input signal from the digital video input object.

Stores 0 if no signal is input or the resolution cannot be identified.

■Digital Image Display (Object) Resolution (Vertical) (CH1 to CH2) (GS1032, GS1037)

Stores the vertical resolution (dots) of the input signal from the digital video input object.

Stores 0 if no signal is input or the resolution cannot be identified.

■Digital Image Display (Object) Refresh Rate (CH1 to CH2) (GS1033, GS1038)

Stores the frequency (Hz) of the input signal from the digital video input object.

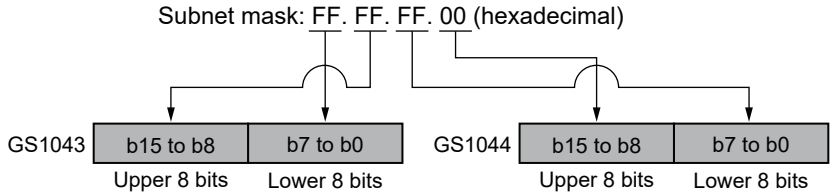
Stores 0 if no signal is input or the frequency cannot be identified.

■Ethernet Port 1 Subnet Mask Notification (GS1043, GS1044), Ethernet Port 2 Subnet Mask Notification (GS1045, GS1046)

Stores the subnet mask that is specified for the GOT Ethernet port 1 or port 2 in hexadecimal.

Ex.

When the subnet mask for Ethernet port 1 is 255.255.255.0 (decimal)



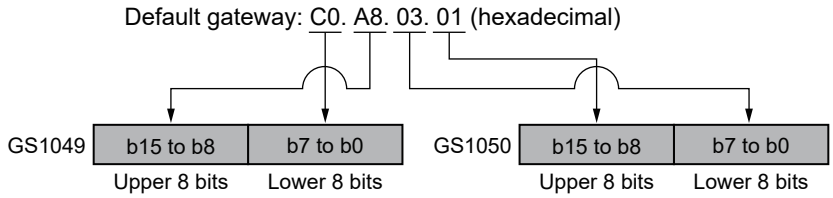
When the subnet mask for Ethernet port 2 is invalid, 0.0.0.0 (decimal) is stored in GS1045 and GS1046.

■Default Gateway Notification (GS1049 to GS1050)

Stores the default gateway set in the GOT in hexadecimal.

Ex.

When the default gateway is 192.168.3.1 (decimal)



■Label Name Resolution Status (Common, CH1 to CH4) (GS1080, GS1081 to GS1084)

Notifies the status of the label name resolution.

GS1080 notifies the status relevant to all channels.

GS1081 to GS1084 each notify the status of the corresponding channel (CH1 to CH4).

- b0: Use prohibited
- b1: Notifies that the label name resolution is being executed.

For GS1080, this bit turns on while the label name resolution is being executed on any of the channels.

For GS1081 to GS1084, this bit turns on while the label name resolution is being executed on the corresponding channel.

- b2: Notifies that the label name resolution completes.

For GS1080, this bit turns on when the label name resolution completes on all the channels.

For GS1081 to GS1084, this bit turns on when the label name resolution completes on the corresponding channel.

- b3: Notifies that the label name resolution is canceled.

For GS1080, this bit turns on when the label name resolution is canceled on any of the channels.

For GS1081 to GS1084, this bit turns on when the label name resolution is canceled on the corresponding channel.

- b4 to b14: Use prohibited
- b15: Notifies that an error has occurred during the label name resolution.

For GS1080, this bit turns on when a label name resolution error occurs on any of the channels.

For GS1081 to GS1084, this bit turns on when a label name resolution error occurs on the corresponding channel.

For details on how to use the bits, refer to the following.

☞ Page 916 Manually performing the label name resolution

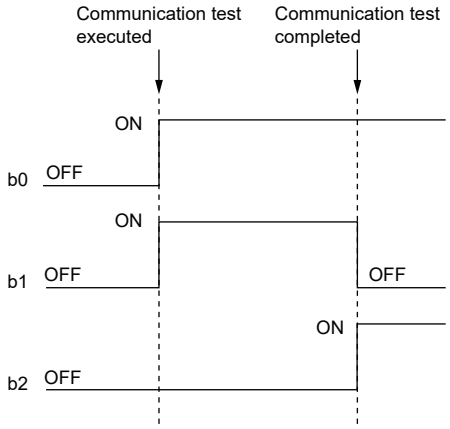
A

■CC-Link IE TSN Module Communication Test Status (GS1114)

Notifies the execution status of a communication test of the CC-Link IE TSN communication unit.

- b0: Turns on when a communication test is executed.
- b1: Is on while a communication test is being executed.
- b2: Turns on when a communication test is complete.
- b3 to b15: Use prohibited

The following shows the status of each bit during a communication test.



For details on the communication test of the CC-Link IE TSN communication unit, refer to the following.

GOT3000 Series User's Manual (Connection)

■CC-Link IE TSN Module Communication Test Error (GS1115)

Notifies that an error has occurred during a communication test of the CC-Link IE TSN communication unit.

- b0: Turns on if there is a problem with the port 1 side of the CC-Link IE TSN communication unit.
- b1: Turns on if there is a problem with the connection interface (port 1) or the Ethernet cable terminal connected to port 1.
- b2: Turns on if there is a problem with the Ethernet cable connected to port 1 of the CC-Link IE TSN communication unit.
- b3 to b7: Use prohibited
- b8: Turns on if there is a problem with the port 2 side of the CC-Link IE TSN communication unit.
- b9: Turns on if there is a problem with the connection interface (port 2) or the Ethernet cable terminal connected to port 2.
- b10: Turns on if there is a problem with the Ethernet cable connected to port 2 of the CC-Link IE TSN communication unit.
- b11 to b15: Use prohibited

For details on the communication test of the CC-Link IE TSN communication unit, refer to the following.

GOT3000 Series User's Manual (Connection)

■Special Function Switch Special Control (GS1220)

- b0: Turns on when an error occurs during the iQSS utility special control.

This signal turns off at a start of the iQSS utility special control.

- b1 to b15: Use prohibited

■iQSS Utility Special Control Error Sensor Device No. (GS1221)

Stores the affected sensor device number when an error occurs during the iQSS utility special control.

The data type is unsigned 16-bit binary.

When no error occurs, the reset value (65535) is stored.

■VNC Server Operation Status Notification (GS1230)

- b0: Turns on while the VNC server communicates with the VNC client.
- b1: Turns on when the VNC client is allowed to display the VNC server screen and to remotely operate the VNC server.

Turns off when the VNC client is allowed to only display the VNC server screen.

- b2: Turns on when the VNC client holds the authorization.

Turns off when the VNC server holds the authorization.

- b3 to b14: Use prohibited
- b15: Turns on when the VNC client holds the authorization.

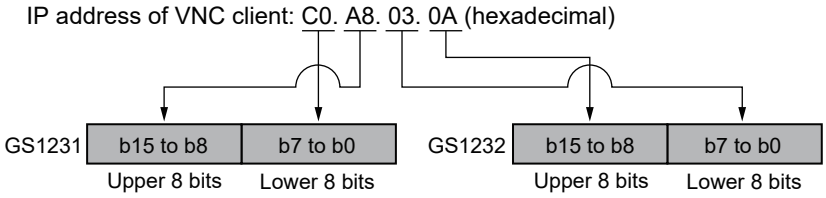
Turns off when the VNC server holds the authorization.

■VNC Client IP Address (GS1231, GS1232)

Stores the IP address of VNC client 1 which is communicating with the VNC server in hexadecimal.

Ex.

When the IP address of VNC client 1 is 192.168.3.10 (decimal)



■VNC Server Authorization Guarantee Status Notification (GS1233)

Stores the remaining authorization guarantee time (second).

■Insufficient Security Level Notification (GS1241)

Turns on the corresponding bit when the screen cannot be displayed due to insufficient security level.• b0: Turns on when overlap window 3 cannot be displayed.• b1: Turns on when overlap window 4 cannot be displayed.• b2: Turns on when overlap window 5 cannot be displayed.• b3 to b7: Use prohibited• b8: Turns on when a called screen on overlap window 3 is be displayed.• b9: Turns on when a called screen on overlap window 4 cannot be displayed.• b10: Turns on when a called screen on overlap window 5 cannot be displayed.• b11 to b15: Use prohibited

■Faulty Monitor Station signal (CC-Link IE TSN) (GS1280)

- b0 to b7: Stores the number of faulty monitor stations in the CC-Link IE TSN connection.
- b8 to b15: Use prohibited

■Faulty Station Information (CC-Link IE TSN) (GS1281 to GS1288)

Turn on the bit that corresponds to the faulty monitor station number in the CC-Link IE TSN network.

0: No error

1: Error

When the faulty station is restored from the error, the bit turns off.

The following shows the station numbers for each device.

Device	Station number corresponding to each bit															
	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
GS1281	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
GS1282	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16
GS1283	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32
GS1284	63	62	61	60	59	58	57	56	55	54	53	52	51	50	49	48
GS1285	79	78	77	76	75	74	73	72	71	70	69	68	67	66	65	64
GS1286	95	94	93	92	91	90	89	88	87	86	85	84	83	82	81	80
GS1287	111	110	109	108	107	106	105	104	103	102	101	100	99	98	97	96
GS1288	-	-	-	-	-	-	-	120	119	118	117	116	115	114	113	112

■CC-Link IE TSN Connection Status (GS1297)

Notifies whether the GOT is connectable to the network in CC-Link IE TSN Connection.

After checking the connection with the master station at the startup, the GOT is connectable to the network.

- 0 or 1: Not connectable because the connection has not been confirmed.
- 2: Connectable

■Number of Connected GOT Mobile Function Clients (GS1400)

Stores the number of clients connected to the server (GOT).

■GOT Mobile Function Connection Status (GS1401)

Notifies the connection status between the server (GOT) and each client.

GT37 supports b0 to b5.

- b0: Use prohibited
- b1: Turns on when client 1 connects to the server (GOT).
- b2: Turns on when client 2 connects to the server (GOT).
- b3: Turns on when client 3 connects to the server (GOT).
- b4: Turns on when client 4 connects to the server (GOT).
- b5: Turns on when client 5 connects to the server (GOT).
- b6: Turns on when client 6 connects to the server (GOT).
- b7: Turns on when client 7 connects to the server (GOT).
- b8: Turns on when client 8 connects to the server (GOT).
- b9: Turns on when client 9 connects to the server (GOT).
- b10: Turns on when client 10 connects to the server (GOT).
- b11: Turns on when client 11 connects to the server (GOT).
- b12: Turns on when client 12 connects to the server (GOT).
- b13: Turns on when client 13 connects to the server (GOT).
- b14: Turns on when client 14 connects to the server (GOT).
- b15: Turns on when client 15 connects to the server (GOT).

■Authorization Status Information (GS1460)

Notifies the information on the operation right for the GOT network interaction function.

This device operates on each GOT in the control group.

- b0: Turns on when the equipment obtains the operation right.
- b1: Turns on when the equipment displays a screen in which the authorization control is enabled.
- b2 to b15: Use prohibited

■Master GOT IP Address (GS1461 to GS1462)

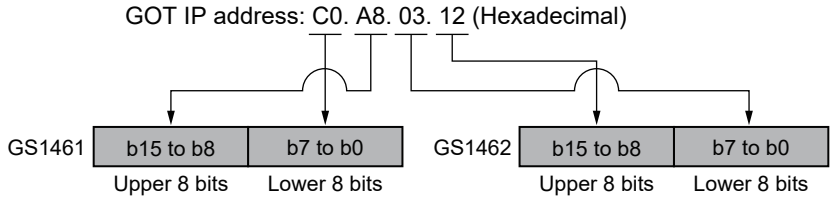
Store the IP address of the master GOT in hexadecimal when GS1460.b0 turns on.

Stores 0 when GS1460.b0 is off.

These devices operate on each GOT in the control group.

Ex.

When the IP address of the master GOT is 192.168.3.18 (decimal)



■Time Elapsed from Authorization Acquisition (GS1463)

Stores the time (second) elapsed since GS1460.b0 turned on.

If the time exceeds 65536 seconds, the value update stops.

Stores 0 when GS1460.b0 is off.

This device operates on each GOT in the control group.

■Authorization Guarantee Time (GS1464)

Stores the remaining authorization guarantee time (second) when GS1460.b0 is on.

Stores 0 when GS1460.b0 is off.

This device operates on each GOT in the control group.

■Authorization Management Information (GS1465)

Notifies the information on the operation right for the GOT network interaction function.

This device is activated on the master GOT.

- b0: Turns on when any equipment obtains the operation right.
- b1: Turns on when devices except the master GOT is prohibited from obtaining the operation right (when GS1796.b0 is on).
- b2: Turns on when all devices including the master GOT are prohibited from obtaining the operation right (when GS1796.b2 is on).
- b3 to b15: Use prohibited

■Authorized Equipment IP Address (GS1466, GS1467)

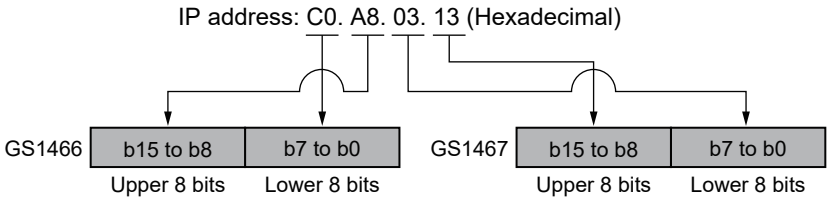
Store the IP address of the device with the operation right when GS1465.b0 turns on.

Stores 0 when GS1465.b0 is off.

These devices are activated on the master GOT.

Ex.

When the IP address of the device with the operation right is 192.168.3.19 (decimal)



■Authorized Equipment Type (GS1468)

Stores the type of the device with the operation right when GS1465.b0 turns on.

Stored value	Type
0	GOT
1	GT SoftGOT3000
2	GOT Mobile function client

Stores 0 when GS1465.b0 is off.

These devices are activated on the master GOT.

■Authorized Equipment ID Information (GS1469)

Stores the ID number of the device with the operation right when GS1465.b0 turns on.

The value to be stored varies depending on the device type.

Type	Value to be stored
GOT	GOT ID (1 to 32767)
GT SoftGOT3000	GT SoftGOT3000 module number (1 to 32767)
GOT Mobile function client	GOT Mobile function client number (1 to 15)

Stores 0 when GS1465.b0 is off.

These devices are activated on the master GOT.

■Authorization Use Time (GS1470)

Stores the time (second) elapsed since GS1465.b0 turned on.

If the time exceeds 65536 seconds, the value update stops.

Stores 0 when GS1465.b0 is off.

These devices are activated on the master GOT.

■GOT Ethernet Setting Change Status (GS1500)

Notifies the status of the GOT Ethernet setting change.

- b0: Turns on while the Ethernet setting is being changed.

When the Execute GOT Ethernet Setting Change signal (GS1901.b0) turns off, this bit also turns off.

- b1: Turns on when the Ethernet setting change has completed.
- b2: Turns on when changes are made in the Ethernet setting by using the GOT Ethernet Setting Change devices (GS1900 to GS1908).

Restart the GOT to apply the new Ethernet setting.

- b3 to b14: Use prohibited
- b15: Turns on when an error occurs during the Ethernet setting change.

For details on the GOT Ethernet Setting Change devices (GS1900 to GS1908), refer to the following.

☞ Page 3661 GOT Ethernet Setting Change (GS1900 to GS1908)

■VPN Connection Function Status Notification (GS2051)

Notifies the operating status of the VPN connection.

- b0: Turns on when connection is established between SiteManager and GateManager of the GOT.
- b1: Turns on when SiteManager is running.
- b2 to b15: Use prohibited

■MonitoredItem Cycle Time Current Value (GS2057)

Stores the current cycle time in milliseconds for the client connecting to the GOT's OPC UA server to update tags using the MonitoredItem service set.

The setting range is 0 to 65535.

If the value is 65536 or greater, 65535 is stored.

■MonitoredItem Cycle Time Minimum Value (GS2058)

Stores the minimum cycle time in milliseconds for the client connecting to the GOT's OPC UA server to update tags using the MonitoredItem service set.

The setting range is 0 to 65535.

If the value is 65536 or greater, 65535 is stored.

■MonitoredItem Cycle Time Maximum Value (GS2059)

Stores the maximum cycle time in milliseconds for the client connecting to the GOT's OPC UA server to update tags using the MonitoredItem service set.

The setting range is 0 to 65535.

If the value is 65536 or greater, 65535 is stored.

■OPC Server Function Status Notification (GS2060)

Notifies the startup status of the OPC server.

- b0: Turns on when the OPC server starts normally.
- b1 to b15: Use prohibited

■Web Browser Function Status Notification (GS2065)

Notifies the status of the web browser.

- b0 to b14: Use prohibited
- b15: Turns on when an error occurs during the web browser function operation and the function stops.

This can happen if the web browser function is used for a long time.

To use the web browser again, restart the GOT.

This signal remains on until the GOT is restarted.

■Web Camera/USB Converter Status Notification (GS2070)

Notifies the status of the web camera or USB converter.

- b1 to b14: Use prohibited
- b0: Turns on when the memory size required for connecting a web camera or USB converter reaches the upper limit.
- b1 to b15: Use prohibited

■Video Signal Input Status Notification (GS2071)

Notifies the status of video signal input.

- b0: Turns on when there is a video signal input to web camera channel 1.
- b1: Use prohibited
- b2 to b5: Turns on when there is a video signal input to network camera channels 1 to 4.
- b6 to b15: Use prohibited

■Video Signal Input Object Function Status Notification (GS2072)

Notifies the input status of the video signal when a video image is about to be displayed on the digital image display object.

- b0: Turns on if there is a video signal input to web camera channel 1 when a video image is about to be displayed on the digital image display object.
- b1: Use prohibited
- b2 to b5: Turns on when there is a video signal input to network camera channels 1 to 4 and a video image is about to be displayed on the digital image display object.
- b6 to b15: Use prohibited

■Network Camera Error Status Notification (CH1 to CH4) (GS2073 to GS2076)

If an error occurs when a network camera is used, the corresponding bit of the corresponding device turns on.

For example, if GS2073.b0 turns on, a network camera detection error has occurred on CH1.

Bit	Device				Description
	GS2073	GS2074	GS2075	GS2076	
b0	CH1	CH2	CH3	CH4	Network Camera Not Detected Error This signal turns on when the network camera cannot be detected at the specified IP address or through the UDP port.
b1	CH1	CH2	CH3	CH4	Network Camera Account Authentication Error This signal turns on when the network camera cannot be detected at the specified IP address or through the UDP port.
b3	CH1	CH2	CH3	CH4	Network Camera Setting Error This signal turns on when an error occurs in the network camera settings.
b4	CH1	CH2	CH3	CH4	Network Camera Connection Error This signal turns on when the connection to a network camera fails, or when nothing is received after the connection is established.
b5	CH1	CH2	CH3	CH4	Network Camera Profile Error This signal turns on when the H.264 compression profile set for the network camera is set to any option other than Baseline.
b6	CH1	CH2	CH3	CH4	Network Camera Media Profile Count Limit Error This signal turns on when the number of media profiles set for the network camera exceeds the limit and images are not displayed.

■Network Camera Video Reception Error (CH1 to CH4) (GS2077 to GS2080)

Stores the number of times invalid video was received the network camera.

Resets the value when RTP reception is restarted.

■Combination Invalid Error Status Notification (GS2085)

This bit turns on when the maximum number of video/personal computer image windows that can be displayed simultaneously is exceeded.

Bit	Input target image	Channel	Description
b0	Network camera	CH1	0: Other (enabled or unused) 1: Disabled
b1		CH2	
b2		CH3	
b3		CH4	
b4	Web camera	CH1	Fixed to 0
b6	Personal computer image	CH1	

■Destination Authentication Status Notification (CH1 to CH4) (GS2200 to GS2231)

Notifies the logon status of the destination authentication.

The bit shows the status for each channel and connected station for stations that are logged on by the destination authentication function.

1: Logon status

0: Logoff status

The specification of the network number is invalid, and only stations on the same network as the GOT are supported.

When the authentication is performed by specifying a host station, the logon status is notified if the station is a device that supports the destination authentication.

The bit information to be stored is as follows.

Device				Station number															
CH1	CH2	CH3	CH4	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
GS2200	GS2208	GS2216	GS2224	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0*1
GS2201	GS2209	GS2217	GS2225	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16
GS2202	GS2210	GS2218	GS2226	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32
GS2203	GS2211	GS2219	GS2227	63	62	61	60	59	58	57	56	55	54	53	52	51	50	49	48
GS2204	GS2212	GS2220	GS2228	79	78	77	76	75	74	73	72	71	70	69	68	67	66	65	64
GS2205	GS2213	GS2221	GS2229	95	94	93	92	91	90	89	88	87	86	85	84	83	82	81	80
GS2206	GS2214	GS2222	GS2230	111	110	109	108	107	106	105	104	103	102	101	100	99	98	97	96
GS2207	GS2215	GS2223	GS2231	—	—	—	—	—	—	—	120	119	118	117	116	115	114	113	112

*1 Indicates the master station depending on the connection type.
Status notification is disabled when the corresponding station is a station other than the GOT.

List of read devices

Device	Function	Reference	Model
GS384	Script Common Control	☞ Page 3631 Script Common Control (GS384)	GT37 SoftGOT3000
GS385	Script Monitoring Time	☞ Page 3631 Script Monitoring Time (GS385)	
GS386	Project/Screen Script Initial Operation	☞ Page 3631 Project/Screen Script Initial Operation (GS386)	
GS387	Object Script Common Control	☞ Page 3632 Object Script Common Control (GS387)	
GS388	Object Script Monitoring Time	☞ Page 3632 Object Script Monitoring Time (GS388)	
GS389	Object Script Initial Operation	☞ Page 3632 Object Script Initial Operation (GS389)	
GS390	File Operation Data Storage Order	☞ Page 3633 File Operation Data Storage Order (GS390)	
GS391	Use prohibited	—	—
GS392	Start GD Device for Script Error Info Notification	☞ Page 3633 Start GD Device for Script Error Info Notification (GS392)	GT37 SoftGOT3000
GS393	Use prohibited	—	—
GS394	Number of Script Error Info Outputs	☞ Page 3634 Number of Script Error Info Outputs (GS394)	GT37 SoftGOT3000
GS395	Script Error Info Output Common Control	☞ Page 3635 Script Error Info Output Common Control (GS395)	
GS396	Start GD Device for Script Event Notification	☞ Page 3635 Start GD Device for Script Event Notification (GS396)	
GS397	Use prohibited	—	—
GS398	Number of Script Event Outputs	☞ Page 3635 Number of Script Event Outputs (GS398)	GT37 SoftGOT3000
GS399	Script Event Output Common Control	☞ Page 3636 Script Event Output Common Control (GS399)	
GS400	Gateway Common Information	☞ Page 3636 Gateway Common Control (GS400)	GT37 SoftGOT3000
GS401	File Transfer Control	☞ Page 3636 File Transfer Control (GS401)	
GS402	File Transfer Timeout Time	☞ Page 3637 File Transfer Timeout Time (GS402)	
GS403	Use prohibited	—	—
GS404	Maximum Number of Connected FTP Clients	☞ Page 3637 Maximum Number of Connected FTP Clients (GS404)	GT37 SoftGOT3000
GS405	GOT Information Output Common Control	☞ Page 3637 GOT Information Output Common Control (GS405)	GT37 SoftGOT3000
GS406	Serial No. Output Destination	☞ Page 3637 Serial No. Output Destination (GS406)	
GS407	Use prohibited	—	—
GS408	Ethernet Port 1 MAC Address Destination	☞ Page 3637 Ethernet Port 1 MAC Address Destination (GS408)	GT37 SoftGOT3000
GS409	Use prohibited	—	—
GS410	Ethernet Port 2 MAC Address Destination	☞ Page 3637 Ethernet Port 2 MAC Address Destination (GS410)	GT37 SoftGOT3000
GS411 to GS422	Use prohibited	—	—

Device	Function	Reference	Model
GS423	Current Directory Designation when Logging in to the FTP Server Function	☞ Page 3637 Current Directory Designation when Logging in to the FTP Server Function (GS423)	GT37 SoftGOT3000
GS424 to GS431	Use prohibited	—	—
GS432	Start GD Device for Object Script Error Info Notification	☞ Page 3637 Start GD Device for Object Script Error Info Notification (GS432)	GT37 SoftGOT3000
GS433	Use prohibited	—	—
GS434	Number of Object Script Error Info Outputs	☞ Page 3637 Number of Object Script Error Info Outputs (GS434)	GT37 SoftGOT3000
GS435	Object Script Error Info Output Common Control	☞ Page 3638 Object Script Error Info Output Common Control (GS435)	
GS436	Start GD Device for Object Script Event Notification	☞ Page 3638 Start GD Device for Object Script Event Notification (GS436)	
GS437	Use prohibited	—	—
GS438	Number of Object Script Event Outputs	☞ Page 3639 Number of Object Script Event Outputs (GS438)	GT37 SoftGOT3000
GS439	Object Script Event Output Common Control	☞ Page 3639 Object Script Event Output Common Control (GS439)	
GS440 to GS446	Use prohibited	—	—
GS447	Exclusive Authorization Control	☞ Page 3639 Exclusive Authorization Control (GS447)	GT37 SoftGOT3000
GS448	Use prohibited	—	—
GS449	PC Image Display Common Control	☞ Page 3640 PC Image Display Common Control (GS449)	GT37 SoftGOT3000
GS450	Monitor Common Control	☞ Page 3640 Monitor Common Control (GS450)	GT37 SoftGOT3000
GS451	Auto Screen Save Time	☞ Page 3641 Auto Screen Save Time (GS451)	GT37 SoftGOT3000
GS452 GS453	Use prohibited	—	—
GS454	Ethernet Port 1 Access Control, Ethernet Port 2 Access Control	☞ Page 3641 Ethernet Port 1 Access Control, Ethernet Port 2 Access Control (GS454)	GT37 SoftGOT3000
GS455	Intensity Control	☞ Page 3642 Intensity Control (GS455)	
GS456	Text Code Format Control	☞ Page 3643 Text Code Format Control (GS456)	GT37 SoftGOT3000
GS457	Pass-through Transparent Stop Control	☞ Page 3643 Pass-through Transparent Stop Control (GS457)	GT37 SoftGOT3000

Device	Function	Reference	Model
GS458 to GS459	Use prohibited	—	—
GS460	Conversion Start Indication	☞ Page 3643 Conversion Start Indication (GS460)	GT37 SoftGOT3000
GS461	Number of Conversion Devices	☞ Page 3644 Number of Conversion Devices (GS461)	
GS462	Conversion Source Head Device No.	☞ Page 3644 Conversion Source Head Device No. (GS462)	
GS463	Conversion Destination Head Device No.	☞ Page 3644 Conversion Destination Head Device No. (GS463)	
GS464	Storage Error Value	☞ Page 3644 Storage Error Value (GS464)	
GS465	Remote Personal Computer Operation (Ethernet) Common Control	☞ Page 3644 Remote Personal Computer Operation (Ethernet) Common Control (GS465)	GT37 SoftGOT3000
GS466	Unit of Drive Free Space	☞ Page 3645 Unit of Drive Free Space (GS466)	GT37 SoftGOT3000
GS467	Monitor Common Control 2	☞ Page 3645 Monitor Common Control 2 (GS467)	
GS468	Kanji Region Control	☞ Page 3645 Kanji Region Control (GS468)	
GS469 to GS492	Use prohibited	—	—
GS493 to GS498	SoftGOT and Other Applications Start Signal	☞ Page 3646 SoftGOT and Other Applications Start Signal (GS493 to GS498)	GT37 SoftGOT3000
GS499	Use prohibited	—	—
GS500	GT SoftGOT3000 Common Control	☞ Page 3646 GT SoftGOT3000 Common Control (GS500)	GT37 SoftGOT3000
GS501 GS502	GT SoftGOT3000 Application Start Signal	☞ Page 3646 GT SoftGOT3000 Application Start Signal (GS501, GS502)	
GS503	GT SoftGOT3000 Full Screen Size (Width)	☞ Page 3646 GT SoftGOT3000 Full Screen Size (Width) (GS503)	
GS504	GT SoftGOT3000 Full Screen Size (Height)	☞ Page 3646 GT SoftGOT3000 Full Screen Size (Height) (GS504)	
GS505 to GS507	GT SoftGOT3000 Advanced Application Start Signal	☞ Page 3646 GT SoftGOT3000 Advanced Application Start Signal (GS505 to GS507)	
GS508 to GS509	Use prohibited	—	—
GS510	Device Data Transfer Information	☞ Page 3647 Device Data Transfer Information (GS510)	GT37 SoftGOT3000
GS511	Use prohibited	—	—
GS512	Time Change Information	☞ Page 3647 Time Change Information (GS512)	GT37 SoftGOT3000
GS513 to GS516	Changed Time	☞ Page 3647 Changed Time (GS513 to GS516)	
GS517	External I/O Function Notification/External I/O Control Function	☞ Page 3647 External I/O Function Notification/External I/O Control Function (GS517)	GT37 SoftGOT3000
GS518	Sound Output Common Control	☞ Page 3647 Sound Output Common Control (GS518)	GT37 SoftGOT3000
GS519	Use prohibited	—	—

Device	Function	Reference	Model
GS520	Buffering And File Access Control	☞ Page 3647 Buffering And File Access Control (GS520)	GT37 SoftGOT3000
GS521	Trigger Backup Data Send Delay	☞ Page 3648 Trigger Backup Data Send Delay (GS521)	
GS522	Special Control During Specific Function Execution	☞ Page 3648 Special Control During Specific Function Execution (GS522)	
GS523	Document Display Common Control	☞ Page 3649 Document Display Common Control (GS523)	GT37 SoftGOT3000
GS524, GS525	Use prohibited	—	—
GS526	Delay Hard Copy Execution	☞ Page 3649 Delay Hard Copy Execution (GS526)	GT37 SoftGOT3000
GS527 to GS529	Use prohibited	—	—
GS530	Network No. For Monitor Station Disconnected (CH1)	☞ Page 3649 Network No. For Monitor Station Disconnected (CH1 to CH4) (GS530, GS540, GS550, GS560)	GT37 SoftGOT3000
GS531 to GS538	Monitor Station Disconnection (CH1)	☞ Page 3650 Monitor Station Disconnection (CH1 to CH4) (GS531 to GS538, GS541 to GS548, GS551 to GS558, GS561 to GS568)	
GS539	Channel Shutdown Control Information (CH1)	☞ Page 3651 Channel Shutdown Control Information (CH1 to CH4) (GS539, GS549, GS559, GS569)	
GS540	Network No. For Monitor Station Disconnected (CH2)	☞ Page 3649 Network No. For Monitor Station Disconnected (CH1 to CH4) (GS530, GS540, GS550, GS560)	
GS541 to GS548	Monitor Station Disconnection (CH2)	☞ Page 3650 Monitor Station Disconnection (CH1 to CH4) (GS531 to GS538, GS541 to GS548, GS551 to GS558, GS561 to GS568)	
GS549	Channel Shutdown Control Information (CH2)	☞ Page 3651 Channel Shutdown Control Information (CH1 to CH4) (GS539, GS549, GS559, GS569)	
GS550	Network No. For Monitor Station Disconnected (CH3)	☞ Page 3649 Network No. For Monitor Station Disconnected (CH1 to CH4) (GS530, GS540, GS550, GS560)	
GS551 to GS558	Monitor Station Disconnection (CH3)	☞ Page 3650 Monitor Station Disconnection (CH1 to CH4) (GS531 to GS538, GS541 to GS548, GS551 to GS558, GS561 to GS568)	
GS559	Channel Shutdown Control Information (CH3)	☞ Page 3651 Channel Shutdown Control Information (CH1 to CH4) (GS539, GS549, GS559, GS569)	
GS560	Network No. For Monitor Station Disconnected (CH4)	☞ Page 3649 Network No. For Monitor Station Disconnected (CH1 to CH4) (GS530, GS540, GS550, GS560)	
GS561 to GS568	Monitor Station Disconnection (CH4)	☞ Page 3650 Monitor Station Disconnection (CH1 to CH4) (GS531 to GS538, GS541 to GS548, GS551 to GS558, GS561 to GS568)	
GS569	Channel Shutdown Control Information (CH4)	☞ Page 3651 Channel Shutdown Control Information (CH1 to CH4) (GS539, GS549, GS559, GS569)	
GS570 to GS576	MODBUS Communication Control Function (Common)	☞ Page 3652 MODBUS Communication Control Function (GS570 to GS576, GS590 to GS596, GS597 to GS603, GS604 to GS610, GS611 to GS617)	GT37 SoftGOT3000
GS577 to GS578	Use prohibited	—	—
GS579	MODBUS Communication Control Function	☞ Page 3653 Channel Setting of MODBUS Communication Control Function (GS579)	GT37 SoftGOT3000

Device	Function	Reference	Model
GS580	Microcomputer Connection Extended Setting (CH1)	☞ Page 3653 Microcomputer Connection Extended Setting (CH1 to CH4) (GS580 to GS583)	GT37 SoftGOT3000
GS581	Microcomputer Connection Extended Setting (CH2)		
GS582	Microcomputer Connection Extended Setting (CH3)		
GS583	Microcomputer Connection Extended Setting (CH4)		
GS584 to GS619	Use prohibited	—	—
GS620	CC-Link IE TSN Control	☞ Page 3654 CC-Link IE TSN Control (GS620)	GT37 SoftGOT3000
GS621	Operator Management Common Control	☞ Page 3654 Operator Management Common Control (GS621)	GT37 SoftGOT3000
GS622	System Screen Operation Restriction	☞ Page 3654 System Screen Operation Restriction (GS622)	GT37 SoftGOT3000
GS623	Specify Drive to Prohibit Write Operation (System Screen)	☞ Page 3654 Specify Drive to Prohibit Write Operation (System Screen) (GS623)	
GS624	Specify Drive to Hide (System Screen)	☞ Page 3655 Specify Drive to Hide (System Screen) (GS624)	
GS625 to GS629	Use prohibited	—	—
GS630	Touch Position Color Acquisition Ready signal	☞ Page 3655 Touch Position Color Acquisition Ready Signal (GS630)	GT37 SoftGOT3000
GS631	Use prohibited	—	—
GS632	Date Format Control	☞ Page 3655 Date Format Control (GS632)	GT37 SoftGOT3000
GS633	Specify Notification While Monitoring Stopped	☞ Page 3655 Specify Notification While Monitoring Stopped (GS633)	GT37 SoftGOT3000
GS634	Specify Screen No. to be Displayed While Monitoring Stopped	☞ Page 3655 Specify Screen No. to be Displayed While Monitoring Stopped (GS634)	
GS635	Base Screen Size Expansion Common Control	☞ Page 3655 Base Screen Size Expansion Common Control (GS635)	GT37 SoftGOT3000
GS636	Specify Expanded Base Screen Position (X Coordinate)	☞ Page 3656 Specify Expanded Base Screen Position (GS636, GS637)	
GS637	Specify Expanded Base Screen Position (Y Coordinate)		
GS638	Use prohibited	—	—
GS639	GOT Reset Control	☞ Page 3656 GOT Reset Control (GS639)	GT37 SoftGOT3000
GS1792	VNC Server Function Control	☞ Page 3657 Authorization Management Control (GS1796)	GT37 SoftGOT3000
GS1793	Use prohibited	—	—
GS1794	Gesture Common Control	☞ Page 3657 Gesture Common Control (GS1794)	GT37 SoftGOT3000

Device	Function	Reference	Model
GS1795	Authorization Status Control	☞ Page 3657 Authorization Status Control (GS1795)	GT37 SoftGOT3000
GS1796	Authorization Management Control	☞ Page 3657 Authorization Management Control (GS1796)	
GS1797	Use prohibited	—	—
GS1798	VNC Server GOT Processing Balance Control	☞ Page 3657 VNC Server GOT Processing Balance Control (GS1798)	GT37 SoftGOT3000
GS1799	Use prohibited	—	—
GS1800	Recipe Control	☞ Page 3658 Recipe Control (GS1800)	GT37 SoftGOT3000
GS1801	Recipe Special Control Action	☞ Page 3658 Recipe Special Control Action (GS1801)	
GS1802	Recipe Special Control Target Type	☞ Page 3658 Recipe Special Control Target Type (GS1802)	
GS1803	Recipe Special Control Start GD Device No.	☞ Page 3658 Recipe Special Control Start GD Device No. (GS1803)	
GS1804	Use prohibited	—	—
GS1805	Recipe Special Control Recipe No.	☞ Page 3658 Recipe Special Control Recipe No. (GS1805)	GT37 SoftGOT3000
GS1806	Recipe Special Control Record No.	☞ Page 3658 Recipe Special Control Record No. (GS1806)	
GS1807	Recipe Special Control Row No.	☞ Page 3658 Recipe Special Control Row No. (GS1807)	
GS1808	Recipe Special Control Points	☞ Page 3658 Recipe Special Control Points (GS1808)	
GS1809	Recipe Display (Record List) Control	☞ Page 3658 Recipe Display (Record List) Control (GS1809)	GT37 SoftGOT3000
GS1810	Special Function Switch Special Control	☞ Page 3659 Special Function Switch Special Control (GS1810)	GT37 SoftGOT3000
GS1811	iQSS Utility Special Control Start GD Device No. Specification	☞ Page 3659 iQSS Utility Special Control Start GD Device No. Specification (GS1811)	
GS1812	iQSS Utility Special Control Number of Parameters	☞ Page 3659 iQSS Utility Special Control Number of Parameters (GS1812)	
GS1813 to GS1819	Use prohibited	—	—
GS1820	SD Card Access Switch Status Control	☞ Page 3660 SD Card Access Switch Status Control (GS1820)	GT37 SoftGOT3000
GS1821 to GS1823	Use prohibited	—	—
GS1824	USB Drive Common Control	☞ Page 3660 USB Drive Common Control (GS1824)	GT37 SoftGOT3000
GS1825 to GS1879	Use prohibited	—	—
GS1880	Label Name Resolution Control	☞ Page 3660 Label Name Resolution Control (GS1880)	GT37 SoftGOT3000
GS1881 to GS1891	Use prohibited	—	—

Device	Function	Reference	Model
GS1892	GOT Mobile File Operation Security Level	☞ Page 3660 GOT Mobile File Operation Security Level (GS1892)	GT37 SoftGOT3000
GS1893 to GS1895	Use prohibited	—	—
GS1896	GOT Mobile Common Control	☞ Page 3660 GOT Mobile Common Control (GS1896)	GT37 SoftGOT3000
GS1897 to GS1898	Use prohibited	—	—
GS1899	Time to Force Mobile Momentary Switch OFF	☞ Page 3660 Time to Force Mobile Momentary Switch OFF (GS1899)	GT37 SoftGOT3000
GS1900 to GS1908	GOT Ethernet Setting Change	☞ Page 3661 GOT Ethernet Setting Change (GS1900 to GS1908)	GT37 SoftGOT3000
GS1909 to GS1997	Use prohibited	—	—
GS1998	Full-screen Display Control signal	☞ Page 3665 Full-screen Display Control signal (GS1998)	GT37 SoftGOT3000
GS1999 to GS2006	Video Window 1 Extended Control Signal	☞ Page 3666 Video Window 1 to 4 and PC Image Extended Control signal (GS1999 to GS2006, GS2009 to GS2016, GS2019 to GS2026, GS2029 to GS2036, GS2039 to GS2045)	GT37 SoftGOT3000
GS2007, GS2008	Use prohibited	—	—
GS2009 to GS2016	Video Window 2 Extended Control Signal	☞ Page 3666 Video Window 1 to 4 and PC Image Extended Control signal (GS1999 to GS2006, GS2009 to GS2016, GS2019 to GS2026, GS2029 to GS2036, GS2039 to GS2045)	GT37 SoftGOT3000
GS2017, GS2018	Use prohibited	—	—
GS2019 to GS2026	Video Window 3 Extended Control Signal	☞ Page 3666 Video Window 1 to 4 and PC Image Extended Control signal (GS1999 to GS2006, GS2009 to GS2016, GS2019 to GS2026, GS2029 to GS2036, GS2039 to GS2045)	GT37 SoftGOT3000
GS2027, GS2028	Use prohibited	—	—
GS2029 to GS2036	Video Window 4 Extended Control Signal	☞ Page 3666 Video Window 1 to 4 and PC Image Extended Control signal (GS1999 to GS2006, GS2009 to GS2016, GS2019 to GS2026, GS2029 to GS2036, GS2039 to GS2045)	GT37 SoftGOT3000
GS2037, GS2038	Use prohibited	—	—
GS2039 to GS2045	PC Image Extended Control signal	☞ Page 3666 Video Window 1 to 4 and PC Image Extended Control signal (GS1999 to GS2006, GS2009 to GS2016, GS2019 to GS2026, GS2029 to GS2036, GS2039 to GS2045)	GT37 SoftGOT3000

Device	Function	Reference	Model
GS2046, GS2047	Use prohibited	—	—
GS2560 to GS2061	Use prohibited	—	—
GS2562	Web Browser Control	☞ Page 3667 Web Browser Control (GS2562)	GT37 SoftGOT3000
GS2563	OPC Server Function Control	☞ Page 3667 OPC Server Function Control (GS2563)	GT37 SoftGOT3000
GS2564	Special Control Function 2 During Specific Application Execution	☞ Page 3667 Special Control Function 2 During Specific Application Execution (GS2564)	GT37 SoftGOT3000
GS2565	VPN Operation Status Control	☞ Page 3667 VPN Operation Status Control (GS2565)	GT37 SoftGOT3000
GS2566	Use prohibited	—	—
GS2567	Transparent End Time	☞ Page 3667 Transparent End Time (GS2567)	GT37 SoftGOT3000
GS2568 to GS2574	Use prohibited	—	—
GS2575	FTP Server Function Extend Command Control	☞ Page 3667 FTP Server Function Extend Command Control (GS2575)	GT37 SoftGOT3000
GS2576 to GS3072	Use prohibited	—	—

Read device (GS384 to GS639)

■Script Common Control (GS384)

The following script types are supported: project script, screen script, and script part.

Notifies the information common to project scripts and screen scripts.

• b0: When this bit is turned on, the script error records are cleared as shown below.

GS14.b0, b7, b8, and b12 store 0.

GS15 stores -1.

GS16 to GS47 store 0.

• b1: When this bit is turned on, the project script or screen script aborted due to an error is re-executed.

• b2 to b15: Use prohibited

For the precautions on the script error, refer to the following.

☞ Page 2431 GOT internal device

■Script Monitoring Time (GS385)

The following script types are supported: project script, screen script, and script part.

Specify the monitoring time of a project script, screen script, or script of a script parts object in seconds.

If a script does not end after the lapse of the timeout period, the script processing is aborted.

The setting range is [1] (second) to [300] (seconds).

If an invalid value is specified, 10 seconds are assumed.

■Project/Screen Script Initial Operation (GS386)

Set whether to run a project script, screen script, or script of a script parts object upon screen switching or other applicable processes.

• When GS386 stores 0, the script runs.

• When GS386 stores a nonzero value, the script does not run.

This setting is applied to the project scripts, screen scripts, and script parts where the following trigger types are set.

• [Rise]:

When the trigger device is on, the script runs upon screen switching or other applicable processes.

• [Fall]:

When the trigger device is off, the script runs upon screen switching or other applicable processes.

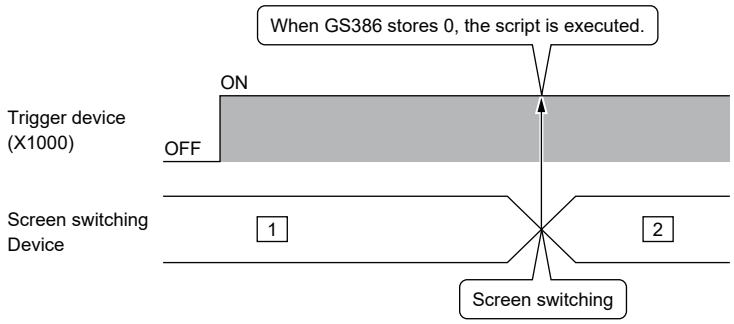
• [Rise/Fall]:

When the trigger device is on or off, the script runs upon screen switching or other applicable processes.

Ex.

When a screen script ([Trigger Type]: [Rise], [Trigger Device]: X1000) is set for base screen 2

After base screen 1 is switched to base screen 2, if the trigger device (X1000) turns on, the screen script set for base screen 2 is executed.



The following processes trigger applicable scripts to run.

Project script

• When the GOT is powered on or when the GOT returns from offline

Screen script

• Screen switching

The script set for the destination screen runs upon screen switching.

If [Perform script initial operation (screen/object) only when switching screens] is deselected in the [Script] dialog, each of the following processes triggers the relevant script to run.

☞ Page 2410 [Option] tab

- Security switching
- Language switching
- System language switching
- Station number switching

When the station number switching devices are set by screen type, the scripts that are set for the screens of the target screen type are executed.

- Offset switching

Only the screen scripts are executed.

On a screen having a script setting, when offset switching occurs in any device of the screen, the script is executed.

- Buffer memory unit number switching
- When object script "redraw_screen()" is executed

■Object Script Common Control (GS387)

Notifies the information common to object scripts.

- b0: When this bit is turned on, the object script error records are cleared as shown below.

GS80.b0, b7, b8, and b12 store 0.

GS81 stores -1.

GS82 to GS113 store 0.

- b1: When this bit is turned on, the object script aborted due to an error is re-executed.
- b2 to b15: Use prohibited

For the precautions on the object script error, refer to the following.

☞ Page 2431 GOT internal device

■Object Script Monitoring Time (GS388)

Specify the monitoring time of an object script in seconds.

If a script does not end after the lapse of the timeout period, the script processing is aborted.

The setting range is [1] (second) to [300] (seconds).

If an invalid value is specified, 10 seconds are assumed.

■Object Script Initial Operation (GS389)

Set whether to run an object script upon screen switching or other applicable processes.

- When GS389 stores 0, the object script runs.
- When GS389 stores a nonzero value, the object script does not run.

This setting is applied to the object scripts where the following trigger types are set.

- [Rise]:

When the trigger device is on, the script runs upon screen switching or other applicable processes.

- [Fall]:

When the trigger device is off, the script runs upon screen switching or other applicable processes.

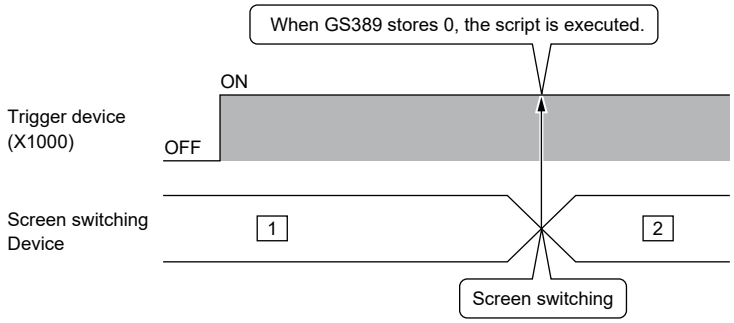
- [Rise/Fall]:

When the trigger device is on or off, the script runs upon screen switching or other applicable processes.

Ex.

When an object script ([Trigger Type]: [Rise], [Trigger Device]: X1000) is set for a switch on base screen 2

After base screen 1 is switched to base screen 2, if the trigger device (X1000) turns on, the object script of the switch on base screen 2 is executed.



The following processes trigger applicable scripts to run.

- Screen switching

The script set for the destination screen runs upon screen switching.

If [Perform script initial operation (screen/object) only when switching screens] is deselected in the [Script] dialog, each of the following processes triggers the relevant script to run.

☞ Page 2410 [Option] tab

- Security switching
- Language switching
- System language switching
- Station number switching

When the station number switching devices are set by screen type, the scripts that are set for the screens of the target screen type are executed.

- Buffer memory unit number switching
- When object script "redraw_screen()" is executed

■File Operation Data Storage Order (GS390)

The following script types are supported: project script, screen script, and script part.

Select the order in which data is stored when using the file_read or file_write function in a script.

[Low-->High]: Stores data from the lower-order bytes.

[High-->Low]: Stores data from the higher-order bytes.

Alternatively, you can configure the data storage order setting on GT Designer3.

This setting becomes invalid when GS390 stores 1 or 2.

The following shows examples of settings.

- When GS390 stores 0, data is stored in the order specified on GT Designer3.
- When GS390 stores 1, data is stored from the lower-order bytes.
- When GS390 stores 2, data is stored from the higher-order bytes.
- When GS390 stores 3 or more, data is stored in the order specified on GT Designer3.

■Start GD Device for Script Error Info Notification (GS392)

The following script types are supported: project script, screen script, and script part.

Specify the start device number of the GD devices to store error records.

Data type: Unsigned binary

■Number of Script Error Info Outputs (GS394)

The following script types are supported: project script, screen script, and script part.

Specify the maximum number of error records.

Data type: Unsigned binary

The setting range is 0 to 5000.

If the device stores 0, no error record will be stored.

If the device stores 5001 or more, up to 5000 records will be stored.

GS395.b1 specifies the operation to be performed when the number of errors has exceeded the maximum number of error records.

The following shows an example of how an error record is stored in eight word devices starting from GD1000.

Storage device	Item	Description
GD1000	Error code	Error code of an error. For the error details and corrective actions, refer to the following. ☞ Page 2442 List of script execution error codes
GD1001	Script type	Number that shows a script type. The device stores any of the following values according to the script type. • 1: Project script • 2: Screen script (set for a base screen) • 3: Screen script (set for a window screen) • 4: Script part
GD1002	Screen number	Number of the screen for which the script is set. The device stores 0 for a project script.
GD1003	Script number or object ID	The data differs according to the script type. • For project scripts and screen scripts: script number • For script parts: object ID
GD1004	Execution order number	Script execution order number specified on GT Designer3 The device stores any of the following values according to the script type. • For project scripts: 1 to 256 • For screen scripts: 1 to 256 (per screen) • For script parts: 1 to 16 (per script parts object)
GD1005	Screen type	Type of the screen for which the script is set. The device stores any of the following values according to the screen type. • 200: Base screen • 210: Superimpose window 1 • 220: Superimpose window 2 • 310: Overlap window 1 • 320: Overlap window 2 • 330: Overlap window 3 • 340: Overlap window 4 • 350: Overlap window 5 If the script is set for a called screen, the device stores a value by adding a number to the number showing the calling screen type. • When a base screen is called, 1 is added. • When a window screen is called, 2 is added. Example) When a window screen is called from overlap window 3 330 + 2 = 332 The device stores 0 for a project script.
GD1006	Number of the displayed base screen	Number of the base screen that is displayed when the script runs.
GD1007	Use prohibited	The device stores 0.

■Script Error Info Output Common Control (GS395)

The following script types are supported: project script, screen script, and script part.

- b0: When this bit is turned on, storing error records starts.

When this bit is turned off, storing error records ends.

- b1: Specifies the operation to be performed when the number of errors has exceeded the maximum number of error records specified with GS394.

When this bit is turned on, storing error records stops.

When this bit is turned off, storing error records continues by overwriting the oldest record.

- b2 to b7: Use prohibited
- b8: When this bit is turned on, the project script error records are not stored.
- b9: When this bit is turned on, the screen script error records are not stored.
- b10: When this bit is turned on, the script error records of script parts objects are not stored.
- b11: When this bit is turned on, the records of warnings that do not abort a script are not stored.
- b12 to b15: Use prohibited

■Start GD Device for Script Event Notification (GS396)

The following script types are supported: project script, screen script, and script part.

Specify the start device number of the GD devices to store script execution records.

Data type: Unsigned binary

■Number of Script Event Outputs (GS398)

The following script types are supported: project script, screen script, and script part.

Specify the maximum number of script execution records.

Data type: Unsigned binary

The setting range is 0 to 5000.

If the device stores 0, no script execution record will be stored.

If the device stores 5001 or more, up to 5000 records will be stored.

GS399.b1 specifies the operation to be performed when the number of the executed scripts has exceeded the maximum number of script execution records.

The following shows an example of how a script execution record is stored in eight word devices starting from GD1000.

Storage device	Item	Description
GD1000	Script type	Number that shows a script type. The device stores any of the following values according to the script type. • 1: Project script • 2: Screen script (set for a base screen) • 3: Screen script (set for a window screen) • 4: Script part
GD1001	Screen number	Number of the screen for which the script is set. The device stores 0 for a project script.
GD1002	Script number or object ID	The data differs according to the script type. • For project scripts and screen scripts: script number • For script parts: object ID
GD1003	Execution order number	Script execution order number specified on GT Designer3 The device stores any of the following values according to the script type. • For project scripts: 1 to 256 • For screen scripts: 1 to 256 (per screen) • For script parts: 1 to 16 (per script parts object)

Storage device	Item	Description
GD1004	Screen type	Type of the screen for which the script is set. The device stores any of the following values according to the screen type. • 200: Base screen • 210: Superimpose window 1 • 220: Superimpose window 2 • 310: Overlap window 1 • 320: Overlap window 2 • 330: Overlap window 3 • 340: Overlap window 4 • 350: Overlap window 5 If the script is set for a called screen, the device stores a value by adding a number to the number showing the calling screen type. • When a base screen is called, 1 is added. • When a window screen is called, 2 is added. Example) When a window screen is called from overlap window 3 330 + 2 = 332 The device stores 0 for a project script.
GD1005	Number of the displayed base screen	Number of the base screen that is displayed when the script runs.
GD1006	Use prohibited	The device stores 0.
GD1007	Use prohibited	The device stores 0.

■Script Event Output Common Control (GS399)

The following script types are supported: project script, screen script, and script part.

• b0: When this bit is turned on, storing script execution records starts.

When this bit is turned off, storing script execution records ends.

• b1: Specifies the operation to be performed when the number of executed scripts has exceeded the maximum number of script execution records specified with GS398.

When this bit is turned on, storing script execution records stops.

When this bit is turned off, storing script execution records continues by overwriting the oldest record.

• b2 to b7: Use prohibited

• b8: When this bit is turned on, the project script execution records are not stored.

• b9: When this bit is turned on, the screen script execution records are not stored.

• b10: When this bit is turned on, the script execution records of script parts objects are not stored.

• b11 to b15: Use prohibited

■Gateway Common Control (GS400)

Controls the FTP server function.

b0 to b1: Use prohibited

b2: When this bit is turned on, all FTP clients connected to the FTP server are forcibly disconnected.

b3 to b7: Use prohibited

b8: When this bit is turned on, binary files (*.G3□) (excluding G3, G3D, and G3G) become readable from all the FTP clients that are connected to the FTP server.

b9 and b10: Use prohibited

b11: When this bit is turned on, the error occurring in the mail send function is cleared. (GS200.b11 and GS201 to GS206 are cleared.)

b12 and b13: Use prohibited

b14: When this bit is turned on, the error occurring in the server function is cleared. (GS200.b14 and GS210 to GS216 are cleared.)

b15: When this bit is turned on, the error occurring in the client function is cleared. (GS200.b15 and GS220 to GS226 are cleared.)

■File Transfer Control (GS401)

b0: When this bit is turned on, the error code stored in the following device is cleared or the following signals are turned off.

• File Transfer Error No. (GS989)

• Warning signal (GS990.b14)

• File Transfer Error signal (GS990.b15)

b1 to b15: Use prohibited

■File Transfer Timeout Time (GS402)

Set the timeout period for FTP communication in units of seconds.

If a script does not end after the lapse of the timeout period, the script processing is aborted.

The setting range is [1] (second) to [300] (seconds).

If an invalid value is specified, 3 seconds are assumed.

■Maximum Number of Connected FTP Clients (GS404)

This GS device is enabled only when 1 is specified for [Simultaneous Client Connection].

Specify the number of FTP clients connectable to the FTP server.

The setting range is 1 to 4.

If an invalid value is specified, 1 is assumed.

Changing the number of connectable FTP clients does not affect the already-connected FTP clients.

■GOT Information Output Common Control (GS405)

• b0: When this bit is turned on, the GOT serial number is output to the devices specified with GS406.

If 10 word devices cannot be reserved, the output is not executed.

• b1: When this bit is turned on, the MAC address of Ethernet port 1 is output to the devices specified with GS408.

If 3 word devices cannot be reserved, the output is not executed.

• b2: When this bit is turned on, the MAC address of Ethernet port 2 is output to the devices specified with GS410.

If 3 word devices cannot be reserved, the output is not executed.

• b3 to b15: Use prohibited

■Serial No. Output Destination (GS406)

Specify the start device number of the GOT data registers (GD) to store the GOT serial number.

Ten GD devices, starting from the specified device, are used to store the GOT serial number.

■Ethernet Port 1 MAC Address Destination (GS408)

Specify the start device number of the GOT data registers (GD) to store the MAC address of Ethernet port 1.

Three GD devices, starting from the specified device, are used to store the MAC address.

■Ethernet Port 2 MAC Address Destination (GS410)

Specify the start device number of the GOT data registers (GD) to store the MAC address of Ethernet port 2.

Three GD devices, starting from the specified device, are used to store the MAC address.

■Current Directory Designation when Logging in to the FTP Server Function (GS423)

Specify the current directory immediately after logging in to the FTP server.

• b0 to b9: Use prohibited

• b10: When this bit is turned on, drive V is specified as the current directory.

• b11 to b15: Use prohibited

■Start GD Device for Object Script Error Info Notification (GS432)

Specify the start device number of the GD devices to store error records.

Data type: Unsigned binary

■Number of Object Script Error Info Outputs (GS434)

Specify the maximum number of error records.

Data type: Unsigned binary

The setting range is 0 to 5000.

If the device stores 0, no error record will be stored.

If the device stores 5001 or more, up to 5000 records will be stored.

GS435.b1 specifies the operation to be performed when the number of errors has exceeded the maximum number of error records.

The following shows an example of how an error record is stored in eight word devices starting from GD1000.

Storage device	Item	Description
GD1000	Error code	Error code of an error. For the error details and corrective actions, refer to the following. ☞ Page 2492 List of error codes during script execution (object script)

Storage device	Item	Description
GD1001	Script type	Number that shows a script type. The device stores any of the following values according to the script type. • 10: Display object script or switch object script • 11: Input object script
GD1002	Screen number	Number of the screen where the object is placed.
GD1003	Object ID	ID of the object where a script error has occurred.
GD1004	Use prohibited	The device stores 0.
GD1005	Screen type	Type of the screen where the object is placed. The device stores any of the following values according to the screen type. • 200: Base screen • 210: Superimpose window 1 • 220: Superimpose window 2 • 310: Overlap window 1 • 320: Overlap window 2 • 330: Overlap window 3 • 340: Overlap window 4 • 350: Overlap window 5 • 400: User-created key window • 500: Dialog window substituted for a system message If the script is set for a called screen, the device stores a value by adding a number to the number showing the calling screen type. • When a base screen is called, 1 is added. • When a window screen is called, 2 is added. Example) When a window screen is called from overlap window 3 330 + 2 = 332
GD1006	Number of the displayed base screen	Number of the base screen that is displayed when the script runs.
GD1007	Use prohibited	The device stores 0.

■Object Script Error Info Output Common Control (GS435)

• b0: When this bit is turned on, storing error records starts.

When this bit is turned off, storing error records ends.

• b1: Specifies the operation to be performed when the number of errors has exceeded the maximum number of error records specified with GS434.

When this bit is turned on, storing error records stops.

When this bit is turned off, storing error records continues by overwriting the oldest record.

• b2 to b10: Use prohibited

• b11: When this bit is turned on, the records of warnings that do not abort a script are not stored.

• b12 to b15: Use prohibited

■Start GD Device for Object Script Event Notification (GS436)

Specify the start device number of the GD devices to store script execution records.

Data type: Unsigned binary

■Number of Object Script Event Outputs (GS438)

Specify the maximum number of script execution records.

Data type: Unsigned binary

The setting range is 0 to 5000.

If the device stores 0, no script execution record will be stored.

If the device stores 5001 or more, up to 5000 records will be stored.

GS439.b1 specifies the operation to be performed when the number of the executed scripts has exceeded the maximum number of script execution records.

The following shows an example of how a script execution record is stored in eight word devices starting from GD1000.

Storage device	Item	Description
GD1000	Script type	Number that shows a script type. The device stores any of the following values according to the script type. • 10: Display object script or switch object script • 11: Input object script
GD1001	Screen number	Number of the screen where the object is placed.
GD1002	Object ID	ID of the object where a script runs.
GD1003	Use prohibited	The device stores 0.
GD1004	Screen type	Type of the screen where the object is placed. The device stores any of the following values according to the screen type. • 200: Base screen • 210: Superimpose window 1 • 220: Superimpose window 2 • 310: Overlap window 1 • 320: Overlap window 2 • 330: Overlap window 3 • 340: Overlap window 4 • 350: Overlap window 5 • 400: User-created key window • 500: Dialog window substituted for a system message If the script is set for a called screen, the device stores a value by adding a number to the number showing the calling screen type. • When a base screen is called, 1 is added. • When a window screen is called, 2 is added. Example) When a window screen is called from overlap window 3 330 + 2 = 332
GD1005	Number of the displayed base screen	Number of the base screen that is displayed when the script runs.
GD1006	Use prohibited	The device stores 0.
GD1007	Use prohibited	The device stores 0.

■Object Script Event Output Common Control (GS439)

• b0: When this bit is turned on, storing script execution records starts.

When this bit is turned off, storing script execution records ends.

• b1: Specifies the operation to be performed when the number of executed scripts has exceeded the maximum number of script execution records specified with GS438.

When this bit is turned on, storing script execution records stops.

When this bit is turned off, storing script execution records continues by overwriting the oldest record.

• b2 to b15: Use prohibited

■Exclusive Authorization Control (GS447)

Controls the authorization of the SoftGOT-GOT link function.

This control is disabled when the GOT network interaction function is used.

• b0: When this bit is turned on, the GOT obtains the exclusive authorization.

• b1: When this bit is turned on, the authorization guarantee time for the SoftGOT-GOT link function is disabled and GS984 (Authorization Guarantee Status Notification signal) stores 0.

• b2 to b15: Use prohibited

■PC Image Display Common Control (GS449)

Notifies the GOT of the display position of the personal computer image when its resolution is lower than that of the GOT.

- b0: When this bit is turned on, the personal computer image is displayed in the center of the GOT screen.

When this bit is turned off, the personal computer image is displayed in the upper-left corner of the GOT screen.

- b1 to b15: Use prohibited

■Monitor Common Control (GS450)

- b0: When this bit is turned on, a confirm message is displayed after numerical or text data (numerical input or text input) is input .
- b1: Controls the displaying methods of the message displayed when an numeric value exceeding the valid range is input.

Turning on displays a message during the numerical input.

Turning off displays a message after the numeric value is input.

- b2: When this bit is turned on, the system signal 1-1.b4 (Numeric Value Input Read Complete signal), system signal 2-1.b4 (Numeric Value Input signal), [Numeric Value Input Number], [Current Cursor Display User ID], and [Previous Cursor Display User ID] in the [Environmental Setting] window ([System Information]) are activated during the input as well.
- b3: When this bit is turned on, 0 is stored into [Current Cursor Display Object], [Previous Cursor Display Object], [Current Cursor Display User ID], and [Previous Cursor Display User ID] in the [Environmental Setting] window ([System information]) when a cursor is erased.
- b4: When this bit is turned on, the Kana-Kanji conversion or Pinyin conversion function is activated when text input is used.

The conversion function selected for [Kana-Kanji/Pinyin Conversion] in the [Environmental Setting] window ([Kana-Kanji/Pinyin Conversion]) is activated.

- b5: When this bit is turned on, the key window is forcibly closed if the input condition (the trigger condition or security level for the object) is not satisfied during a value or text input.
- b6: When this bit is turned on, the key window for inputting binary values is displayed for the numerical input whose format is binary.
- b7: When this bit is turned on, the key window for inputting octal values is displayed for the numerical input whose format is octal.
- b8: When this bit is turned on, BMP, JPEG, and PNG files in the data storage can be used as a part for parts display.

Turning off displays parts registered by GT Designer3.

When [Show image files in the memory card at the time of specifying Parts No. 9001-9999] is selected in the [Parts Setting] dialog, a BMP, JPEG, or PNG file in the data storage is used as a part regardless of the on or off status of this signal.

☞ Page 1416 Placing a parts display

- b9: When this bit is turned on, the GOT retains the state of the historical trend graph displayed before screen switching and displays the same graph state after switching back to the graph screen.

☞ Page 1693 Placing a historical trend graph

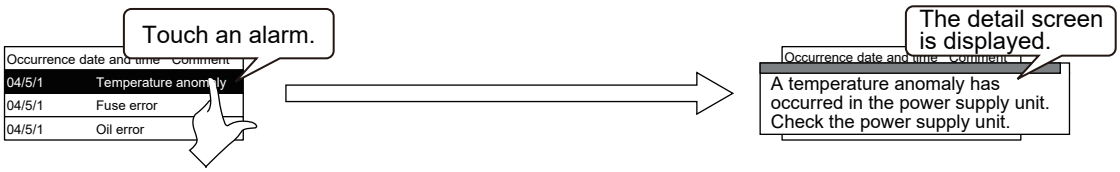
- b10: When this bit is turned on, the upper and lower limit symbols on the trend graph and the historical trend graph are hidden.
- b11: Use prohibited
- b12: Controls the switching timing when the bit alternate, bit set, or bit reset is set for a touch switch, and the switch is used for screen or station number switching.

☞ Page 1191 Placing a touch switch

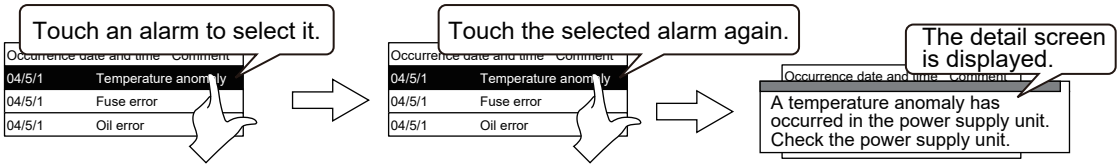
- b13: When this bit is turned on, the data storage stores the history of the screen switching.
- b14: When this bit is turned on, the screen switching mode is switched from the previous mode to history mode.
- b15: While this bit is on, touching an alarm once in the alarm display (user) displays the detail screen.

While this bit is off, touching an alarm twice in the alarm display (user) displays the detail screen.

When GS450.b15 is on



When GS450.b15 is off



■Auto Screen Save Time (GS451)

Stores the time until the monitor screen display is turned off by the clean save function as a value from 1 to 60 (minutes).

When the stored value is 61 or greater, the value is processed as 60.

If 0 is stored, the screen save time set in the utility is applied.

If the value is changed during the screen save, the changed value becomes effective after the screen save is canceled.

■Ethernet Port 1 Access Control, Ethernet Port 2 Access Control (GS454)

Controls the operations through an Ethernet network.

- b0: When this bit is turned on, writing the package data (system applications) through Ethernet port 1 is disabled.
- b1: When this bit is turned on, writing the package data (project data) through Ethernet port 1 is disabled.
- b2 to b3: Use prohibited
- b4: When this bit is turned on, writing the package data (system applications) through Ethernet port 2 is disabled.
- b5: When this bit is turned on, writing the package data (project data) through Ethernet port 2 is disabled.
- b6 to b7: Use prohibited
- b8: When this bit is turned on, reading data through Ethernet port 1 is disabled.
- b9 to b11: Use prohibited
- b12: When this bit is turned on, reading data through Ethernet port 2 is disabled.
- b13 to b15: Use prohibited

■Intensity Control (GS455)

Sets the intensity and the brightness adjustment mode of the GOT display section.

- b0 to b14: When the bits store a setting value, the intensity of the backlight changes to the one corresponding to the setting value.

A value can be set on the 8-level scale from 1 to 8 or 32-level scale from 101 to 132.

If 0 and 9 to 100, or 133 or more is set, the setting for the intensity adjustment function for the utility is applied.

The following shows the correspondence between setting values for the device and the intensity.

Setting value of GS455	8 levels	32 levels
0	The intensity setting of the utility is applied.	
1	1	—
:	:	
8	8	
9	The intensity setting of the utility is applied.	
:		
100		
101	—	101
:		:
132		132
133	The intensity setting of the utility is applied.	
:		

The following table shows the correspondence between the 8-level scale and the 32-level scale.

Intensity	
8 levels	**32 levels**
1	1 or 101
2	5 or 105
3	10 or 110
4	14 or 114
5	19 or 119
6	23 or 123
7	28 or 128
8	32 or 132

- b15: When the bit turns on, the brightness adjustment mode is set to low intensity.

The intensity of the GOT can be confirmed by the Intensity Notification (GS255).

☞ Page 3601 Intensity Notification (GS255)

For the specifications of the GOT display section, refer to the following.

GOT3000 Series User's Manual (Hardware)

Point

The Intensity Control (GS455) changes the setting value of the intensity temporarily.
If the GOT is turned off after the setting value is changed by the Intensity Control (GS455), the value is returned to the value set in the utility.

■Text Code Format Control (GS456)

The character code used for the text display or the text input is changeable.

This device is enabled only when the character code is determined by the system language or Unicode.

If you change the character code, the KANJI region for the kanji characters displayed on the text display or the text input is also changed.

The character code is changed to one corresponding to the stored value as shown below.

Stored value	Character code	KANJI region of displayed kanji characters
0	ASCII code, Shift JIS code	Japanese
1	Shift JIS code	Japanese
2	ASCII code	Japanese
3	GB code	Simplified Chinese
4	KS code	Japanese
5	BIG5	Traditional Chinese

• Timing of change

A change to the specified character code format is reflected at one of the following timings.

◇Switching the screen (except for key windows or dialog windows)

◇Switching the security level

◇Switching the language

◇Switching the station number

◇Switching the buffer memory unit number

◇Executing the function (redraw_screen()) of the object script

• Applied KANJI region

If the UD font corresponding to the KANJI region of the selected character code is not written to the GOT, the written UD font is applied.

The following is an example in using the GOT that has only Japanese as the standard font (standard). If the character code is changed to GB code, the KANJI region of the displayed kanji characters is set to Japanese.

• How to reflect the new setting at the GOT startup

You can reflect the new setting at the GOT startup by using the object script.

Ex.

When changing the character code to GB code at GOT startup

On the screen displayed at the GOT startup, place an object where the following object script is set.

Setting item for the script	Setting details
Trigger type	[Rise]
Trigger device	GS0.b4 (Common Information 1: Always ON Signal)
Script	[w:GS456] = 3; redraw_screen();

■Pass-through Transparent Stop Control (GS457)

When 1 is set at this area, pass-through transparent stop request is performed.

By using this area, the user can expedite recovery from the pass-through transparent recovery waiting status.

This area is effective only when 2 (pass-through mode in operation) is set for FA transparent status (GS256).

0: No stop request

1: No stop request

■Conversion Start Indication (GS460)

The following script types are supported: project script, screen script, and script part.

• b0: Converts unsigned 16-bit binary data to a 32-bit real number with the integer ⇔ real number conversion function.

• b1: Converts signed 16-bit binary data to a 32-bit real number with the integer ⇔ real number conversion function.

• b2 to b3: Use prohibited

• b4: Converts a 32-bit real number to unsigned 16-bit binary data with the integer ⇔ real number conversion function.

• b5: Converts a 32-bit real number to signed 16-bit binary data with the integer ⇔ real number conversion function.

• b6 to b14: Use prohibited

• b15: Starts a conversion with the integer ⇔ real number conversion function.

■Number of Conversion Devices (GS461)

The following script types are supported: project script, screen script, and script part.

Specify the number of devices to be converted with the integer ⇔ real number conversion function.

1 to 4096 conversion devices can be specified.

■Conversion Source Head Device No. (GS462)

The following script types are supported: project script, screen script, and script part.

Specify the start device of GOT internal devices (GD) that store the value before conversion with the integer ⇔ real number conversion function.

■Conversion Destination Head Device No. (GS463)

The following script types are supported: project script, screen script, and script part.

Stores the conversion results of the conversion with the integer ⇔ real number conversion function and specifies the start device of the GOT internal devices (GD).

■Storage Error Value (GS464)

The following script types are supported: project script, screen script, and script part.

Specify the value to be stored in the conversion destination device if a conversion error occurs during conversion between an integer and a real number.

■Remote Personal Computer Operation (Ethernet) Common Control (GS465)

Set whether to display the operation buttons on the personal computer screen on the GOT, and specify the display magnification of the personal computer screen.

The settings are applied when the remote personal computer screen is launched.

For details on the remote personal computer operation function (Ethernet), refer to the following.

☞ Page 2613 Operating a personal computer by using the GOT (remote personal computer operation function (Ethernet))

- b0: When this bit is turned on, the [CAD] button is hidden.
- b1: When this bit is turned on, the [C+E] button is hidden.
- b2: When this bit is turned on, the [KBD] button is hidden.
- b3: When this bit is turned on, the zoom in button and the zoom out button are hidden.
- b4: Use prohibited
- b5: Specifies the display magnification of the personal computer screen to be applied when b3 is turned on.

When this bit is turned on, the display magnification specified on GT Designer3 is applied.

When this bit is turned off, the display magnification is fixed to 100%.

- b6: When this bit is turned on, the click switching button is hidden.
- b7: When this bit is turned on, the scroll bars of the personal computer screen on the GOT are hidden.
- b8: When this bit is turned on, the personal computer screen on the GOT opens in the full screen mode.

For the display modes of the personal computer screen on the GOT, refer to the following.

☞ Page 2613 Operating a personal computer by using the GOT (remote personal computer operation function (Ethernet))

- b9: When this bit is on, the GOT (VNC server) can be connected to a vision sensor described in the following Technical Bulletin.

📖List of VNC Servers Supporting the Remote Personal Computer Operation (Ethernet) Function Validated to Operate with the GOT3000 Series (GOT-A-0257)

- b10: When the GOT connected with multiple personal computers displays a remote screen window, use this bit to set the action when the touch switch to open the specified personal computer screen without closing the remote screen window is touched.

When this bit is on, the personal computer screen on the GOT is switched.

When this bit is off, the personal computer screen on the GOT is not switched and an error message is displayed.

For switching the personal computer screen on the GOT, refer to the following.

☞ Page 2617 Switching the remote personal computer screen

- b11 to b15: Use prohibited

■Unit of Drive Free Space (GS466)

Specify the unit of values to be stored in the Drive Empty Capacity Information devices of the system information.

☞ Page 585 Drive Empty Capacity Information

This setting applies to all the drives when the system information is updated.

The setting range is 0 to 2.

If you set a value outside the setting range, each target device stores a value in bytes.

Stored value	Unit	Remarks
0	byte	Each target device notifies up to 2 GB free space.
1	Kbyte	Each target device notifies up to 2 TB free space. (1 Kbyte = 1024 bytes) The fractional portion is rounded off. Example) For 1.1 Kbytes of free space, 1 is stored.
2	Mbyte	Each target device notifies up to 2 PB free space. (1 Mbyte = 1024 Kbytes) The fractional portion is rounded off. Example) For 1.2 Mbytes of free space, 1 is stored.

If you change the specified unit, the maximum size of free space to be notified is changed. Note that the capacity of the data storage usable in the GOT remains unchanged.

■Monitor Common Control 2 (GS467)

- b0: When this bit is turned on, the cursor moves to a different alarm on the alarm display (user) after the alarm under the cursor is deleted.

The cursor display position after the deletion varies with the displayed contents on the alarm display (user).

If an alarm is displayed below the deleted alarm, the cursor moves to this alarm after the deletion.

If all the other alarms are displayed above the deleted alarm, the cursor moves to the alarm at the bottom after the deletion.

If all the alarms are deleted, the cursor is hidden after the deletion.

When this bit is off, the cursor is hidden.

- b1: Turning on this bit displays the key window for text input (key window that supports Kana-Kanji/Pinyin conversion).

The default display for Kana-Kanji conversion is hiragana characters (first half).

The default display for Pinyin (Simplified) conversion is lowercase English letters.

Turning off this bit displays the system key window for text input.

This bit must be on when the Kana-Kanji/Pinyin (Simplified) conversion function is enabled and the text input enters the input state.

When this signal is turned on and a key window that supports Kana-Kanji conversion is displayed, the hiragana and katakana key window is displayed even if the system language is not set to [Japanese].

When a user-created key window is used, the Kana-Kanji/Pinyin (Simplified) conversion key window is not displayed even if this setting is turned on. Instead, the user-created key window takes priority.

- b2 to b15: Use prohibited

■Kanji Region Control (GS468)

The KANJI region used for the text display or text input is changeable.

This setting is applied to all the text displays and text inputs where [Character Code] is set to [Unicode].

The KANJI region is changed according to the stored value as shown below.

Stored value	KANJI region
0	Not changed
1	Japanese
2	Simplified Chinese
3	Traditional Chinese

- Timing of change

A change to the specified KANJI region is reflected at one of the following timings.

◇Switching the screen (except for key windows or dialog windows)

◇Switching the security level

◇Switching the language

◇Switching the station number

◇Switching the buffer memory unit number

◇Executing the function (redraw_screen()) of the object script

• Applied KANJI region

If the UD font corresponding to the KANJI region of the selected character code is not written to the GOT, the written UD font is applied.

• How to reflect the new setting at the GOT startup

You can reflect the new setting at the GOT startup by using the object script.

Ex.

When changing the KANJI region to Simplified Chinese at GOT startup

On the screen displayed at the GOT startup, place an object where the following object script is set.

Setting item for the script	Setting details
Trigger type	[Rise]
Trigger device	GS0.b4 (Common Information 1: Always ON Signal)
Script	[w:GS468] = 2; redraw_screen();

■SoftGOT and Other Applications Start Signal (GS493 to GS498)

b0 to b15: When this bit is turned on, the application assigned to each bit in GT SoftGOT3000 runs.

This function is enabled only when [Effective] in [Allocation Setting] of [Basic Application Startup] is selected in GT SoftGOT3000.

■GT SoftGOT3000 Common Control (GS500)

• b0: When this bit is turned on, the dialog to exit GT SoftGOT3000 is displayed.

If exiting is canceled in the displayed dialog, the signal turns off.

• b1: When this bit is turned on, GT SoftGOT3000 is displayed in the full screen mode.

When this bit is turned off, the full screen mode of GT SoftGOT3000 is canceled.

• b2 to b15: Use prohibited

■GT SoftGOT3000 Application Start Signal (GS501, GS502)

b0 to b15: When this bit is turned on, the application assigned to each bit in GT SoftGOT3000 runs.

This function is enabled only when [Effective] in [Allocation Setting] of [Basic Application Startup] is selected in GT SoftGOT3000.

■GT SoftGOT3000 Full Screen Size (Width) (GS503)

When using the full screen mode function of GT SoftGOT3000, set the width (640 to 1920 dots) of the GT SoftGOT3000 monitor screen.

When the set value is 640 or less, the value is processed as 640. When the set value is 1920 or more, the value is processed as 1920.

■GT SoftGOT3000 Full Screen Size (Height) (GS504)

When using the full-screen display function of GT SoftGOT3000, set the height (480 to 1920 dots) of the GT SoftGOT3000 monitor screen.

When the set value is 480 or less, the value is processed as 480. When the set value is 1920 or more, the value is processed as 1920.

■GT SoftGOT3000 Advanced Application Start Signal (GS505 to GS507)

Starts an application in GT SoftGOT3000 using a value stored in GS505 and a bit of GS506 to GS507.

This function is enabled only when [Effective] in [Allocation Setting] of [Advanced Application Startup] is selected in GT SoftGOT3000.

For setting the devices from GS505 to 507 as triggers for the application, refer to the following manual.

GT SoftGOT3000 User's Manual

■Device Data Transfer Information (GS510)

- b0: When this bit is turned on, the device stores 0 in the Error Device Data Transfer ID (GS642) and the Device Data Transfer Error Count (GS643).
- b1: When this bit is turned on, the device stores 0 in the Device Data Transfer Processing Time (GS644), the Device Data Transfer Min. Processing Time (GS646), and the Device Data Transfer Max. Processing Time (GS648).
- b2 to b15: Use prohibited

■Time Change Information (GS512)

- b0: When this bit is turned on, the GOT clock data is changed to the data set for the Changed Time (GS513 to GS516).

When the time is changed, the clock data of the external device is also changed (time notification function).

- b1 to b15: Use prohibited

■Changed Time (GS513 to GS516)

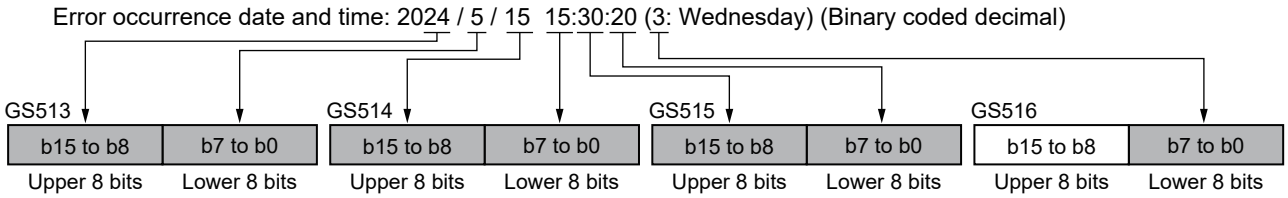
Stores the current time with BCD code.

The day-of-the-week data, 0 to 6, is stored.

(0: Sunday 1: Monday 2: Tuesday 3: Wednesday 4: Thursday 5: Friday 6: Saturday)

Ex.

Example) When the error occurrence date is 15:30:20 May 15, 2024 (Wednesday)



■External I/O Function Notification/External I/O Control Function (GS517)

- b0: When this bit is turned on, the 128-point input can be executed with the external I/O function.

When this bit is turned off, the 16-point input can be executed.

- b1 to b15: Use prohibited

Point

128-point input

Without the 128-point input (when the above device turns off), the GOT internal device turns on when the 16-point input is executed with the input terminal.

With the 128-point input (when the above device turns on), the 16-point input with the input terminal is used with the 8-point scan signal and the 128-point input (16 × 8) is performed.

For connection diagrams of each signal with the external I/O function, refer to the following manual.

GOT3000 Series User's Manual (Connection)

■Sound Output Common Control (GS518)

- b0: Turn on this bit to stop the current playback.
- b1: Turn on this bit to stop the current playback and cancel all standby sound files.
- b2: Turn on this bit to mute the sound.
- b3 to b15: Use prohibited

■Buffering And File Access Control (GS520)

- b0: When this bit is turned on, the whole data in the buffering area is stored in the destination drive at the timing of the rising edge.
- b1 to b15: Use prohibited

■Trigger Backup Data Send Delay (GS521)

The backup/restoration function can set the delay time for backup communication intervals.
Setting of the delay time can reduce the load of other processes (such as monitoring objects) with the backup process.
The delay time determined by the set value is listed as follows.

Set value	Delay time
0	None
1 to 100	Set value × 5 (ms)
101 or more	500 (ms)

Point

Setting of Trigger Backup Data Send Delay
Backup communication times are longer than a default when the Trigger Backup Data Send Delay is set.
Set the suitable delay time to match the processing condition of backup function and others (such as monitoring objects).

■Special Control During Specific Function Execution (GS522)

- b0: When this bit is turned on during backup or restoration, background processing such as alarms, logging, and communication with registered devices is stopped. Only communication for the backup or restoration process is executed.

After the backup/restoration process, background processing and communication with registered devices are automatically resumed.

- b1: Only available for GT37.

Controls the start and stop of the function to notify the data storage usage capacity and the number of video files.
Turning on this bit starts the function to notify the data storage usage capacity and the number of video files.
Turning off this bit stops the function to notify the data storage usage capacity and the number of video files.
When this bit is off, the Memory Card Usage signal (GS1022.b0 to b1, b8 to b9) and the Number of Memory Card Files signal (GS1022.b2 to b7, b10 to b15) are reset.

- b2: When this bit is on, the character code is changed to Unicode and data is tab-delimited during a binary-to-CSV conversion or the creation of a CSV file.

Turn on this bit before executing the following operations.
· Converting a binary file (alarm log file, logging file, recipe file, or operation log file) to a CSV file
· Writing/reading data to/from a recipe file in CSV format
· Reading a CSV file from drive C of the GOT to a personal computer
· Copying a CSV file from drive C to any other drive
Make sure that this bit is on when you execute the following operations using the CSV file that has been converted from another format or created during the turn-on of the bit.
· Converting the CSV file to a binary file
· Performing an operation that uses the CSV file as a recipe file

- b3: When this bit is turned on, all buttons except the [List] and [Latest] buttons are disabled on the [Operation Log Information] screen of the utility.
- b4 to b5: Use prohibited
- b6: Available for GT37.

Controls whether to acquire GOT data package in conjunction with trigger backups performed by the backup/restoration function. Turning on this bit executes GOT data package acquisition upon successful completion of a trigger backup, regardless of the trigger settings (CH No.).
If the trigger backup fails, the acquisition is not performed. When this bit is off, GOT data package acquisition is not performed. The reflection timing corresponds to when the trigger condition is satisfied for each trigger setting (CH No.).

- b7: Turning on this bit closes the system window and switches the base screen when executing base screen switching while displaying the system window.

The system window is not closed if the base screen remains the same before and after switching.
For system windows, refer to the following.
☞ Page 536 Using an overlap window as the system window

- b8 to b15: Use prohibited

■Document Display Common Control (GS523)

• b0: When this bit is turned on, PDF files are not cached, and the cached PDF files are not displayed and updated.

• b1: When this bit is turned on, the search history file is not created or updated.

• b2: When this bit is turned on, an A4 or smaller PDF document is displayed in high quality (144 dpi resolution).

When this bit is turned off, a PDF document is displayed in standard quality (72 dpi resolution).

• b3: When this bit is turned on while a PDF document is displayed, the document is fit to the object width.

When a document is displayed for the first time while this bit is on, the document is fit to the object width, regardless of the selection for [Initial Display Size].

• b4 to b15: Use prohibited

■Delay Hard Copy Execution (GS526)

Set delay time to output a hidden screen image using the hard copy function.

When the start trigger condition is satisfied, the hard copy processing is executed after the set delay time has passed.

Set the delay time as below according to the values to be stored.

Set value	Delay time
0	None
1 to 10	1 to 10 seconds
11 or more	10 seconds

■Network No. For Monitor Station Disconnected (CH1 to CH4) (GS530, GS540, GS550, GS560)

Controls the disconnection and the connection of the monitor stations by the station.

• b0 to b7: the network No. for the station to be disconnected is specified. (0 to 239)

One network No. can be specified per channel.

• b8 to b15: Use prohibited

The devices are enabled only when the following communication drivers are used.

[Bus(A/QnA)]

[Bus(Q)]

Specify the station to be disconnected by using the following GOT special registers.

☞ Page 3650 Monitor Station Disconnection (CH1 to CH4) (GS531 to GS538, GS541 to GS548, GS551 to GS558, GS561 to GS568)

■Monitor Station Disconnection (CH1 to CH4) (GS531 to GS538, GS541 to GS548, GS551 to GS558, GS561 to GS568)

Each bit corresponds to a station number when one of the following communication drivers is used. Turning on a bit disconnects the corresponding station from the GOT.

The following shows the communication drivers supported by the GOT model.

○: Supported, —: Not supported

Communication driver	Supported/ Unsupported	Communication driver	Supported/ Unsupported
[Bus(Q)]	○	[Ethernet(MELSERVO), Gateway]	○
[Serial (MELSEC)]	○	[Ethernet(YASKAWA),Gateway]	○
[MELSECNET/H]	—	[Ethernet(YASKAWA MP3000),Gateway]	○
[CC-Link Ver2(ID)]	—	[Ethernet(YASKAWA High Speed Ethernet Server), Gateway]	○
[CC-Link IE Controller Network]	—	[Ethernet(YOKOGAWA), Gateway]	○
[CC-Link IE Field Network]	—	[Ethernet(AB), Gateway]	—
[CC-Link IE TSN]	—	[Ethernet(AB MicroLogix), Gateway]	—
[CC-Link IE TSN (Built-in Ethernet)]	—	[Ethernet(AB Tag), Gateway]	—
[MELSEC-FX]	—	[Ethernet(OMRON), Gateway]	○
[Serial (MICROCOMPUTER)]	—	[Ethernet(OMRON NJ/NX), Gateway]	○
[Serial (MELSERVO)]	○	[Ethernet(SIEMENS OP), Gateway]	—
[FREQROL 700/800, Sensorless Servo]	○	[Ethernet(FUJI), Gateway]	—
[FREQROL(Batch Monitor Support)]	○	[Ethernet(KEYENCE), Gateway]	—
[OMRON Temperature Controller/Digital Controller]	○	[Ethernet(LS ELECTRIC XGK), Gateway]	○
[Azbil SDC/DMC]	○	[MODBUS/TCP Client, Gateway]	○
[MODBUS/RTU Client]	○	[MODBUS/TCP Server, Gateway]	—
[MODBUS/RTU Server]	—	[Ethernet(Computer)]	—
[Ethernet(MITSUBISHI ELECTRIC), Gateway]	○	[Ethernet(SLMP), Gateway]	○
[Ethernet(FX), Gateway]	○	[Ethernet(CC-Link IE Field Network Basic)]	—
[Ethernet(FREQROL(Batch Monitor Support)), Gateway]	○	[OPC UA Client]	—

For the multi-channel connection, the target bit of the device corresponding to each channel number (CH1 to CH4) turns on.

1: Disconnected

0: Connected

The following shows the station numbers for each device.

The station corresponding to each device differs according to whether the Ethernet connection is used or not.

• Ethernet connection: 1 to 128

Device				Ethernet setting number															
CH1	CH2	CH3	CH4	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
GS531	GS541	GS551	GS561	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
GS532	GS542	GS552	GS562	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17
GS533	GS543	GS553	GS563	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33
GS534	GS544	GS554	GS564	64	63	62	61	60	59	58	57	56	55	54	53	52	51	50	49
GS535	GS545	GS555	GS565	80	79	78	77	76	75	74	73	72	71	70	69	68	67	66	65
GS536	GS546	GS556	GS566	96	95	94	93	92	91	90	89	88	87	86	85	84	83	82	81
GS537	GS547	GS557	GS567	112	111	110	109	108	107	106	105	104	103	102	101	100	99	98	97
GS538	GS548	GS558	GS568	128	127	126	125	124	123	122	121	120	119	118	117	116	115	114	113

• Other than Ethernet connection: 0 to 127

Device				Station number															
CH1	CH2	CH3	CH4	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
GS531	GS541	GS551	GS561	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
GS532	GS542	GS552	GS562	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16
GS533	GS543	GS553	GS563	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32

Device				Station number															
CH1	CH2	CH3	CH4	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
GS534	GS544	GS554	GS564	63	62	61	60	59	58	57	56	55	54	53	52	51	50	49	48
GS535	GS545	GS555	GS565	79	78	77	76	75	74	73	72	71	70	69	68	67	66	65	64
GS536	GS546	GS556	GS566	95	94	93	92	91	90	89	88	87	86	85	84	83	82	81	80
GS537	GS547	GS557	GS567	111	110	109	108	107	106	105	104	103	102	101	100	99	98	97	96
GS538	GS548	GS558	GS568	127	126	125	124	123	122	121	120	119	118	117	116	115	114	113	112

Precautions

- The GOT cannot disconnect station No. 128 or later, or station-substation No. 9-0 or later.
- Stations with indirectly specified station numbers cannot be disconnected using the above devices.

For details on the indirect specification, refer to the following.

GOT3000 Series User's Manual (Connection)

■Channel Shutdown Control Information (CH1 to CH4) (GS539, GS549, GS559, GS569)

Communication of each channel is prohibited.

Turning on this signal turns off the Channel Observation Notification Information Signal (GS299, GS319, GS339, GS359) for the channel whose communication is prohibited.

☞ Page 3606 Channel Observation Notification Information Signal (CH1) (GS299, GS319, GS339, GS359)

- b0: While the bit is on, communication of each channel is prohibited.
- b1 to b15: Use prohibited

The following shows the compatible communication drivers.

○: Supported, —: Not supported

Communication driver	Supported/ Unsupported	Communication driver	Supported/ Unsupported
[Bus(Q)]	○	[Ethernet(MELSERVO), Gateway]	○
[Serial (MELSEC)]	○	[Ethernet(YASKAWA),Gateway]	○
[MELSECNET/H]	○	[Ethernet(YASKAWA MP3000),Gateway]	○
[CC-Link Ver2(ID)]	○	[Ethernet(YASKAWA High Speed Ethernet Server), Gateway]	○
[CC-Link IE Controller Network]	○	[Ethernet(YOKOGAWA), Gateway]	○
[CC-Link IE Field Network]	○	[Ethernet(AB), Gateway]	○
[CC-Link IE TSN]	○	[Ethernet(AB MicroLogix), Gateway]	○
[CC-Link IE TSN (Built-in Ethernet)]	○	[Ethernet(AB Tag), Gateway]	○
[MELSEC-FX]	○	[Ethernet(OMRON), Gateway]	○
[Serial (MICROCOMPUTER)]	○	[Ethernet(OMRON NJ/NX), Gateway]	○
[Serial (MELSERVO)]	○	[Ethernet(SIEMENS OP), Gateway]	○
[FREQROL 700/800, Sensorless Servo]	○	[Ethernet(FUJI), Gateway]	○
[FREQROL(Batch Monitor Support)]	○	[Ethernet(KEYENCE), Gateway]	○
[OMRON Temperature Controller/Digital Controller]	○	[Ethernet(LS ELECTRIC XGK), Gateway]	○
[Azbil SDC/DMC]	○	[MODBUS/TCP Client, Gateway]	○
[MODBUS/RTU Client]	○	[MODBUS/TCP Server, Gateway]	○
[MODBUS/RTU Server]	○	[Ethernet(Computer)]	○
[Ethernet(MITSUBISHI ELECTRIC), Gateway]	○	[Ethernet(SLMP), Gateway]	○
[Ethernet(FX), Gateway]	○	[Ethernet(CC-Link IE Field Network Basic)]	○
[Ethernet(FREQROL(Batch Monitor Support)), Gateway]	○	[OPC UA Client]	○

■MODBUS Communication Control Function (GS570 to GS576, GS590 to GS596, GS597 to GS603, GS604 to GS610, GS611 to GS617)

When some controllers do not comply with the specifications, this function enables the GOT to reduce the communication delay in the MODBUS network.

The availability of function codes is controlled when MODBUS/RTU or MODBUS/TCP connection is used.

The MODBUS Communication Control Function contains two types: the MODBUS Communication Control Function (Common) and the MODBUS Communication Control Function (CH1 to CH4). For the MODBUS Communication Control Function (Common), the device values are applied to all relevant channels. For the MODBUS Communication Control Function (CH1 to CH4), the device values are applied to each applicable channel.

Use GS579 to determine which type of the MODBUS Communication Control Function is applied.

☞ Page 3653 Channel Setting of MODBUS Communication Control Function (GS579)

When applicable devices store a value as shown below, the GOT operates with the values specified in the communication setting of the utility.

- For the MODBUS Communication Control Function (Common), GS571 to GS576 each store 0.
- For the MODBUS Communication Control Function (CH1), GS591 to GS596 each store 0.
- For the MODBUS Communication Control Function (CH2), GS598 to GS603 each store 0.
- For the MODBUS Communication Control Function (CH3), GS605 to GS610 each store 0.
- For the MODBUS Communication Control Function (CH4), GS612 to GS617 each store 0.

Device					Function
Common	CH1	CH2	CH3	CH4	
GS570.b0	GS590.b0	GS597.b0	GS604.b0	GS611.b0	When the bit turns on, function code 0Fh (write multiple coils) becomes unavailable.
GS570.b1	GS590.b1	GS597.b1	GS604.b1	GS611.b1	When the bit turns on, function code 10h (write multiple holding registers) becomes unavailable.
GS570.b2 to b15	GS590.b2 to b15	GS597.b2 to b15	GS604.b2 to b15	GS611.b2 to b15	Use prohibited
GS571	GS591	GS598	GS605	GS612	Set the maximum number of devices (1 to 2000) for a message with function code 01h (read coils). When 0 is set, the maximum number of devices is set as shown below. • MODBUS/TCP: 1000 • MODBUS/RTU: 2000 When a value other than the above is set, the maximum number of devices is 2000.
GS572	GS592	GS599	GS606	GS613	Set the maximum number of devices (1 to 2000) for a message with function code 02h (read input relays). When 0 is set, the maximum number of devices is set as shown below. • MODBUS/TCP: 1000 • MODBUS/RTU: 2000 When a value other than the above is set, the maximum number of devices is 2000.
GS573	GS593	GS600	GS607	GS614	Set the maximum number of devices (1 to 125) for a message with function code 03h (read holding registers). When a value other than 1 to 125 is set, the maximum number of devices is 125.
GS574	GS594	GS601	GS608	GS615	Set the maximum number of devices (1 to 125) for a message with the function code 04h (read input registers). When a value other than 1 to 125 is set, the maximum number of devices is 125.
GS575	GS595	GS602	GS609	GS616	Set the maximum number of devices for a message with the function code 0Fh (write multiple coils). The following shows the setting range of the maximum number of devices. • MODBUS/TCP: 1 to 800 • MODBUS/RTU: 1 to 1968 When 0 is set, the maximum number of devices is 800. When a value other than the above is set, the maximum value in the setting range is applied. When GS570.b0 stores 1, [0F] is not used; therefore, the setting for GS575 is invalid.
GS576	GS596	GS603	GS610	GS617	Set the maximum number of devices per message when using function code 10h (write multiple holding registers). The following shows the setting range of the maximum number of devices. • MODBUS/TCP: 1 to 100 • MODBUS/RTU: 1 to 123 When 0 is set, the maximum number of devices is 100. When a value other than the above is set, the maximum value in the setting range is applied. When GS570.b1 stores 1, [10] is not used; therefore, the setting for GS576 is invalid.

Point

• Function codes supported by the GOT

For details on the function codes supported by the GOT, refer to the following.

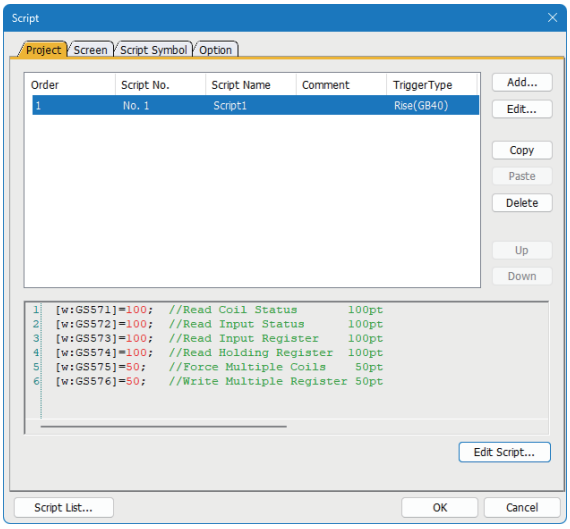
☞ Page 3568 Function code ([MODBUS Server(GOT:Client)])

• Setting MODBUS Communication Control Function

Set the MODBUS Communication Control Function at the GOT startup with the project script or others.

Do not change the setting after the communication starts.

The communication error may occur.



Setting example of project script

■Channel Setting of MODBUS Communication Control Function (GS579)

The MODBUS Communication Control Function setting can be selected for each channel.

When all bits of GS579 are off, all channels operate with the values of the common settings (GS570 to GS576).

☞ Page 3652 MODBUS Communication Control Function (GS570 to GS576, GS590 to GS596, GS597 to GS603, GS604 to GS610, GS611 to GS617)

• b0: The MODBUS Communication Control Function for CH1 can be selected.

Turning on this bit applies the MODBUS Communication Control Function (CH1) (GS590 to GS596).

Turning off this bit applies the MODBUS Communication Control Function (Common) (GS570 to GS576).

• b1: The MODBUS Communication Control Function for CH2 can be selected.

Turning on this bit applies the MODBUS Communication Control Function (CH2) (GS597 to GS603).

Turning off this bit applies the MODBUS Communication Control Function (Common) (GS570 to GS576).

• b2: The MODBUS Communication Control Function for CH3 can be selected.

Turning on this bit applies the MODBUS Communication Control Function (CH3) (GS604 to GS610).

Turning off this bit applies the MODBUS Communication Control Function (Common) (GS570 to GS576).

• b3: The MODBUS Communication Control Function for CH4 can be selected.

Turning on this bit applies the MODBUS Communication Control Function (CH4) (GS611 to GS617).

Turning off this bit applies the MODBUS Communication Control Function (Common) (GS570 to GS576).

• b4 to b15: Use prohibited

■Microcomputer Connection Extended Setting (CH1 to CH4) (GS580 to GS583)

• b0 to b70: Use prohibited

• b8: For the microcomputer connection (Ethernet), when the bit turns on, if the data format of the message format is Format 3 or 4, communication packets are fully compatible with those of the GOT-F900 series microcomputer connection.

(ON: Fully compatible, OFF: Partly compatible)

For details on the message format of the microcomputer connection (Ethernet), refer to the following.

GOT3000 Series User's Manual (Connection)

• b9 to b15: Use prohibited

■CC-Link IE TSN Control (GS620)

- b0: When the bit is turned on, the firmware update of the CC-Link IE TSN communication unit is prohibited.
- b1 to b15: Use prohibited

■Operator Management Common Control (GS621)

Controls the operator information management.

- b0: Turning on this bit inactivates the delete button on the operator management screen. This disables deletion of the existing operator information.

If the GOT has operator information that does not exist in the operator management file to be imported, the GOT retains its operator information.

When the operator name or operator ID to be imported is the same as that of the import destination, the operator information is not imported.

- b1: Turning on this bit inactivates the edit button on the operator management screen. This disables editing of the operator information when an inactivated operator is selected.

If both b0 and b1 are on, the inactivated operator information is not updated when an operator management information file is imported.

- b2: Turning on this bit inactivates the import button on the operator management screen.
- b3 to b15: Use prohibited

■System Screen Operation Restriction (GS622)

Restricts operation on the screens in the [Data mng.] tab of the utility.

This device is applied when the target screen is displayed.

Even if the signal is turned on or off while the target screen is displayed, restrictions cannot be switched.

- b0: Turning on this bit restricts access to the specified drives on the [Alarm info.], [Image file], [Recipe Information], [Logging info.], [Operation Log Information], and [SD card format] screens of the utility.

Use GS623 or GS624 to specify the drives to which access is restricted.

- b1: Turning on this bit restricts the display of the [Package management] and [GOT data package acquisition] screens.

When the target screen is selected in the [Data mng.] tab, an error dialog appears.

- b2: Turning on this bit restricts the display of the [NVRAM management] screen.

When the [NVRAM management] screen is selected in the [Data mng.] tab, an error dialog appears.

- b3 to b15: Use prohibited

For details on the utility screens, refer to the following manual.

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

For the available drives by GOT model, refer to the following.

☞ Page 81 Drive configuration and capacity of the GOT

■Specify Drive to Prohibit Write Operation (System Screen) (GS623)

Prohibits writing to the specified drives when GS622.b0 is on.

On an access-restricted screen, if you display the contents of a drive to which writing is prohibited, the buttons relevant to writing become inactive.

If you perform conversion, copying, or moving of data to the drive to which writing is prohibited, the attempt fails and an error dialog appears.

This device is applied when the target screen is displayed.

Even if the signal is turned on or off while the target screen is displayed, restrictions cannot be switched.

- b0: Turning on this bit prohibits writing to all drives.
- b1: Turning on this bit prohibits writing to drive A.
- b2: Turning on this bit prohibits writing to drive B.
- b3: Turning on this bit prohibits writing to drive E.
- b4: Turning on this bit prohibits writing to drive F.
- b5: Turning on this bit prohibits writing to drive G.
- b6: Turning on this bit prohibits writing to drive N.
- b7 to b15: Use prohibited

■Specify Drive to Hide (System Screen) (GS624)

Restricts access to specified drives when GS622.b0 is on.

If you perform conversion, copying, or moving of data to the drive to which access is restricted, the attempt fails and an error dialog appears.

This device is applied when the target screen is displayed.

Even if the signal is turned on or off while the target screen is displayed, restrictions cannot be switched.

- b0: Turning on this bit restricts access to all drives.

The screen itself is hidden because there are no operations that can be performed on the target screen.

- b1: Turning on this bit restricts access to drive A.
- b2: Turning on this bit restricts access to drive B.
- b3: Turning on this bit restricts access to drive E.
- b4: Turning on this bit restricts access to drive F.
- b5: Turning on this bit restricts access to drive G.
- b6: Turning on this bit restricts access to drive N.
- b7 to b15: Use prohibited

■Touch Position Color Acquisition Ready Signal (GS630)

- b0: Turning on the bit makes the GOT ready for acquiring the color information at the touched position on the GOT screen.

In this status, even when an object or others is touched, the object or others does not function.

Turning off the bit without acquiring the color information cancels the status.

- b1 to b15: Use prohibited

■Date Format Control (GS632)

Controls the date format used for the operation log information of the utility by turning b0 and b1 on or off.

This is available for the [Operation Log Data List] screen.

This is also available for the dialogs displayed from the [Operation Log Data List] screen.

The specified data format is applied to the [Operation Log Data List] screen when the screen is displayed.

GS632.b0	GS632.b1	Date format
OFF	OFF	Not controlled (Date format of the system language)
ON	OFF	Year, month, day
OFF	ON	Month, day, year
ON	ON	Day, month, year

■Specify Notification While Monitoring Stopped (GS633)

This device is available only when an overlap window is output to the display using the video output function.

Specify the display when the GOT screen transitions to a screen dedicated to the utility or add-on function while using the video output function.

- 0: Displays the monitoring stopped message in the center of the screen.

This message does not appear if the size of the overlap window to be output to the display is less than 190 dots × 56 dots.

- 1. Displays the screen specified using GS634.

The monitoring stopped message appears in the center of the screen when: 0 is specified for the screen number, the screen having the specified number does not exist, or the screen security level is insufficient.

- 2: Retains the screen on the display without notifying monitoring stopped.

When 3 or greater value is input, the value is handled as 0.

■Specify Screen No. to be Displayed While Monitoring Stopped (GS634)

Specify the screen number of the window to be displayed when GS633 is 1.

Only figures can be displayed on the window screen while monitoring is stopped.

■Base Screen Size Expansion Common Control (GS635)

- b0: Turning on this bit displays the specified area on the GOT when a base screen switched to an expanded screen.

To specify the upper-left coordinates of the area to be in view, use GS636 and GS637.

- b1: Turning on this bit disables swiping to scroll the screen.
- b2 to b15: Use prohibited

■Specify Expanded Base Screen Position (GS636, GS637)

Specify the upper-left coordinates of the area to be in view, when the screen is switched to an expanded base screen.

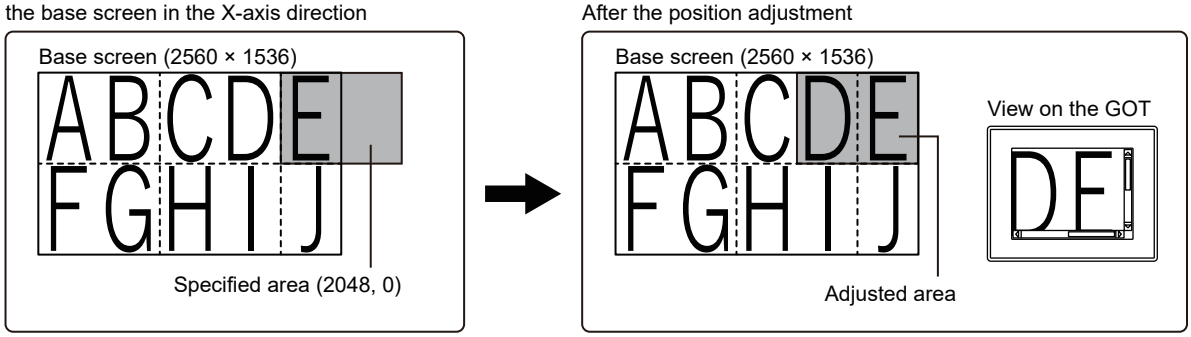
- GS636: X coordinate
- GS637: Y coordinate

If the specified area extends off the base screen, the area is adjusted to fit within the base screen.

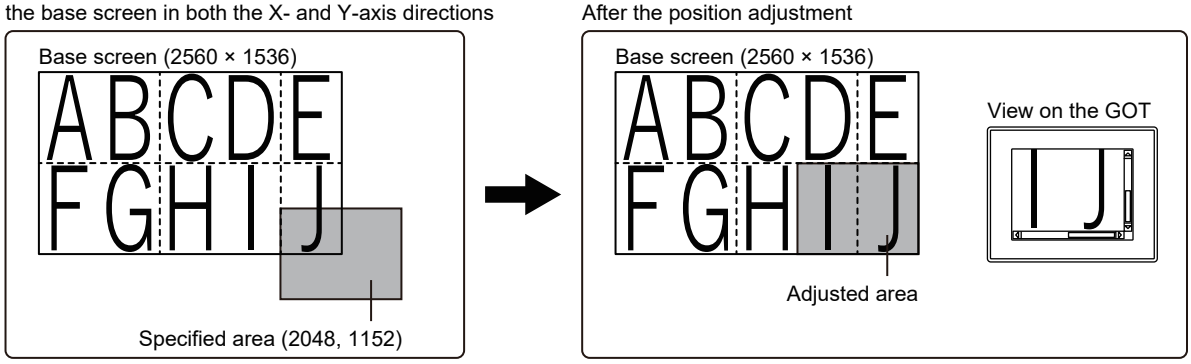
Ex.

Displaying an expanded base screen (2560 × 1536) on GT37-X (1024 × 768)

When the specified area extends off the base screen in the X-axis direction



When the specified area extends off the base screen in both the X- and Y-axis directions



■GOT Reset Control (GS639)

- b0 to b13: Use prohibited
- b14: When the bit is turned on, all the GOT functions exit. (The GOT power can be turned off safely.)
- b15: When the bit is turned on, the software reset for the GOT is performed at the rising edge timing.

Read devices (GS1792 to GS2567)

■VNC Server Function Control (GS1792)

This control is disabled when the GOT network interaction function is used.

- b0: When the bit is turned on, the device disables communication from the VNC client.
- b1: When the bit is turned on, the device disables operations from the VNC client.
- b2 to b7: Use prohibited
- b8: When the bit is turned on, the authorization guarantee time for the VNC server function is disabled.
- b9 to b15: Use prohibited

■Gesture Common Control (GS1794)

Controls gesture operations.

- b0: When the bit turns on, the object gesture function becomes disabled.

The single touch operation of the object remains enabled.

- b1: When the bit turns on, the single touch operation of the object becomes disabled.

The object gesture function remains enabled.

- b2 to b15: Use prohibited

■Authorization Status Control (GS1795)

Controls the authorization of the GOT network interaction function.

This device operates on each GOT in the control group.

- b0: When this bit turns on, the automatic acquisition of the operation right becomes disabled.

On a device without operation right, even if you switch a screen to another screen in which the authorization control is enabled, the device cannot automatically obtain the operation right.

- b1 to b15: Use prohibited

■Authorization Management Control (GS1796)

Controls the authorization of the GOT network interaction function.

These devices are activated on the master GOT.

- b0: When this bit turns on, devices except the master GOT are prohibited from obtaining the authorization.

The device with the operation right (other than the master GOT) will release the operation right.

When the bit is used in combination with b1, the operation right can be released during the authorization guarantee time.

- b1: When this bit turns on, the authorization guarantee time becomes invalid.
- b2: When this bit turns on, all devices including the master GOT are prohibited from obtaining the authorization.

The device with the operation right will release the operation right.

When the bit is used in combination with b1, the operation right can be released during the authorization guarantee time.

- b3 to b15: Use prohibited

■VNC Server GOT Processing Balance Control (GS1798)

Set the load balance between processing of the VNC server function and processing of the other functions on the GOT, regardless of whether or not the GOT is connected with the VNC client.

- b0: Turning on this bit prioritizes processing of the functions in the GOT.

The delay in internal processing due to the VNC server function is reduced.

- b1: Turning on this bit applies standard balance between processing of the VNC server function and processing of the other functions in the GOT.
- b2: Turning on this bit prioritizes processing of the VNC server function.

The speed of remote screen refresh is higher than that when b0 or b1 is on.

- b3: Turning on this bit prioritizes processing of the VNC server function.

The priority on the processing of the VNC function and the speed of remote screen refresh are higher than those when b2 is on.

- b4: Turning on this bit prioritizes processing of the VNC server function.

The priority on the processing of the VNC function and the speed of remote screen refresh are higher than those when b3 is on.

- b5 to b15: Use prohibited

When multiple bits are turned on, the bit having the smallest number is prioritized.

When all the bits are off, the GOT operates according to the setting of [GOT processing balance when VNC server is in operation].

☞ Page 2650 [VNC Server] dialog

■Recipe Control (GS1800)

- b0 to b1: Use prohibited
- b2: When this bit is turned on, the recipe special control is executed.
- b3 to b13: Use prohibited
- b14: When this bit is turned on, the Operation Completed signal (GS1010.b14) and the Operation Error signal (GS1010.b15) turn off.

☞ Page 3612 Recipe Status (GS1010)

- b15: Use prohibited

■Recipe Special Control Action (GS1801)

Specify the control action. The action varies with the stored value.

0: Resets the Recipe Special Control Result device (GS1011) and the Recipe Special Control No. device (GS1012) to 0.

1: Reads a record from the target recipe data into GOT data registers (GD).

2: Overwrites the values of a record in the target recipe data with the values of GOT data registers (GD).

4: Outputs recipe information to GOT data registers (GD).

5: Searches the target recipe data based on the values of GOT data registers (GD).

■Recipe Special Control Target Type (GS1802)

Specify the target of the recipe special control.

- b0: When this bit is turned on, record information (record number, record attribute, and record name) is set as the control target.
- b1: When this bit is turned on, the update date and time of a record is set as the control target.
- b2: When this bit is turned on, the device values of a record are set as the control target.
- b3: When this bit is turned on, device comments are set as the control target.
- b4 to b15: Use prohibited

■Recipe Special Control Start GD Device No. (GS1803)

Specify the start device number of the GOT internal devices (GD) to be used.

■Recipe Special Control Recipe No. (GS1805)

Specify the recipe number of a target recipe setting.

■Recipe Special Control Record No. (GS1806)

Specify the record number of a target record.

■Recipe Special Control Row No. (GS1807)

Specify the start row of a record as necessary.

Subtract 1 from a target row number, and then set the result.

Example 1) To specify row number 1, set 0.

Example 2) To specify row number 65536, set 65535.

■Recipe Special Control Points (GS1808)

Specify the number of target rows of a record as necessary.

Starting from the row specified with GS1807, the specified number of rows are targeted for the recipe special control.

■Recipe Display (Record List) Control (GS1809)

- b0: Turning on this bit hides the confirmation or notification dialog that appears during a record manipulation after this bit is turned on.

So, you can skip the confirmation step.

The manipulation result is notified by GS1015 and GS1016.

☞ Page 3613 Recipe Display (Record List) Target Record No. (GS1015)

☞ Page 3613 Recipe Display (Record List) Record Manipulation Result (GS1016)

- b1 to b14: Use prohibited
- b15: When this bit is turned on, GS1016 turns off.

This bit is invalid when the recipe display (record list) is not displayed.
When the recipe display (record list) is displayed while this bit is on, GS1016 turns off.

■Special Function Switch Special Control (GS1810)

• b0: Turning on this bit enables the iQSS utility special control function.

While this signal is on, press the special function switch for which [iQSS Utility] is selected for [Switch Action] to execute the iQSS utility special control.

• b1 to b15: Use prohibited

For details on the iQSS utility special control function, refer to the following.

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

For the special function switch settings, refer to the following.

☞ Page 1243 Settings for [iQSS Utility]

■iQSS Utility Special Control Start GD Device No. Specification (GS1811)

Specify the start device number of the GD devices used for the iQSS utility special control.

Setting range: 0 to 65529 Data type: Unsigned binary

Parameters are stored in seven GD devices from the start device specified using this device.

The following shows the structure of the parameters to be stored.

Example) When GD1000 is set as the start device

Storage destination device (GD)	Parameter
GD1000	Sensor device No.: 0 to 65534
GD1001	When connected to an RCPU, QCPU, or LCPU Start XY address: 0x0000 to 0x0FE0 When connected to an FX5CPU Intelligent module No.: 0x01 to 0x10
GD1002	For the bit remote module Device address: 0 to 254 The device stores 0 when any value from 255 to 65535 is set. For the word remote module Device address: 0 to 510 The device stores 0 when any value from 511 to 65535 is set.
GD1003	Device I/O type • 0: Bit input • 64: Bit output • 128: Bit input/output • 256: Word input • 320: Word output • 384: Word input/output
GD1004	Screen to be displayed • 00: Monitor screen • 01: Parameter information screen b0 and b1 are used as parameters.
GD1005	Error code of the ASLINK remote module: 100 to 65535 For details on the error codes, refer to the following manual. 📖AnyWireASLINK Master Module User's Manual
GD1006	Error codes used for the iQSS utility special control function • 0: Normal startup • 1: Target network module not found • 2: Target CPU not found • 3: Information read error • 4: Target sensor device not found • 5: Profile not found • 6: Address/station number duplicated • 7: Incorrect profile

■iQSS Utility Special Control Number of Parameters (GS1812)

Specify the number of sensor devices used for the iQSS utility special control.

The data type is unsigned 16-bit binary.

Example) When setting 500 to GS1811 and 2 to GS1812

• GD500 to GD506: Parameters to start the first sensor device are stored.

• GD507 to GD513: Parameters to start the second sensor device are stored.

■SD Card Access Switch Status Control (GS1820)

• b0: When the bit is turned on, the control for GS1820.b1 is enabled.

When the bit is turned off, the control for GS1820.b1 is disabled.

• b1: When the bit is turned on, the access to the SD card is allowed.

• b2 to b15: Use prohibited

■USB Drive Common Control (GS1824)

• b0: When the bit is turned on, the USB memory connected to drive E on the GOT can be removed.

• b1: When the bit is turned on, the USB memory connected to drive F on the GOT can be removed.

• b2: When the bit is turned on, the USB memory connected to drive B on the GOT can be removed.

• b3: When the bit is turned on, the USB memory connected to drive G on the GOT can be removed.

• b4: When the bit is turned on, the USB memory connected to drive E on the GOT can be removed.

• b5: When the bit is turned on, the USB memory connected to drive F on the GOT can be removed.

• b6: When the bit is turned on, the USB memory connected to drive B on the GOT can be removed.

• b7: When the bit is turned on, the USB memory connected to drive G on the GOT can be removed.

• b8 to b15: Use prohibited

For the available drives by GOT model, refer to the following.

☞ Page 81 Drive configuration and capacity of the GOT

■Label Name Resolution Control (GS1880)

• b0: Use prohibited

• b1: When this bit is turned on, the label name resolution is performed.

• b2: While this bit is on, executing the label name resolution resolves the label names that have been unresolved in the past resolution during the PLC initial processing.

This operation does not resolve the unresolved label names resulting from the nonexistence of the relevant labels on the PLC side, and system alarm 328 occurs. Accordingly, you can find out which cause is responsible for the unresolved label names.

☞ Page 918 Precautions for the label name resolution

• b3 to b15: Use prohibited

For details on how to use the bits, refer to the following.

☞ Page 916 Manually performing the label name resolution

■GOT Mobile File Operation Security Level (GS1892)

Specify a security level with which file manipulations are allowed in the GOT Mobile function, ranging from 0 to 15.

If an invalid value is specified, 0 is assumed.

If 0 is specified, file manipulations are allowed without operator authentication and level authentication.

■GOT Mobile Common Control (GS1896)

Specify the behavior of the GOT Mobile function.

• b0: When this bit is turned on, the URL parameter (initscreen) is enabled.

☞ Page 2753 Mobile screen

• b1: When this bit is turned on, file manipulations with the file manager are enabled.

When the GOT is in security mode 2, this signal is always off.

• b2: When this bit is turned on, the addition of X-Frame-Options to the HTTP response header is disabled.

• b3 to b15: Use prohibited

■Time to Force Mobile Momentary Switch OFF (GS1899)

Set the time from when communication is lost between the GOT and a client until when the GOT forcibly turns off the touch switch being touched on the client.

If a touch switch is released on a client after the client loses communication with the GOT, the GOT does not recognize the release.

After a specified time (default: 3 seconds) elapses, the GOT forcibly turns off the touch switch.

The following shows the setting range.

Device value	Type of Ethernet setting to be changed
0 to 2, 31 or more	3000 ms (3 seconds)

Device value	Type of Ethernet setting to be changed
3 to 30	300 ms to 3000 ms (Settable in units of 100 ms)

■GOT Ethernet Setting Change (GS1900 to GS1908)

Change the GOT Ethernet setting without using the utility.

Point

Precautions for changing the Ethernet setting

Make sure to restart the GOT after you change the Ethernet setting by using the GOT Ethernet Setting Change devices (GS1900 to GS1908).

Even though the new Ethernet setting is displayed in the utility, the GOT does not operates with the new setting until you restart the GOT.

The following shows the procedure for changing the Ethernet setting.

1. Specify the category of an Ethernet setting item by using the GOT Ethernet Setting Change Category device (GS1900).

☞ Page 3662 GOT Ethernet Setting Change Category (GS1900)

2. Store a new value to the New GOT Ethernet Setting device (GS1903 to GS1908) that corresponds to the Ethernet setting item to be changed.

☞ Page 3663 New GOT Ethernet Setting (GS1903 to GS1908)

3. Turn on the relevant bit of the GOT Ethernet Setting Change Item device (GS1902) that corresponds to the New GOT Ethernet Setting device storing the new value.

☞ Page 3662 GOT Ethernet Setting Change Item (GS1902)

4. Turn on the Execute GOT Ethernet Setting Change signal (GS1901.b0) to execute the Ethernet setting change.

☞ Page 3662 Execute GOT Ethernet Setting Change (GS1901)

5. After the setting change has completed, the GOT Ethernet Setting Change Completed signal (GS1500.b1) and the GOT Ethernet Setting Changed signal (GS1500.b2) turn on.

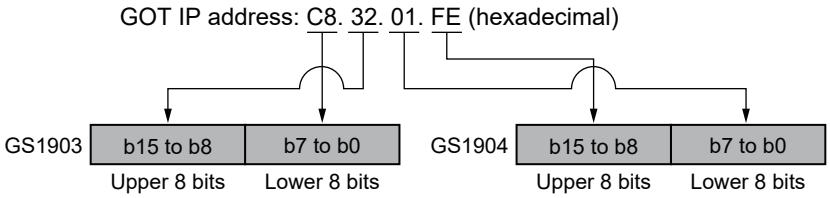
☞ Page 3620 GOT Ethernet Setting Change Status (GS1500)

Restart the GOT.

Ex.

When changing the GOT IP address for Ethernet port 1 to 200.50.1.254 (decimal)

1. Store 1 to GS1900.
2. Store new values to GS1903 and GS1904 as shown below.



3. Turn on GS1902.b0.
4. Turn on GS1901.b0 to execute the Ethernet setting change.
5. After the setting change has completed, GS1500.b1 and GS1500.b2 turn on.

Restart the GOT.

For details on the devices (GS1900 to GS1908) used to change the GOT Ethernet settings, refer to the following.

☞ Page 3662 GOT Ethernet Setting Change Category (GS1900)
☞ Page 3662 Execute GOT Ethernet Setting Change (GS1901)
☞ Page 3662 GOT Ethernet Setting Change Item (GS1902)
☞ Page 3663 New GOT Ethernet Setting (GS1903 to GS1908)

■GOT Ethernet Setting Change Category (GS1900)

The following shows the correspondence between the setting values and the categorized Ethernet setting items.

Setting value	Type of Ethernet setting to be changed
1	• GOT IP address for Ethernet port 1 • Subnet mask for Ethernet port 1 • Default gateway
2	• Channel number • Host station • GOT network number • GOT station number
3	• Not used
4	• GOT IP address for Ethernet port 2 • Subnet mask for Ethernet port 2 • Setting to disable Ethernet port 2
5	• Channel number • Setting number in the connected Ethernet controller setting • Network number for a controller
6	• Channel number • Setting number in the connected Ethernet controller setting • Station number of a controller
7	• Channel number • Setting number in the connected Ethernet controller setting • IP address of a controller

■Execute GOT Ethernet Setting Change (GS1901)

- b0: Turning on the bit executes the Ethernet setting change. The item to be changed is specified by using the GOT Ethernet Setting Change Category device (GS1900) and the GOT Ethernet Setting Change Item device (GS1902).
- b1 to b15: Use prohibited

■GOT Ethernet Setting Change Item (GS1902)

Set an Ethernet setting item to be changed. The category of the item is specified by using the GOT Ethernet Setting Change Category device (GS1900).

- b0 to b4: Turning on the bit sets the corresponding Ethernet setting item to be changed.

The following shows the correspondence between the bits and the Ethernet setting items.

GS1900 setting value: 1 to 4

GS1902	Ethernet setting to be changed (setting value of GS1900)			
	1	2	3	4
b0	GOT IP address for Ethernet port 1	Channel number	Use prohibited	GOT IP address for Ethernet port 2
b1	Use prohibited	Host station	Use prohibited	Use prohibited
b2	Subnet mask for Ethernet port 1	GOT network number	Use prohibited	Subnet mask for Ethernet port 2
b3	Use prohibited	GOT station number	Use prohibited	Use prohibited
b4	Default gateway	Use prohibited		Setting to disable Ethernet port 2

GS1900 setting value: 5 to 7

GS1902	Ethernet setting to be changed (setting value of GS1900)		
	5	6	7
b0	Channel number	Channel number	Channel number
b1	Setting number in the connected Ethernet controller setting	Setting number in the connected Ethernet controller setting	Setting number in the connected Ethernet controller setting
b2	Network number for a controller	Station number of a controller	IP address of a controller
b3	Use prohibited		
b4			

- b5 to b15: Use prohibited

■New GOT Ethernet Setting (GS1903 to GS1908)

The device that corresponds to the Ethernet setting item to be changed stores a new value.

When the Execute GOT Ethernet Setting Change signal (GS1901.b0) is turned on, the Ethernet setting is updated with the new value.

The following shows the correspondence between the devices and the Ethernet setting items.

GS1900 setting value: 1 to 4

New GOT Ethernet setting	Ethernet setting (setting value of GS1900)			
	1	2	3	4
GS1903	GOT IP address for Ethernet port 1	Channel number	Use prohibited	GOT IP address for Ethernet port 2
GS1904		Host station		
GS1905	Subnet mask for Ethernet port 1	GOT network number	Use prohibited	Subnet mask for Ethernet port 2
GS1906		GOT station number		
GS1907	Default gateway	Use prohibited	Use prohibited	Setting to disable Ethernet port 2
GS1908				Use prohibited

GS1900 setting value: 5 to 7

New GOT Ethernet setting	Ethernet setting (setting value of GS1900)		
	5	6	7
GS1903	Channel number	Channel number	Channel number
GS1904	Setting number in the connected Ethernet controller setting	Setting number in the connected Ethernet controller setting	Setting number in the connected Ethernet controller setting
GS1905	Network number for a controller	Station number of a controller	IP address of a controller
GS1906	Use prohibited	Use prohibited	
GS1907	Use prohibited		
GS1908			

The following shows how to set a new value.

• When the GOT Ethernet Setting Change Category device (GS1900) stores 1

Set new values in hexadecimal for the following items.

◇GOT IP address for Ethernet port 1

◇Subnet mask for Ethernet port 1

◇Default gateway

• The following shows the setting range of each item. (Decimal)

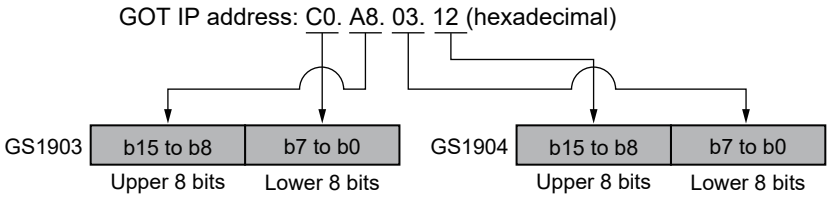
◇GOT IP address: 0.0.0.0 to 223.255.255.255

◇Subnet mask and default gateway: 0.0.0.0 to 255.255.255.255

If you do not use the subnet mask or default gateway, set the item to 0.0.0.0.

Ex.

When changing the GOT IP address for Ethernet port 1 to 192.168.3.18 (decimal)



• When the GOT Ethernet Setting Change Category device (GS1900) stores 2

◇Channel number

Set the channel number of a controller for which the host station, GOT network number, or GOT station number is changed.

The setting range is 1 to 4.

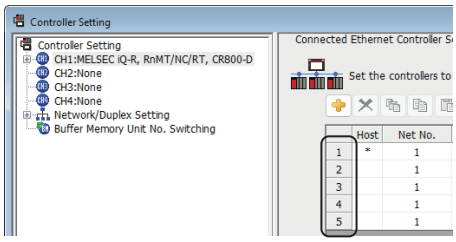
◇Host station, GOT network number, and GOT station number

Set the host station, GOT network number, or GOT station number for the controller connected to the specified channel.

The following shows the setting range of each item.

Host station: 1 to 128

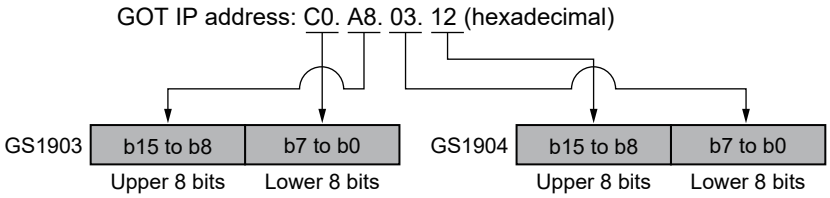
GOT network number: The setting range depends on the controller used.
GOT station number: The setting range depends on the controller used.
For details, refer to the following.
📖GOT3000 Series User's Manual (Connection)
To set the host station, specify a setting number existing in the connected Ethernet controller setting.



• When the GOT Ethernet Setting Change Category device (GS1900) stores 4

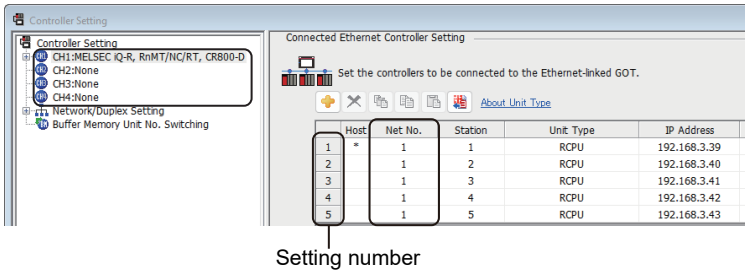
Set the GOT IP address or subnet mask for Ethernet port 2 in hexadecimal with GS1903 to GS1906.
The following shows the setting range of each item. (Decimal)
◇GOT IP address: 0.0.0.0 to 223.255.255.255
◇Subnet mask: 0.0.0.0 to 255.255.255.255
If you do not use the subnet mask, set the item to 0.0.0.0.

Ex.
When changing the GOT IP address to 192.168.4.20 (decimal)



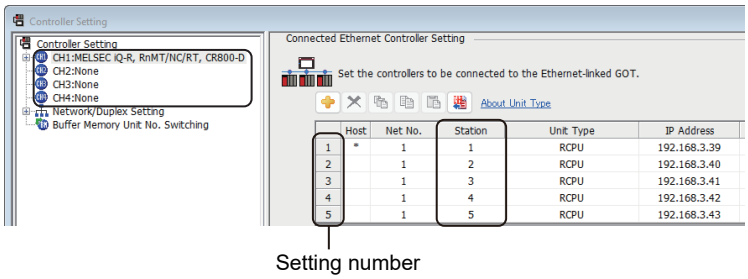
Set whether to enable or disable Ethernet port 2 with GS1907.
To disable Ethernet port 2, turn on GS1907.b0.

• When the GOT Ethernet Setting Change Category device (GS1900) stores 5



◇Channel number and the setting number in the connected Ethernet controller setting
Set the channel number and setting number of a controller for which the network number is changed.
The following shows the setting range of each item.
Channel number: 1 to 4
Setting number in the connected Ethernet controller setting: 1 to 128
◇Network number for a controller
Set the network number for a controller.
The setting range varies with the controller.
For details, refer to the following.
📖GOT3000 Series User's Manual (Connection)

• When the GOT Ethernet Setting Change Category device (GS1900) stores 6



◇Channel number and the setting number in the connected Ethernet controller setting

Set the channel number and setting number of a controller whose station number is changed.

The following shows the setting range of each item.

Channel number: 1 to 4

Setting number in the connected Ethernet controller setting: 1 to 128

◇Station number of the controller

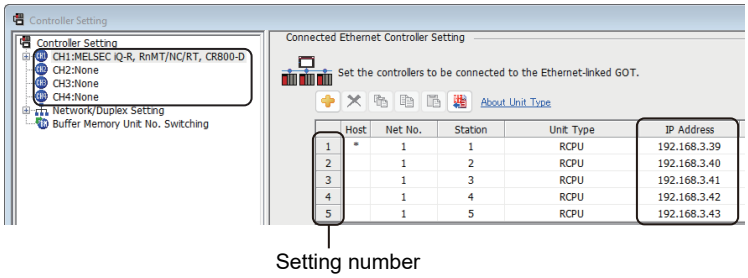
Set the station number of a controller.

The setting range varies with the controller.

For details, refer to the following.

GOT3000 Series User's Manual (Connection)

• When the GOT Ethernet Setting Change Category device (GS1900) stores 7



◇Channel number and the setting number in the connected Ethernet controller setting

Set the channel number and setting number of a controller whose IP address is changed.

The following shows the setting range of each item.

Channel number: 1 to 4

Setting number in the connected Ethernet controller setting: 1 to 128

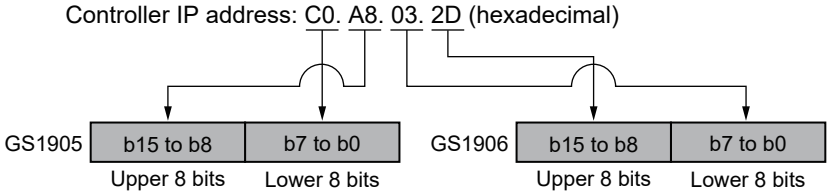
◇IP address of the controller

Set the IP address of a controller in hexadecimal.

The setting range is 0.0.0.0 to 223.255.255.255 (decimal).

Ex.

When changing the IP address of the controller to 192.168.3.45 (decimal)



■Full-screen Display Control signal (GS1998)

Specify the number of the video window to be displayed in full-screen size.

For the setting other than the following values, the operation is the same as when 0 is stored.

• 0: Does not provide full-screen display. (Displays each video window according to its setting.)

• 1 to 4: Displays the video window corresponding to the specified number in full-screen size.

• 5: Provides the full-screen display of the personal computer image.

■Video Window 1 to 4 and PC Image Extended Control signal (GS1999 to GS2006, GS2009 to GS2016, GS2019 to GS2026, GS2029 to GS2036, GS2039 to GS2045)

To display the video window or PC image screen on the GOT in full-screen mode or clip mode, configure the settings for video window 1 to 4 and the PC image screen.

The default display position of the video window or PC image screen is the upper left corner of the GOT screen.

Device					Function
Video window 1	Video window 2	Video window 3	Video window 4	PC image screen	
GS1999	GS2009	GS2019	GS2029	—	Specifies the channel number to be displayed on the video window. The setting value is fixed to 1. To display the channel number on the PC image screen, specify it using b15 of the [Digital Image Input Common] device. ☞ Page 2672 Settings of [Digital Image Input Common] device
GS2000	GS2010	GS2020	GS2030	GS2039	Specifies the display magnification of the video window or PC image screen. The display size (width and height) specified in the settings for the video windows and the personal computer image is the reference. • 8: 200% • 7: 400% • 0: 100% • 1: 87.5% • 2: 75% • 3: 62.5% • 4: 50% • 5: 37.5% • 6: 25% • Other than the above: 100%
GS2001	GS2011	GS2021	GS2031	GS2040	Specifies the display size (width) of the video window or PC image screen in dots. Specify a value within the range of the resolution for the maximum input signal or the GOT resolution, whichever is lower.
GS2002	GS2012	GS2022	GS2032	GS2041	Specifies the display size (height) of the video window or PC image screen in dots. Specify a value within the range of the resolution for the maximum input signal or the GOT resolution, whichever is lower.
GS2003	GS2013	GS2023	GS2033	GS2042	Specifies the display position (X-coordinate) of the video window or PC image screen in dots based on the upper left corner of the GOT screen. Specify a value within the range of the resolution for the maximum input signal or the GOT resolution, whichever is lower.
GS2004	GS2014	GS2024	GS2034	GS2043	Specifies the display position (Y-coordinate) of the video window or PC image screen in dots based on the upper left corner of the GOT screen. Specify a value within the range of the resolution for the maximum input signal or the GOT resolution, whichever is lower.
GS2005	GS2015	GS2025	GS2035	GS2044	Specifies the origin (X-coordinate) of the clip area of the input image using a value based on the coordinate for 100% display. Specify a value within the range of the resolution for the input image. The window size is a minimum width and height of 64 dots each. The window is resized based on the specified clip origin. For the input image, the clip area is determined by the width and height of the video window. Therefore, when the window is resized, its size on the GOT screen is adjusted according to the reduction ratio. Example) When the video window width and height are 100 and 100 and the window is displayed at 50%, the input image is displayed at a size of (50, 50) on the GOT screen.
GS2006	GS2016	GS2026	GS2036	GS2045	Specifies the origin (Y-coordinate) of the clip area of the input image using a value based on the coordinate for 100% display. Specify a value within the range of the resolution for the input image. The window size is a minimum width and height of 64 dots each. The window is resized based on the specified clip origin. For the input image, the clip area is determined by the width and height of the video window. Therefore, when the window is resized, its size on the GOT screen is adjusted according to the reduction ratio. For examples, refer to the descriptions on GS2005 to GS2044.

■Web Browser Control (GS2562)

Specifies the behavior of the web browser.

- b0: Turning on this bit hides the browser toolbar display switching button on the application toolbar.
- b1: Turning on this bit hides the browser toolbar.
- b2: Turning on this bit hides the click switching button on the application toolbar.
- b3: Turning on this bit hides the zoom in and out buttons on the application toolbar.
- b4 to b9: Use prohibited
- b10: Turning on this bit displays the web browser window in full screen mode. Turning off this bit displays the web browser window in window display mode.
- b11: Turning on this bit launches another web browser window when the displayed web browser window is closed.

When this bit is turned off, the dialog notifying that another web browser window cannot be launched when the displayed web browser window is closed.

- b12: Turning on this bit disables JavaScript of the web browser.
- b13: Use prohibited
- b14: Turning on this bit displays the [Logs] menu on the browser setting screen.

From the [Logs] menu, the log display screen for webpage designers can be displayed.

- b15: Turning on this bit enables the iframe history.

■OPC Server Function Control (GS2563)

Controls the connections between the OPC server and the clients.

- b0: Turning on this bit disconnects all clients.

■Special Control Function 2 During Specific Application Execution (GS2564)

Controls the functions that can be operated with the utility.

- b0: Turning on this bit allows manipulation and viewing of only G3P files in [Recipe information] of the utility.
- b1: Turning on this bit allows viewing of only G3L files in [Logging information] of the utility.
- b2: Turning on this bit allows viewing of only G3A files in [Alarm information] of the utility.

■VPN Operation Status Control (GS2565)

Controls the operation of SiteManager.

- b0: Turning on this bit starts the operation of (connection with) SiteManager.

Turning off this bit stops the operation of (disconnects) SiteManager.

■Transparent End Time (GS2567)

Specify the time from the last relay of communication data to the interruption of the FA transparent function in seconds.

After the FA transparent function is interrupted, the GOT monitors the changed controller according to its settings.

The setting range is 3 to 90.

If a value outside the range is specified, the operation is performed in 30 seconds. The set value is applied before the FA transparent function is started.

For information on the FA transparent function, refer to the following.

GOT3000 Series User's Manual (Connection)

■FTP Server Function Extend Command Control (GS2575)

Specify the response string for the SYST command when the FTP server function is used.

The following shows the response string for each set value.

Set value	String
0	GOT3000
1	Windows_NT

Appendix 2 Precautions for using CSV file

GT37 SoftGOT3000

This section describes precautions for using an imported/exported CSV file in GT Designer3.

How to save CSV files

To edit a CSV file in Microsoft Excel and use the file in GT Designer3, save the file in the CSV (comma delimited) file format (*.csv).

The file cannot be used if saved in the CSV UTF-8 (comma delimited) file format (*.csv).

Editing the exported file

If a device in use has a name starting with 0, the 0 may be deleted by a function to edit files such as spreadsheet software or other applications.

If a file is saved with the leading zero removed from a device name, the file cannot be imported normally.

When using a device whose name starts with 0, use a text editor or similar tool to edit the file.

Appendix 3 Precautions for using Unicode text file

GT37 SoftGOT3000

This section describes precautions for using a Unicode text file imported or exported in GT Designer3.

How to save Unicode text files

To edit and use a Unicode text file exported in GT Designer3, save the file in the Unicode text file format (*.txt).
The character code applicable to Unicode text files is Unicode (file format: UTF16 LittleEndian).

Displaying Unicode text files

To display Unicode text files on a personal computer and others, use software compatible with Unicode.
Software that is not compatible with the Unicode cannot display Unicode text files properly.

Displaying Unicode text files using Microsoft Excel

To open a Unicode text file that contains a comment of multiple lines by Microsoft Excel, drag the Unicode text file to the Microsoft Excel.
Methods other than above cannot display Unicode text files by Microsoft Excel properly.

A

Appendix 4 Specifications of resource data

GT37 SoftGOT3000

☞ Page 3670 Common specifications of CSV files and Unicode text files
☞ Page 3670 Size of the resource data file

Appendix 4.1 Common specifications of CSV files and Unicode text files

Binary files created using the following functions can be viewed on a personal computer when the files are converted to CSV files or Unicode text files.

- User alarm monitoring
- System alarm monitoring
- Logging
- Recipe
- Operation log

The following shows the specifications of the file formats.

File format	Specifications
CSV format (*.CSV)	• Character codes: ASCII and Shift JIS • Delimiter: Comma (,) Before converting a data file containing any character other than the ASCII and Shift JIS code characters to a CSV file, turn on GS522.b2. Then, the file is converted to a file with an extension of CSV in the following specifications, and the characters are correctly displayed. • Character codes: Unicode • Delimiter: Tab ☞ Page 3648 Special Control During Specific Function Execution (GS522)
Unicode text format (*.TXT)	• Character codes: Unicode • Delimiter: Tab

Appendix 4.2 Size of the resource data file

GT37 SoftGOT3000

Some functions of the GOT store the resource data into a data storage.

The following shows the expressions for calculating the size of the resource data to be stored into a data storage by each function.

The sizes determined by the expressions are approximate.

A determined size may be different from the actual size of the resource data.

☞ Page 3671 User alarm monitoring
☞ Page 3672 System alarm monitoring
☞ Page 3673 Logging
☞ Page 3674 Recipe
☞ Page 3675 Operation log
☞ Page 3678 Hard copy
☞ Page 3678 Video file
☞ Page 3678 Label name resolution information

User alarm monitoring

■Binary file (*.G3A)

History mode	
144 + (A × 2) + (18 × B) + (20 × C) bytes	
A	Number of characters of the alarm name
B	Number of alarms
C	Number of stored events

Cumulative mode (when [Display the same alarm occurring multiple times as another item] is deselected)	
144 + (A × 2) + (48 × B) bytes	
A	Number of characters of the alarm name
B	Number of alarms

Cumulative mode (when [Display the same alarm occurring multiple times as another item] is selected)	
144 + (A × 2) + (26 × B) + (32 × C) bytes	
A	Number of characters of the alarm name
B	Number of alarms
C	Number of stored events

■CSV file

When counting the number of characters in an alarm name or the average number of characters in a comment, count a one-byte character as 0.5 character and a two-byte character as 1 character.

History mode	
422 + (A × 2) + (14 + B + C + D + (E × 2) + (F × 3) + G + H) × J bytes	
A	Number of characters of the alarm name
B	Number of digits of the upper comment number
C	Number of digits of the middle comment number
D	Number of digits of the basic alarm comment number
E	Average number of characters of comments
F	Length of the date and time string
G	Number of digits of the level
H	Number of digits of the group
J	Number of alarms

Cumulative mode	
457 + (A × 2) + (39 + B + C + D + (E × 2) + (F × 3) + G + H + J) × K bytes	
A	Number of characters of the alarm name
B	Number of digits of the upper comment number
C	Number of digits of the middle comment number
D	Number of digits of the basic alarm comment number
E	Average number of characters of comments
F	Length of the date and time string
G	Number of digits of the level
H	Number of digits of the group
J	Number of digits of the frequency of alarm occurrences
K	Number of alarms

■Unicode text file

Size of the CSV file × 2 bytes

System alarm monitoring

■Binary file (*.G3A)

(1) History mode (when [Get detailed alarm information] is deselected)	
128 + (24 × A) bytes	
A	Number of stored events

(2) History mode (when [Get detailed alarm information] is selected)	
128 + (52 × A) bytes	
A	Number of stored events

History mode (when [Record label/tag name at the time of alarm generation] is selected)	
((1) or (2)) + (((2 + (B × 2) rounded up to a multiple of 4) × A)	
A	Number of stored events
B	Number of characters to be recorded

■CSV file

When counting the average number of characters in a comment or the number of characters in a function name, count a one-byte character as 0.5 character and a two-byte character as 1 character.

447 + (20 + A + (B × 2) + C + D + E + F + G + H + J + (K × 2) + L) × M bytes	
A	Average number of alarm number characters
B	Average number of characters of comments
C	Length of the date and time string
D	Number of channel number characters
E	Number of network number, station number, and module number characters
F	Number of characters of the device name
G	Number of digits of the screen number
H	Number of digits of the definition screen number
J	Number of digits of the object ID
K	Number of characters of the function name
L	Number of characters of the drive name
M	Number of alarms

■Unicode text file

Size of the CSV file × 2 bytes

Logging

■Binary file (*.G3L)

152 + A + B + D + E + F + G bytes	
A*1	2 + 2 × Number of characters used in [Logging Name]
B*1	C × Total number of points set in each block in the [Device] tab
C*1	2 + 2 × Number of characters used in [Device Comment]
D*1	4 × Total number of points set in each block in the [Device] tab
E*1	12 × Number of blocks
F*1	4 × Number of blocks
G*1	H × Number of logs per file
H	4 + J + K
J*1	2 + ((L × 2) + 7) / 8
K*1	L × 2
L	M + N + P + Q + (R × 2) + (S × 4)
M	Total number of points for blocks with the following device type [Bit]
N	Total number of points for blocks with the following device type [Signed BIN8] or [Unsigned BIN8]
P	Total number of points for blocks with the following device type [Signed BIN16], [Unsigned BIN16], or [BCD16]
Q	Total number of points for blocks with the following device type [String]
R	Total number of points for blocks with the following device type [Signed BIN32], [Unsigned BIN32], [BCD32], or [Real(32bit)]
S	Total number of points for blocks with the following device type [Signed BIN64], [Unsigned BIN64], [BCD64], or [Real(64bit)]

*1 Rounded up to a multiple of 4.

■CSV file

215 + [N1] + [N2] × [N3] bytes		
[N1]	(A + 17) × B	
[N2]	20 + (C + 1) × B	
[N3]	Number of logs in the file	
A	Average number of characters of device comments	
B	Total number of device points set to the block	
C	Number of display digits	
	When the display format is real (exponential expression)	Number of display digits + 5
	When the display format is real (fixed decimal) and the number of decimal places is 0	Number of digits of the integer part (number of display digits)
	When the display format is real (fixed decimal) and the number of decimal places is 1 or more	Number of digits of the integer part (number of display digits) + 1 + Number of decimal places

■Unicode text file

Size of the CSV file × 2 bytes

Recipe

■Binary file (*.G3P)

216 +[N1] + [N2] + [N3] + [N4] bytes	
[N1]	16 × A
[N2]	4 × B
[N3]*1	(2 + (2 × C)) × B
[N4]*1	D × M
A	Value set for [Block Number] in the [Device] tab
B	Total number of points set in each block in the [Device] tab
C	Number of characters
D*1	80 + E × 2
E	F + G + H + J + (K × 2) + (L × 4)
F	Total number of points for blocks with the following device type [Bit]
G	Total number of points for blocks with the following device type [Signed BIN8] or [Unsigned BIN8]
H	Total number of points for blocks with the following device type [Signed BIN16], [Unsigned BIN16], or [BCD16]
J	Total number of points for blocks with the following device type [String]
K	Total number of points for blocks with the following device type [Signed BIN32], [Unsigned BIN32], [BCD32], or [Real(32bit)]
L	Total number of points for blocks with the following device type [Signed BIN64], [Unsigned BIN64], [BCD64], or [Real(64bit)]
M	Value set for [Record Number] in the [Device] tab

*1 Rounded up to a multiple of 4.

■CSV file

240 + [N1] + [N2] + [N3] bytes	
[N1]	Number of characters of the record name
[N2]	(A + B + C + D) × (18 + E)
[N3]	F × (25 + A × 2 + B × 7 + C × 12 + H × 2)
A	Number of bit device points
B	Number of word device points
C	Number of double-word device points
D	Number of blocks with the device type [String]
E	Number of characters of the device comment
F	Number of records When the recipe file is in CSV or Unicode text format, 1 is assumed regardless of the recipe settings.
H	Total number of words in devices (with the device type [String])

■Unicode text file

Size of the CSV file × 2 bytes

Operation log

■Binary file (*.G3O)

64 + ([N1] + [N2] + ... + [Nm]) bytes

"[N1] + [N2] + ... + [Nm]" indicates the total size of each log.

The following table shows the size per log for each log type.

Log type	Size (byte)	Log type	Size (byte)
GOT startup	Max. 88	Recipe display (record list): Record name change	Max. 396
GOT termination	12	Recipe display (record list): Read	Max. 328
GOT simple restart	12	Recipe display (record list): Write	Max. 328
GOT project restart	12	Recipe display (record list): Deletion	Max. 328
GOT restart by reset	12	Object script (trigger type [Key Code Input])	Max. 280
GOT offline mode transition	12	Operator authentication: Login successful	Max. 36
GOT background processing stop	12	Operator authentication: Login/re-login failed	Max. 36
GOT background processing restart	12	Operator authentication: Logout	Max. 36
Application switching	16	Operator authentication: Automatic logout	Max. 36
Application startup, exit	20	Operator authentication: Forced logout	Max. 36
Clock setting (External device to GOT)	16	Operator authentication: Operator switching successful	Max. 36
Clock setting (SNTP)	16	Operator authentication: Operator switching failed	Max. 36
Clock setting (GS)	16	Operator authentication: Password changed	Max. 36
Time zone change	24	Operator authentication: Password change failed	Max. 36
Displayed system language	Max. 48	Operator authentication: Operator account lock	Max. 32
Screen switching	Max. 84	Operator management: Started	Max. 40
Station number switching	16	Operator management: Start failed	Max. 40
Language switching	16	Operator management: End	Max. 40
Buffer memory unit number switching	16	Operator management operation: Save	Max. 36
Security level change (Device value change)	16	Operator management operation: Undo	Max. 36
SoftGOT-GOT link connection	6	Operator management operation: Import	Max. 196
SoftGOT-GOT link disconnection	16	Operator management operation: Export	Max. 196
SoftGOT-GOT link authorization transfer	20	Operator management changed (function settings): Authentication type	Max. 44
VNC server connection	16	Operator management changed (function settings): Automatic logout	Max. 44
VNC server disconnection	16	Operator management changed (function settings): Password expiration date	Max. 48
VNC server authorization transfer	20	Operator management changed (function settings): External authentication ID	Max. 48
Screen gesture	20	Operator management changed (function settings): Authentication prohibited	Max. 48
System language switching	Max. 72	Operator management changed (function settings): Operator account lock	Max. 44
Security level change (Password entry)	Max. 40	Operator management changed (function settings): Password requirements	Max. 48
Clock function (changed in the utility)	Max. 40	Operator management changed (function settings): Password history	Max. 44
Time zone change (in the utility)	Max. 48	Operator management changed (function settings): Sub administrator	Max. 44
GOT ID switching	Max. 40	Operator management changed (operator management): Addition of operator	Max. 64
Touch switch: Bit set	Max. 280	Operator management changed (operator management): Deletion of operator	Max. 64
Touch switch: Bit reset	Max. 280	Operator management changed (operator management): Editing of operator	Max. 68
Touch switch: Bit alternate	Max. 280	Operator management (at startup): New file creation	Max. 12
Touch switch: Bit momentary	Max. 280	Operator management (at startup): File corruption	Max. 12

Log type	Size (byte)	Log type	Size (byte)
Touch switch: Word set	Max. 288	Operator management (at startup): Corrupted file restoration	Max. 40
Touch switch: Application switching	Max. 256	Operator management (at startup): Abnormal end	Max. 40
Touch switch: Screen switching	Max. 260	Functional operation security	Max. 44
Touch switch: Station number switching	Max. 260	Numerical input: Base device	Max. 456
Touch switch: Auto repeat start	Max. 256	Numerical input: Option write device	Max. 276
Touch switch: Auto repeat end	Max. 260	Numerical input: Option write completion device	Max. 276
Touch switch: Screen gesture	Max. 256	Text input	Max. 1080
Touch switch: Recipe operation import	Max. 420	Text input: Option write completion device	Max. 276
Touch switch: Recipe operation export	Max. 420	Alarm display (list, history): User alarm deletion	Max. 256
Alarm display (list, history): Deletion of all the user alarms	Max. 256	GOT Mobile: Disconnection	20
Alarm display (list, history): System alarm deletion	Max. 256	GOT Mobile: Forced disconnection (Control information)	20
Alarm display (list, history): Deletion of all the system alarms	Max. 256	GOT Mobile: End of trial connection	20
Alarm display (list, history): System alarm reset	Max. 256	GOT Mobile: Abnormal disconnection due to a communication error	20
Alarm display (list, history): User alarm reset	Max. 288	GOT Mobile: Virtual device allocation	48
Slider control	Max. 336	Authorization management: Obtained	20
GOT Mobile: Connection established	Max. 295	Authorization management: Released	20
GOT Mobile: Trial connection established	Max. 295	Authorization use: Obtained	44
GOT Mobile: Connection authentication failed	Max. 295	Authorization use: Released	44
GOT Mobile: Number of clients exceeded the upper limit	Max. 295	Authorization use: Failed to obtain	44

■CSV file

248 + ([N1] + [N2] + ... + [Nm]) bytes

"[N1] + [N2] + ... + [Nm]" indicates the total size of each log.

The following table shows the size per log for each log type.

Log type	Size (byte)	Log type	Size (byte)
GOT startup	154	Text input: Option write completion device	152
GOT termination	93	Text input	588
GOT simple restart	103	User alarm (Deletion)	174
GOT project restart	112	User alarm (Deletion of all the user alarms)	176
GOT restart by reset	108	User alarm (Reset)	195
GOT offline mode transition	113	System alarm (Deletion)	174
GOT background processing stop	116	System alarm (Deletion of all the system alarms)	176
GOT background processing restart	118	System alarm (Reset)	195
Application switching	139	Slider control	151
Application start	128	Recipe display (record list): Record name change	180
Application termination	126	Recipe display (record list): Read	161
Time setting (External device)	182	Recipe display (record list): Write	161
Time setting (SNTP)	179	Recipe display (record list): Deletion	168
Time setting (GS)	176	Object script	218
Time zone change	125	Operator authentication: Login	119
System language switching (Device)	115	Operator authentication: Logout	119
Screen switching	193	Operator authentication: Login failed	123
Station number switching	129	Operator authentication: Automatic logout	128
Language switching	103	Operator authentication: Forced logout	128
Buffer memory unit number switching	118	Operator authentication: Operator switching successful	125
Level change (Device)	111	Operator authentication: Operator switching failed	127
VNC server connection	114	Operator authentication: Password changed	116
Screen gesture	114	Operator authentication: Password change failed	128
System language switching	171	Operator authentication: Operator account lock	117
Level change (Password)	167	Operator management: Started	162
Time change	224	Operator management: Start failed	167
GOT ID switching	169	Operator management: End	160
Touch switch (Bit)	205	Operator management operation: Save	160
Touch switch (Word)	247	Operator management operation: Undo	160
Special function switch	171	Operator management operation: Import	239
Go To Screen Switch	195	Operator management operation: Export	226
Change Station No. Switch	193	Operator management changed (Function settings)	160
Touch switch (Auto repeat start)	193	Operator management changed (Operator management)	381
Touch switch (Auto repeat end)	198	Operator management (at startup)	182
Touch switch: Screen gesture	149	Functional operation security	182
Touch switch: Recipe operation import	243	Authorization management obtained/released	189
Touch switch: Recipe operation export	243	GOT Mobile connection/disconnection	197
Numerical input	228		
Numerical input (Write device)	221		
Numerical input (Write completion device)	227		

■Unicode text file

Size of the CSV file × 2 bytes

Hard copy

■BMP file

The file size depends on the resolution of the GOT.

GOT resolution	Size (byte)
Full HD (1920 × 1080)	6,220,854
WXGA (1280 × 800)	3,072,054
XGA (1024 × 768)	2,359,350
WVGA (800 × 480)	1,152,054
VGA (640 × 480)	921,654
WQVGA (480 × 272)	391,734

■JPEG file

The file size depends on the contents displayed on the GOT screen.

Video file

■Standard recording

For a video (H.264, common to VGA/HD/Full-HD, 1 Mbps, maximum 30 fps)

[1 file size] = [Recording time (seconds)] × (131,072 [bytes] + 960 [bytes]) + 1,118 [bytes]	
131,072 [bytes]	Size in bytes converted from 1 Mbps (1 × 1024 × 1024 ÷ 8)
960 [bytes]	30 [fps] × variable part size (32 [bytes]) of MP4 structure
1,118 [bytes]	Fixed part size of MP4 structure (video only)

Since the file size of compressed video is determined by the bit rate and frame rate, a common calculation formula applies to VGA, HD, and Full-HD, regardless of resolution. Although the frame rate may vary depending on the camera's image quality settings, it does not significantly affect the file size. Therefore, the calculation assumes a fixed maximum frame rate of 30 fps.

■Recording before and after the event

[1 file size] = [(Recording duration (seconds)] = [pre-event duration (seconds)] + [post-event duration (seconds)]) × 132,032 [bytes] + 1,118 [bytes]

■Long-duration recording

A common calculation formula applies to VGA, HD, and Full-HD.

For long-duration recording, each file is calculated based on 7.5 minutes.

[Total video file size] = [Total number of files] × (132,032 [bytes] × 450 [seconds] (7.5 minutes) + 1,118 [bytes])	
[Total number of files]	(Drawing recording time [minutes] ÷ 7.5 [minutes]) + 1 (rounded down to the nearest decimal point)

Label name resolution information

■Batch method

32 + (36 × A) + (68 × B) bytes	
A	Number of connections
B	Total number of labels for each connection

■Split method

32 + (36 × A) + (68 × B) + C bytes	
A	Number of connections
B	Total number of labels for each connection
C	8 + (20 × Maximum number of blocks) × (A + 1)

Appendix 5 Specifications and operations of the nonvolatile RAM user area

GT37 SoftGOT3000

Some functions of the GOT use the non-volatile RAM user area.

This chapter describes the following.

☞ Page 3679 Functions that use the non-volatile RAM user area

☞ Page 3679 Size of data stored in the non-volatile RAM user area (byte)

☞ Page 3681 Operations performed on the nonvolatile RAM user area

Appendix 5.1 Functions that use the non-volatile RAM user area

GT37 SoftGOT3000

The following functions save data to the non-volatile RAM user area.

Applicable function	Number of settings	Capacity
User alarm monitoring	Max. 10	500 KB (total)
System alarm monitoring	Max. 1	
Logging	Max. 20	
Recipe	Max. 20	
Internal device retention	Max. 1	

Appendix 5.2 Size of data stored in the non-volatile RAM user area (byte)

GT37 SoftGOT3000

The following shows the expressions for calculating the size of the non-volatile RAM user area used by each function.

The sizes determined by the expressions are approximate and may differ from the actual sizes.

Check the actual sizes in the following setting dialogs.

Page where the formula is described	Setting dialog
☞ Page 3679 User alarm monitoring	☞ Page 2045 [User Alarm Observation] dialog
☞ Page 3680 System alarm monitoring	☞ Page 2097 [System Alarm Observation] dialog
☞ Page 3680 Logging	☞ Page 2228 [Logging] dialog
☞ Page 3680 Recipe	☞ Page 2311 [Recipe] dialog
☞ Page 3681 Internal device retention	—

User alarm monitoring

((1) rounded up to a multiple of 64) × 2

The formula assigned to (1) differs depending on the mode as listed below.

Mode		Formula assigned to (1)
Occurring mode		256 + (16 × Number of monitored alarms)
History mode		256 + (20 × Number of histories) + [(2 × Number of monitored alarms) rounded up to a multiple of 4]
Cumulative mode	When [Display the same alarm occurring multiple times as another item] is deselected	256 + (32 × Number of monitored alarms)
	When [Display the same alarm occurring multiple times as another item] is selected	256 + (32 × Number of histories) + [(10 × Number of monitored alarms) rounded up to a multiple of 4] + [(2 × Number of monitored alarms) rounded up to a multiple of 4]

System alarm monitoring

((1) rounded up to a multiple of 64) × 2

The formula assigned to (1) differs depending on the mode as listed below.

Mode		Formula assigned to (1)
Occurring mode	When [Get detailed alarm information] is deselected	256 + (20 × Number of histories)
	When [Get detailed alarm information] is selected	256 + (48 × Number of histories)
History mode	When [Get detailed alarm information] is deselected	256 + (24 × Number of histories)
	When [Get detailed alarm information] is selected	256 + (52 × Number of histories)

■When [Record label/tag name at the time of alarm generation] is selected

The formula assigned to (1) differs depending on the mode.

Refer to the above table.

(1) + ((2 + (number of characters to be recorded × 2)) rounded up to a multiple of 4) × number of histories

Logging

[192 + A × E + (4 × F)] rounded up to a multiple of 64

The following table explains the alphabets used in the formula.

Alphabet		Description
A		Log size for one item = [(6 + B ÷ 4) rounded up to a multiple of 4] + [(B × 2) rounded up to a multiple of 4]
B	—	Total number of collection target device points (16-bit conversion) = (C × 2) + D
	C	Total number of 32-bit device points = Total number of points with the device types [Signed BIN32], [Unsigned BIN32], and [BCD32]
	D	Device other than C = Total number of points with the device types [Bit], [Signed BIN16], [Unsigned BIN16], [BCD16], and [String]
	E	Number of stored logs
F		Number of blocks

Recipe

256 + (16 × A) + (B × G)

The following table explains the alphabets used in the formula.

Alphabet		Description
A		[Block Number] in the [Device] tab
B	—	Size of one record = 80 + ((C + D + E + (F × 2)) × 2)
	C	Total number of bit device points = Total number of points for blocks with the device type [Bit]
	D	Total number of 16-bit device points = Total number of points for blocks with the device types [Signed BIN16], [Unsigned BIN16], and [BCD16]
	E	Total number of string points = Total number of points for with the device type [String]
	F	Total number of 32-bit device points = Total number of blocks with the device types [Signed BIN32], [Unsigned BIN32], [BCD32], and [Real(32bit)]
G		[Record Number] in the [Device] tab

Internal device retention

(192 + ("A" rounded up to a multiple of 64)) × 2

The following table explains the alphabets used in the formula.

Alphabet		Description
A		44 + B + D
B	—	GD setting = 32 + (2 × C)
	C	Number of GOT data registers (GD) If the GD devices are not set (number of points is 0), B is not added.
D	—	GB setting = 32 + 4 × ((E ÷ 32) - (F ÷ 32) + 1) In the result of (E / 32) and (F / 32), the numbers after the decimal point are omitted.
	E	Last device number = F + G - 1 If the GB devices are not set (number of points is 0), D is not added.
	F	Start device number of the GOT bit registers (GB)
	G	Number of GOT bit registers (GB)

Appendix 5.3 Operations performed on the nonvolatile RAM user area

☞ Page 3681 Data deletion in the nonvolatile RAM user area
☞ Page 3681 Backing up the data stored in the nonvolatile RAM user area
☞ Page 3681 Influence when changing the nonvolatile RAM user area afterward

Data deletion in the nonvolatile RAM user area

The data saved in the nonvolatile RAM user area is deleted under the following conditions.

- Project data or a system application is written with [Initialize nonvolatile RAM user area at the time of writing project] selected in the [Communicate with GOT] dialog.
- The nonvolatile RAM user area is initialized by using [NVRAM management] in the utility.
- The clear trigger device set in [Buffering] of the user alarm monitoring setting or the system alarm monitoring setting turns on.
- [Initialize NVRAM area at the time of initial monitoring] is set in GT SoftGOT3000.

Backing up the data stored in the nonvolatile RAM user area

Back up or restore the data stored in the nonvolatile RAM user area by using [NVRAM management] of the utility.
For details on backup/restore, refer to the following.
GOT3000 Series User's Manual (Utility & Maintenance Functions)

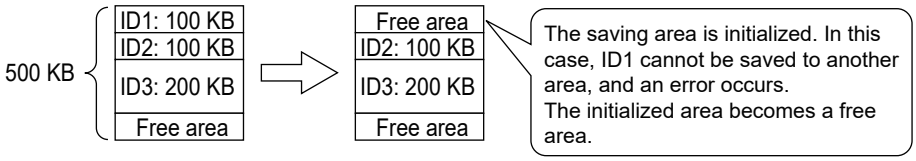
Influence when changing the nonvolatile RAM user area afterward

If you change the setting of the nonvolatile RAM user area after starting the GOT operation, data saving may become impossible.

■When changing the size of the nonvolatile RAM user area used

If the size of the nonvolatile RAM user area used is changed in the setting for the function that uses the nonvolatile RAM user area, the data stored in the RAM user area will be initialized.

Details of the change	Influence
Reducing the size	The data is saved to the initialized area. The remaining area is reserved as a free area.

Details of the change	Influence
Increasing the size	The area used is initialized and the data is saved to another area. If the area required for saving the data is insufficient, an error occurs. If an error occurs, initialize the nonvolatile RAM user area, reduce the data size to 500 KB or less, and save the data again. Example) When increasing the size for ID 1 from 100 KB to 200 KB 

■When deleting the settings of the functions that use the nonvolatile RAM user area

When the setting of each function is deleted, the nonvolatile RAM user area used for saving the data is reserved as an unused area.

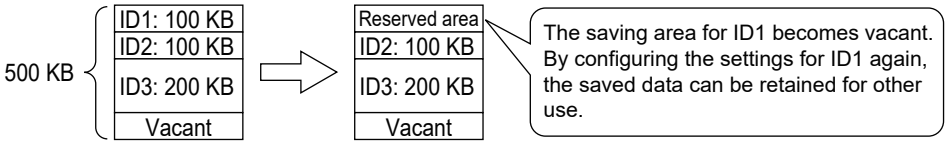
Initialize the unused area to use it.

For initialization of the nonvolatile RAM user area, refer to the following.

GOT3000 Series User's Manual (Utility & Maintenance Functions)

Ex.

Deleting the setting of ID 1



■Others

If the data saved in the nonvolatile RAM user area is not restored at the GOT startup, a system alarm occurs.

If a system alarm occurs, a part of the nonvolatile RAM user area may be corrupted.

Initialize the nonvolatile RAM user area.

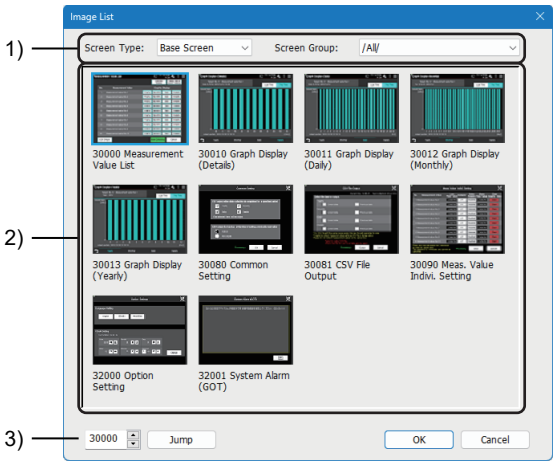
GOT3000 Series User's Manual (Utility & Maintenance Functions)

Appendix 6 Common dialog

☞ Page 3683 [Image List] dialog (screen)
☞ Page 3684 [Date/Time Setting] dialog (screen)
☞ Page 3685 [Password Edit] dialog
☞ Page 3685 [Edit Comment] dialog

Appendix 6.1 [Image List] dialog (screen)

GT37 SoftGOT3000

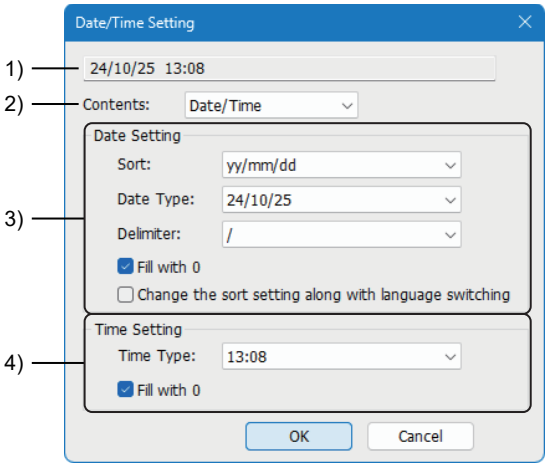


Item		Description
1)	[Screen Type]	This item is displayed when the [Image] button is clicked in the [Set Overlay Screen] dialog displayed on a base screen or window screen. Select the type of the screen to be displayed in the screen image field.
	[Screen Group]	Select the screen group to be displayed in the screen image field.
2)	Screen image list	Displays the thumbnail, screen number, and title of the screen image.
3)	Screen number entry field	Enter a screen number and click the [Jump] button to select the thumbnail of the specified screen in the screen image list.

A

Appendix 6.2 [Date/Time Setting] dialog (screen)

GT37 SoftGOT3000

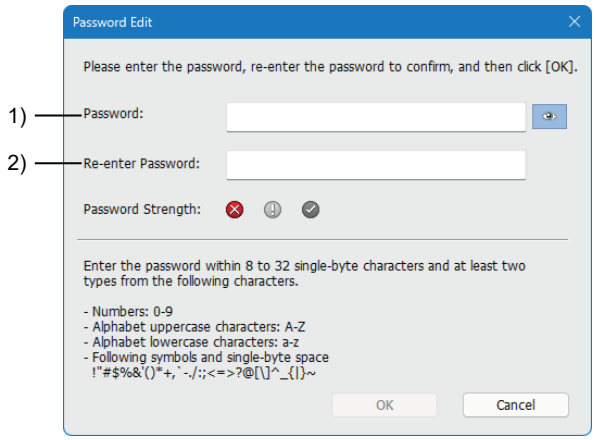


Item			Description
1)	Preview		Previews the date and time based on the current settings.
2)	[Contents]		Select the date and time to be displayed.
3)	[Date Setting]	[Sort]	Select a sorting order of year, month and date. When [Change the sort setting along with language switching] is selected, a sorting order cannot be selected.
		[Date Type]	Select the display format of the date.
		[Delimiter]	Select a delimiter used for separating expressions of year, month and date.
		[Fill with 0]	When the month and/or date are/is in single digit, 0 is displayed before the single-digit number.
		[Change the sort setting along with language switching]	Changes the sorting order of the date according to the setting for [Region Setting] in the [Environmental Setting] window ([Language Switching]). ☞ Page 546 Setting for switching the language displayed on the GOT ([Language Switching]) If an item containing Japanese characters is selected for [Date Format], this item is grayed out and cannot be set.
4)	[Time Setting]	[Time Type]	Select the display format of the time.
		[Fill with 0]	When the time, minute, and/or second are/is in single digit, 0 is displayed before the single-digit number.

Appendix 6.3 [Password Edit] dialog

GT37 SoftGOT3000

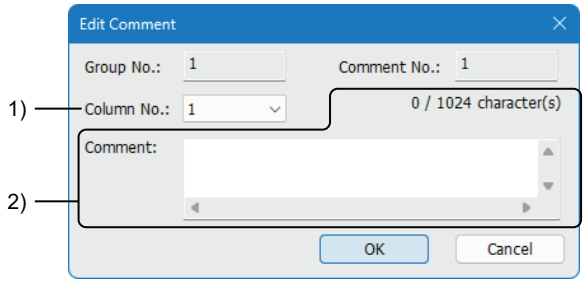
The [Password Edit] dialog is used to register or edit passwords.
The contents of this dialog vary depending on which dialog or screen button was used to open it, but its basic functions are the same.
The following shows an example of the [Password Edit] screen.
The range and allowable character count for the password vary depending on the function.



Item		Description
1)	[Password]	Set a new password.
2)	[Re-enter Password]	Input the password set in [Password] for the confirmation.

Appendix 6.4 [Edit Comment] dialog

GT37 SoftGOT3000



Item		Description
1)	[Column No.]	Select the column No. of the comment to be edited.
2)	[Comment]	Edit the comment in the comment group. If an unregistered comment group No. or comment No. is displayed, create a new comment. Up to 1024 characters can be set for the comment. The number of characters of the input comment is displayed on the upper right of the comment entry field. A one-byte or two-byte character is counted as one character, and a line feed is counted as two characters.

A

Appendix 7 License registration method

GT37 SoftGOT3000

To use the following add-on function of the GOT3000, license registration is required for the relevant functions.

Add-on function	License product name	License product model
GOT Mobile function	GOT Mobile function license	GT30-WEBSKEYA1-☐
VNC server function	VNC server function license	GT30-VNCSKEYA1-☐
VPN connection function	VPN connection function license	GT30-VPNKEYA1-☐
Remote personal computer operation function (Ethernet)	License for the remote personal computer operation function (Ethernet)	GT30-PCRAKEYA1-☐
Multimedia function	Multimedia function license	GT30-MMRKEYA1-☐

To register the license, first purchase the required license and then apply for the activation file.

After receiving the activation file, register the license.

☞ Page 3686 Information required for activation file application

☞ Page 3686 Applying for the activation file and registering the license

☞ Page 3687 Application for reissuing the activation file

For details on the license registration to use GT SoftGOT3000, refer to the following manual.

GT SoftGOT3000 User's Manual

Appendix 7.1 Information required for activation file application

The following information is required to apply for the activation file.

Required information	Description
License product name	It is provided on the purchased license certificate.
License product model	
License product ID	
GOT model	It is required to request the activation file for the GOT3000 add-on function. This can be checked on the [GOT Information] screen in the utility. GOT3000 Series User's Manual (Utility & Maintenance Functions) The model can also be checked with the rating plate or 2D code on the GOT rear face.
GOT serial number	
E-mail address	E-mail address to receive the activation file

Appendix 7.2 Applying for the activation file and registering the license

When you apply for the activation file on the website, the file will be sent by e-mail.

After receiving the file, use it to register the license in the GOT utility.

1. Launch a web browser and access the URL below to display the terms and conditions screen of the HMI GOT activation file request form.

https://www.mitsubishielectric.com/contact/ssl/php/1477/kiyaku.php?fid=1477

2. If you agree to the terms and conditions and apply for the GOT activation file, click [I agree and move to new application form].

If you do not agree to the terms and conditions, close the screen.

If you do not agree to the terms and conditions, you will not be able to apply for the activation file.

3. When the application form appears, enter the required information and press the [Confirm Information] button.

Precautions

• Do not use one-byte katakana or special symbols, as they may not be transmitted correctly.
Enter katakana using two-byte characters.
• Only one model can be applied for at a time.
If applying for multiple models, apply separately for each model.
• It may take several days to issue the activation file.
• Depending on the entered information, the activation file may not be issued.

4. When the confirmation screen appears, review the entered information and click the [Register] button to send the data.

5. When an e-mail is received at the address registered in the application form, change the extension of the attached activation file to zip and unzip it.

The folder structure of the unzip activation file is as follows:

(GOT serial number)\G3LICENSE\APKEYnnnnnnnn.INI

6. Copy the [G3LICENSE] folder and its contents to the data storage.

7. Install the data storage mentioned in step 6 to the GOT.

8. Register the license in the [License management] screen in the GOT utility.

GOT3000 Series User's Manual (Utility & Maintenance Functions)

Appendix 7.3 Application for reissuing the activation file

To use the activation file already registered in the GOT on another GOT due to a malfunction of the GOT or other reasons, access the HMI GOT activation file request form and click [I agree and move to reissue application form], and apply for reissuance of the activation file.

https://www.mitsubishielectric.com/contact/ssl/php/1477/kiyaku.php?fid=1477

Precautions

You can apply for reissuance of the activation file only once through the reissue application form.
If a second or subsequent reissuance is required, consult your local sales office.

Appendix 8 Open source software

This section describes the open source software included in GT Designer3 and its licenses.

☞ Page 3689 Pdfium
☞ Page 3690 libjpeg-turbo
☞ Page 3691 OpenSSL
☞ Page 3694 JQuery
☞ Page 3695 jQuery.Marquee
☞ Page 3695 CreateJS
☞ Page 3696 JQuery UI
☞ Page 3697 jsSHA
☞ Page 3697 Web Font Loader
☞ Page 3701 cairo
☞ Page 3711 webkit
☞ Page 3721 curl
☞ Page 3721 pixman
☞ Page 3722 freetype
☞ Page 3725 libxml2
☞ Page 3726 c-ares
☞ Page 3726 libxslt
☞ Page 3727 fontconfig
☞ Page 3728 libicu
☞ Page 3728 harfbuzz
☞ Page 3729 PCRE
☞ Page 3730 brotli
☞ Page 3730 OpenJPEG
☞ Page 3731 Little cms color engine

Appendix 8.1 Pdfium

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Appendix 8.2 libjpeg-turbo

The Independent JPEG Group's JPEG software

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Appendix 8.3 OpenSSL

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Appendix 8.12 curl

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2006-Jan-27

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--- end of FTL.TXT ---

Appendix 8.15 libxml2

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Appendix 8.21 PCRE

/***
*   Perl-Compatible Regular Expressions   *
***/

/* This is the public header file for the PCRE library, second API, to be
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GT Designer3 Ver.1.410C

Added and edited function		Applicable version	
		CoreOS	BootOS
Digital image input/recording function	Multimedia function license registration	AB	C
	Network camera usage		

MEMO

Revisions

*The manual number is given on the bottom left of the back cover.

Revision date	*Manual number	Revision
April 2025	SH(NA)-082590ENG-A	First edition
December 2025	SH(NA)-082590ENG-B	Compatible with GT Works3 Version 1.410C
April 2026	SH(NA)-082590ENG-C	Compatible with GT Works3 Version 1.412E

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